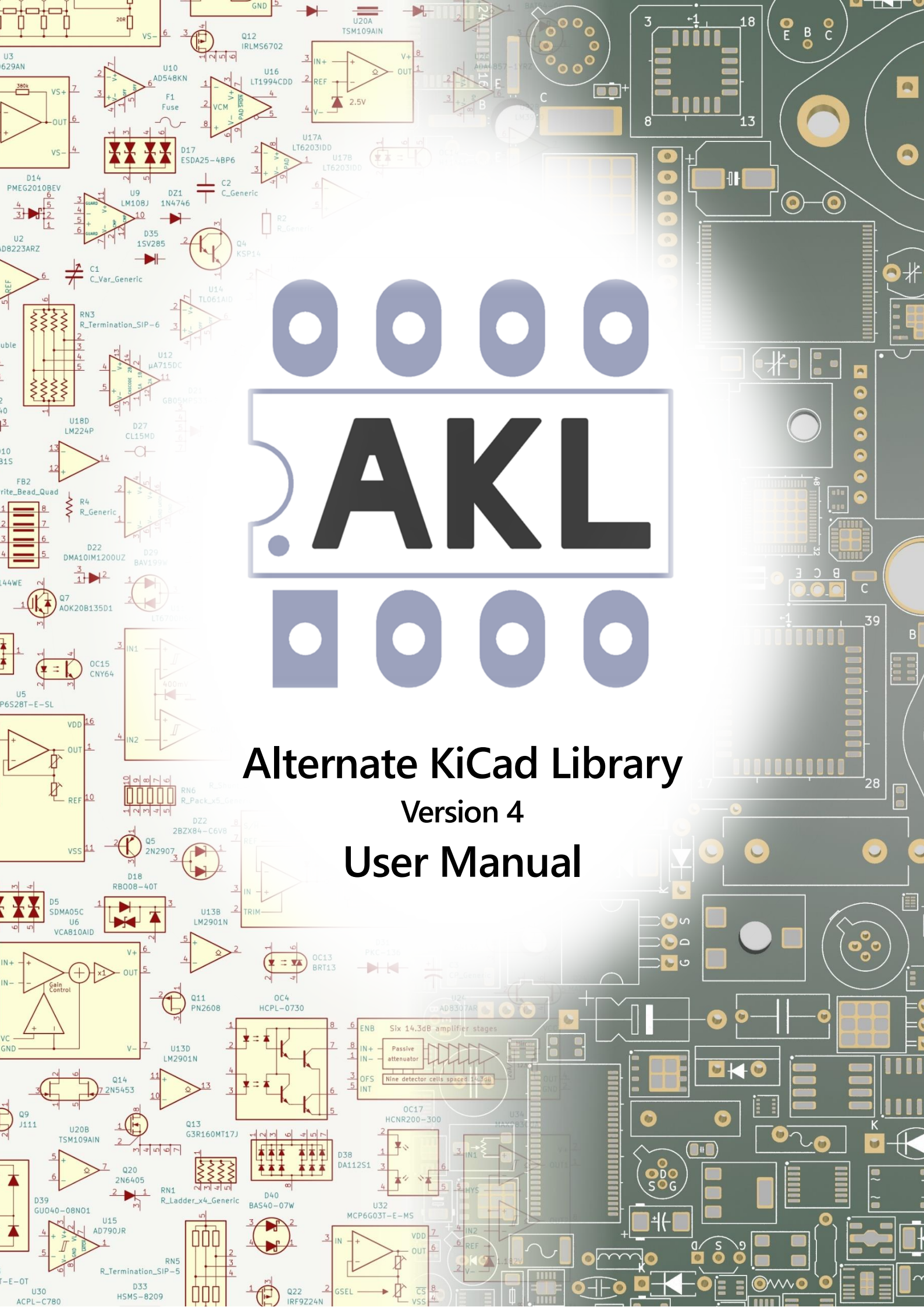

Alternate KiCad Library

Version 4

User Manual

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1. Introduction

Alternate KiCad Library is a symbol and footprint library for KiCad EDA Software. Symbol libraries contain various analog integrated circuits, discrete semiconductors, LEDs and passive components. Footprint libraries contain passives, diode, LED, transistor and IC packages. All symbols and footprints are either edited versions of standard KiCad components or have been created from scratch.

Chapter 1 contains an overview of the new features added to AKL 4.0, provides detailed installation instructions and shows the license under which the library is provided. It also provides instructions for reporting issues and some general usage tips.

Chapter 2 provides detailed description of symbol libraries. First sub-chapter (2.1) provides general information and tips regarding AKL symbols and symbol libraries. All other sub-chapters are dedicated to a single library each, with a short description, symbol examples and a detailed table with each included device.

Chapter 3 provides detailed description of every single footprint library present in Alternate KiCad Library. First sub-chapter (3.1) provides general information and tips regarding AKL footprints and footprint libraries. All other sub-chapters are dedicated to a single library each, with a list of footprints and their naming conventions listed in detail.

Chapter 4 contains version history of the library and this document.

1.1. Version 4.0: New Features

1.1.1. New symbols

AKL 4.0 adds around 3 new symbol libraries (for crystals, LEDs and voltage regulators) and new symbols for certain existing libraries. In total, around 6700 symbols were added, adding up to 36 700 total symbols. Detailed list of additions:

- **Symbols rotated by 45°** for some two-terminal devices (resistors, capacitors etc.). User can choose the rotated symbol by ticking the 'Alternate Symbol (DeMorgan)' option in the symbol properties. Pins snap correctly to the default schematic grid. See chapter 2.1.5. for more details.
- **Dual diodes have a new alternate symbol** that can be more suitable in certain drawing scenarios. See chapter 2.1.5. for more details.
- **Us style resistor graphics in complex symbols,** select the 'Alternate Symbol (DeMorgan)' to change the resistors included in the symbol from European to US style. See chapter 2.1.5. for more details.
- **Most symbols with NC pins were changed from "Unconnected" to "Free" electrical type.** This will allow the PCB designer to route tracks through the unused pins, without having to violate DRC. This is advisable only to devices, where the unused pins are not internally connected to the die, in cases where the device's datasheet labels these pins as "Do not connect" they were left as "Unconnected" and it will not be possible to easily make connections with them while designing the PCB. See chapter 2.1.8 for more information and advice.
- **Pre-biased transistor symbols (Transistor_BJT_Pre-Biased_AKL) have been overhauled.** Symbol graphics now include resistance values for internal bias resistors in accordance with part's datasheet. See chapter 2.33. for more details.
- **New Crystal_AKL Symbol Library:**
  Contains 63 new symbols of crystal oscillators with pre-assigned footprints, see chapter 2.12. for more details
- **New LED_AKL Symbol Library:**
  Introduces 1275 new colorful LED and board-mounted LED indicator symbols. See chapter 2.22. for more details.
- **New Voltage_Regulator_AKL Symbol Library:**
  Introduces 2751 new linear voltage regulator symbols, see chapter 2.38. for more details.
- **Diode_AKL Symbol Library:**
  1141 new symbols were added to this library, consult the symbol table in chapter 2.14. for detailed list of previous and new symbols.
- **Diode_Current_Limiting_AKL Symbol Library:**
  16 new symbols were added to this library, consult the symbol table in chapter 2.18. for detailed list of previous and new symbols.
- **Diode_Schottky_AKL Symbol Library:**
  396 new symbols were added to this library, consult the symbol table in chapter 2.19. for detailed list of previous and new symbols.

- **Diode_TVS_AKL Symbol Library:**
  137 new symbols were added to this library, consult the symbol table in chapter 2.20. for detailed list of previous and new symbols.
- **Diode_Zener_AKL Symbol Library:**
  476 new symbols were added to this library, consult the symbol table in chapter 2.21. for detailed list of previous and new symbols.
- **Diode_Bridge_AKL Symbol Library:**
  6 new symbols were added to this library, consult the symbol table in chapter 2.16. for detailed list of previous and new symbols.
- **Minor generic symbol additions to some symbol libraries as part of bugfixes**

1.1.2. New footprints

AKL 4.0 adds over 1100 new footprints, adding up to around 10400 footprints in total, see the list of additions and changes below:

- **New "ThermalVias2" Footprints for devices with heatsink pads:**
  New footprint variants use standard vias surrounded by soldermask instead of expensive via-in-pad. Total contact surface area is reduced, but manufacturing repeatability is improved without the need for expensive PCB processes.
- **New LED_SMD_AKL and LED_SMD_Handsoldering_AKL footprint libraries:**
  90 footprints in total, surface mount LEDs and arrays, including RGB LEDs.
- **New LED_THT_AKL and LED_THT_AKL_Double footprint libraries:**
  418 footprints in total, through-hole LEDs, LED indicators and arrays, including RGB LEDs.
- **Crystal_AKL, Crystal_AKL_Double and Crystal_Handsoldering_AKL Footprint libraries:**
  -Added Crystal_SMD_8.7x3.8mm_P5.50mm
- **Diode_THT_AKL and Diode_THT_AKL_Double Footprint Libraries:**
  -Added DO-7 (DO-204AA) series
  -Added 7.3x22 mm package used by BY4 type high voltage diodes
  -Added SOD-23 – old plastic rectangular diode package
  -Added SOD-61 series
  -Added SOD-61A series
  -Added CASE-194 series
- **Package_DFN_QFN_AKL Footprint library:**
  -Added DFN-8-1EP_3x2mm_P0.5mm_EP1.7x1.6mm
- **Package_SO_AKL Footprint library:**
  -Added SOIC-8-1EP_3.9x4.9mm_P1.27mm_EP2.29x2.29mm and thermal vias variants.
  -Added HTSSOP-16-1EP_4.4x5mm_P0.65mm_EP2.94x3.58mm_ThermalVias2 and thermal vias variants.
  -Added Infineon_PG-SSOP-14 and thermal vias variants.
  -Added ST_PowerSSO-12 and thermal via variants.
- **Package_TO_SOT_SMD_AKL Footprint library:**
  -Added 1.27mm pin pitch variants for TO-252-4 and TO-252-5 footprints. (Default was only good for 1.14mm pin pitch devices). Some symbols previously using old

footprint had the new one assigned when needed.
-Added Diodes_SOT-89-5

- **Package_TO_SOT_THT_AKL and Package_TO_SOT_THT_AKL_Double Footprint libraries:**
  -Added "BigPads" handsoldering-friendly variants to most metal-can packages: TO-3, TO-5-2, TO-5-3, TO-5-4, TO-5-6, TO-18-2, TO-18-3, TO-18-4, TO-39-3, TO-46-4, TO-78-6, TO-99-8, TO-100-10
  -Added TO-71-6, TO-71-8 with pin indicators and BigPads variants
  -Added two-pin TO-3PF and KA variants
  -Added SOT-33 and SOT-33_Inline with pin variants
  -Added SOT-25 with pin variants

1.1.3. Bug fixes

Errors present in previous versions of the library that were fixed:

- **Amplifier_Difference_AKL symbol library:**
  AD626 – corrected +VS pin's electrical type to "Power Input".
  AD8209 – fixed datasheet link.
  INA132 – fixed resistor values.
- **Analog_AKL symbol library:**
  AD8307 – fixed symbol graphics.
  AD604 – fixed datasheet links.
- **Amplifier_Operational_AKL symbol library:**
  AD8008 – fixed parent symbol.
  AD8012 – fixed parent symbol and updated datasheet links.
  AD8048 – fixed parent symbol and description.
  AD8513 – fixed parent symbol.
  AD8534 – fixed parent symbol.
  AD8539 – fixed parent symbol.
  AD8554 – fixed parent symbol.
  AD8594ACPZ – fixed pinout.
  AD8608 – fixed parent symbol.
  AD8618 – fixed parent symbol.
  AD8664 – fixed parent symbol.
  ADA4522-4ARZ – fixed parent symbol.
  ADA4638-1ARZ – fixed parent symbol.
  ADA4891-1 – fixed parent symbol.
  LMC6042 and LMC6044 – fixed datasheet links
  LMP7716 – fixed parent symbol, description and datasheet links.
  LTC2050 – renamed shutdown pin.
  MCP6H82T-E-MNY and MCP6H92T-E-MNY removed duplicate NC pins.
  MCP617 – fixed parent symbol.
  MCP6044 – fixed parent symbol.
  MCP6144 – fixed parent symbol.
  MCP6232 – fixed parent symbol.

MCP6234 – fixed parent symbol.
MCP6242 – fixed parent symbol.
MCP6244 – fixed parent symbol.
MCP6274 – fixed parent symbol.
MCP6284 – fixed parent symbol.
MCP6294 – fixed parent symbol.
NE5534 – fixed datasheet link.
OP221 – fixed datasheet link.
OP293 – fixed datasheet link.
OP413 – fixed footprint.
OP491 – fixed parent symbol.
OP495GSZ – fixed datasheet link
OPA227AIDRM – fixed pinout.
OPA551PA's – fixed FLAG's pin electrical type.
OPA606 – fixed datasheet link.
OPA683ID's – fixed pinout.
OPA2337 and OPA2338 – fixed parent symbol.
TSX634 – fixed parent symbol.
TSV734IP – fixed parent symbol.
TS9224 – fixed parent symbol.
TLV2464 – fixed parent symbol.
TLE2144 – fixed parent symbol.
TLC271 – fixed datasheet links.
OPA4350UA – fixed parent symbol.
OPA4277 – fixed parent symbol.
OPA4241 and OPA4251 – fixed parent symbols.
OPA4227 and OPA4228 – fixed parent symbols.

- **Analog_Comparator_AKL symbol library:**
  MAX999 – fixed pinout.
  MCP6548 – fixed datasheet link.
  TLV350 – removed incorrect hidden NC pins.
  TLC374 – fixed parent symbol.
  MAX9034 – fixed symbol names.
- **Diode_AKL symbol library:**
  DTV1500MD – fixed footprint.
  Quad Common cathode and anode generic symbols (and derived symbols) now have their pins aligned to 1.27mm grid.
  BAS678 – fix symbol name.
  RS3xB series – fixed footprinds.
- **Diode_Schottky_AKL symbol library:**
  MBRF10200CT – updated datasheet link.
  MBR40250 – changed to a correct parent symbol.
  BAT40V – added separated symbol.
  BAT17-07 – added separated symbol.

- **Diode_TVS_AKL symbol library:**
  TSMPxxA series TVS diode – fixed footprints (SMP_Reverse)
  DT1140-04LP – fixed symbol graphics.
  D_TVS_Array_Generic_4xLine_L1NL2L3xL4 – fixed pinout.
- **Diode_Zener_AKL symbol library:**
  BZX79 series – updated datasheet links.
  MMSZ5221 series – updated datasheet links.
  MMBZxxxBS series – added additional separated symbols.
  All specific Zener diode symbols are now derived from their respective generic symbols.
- **Optocoupler_AKL symbol library:**
  VOM617A and VOM618A series – fixed footprints.
- **Optocoupler_Gate_Driver_AKL symbol library:**
  VOL3120 – fixed pinout.
- **Optocoupler_Logic_AKL symbol library:**
  VO0630T, VO0631T and VO661T – added additional separated symbols.
- **Optocoupler_Triac_AKL symbol library:**
  5-pin Phototriacs no longer generate missing pin errors while updating PCB from schematic.
- **Transistor_MOSFET_AKL symbol library:**
  Dual Gate MOSFETs now have the correct mode indicated on the symbol graphics (depletion instead of enhancement)
- **Transistor_BJT_AKL symbol library:**
  BC212, BC213 and BC214 – fixed parent symbol.
- **Transistor_BJT_Darlington_AKL symbol library:**
  MJ3000/3001 and MJ2500/2501 – fixed parent symbol.
- **Transistor_BJT_Pre-Biased symbol library:**
  MUN211x series, MUN213x series, MUN221x series, MUN223x series, MUN511x series, MUN531x series, MUN521x series, MUN523x series – fixed symbol names.
- **Diode_AKL and Diode_AKL_Double footprint libraries:**
  D_SOD-57_P12,70mm_Horizontal_Zener renamed to D_SOD-57_P12.70mm_Horizontal_Zener (, replaced with .) because the old name was not consistent with the naming convention.
- **Package_TO_SOT_THT_AKL and Package_TO_SOT_THT_AKL_Double footprint libraries:**
  TO-18-2_Zener footprint now has a reversed symbol on the silkscreen layer to match the BZP630 Zener diode series.
- **Package_TO_SOT_SMD_AKL footprint libray**:
  SOT-563 now has narrower pads and larger pad-to-pad clearance

1.2. Installation Instructions

1.2.1. KiCad's Plugin and Content Manager

KiCad's Plugin and Content Manager provides fully automated installation of the Alternate KiCad Library.

- Find the *Alternate KiCad Library* in *Libraries* tab of KiCad's *Plugin and Content Manager*.
- Press *Install*.
- Press *Apply Pending Changes*.

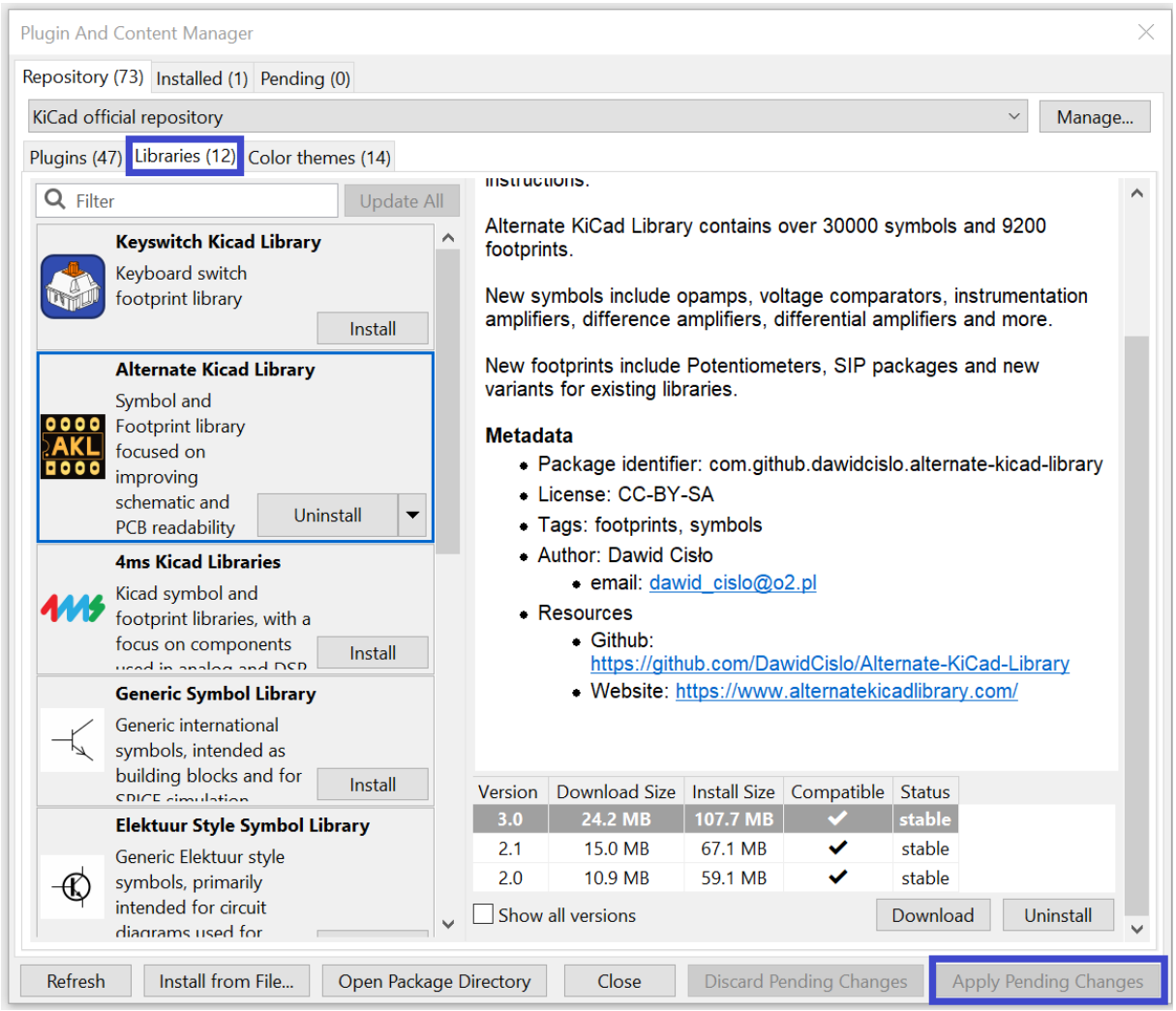


Figure 1.1. KiCad's Plugin and Content manager window, set to the libraries tab and Apply Pending Changes button highlighted.

KiCad automatically adds a 'PCM_' prefix to all of the files downloaded via the PCM. Symbol libraries have links to specifically named footprint libraries. Version 4.0.1 has all the links prepared in such a way, that they will work with the default prefix. Make sure that you have the default 'PCM_' prefix in *Preferences → Packages and Updates*.

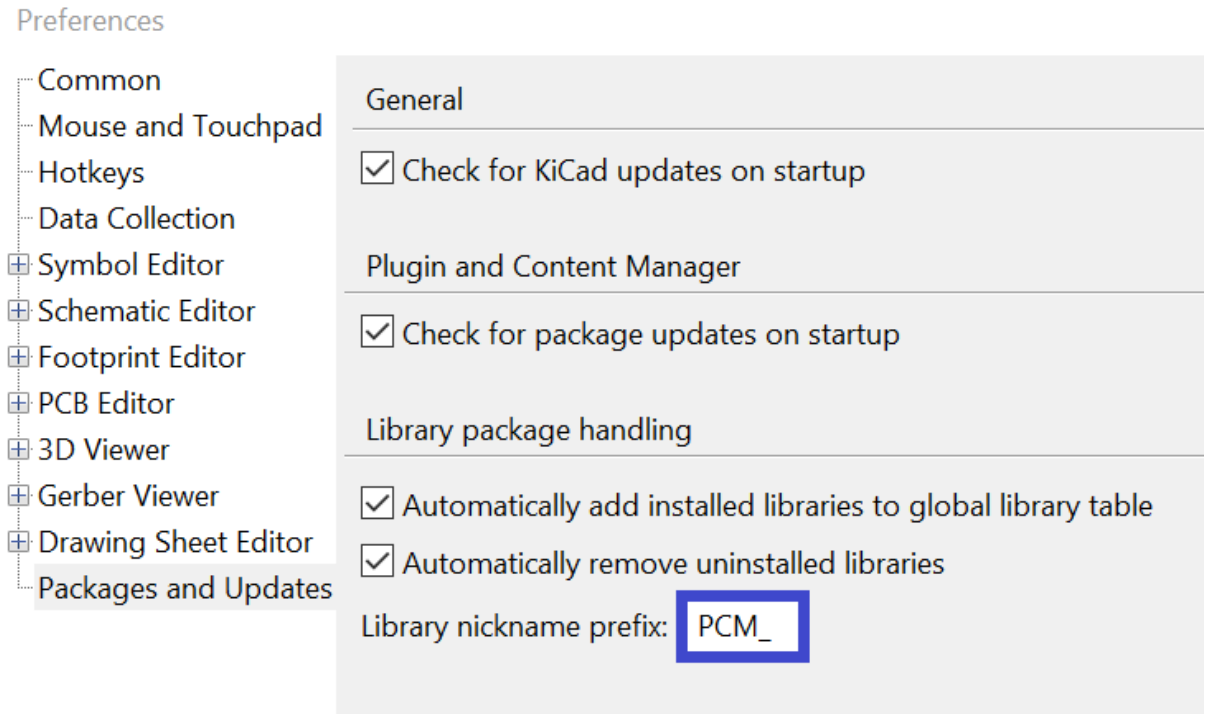


Figure 1.2. Packages and Updates page in KiCad preferences with the default PCM_ library prefix.

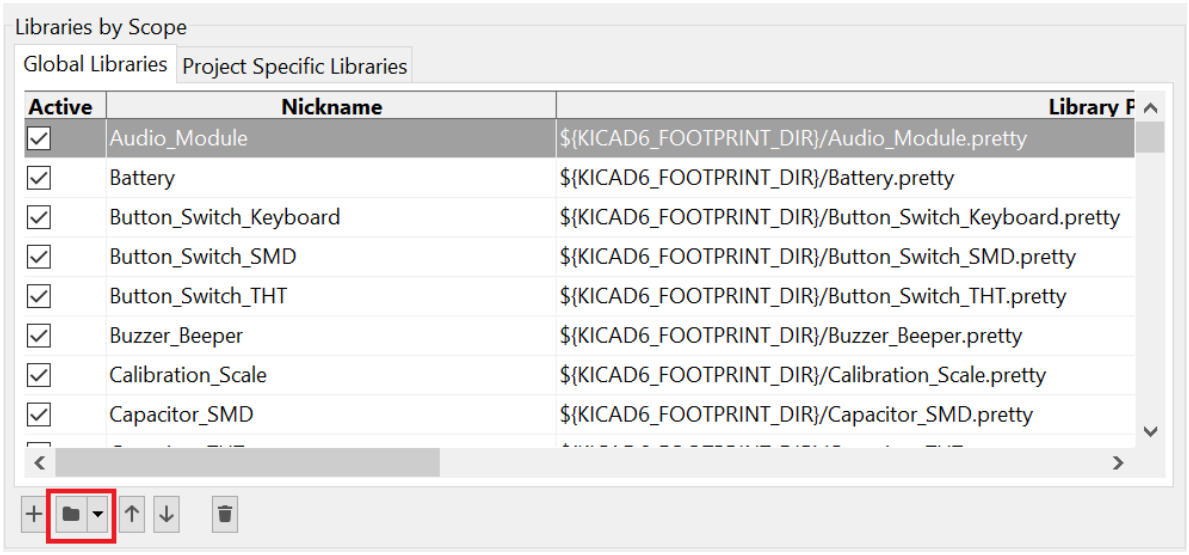
If you do not want AKL library filenames to have that prefix, you can download the slightly older 4.0 version instead, and remove the 'PCM_' prefix in *Preferences → Packages and Updates* (leave the text box blank). Alternatively, you can download and install the library manually, refer to instructions below.

1.2.2. Manual Installation

Use this guide if you're downloading the library from GitHub or sources other than KiCad's Plugin and Content Manager.

Extract the downloaded AKL files into any desired location (it is recommended to avoid windows protected folders such as "Program Files").

KiCad uses library tables to keep track of installed libraries.
To install libraries manually, open the main KiCad window and go to *Manage Footprint Libraries* in the *Preferences* tab.

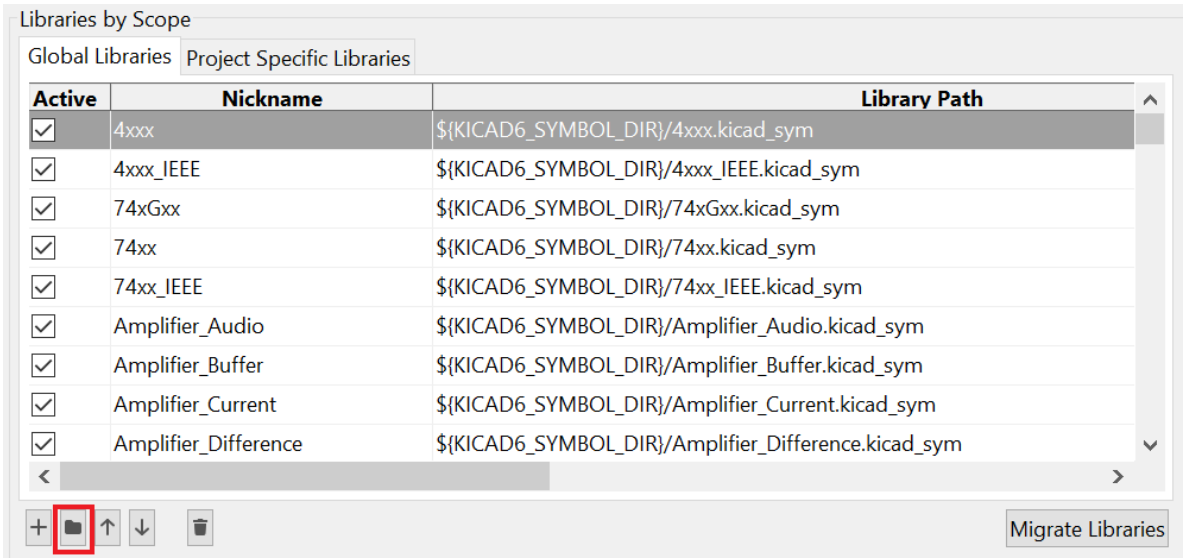


Press the folder icon (highlighted in red) and locate the folder with the extracted footprint library files.

Multiple folders ending in *.Pretty* should be visible. Each of these is a separate footprint library. Select all the libraries (Shift+Click or Ctrl+Click) that you want to install and press *Select Folder*.

You can select which libraries are active and modify their searchable names (Nickname). Be aware that symbol libraries link to these footprint libraries based on that nickname, and any changes will break that link. It's recommended to keep the footprint library names as they are.

Next, open the main KiCad window and go to *Manage Symbol Libraries* in the *Preferences* tab.



Press the folder icon (highlighted in red) and locate the folder with the extracted symbol library files.

Multiple files ending in *.kicad_sym* should be visible. Each of these is a separate symbol library. Select all the libraries (Shift+Click or Ctrl+Click) that you want to install and press *Open*.

You can select which libraries are active and modify their searchable names (Nickname) as desired.

All the installed libraries should be now accessible.

1.3. License

Alternate KiCad Library by Dawid Cisło and other contributors is a derivative of KiCad Library made by KiCad community (see: KiCad library GitLab), used under Creative Commons CC-BY-SA 4.0 License, with the following exception:

To the extent that the creation of electronic designs that use "Licensed Material" can be considered to be "Adapted Material", then the copyright holder waives article 3 of the license with respect to these designs and any generated files which use data provided as part of the "Licensed Material".

Additional information can be found here: KiCad libraries license

What does this mean?

You can freely use Alternate KiCad Library data for commercial, closed and non-commercial projects without any restrictions. There is no need to attribute this library or original KiCad libraries within your design and no obligation to share any project files under this or any other license agreement.

If you wish to redistribute the Alternate KiCad Library, or its parts (including in modified form) as a collection you need to share it under the same license agreement. Libraries must also retain attribution information and license documents which are distributed with the library files.

1.4. Reporting Issues

Any issues that you find while using this library can be reported here (requires a GitHub account).

Before submitting your own issue, please check if any other open issues aren't already covering your problem. Also check the Known Issues section of the readme file, since it'll sometimes contain bugs that no-one opened an issue for.

When submitting the issue, please provide a detailed description of the problem: symbol names, footprint names, names of libraries that are affected etc.

1.5. Usage tips

It is pretty common in KiCad to experience slow library load times, even on good hardware. On Windows machines, Windows Defender scans the library files every time they are opened. You might want to add KiCad library folders to its exceptions. Default library location after downloading it via PCM on Windows is:
`C:\Users\<username>\Documents\KiCad\8.0`

Warning: Any exception added to your antivirus software is a potential security risk. If you added these library locations to the exceptions, please manually scan the downloaded library files after every update. Potential of the AKL package in KiCad's PCM being compromised is very low, but never zero.

KiCad by default hides individual item colors. To see colored LED symbols, go to *Preferences → Schematic → Colors* and untick the *Override individual item colors* check box.

Some symbols in the AKL library make use of the alternate symbol functionality. Switching between standard and alternate symbol is not very convenient. Go to *Preferences → Hotkeys* and assign a new hotkey to the *De Morgan Conversion* command in the *Schematic Editor* section.

2. Symbol libraries

Electrical schematics are drawn with symbols, abstract representations of electronic components indicating their function and electrical properties. Alternate KiCad Library provides 37 symbol libraries totaling over 36 thousand symbols of analog ICs, discrete semiconductors, LEDs, optocouplers and passives.

Section 2.1 provides general information on AKL symbol library structure, relationship between symbols and footprints, multi-unit symbols and their role, usage of alternate symbols, best practices for drawing schematics, shows how AKL facilitates following them, reviews compatibility with KiCad's Electrical Rules Checker (ERC), explains the behavior of NC pins and lists default reference designators.

Following sections (2.2 to 2.38) describe each symbol library contents in more detail. Each chapter shows examples of corresponding symbols and table containing a detailed list of included devices. Each entry in the table contains count of symbols per device, number of units per symbol, NC pins behavior and whether alternate symbol is available. Light-emitting components, such as LEDs have additional information on available symbol colors.

2.1. Symbol Library Features

2.1.1. Symbol Library Structure

Each symbol library consists of generic and specific symbols. Specific symbols are often derived from generic symbols, have the correct footprint pre-assigned, include datasheet link and a short description.

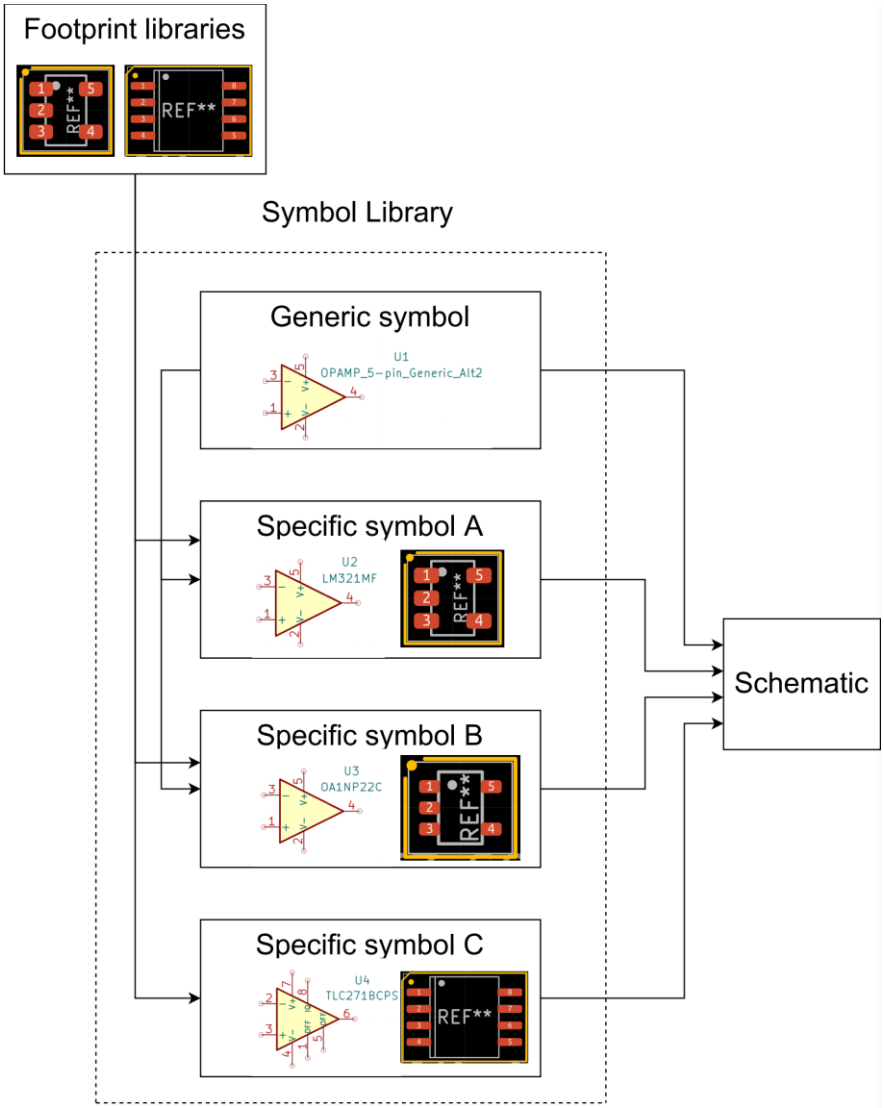


Figure 2.1 *Typical symbol library structure*

Figure 2.1 presents an example of a symbol library containing one generic symbol with no footprint and three specific symbols. Specific symbols A and B are derived from the generic symbol (They have the same graphical body and pin configuration as the generic symbol). Symbol A is a LM321MF operational amplifier in a SOT-23-5 package and has the correct footprint already pre-assigned when placed on a schematic. Symbol B is also an operational amplifier but this time it has a SOT-353 footprint. Symbol C has a different pin configuration than the generic symbol therefore it is a standalone symbol. It also has a footprint pre-assigned.

2.1.2. Link Between Symbols and Footprints

Symbol is an abstract representation of a component and represents its electrical characteristics (it usually does not visually resemble the component itself). All pins of a symbol have numbers that will correspond to the footprint pad numbers when laying out the PCB. Two examples showing the symbol - footprint links are shown on figures 2.2 and 2.3. Devices with only two pins will usually not have the pin number visible, refer to detailed library descriptions for more information.

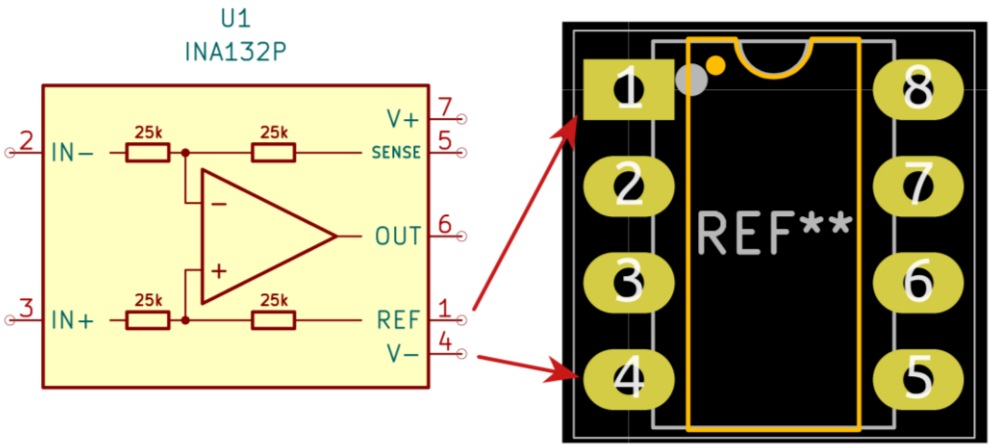


Figure 2.2 *Difference amplifier symbol and its footprint with pin-pad number association shown by red arrows.*

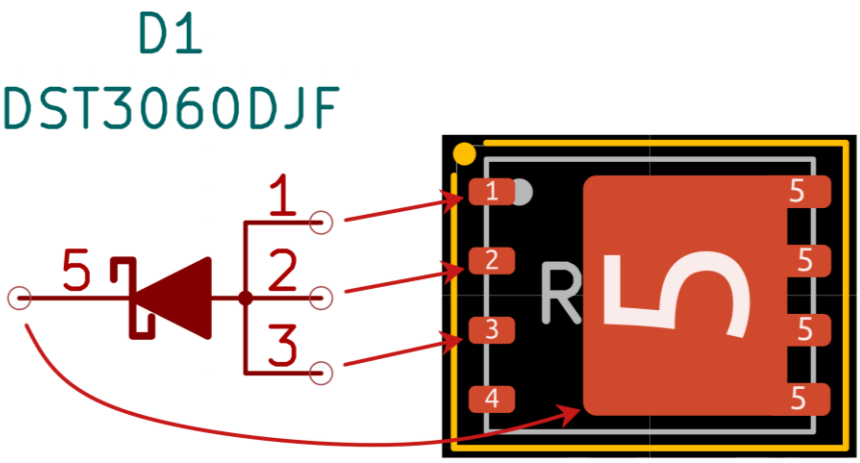


Figure 2.3 *Schottky diode in a TDSON 5x6mm Package with anode connected internally to three pads (pad 1, pad 2, pad 3) and cathode connected to the large pad 5. Symbol has separate pins (pin 1, pin 2, pin 3) that correspond to the footprint pads.*

2.1.3. Multi-unit Symbols

Some devices are made up of multiple identical functional blocks (example: Quad NAND logic gate – contains four identical NAND gates). There are two approaches to making symbols for devices with multiple identical functional blocks:
- standard (aggregated) symbol contains all the functional blocks of a device in a single unit,
- multi-unit (disaggregated) symbol contain multiple "sub-symbols" that can be placed anywhere on the schematic. Units of a symbol are denoted by an uppercase letter suffix on their reference designator (example: U12A is a first unit of the U12 device).

Multi-unit symbols usually provide more flexibility to the designer and result in cleaner and more readable schematics, but aggregated symbols can provide better results in some scenarios. See figures 2.4 2.5 and 2.6 for multi-unit symbol examples.

Figure 2.4 *Triple diode symbol that has two variants:*
- a standard, aggregated symbol (D1) with all three diodes in a single unit,
- a multi-unit, disaggregated symbol (D2) with three separate units (D2A, D2B, D2C), each diode being a separate object that can be placed anywhere on a schematic.

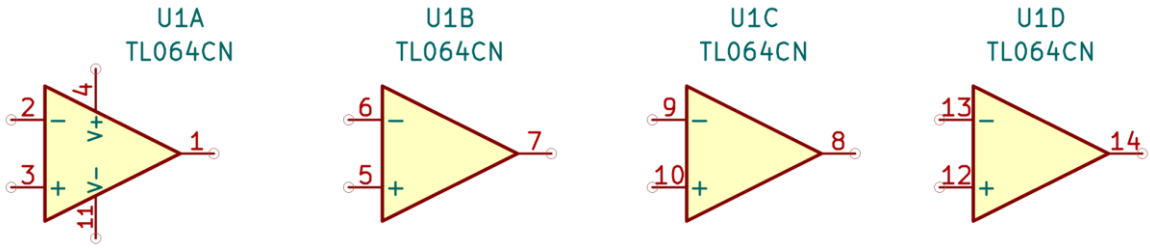


Figure 2.5 *Quad operational amplifier symbol as an example of a multi-unit symbol. First unit (U1A) also has power pins included.*

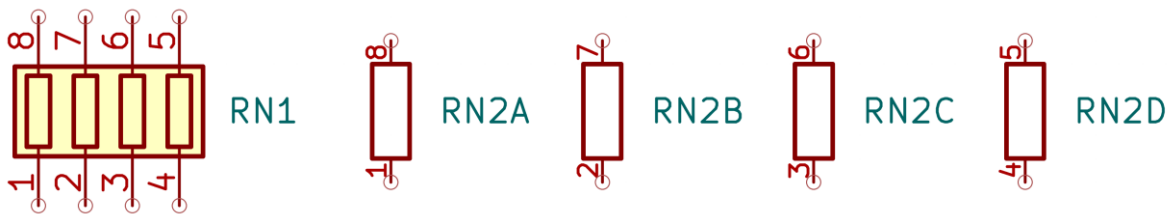


Figure 2.6 *Resistor network with single- and multi-unit symbols.*

2.1.4. Reviewing and Editing Symbol Properties

Symbol properties can be edited by opening *Symbol Properties* window (figure 2.7).

In the symbol properties window component reference designator, value, footprint, datasheet link and description can be reviewed and edited in the *Fields* table. Additional fields can be added to a symbol (internal part number, replacement components etc.).

WARNING: Editing multi-unit symbols via symbol properties might lead to problems (Each unit gets different reference designators instead of a single one), use the "Bulk-edit fields of all symbols on a schematic" tool instead.

SPICE simulation model can also be assigned here, since AKL symbols don't come with any models by default.

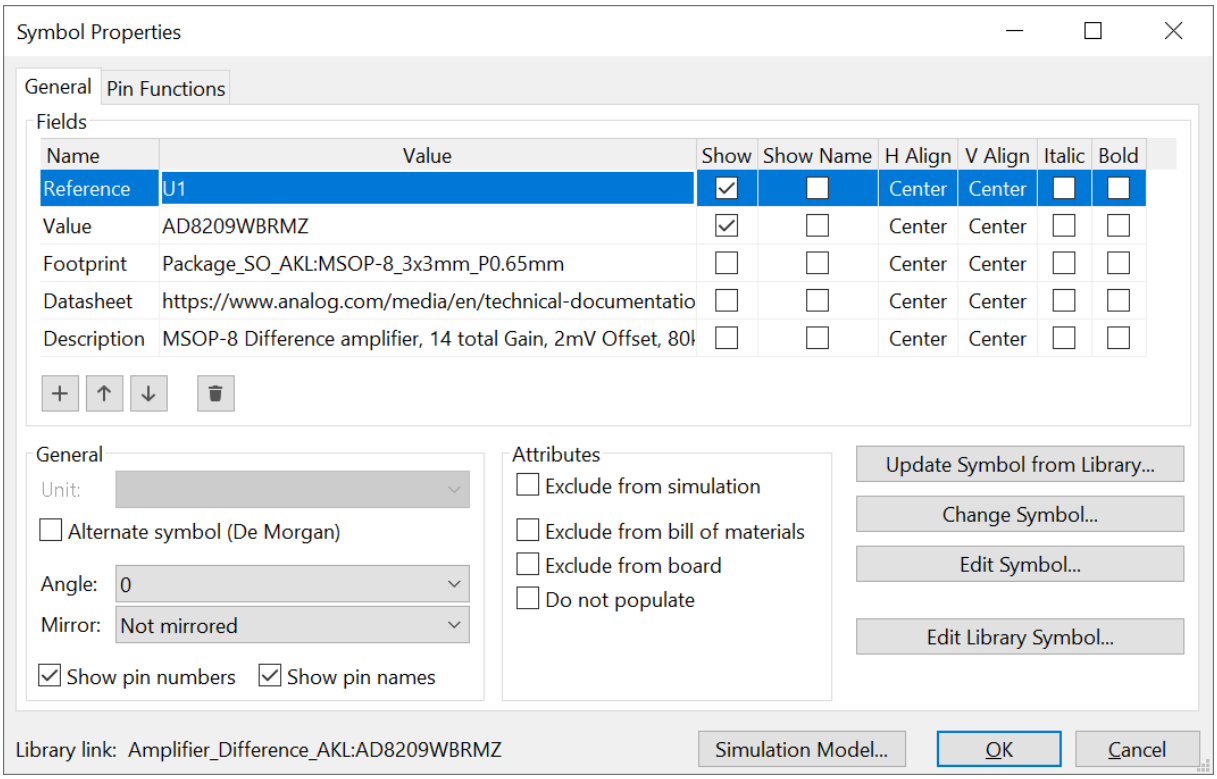


Figure 2.7. *Symbol properties window of a difference amplifier symbol with visible associated footprint and datasheet link. Alternate symbol (De Morgan) box is unchecked, but alternate body style for this symbol is available.*

2.1.5. Alternate Body Styles

Some symbols have alternate body styles that expand their functionality. You can toggle the alternate body style in Symbol Properties by checking the *Alternate Symbol (De Morgan)* checkbox (2.1.4) or set up a hotkey in *Preferences → Hotkeys*.

Two-terminal devices such as diodes, resistors and capacitors have a 45-degree version. Pins of these 45-degree symbols are still located on the default 50 mil grid (figure 2.8).

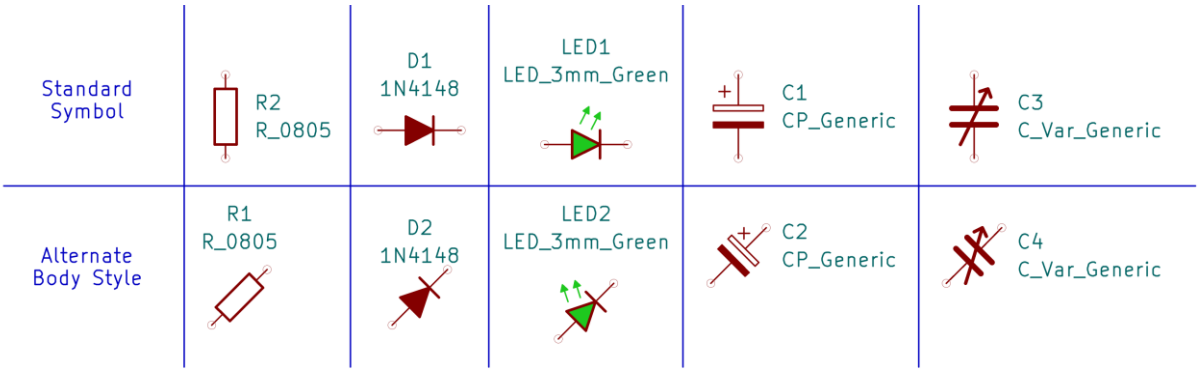


Figure 2.8. *Examples of symbols with a 45-degree rotation alternate body style.*

Dual common cathode, common anode and series diodes have an alternate symbol with different pin placement, that might be more useful in certain drawing scenarios (figure 2.9).

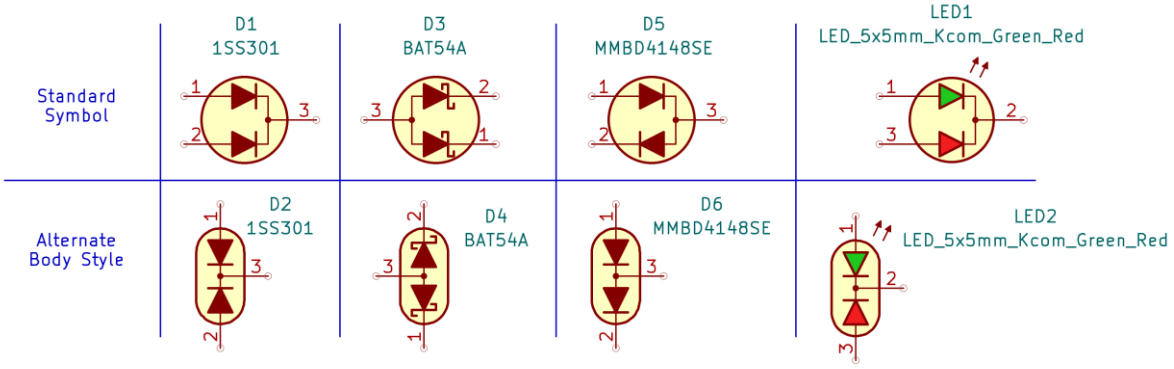


Figure 2.9. *Examples of dual diode symbols with their alternate body style counterparts.*

Some complex integrated circuits have resistors incorporated in their symbol's body. By default, this is an EU-style resistor symbol. Alternate symbol body has US-style resistor symbols instead (figure 2.10).

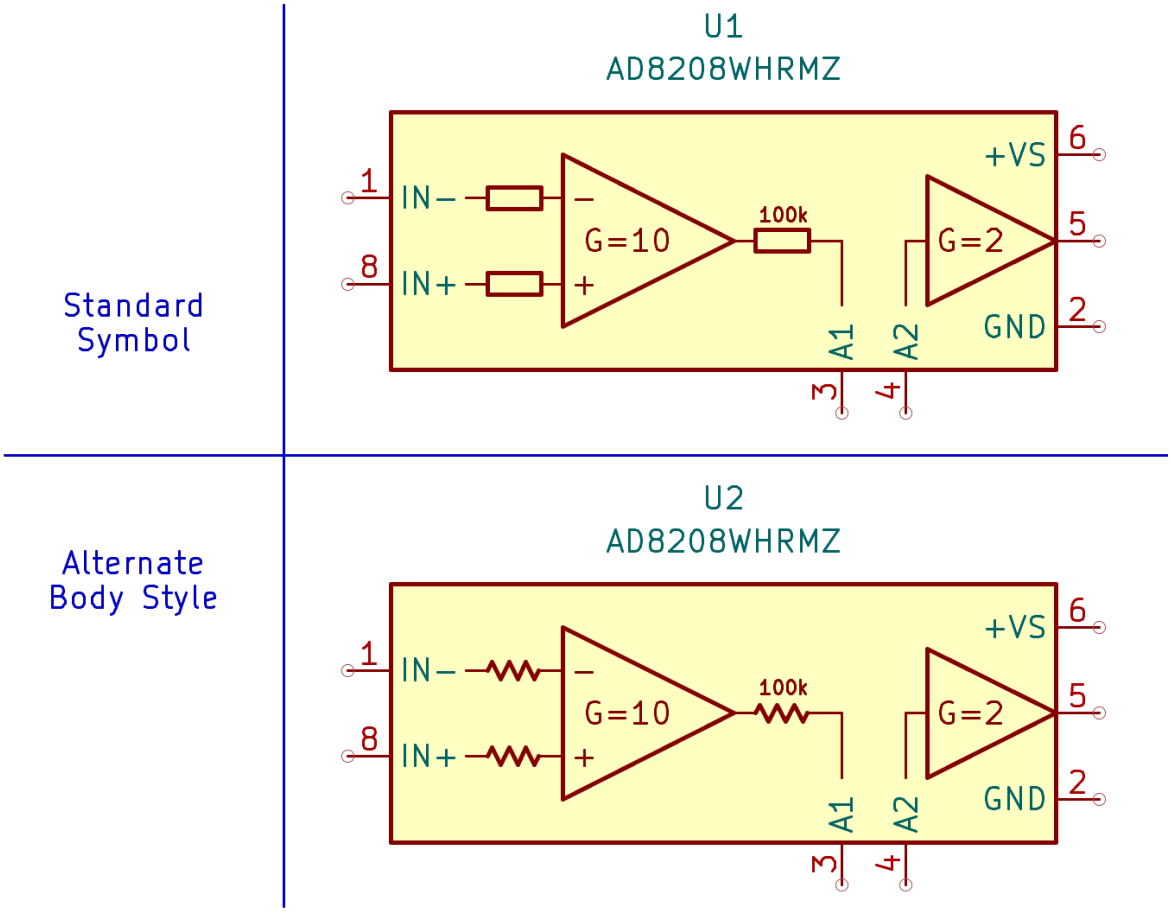


Figure 2.10. *An example of a complex IC symbol with resistors incorporated into its body with both the standard and alternate variant.*

2.1.6. Schematic Drawing Best Practices

A schematic is not just an input method for PCB design, it is the most important piece of documentation that tells how exactly the circuit is supposed to operate. This information is invaluable during troubleshooting, modification or maintenance of the device and therefore it needs to be easy to read and understand. To make the schematic readable, apply the following advice whenever possible:

- All signals must flow from left to right, with the exception of feedback loops. Physical input connector symbols are to be located near the left border of the schematic sheet and output connectors near the right border. This ensures that a signal on a schematic travels along a chain of logically aligned functional blocks responsible for its processing that can be easily understood.
- Nets with a DC bias or power symbols should be arranged vertically in the order of their value (example: 5V, GND, -5V) inside previously mentioned functional blocks. Situations where power symbol for a positive supply voltage points downwards or a symbol for a negative voltage points upwards should be avoided.
- Space out the symbols while laying out the schematic and split up the schematic into hierarchical sheets if needed. It is literally impossible to run out of space for a schematic so congestion needs to be avoided at all cost. Spacing out symbols makes it easy to modify the schematic without completely redrawing it and leaves space for additional documentation.
- Use graphical tools (text, lines) to convey important information about the circuit operation such as bias voltages, currents, resistor divider attenuation ratios, amplifier gains, clock frequencies, waveform shapes etc. Use lines to indicate functional blocks and then label their function with text. Schematic graphics are just as important for electronics design as comments are for programming.

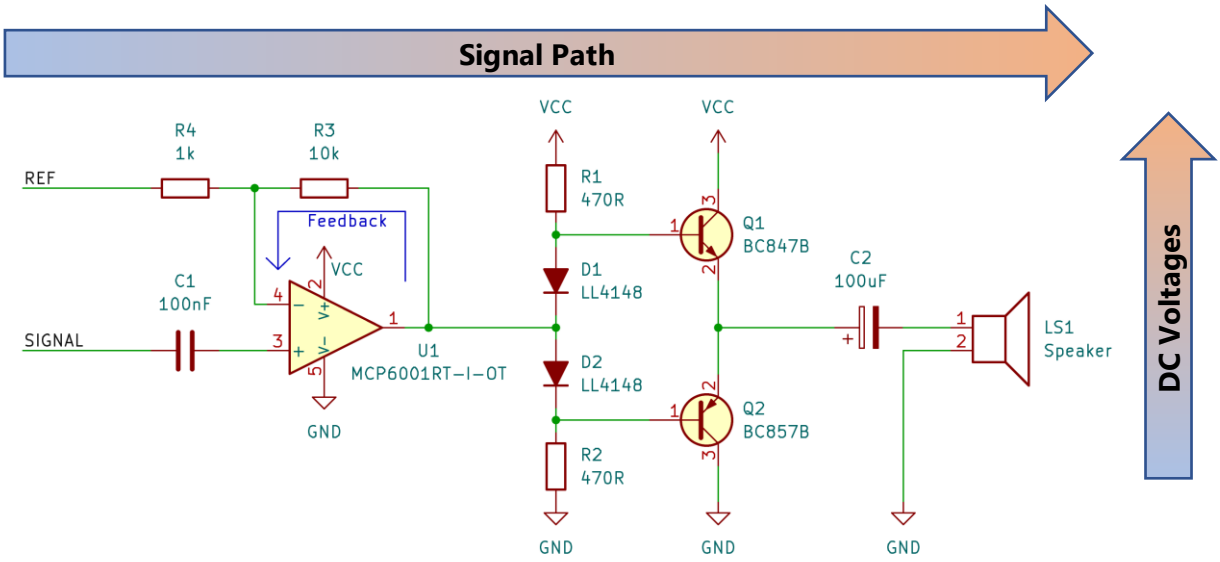


Figure 2.11 *Schematic of a power amplifier with clearly visible signal path (blocking capacitor → voltage amplifier → power stage → speaker) and two supply nets (VCC, GND) with VCC generally being placed above all other symbols, and GND below all other symbols.*

Alternate KiCad Library provides multiple features to facilitate schematic readability through good schematic drawing practices.

All PNP transistors and P-Channel enhancement-mode MOSFETs are oriented in a way that the collector or drain is below the emitter or source by default. This comes from the fact, that these devices usually need the voltage on the collector (or drain) to be lower than on the emitter (or source). Figure 2.12 compares NPN and PNP transistors in their typical application.

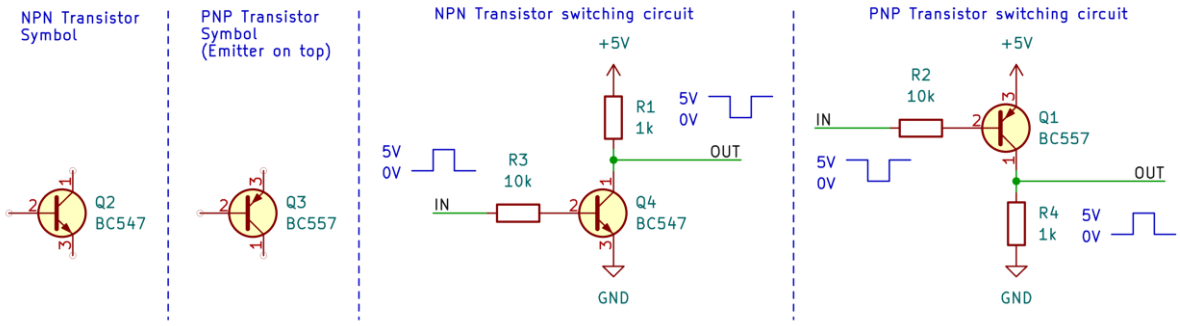


Figure 2.12 *NPN and PNP transistor symbols and their typical application (transistor switch).*

Certain symbols have multiple variants that provide more flexibility while drawing a schematic. Matched transistor pairs have up to four different symbol variants, each best suited for a different scenario (figure 2.13).

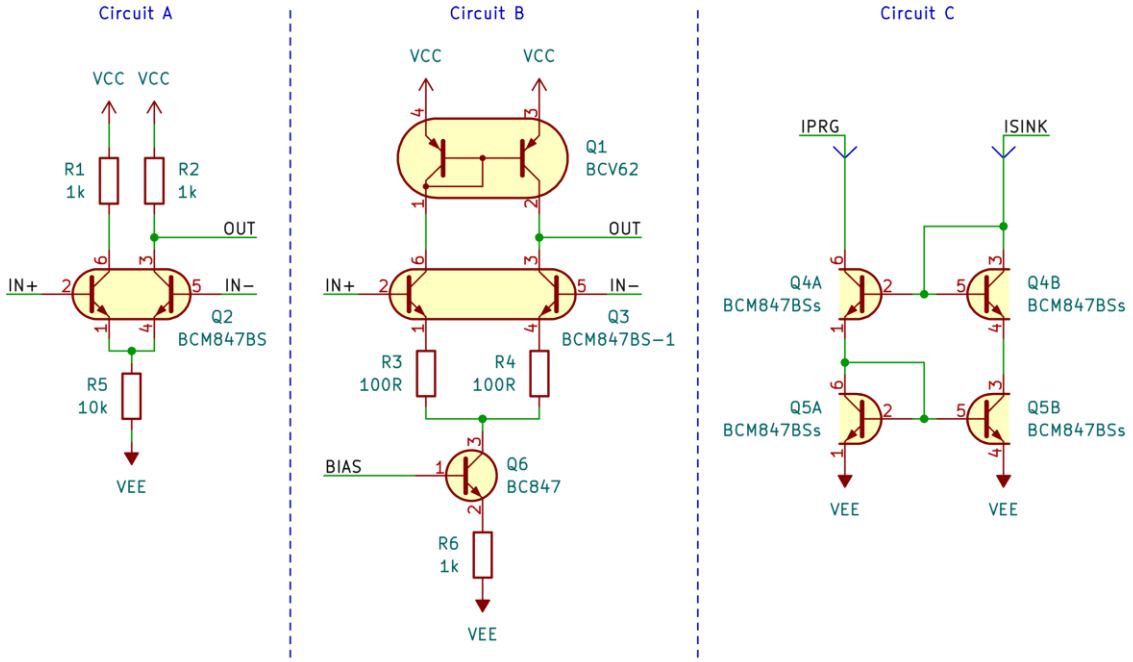


Figure 2.13 *Three different circuits using the BCM847BS dual matched NPN transistor.*
Circuit A is a differential pair amplifier with a standard BCM847BS symbol.
Circuit B is an advanced differential pair amplifier with a BCV62 current mirror as a load and is using the '-1' variant of the BCM847BS symbol.
Circuit C is a Wilson current mirror using multi-unit 's' variant of the BCM847BS.
In all those cases using a different variant of the symbol would make the schematic less readable.

Integrated circuits can serve a wide variety of different functions, and thus make it hard to understand a schematic without analyzing their respective datasheets as well. To make the function of an IC easier to follow from a schematic level some symbols incorporate the simplified internal diagram as it is provided in the manufacturer's datasheet, see figure 2.14 for examples.

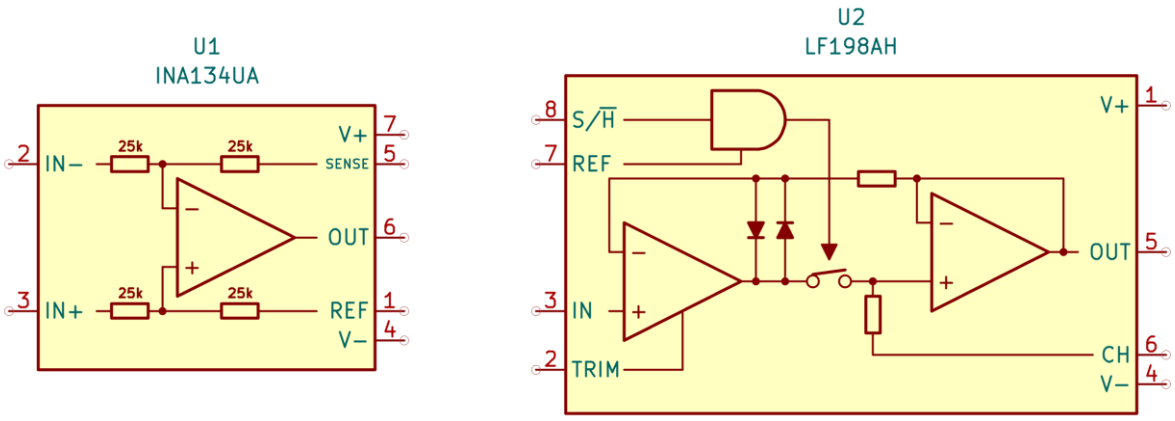


Figure 2.14 *Symbols of analog ICs with their respective internal diagrams visible from the schematic level. By looking at the symbol of an INA134UA it can be easily gathered that it is a difference amplifier with a gain of 1. LF198AH symbol shows the internal architecture of the sample-and-hold amplifier.*

All symbols are designed in a way to convey as much useful information about their electrical characteristics as possible, see figure 2.15 for some examples.

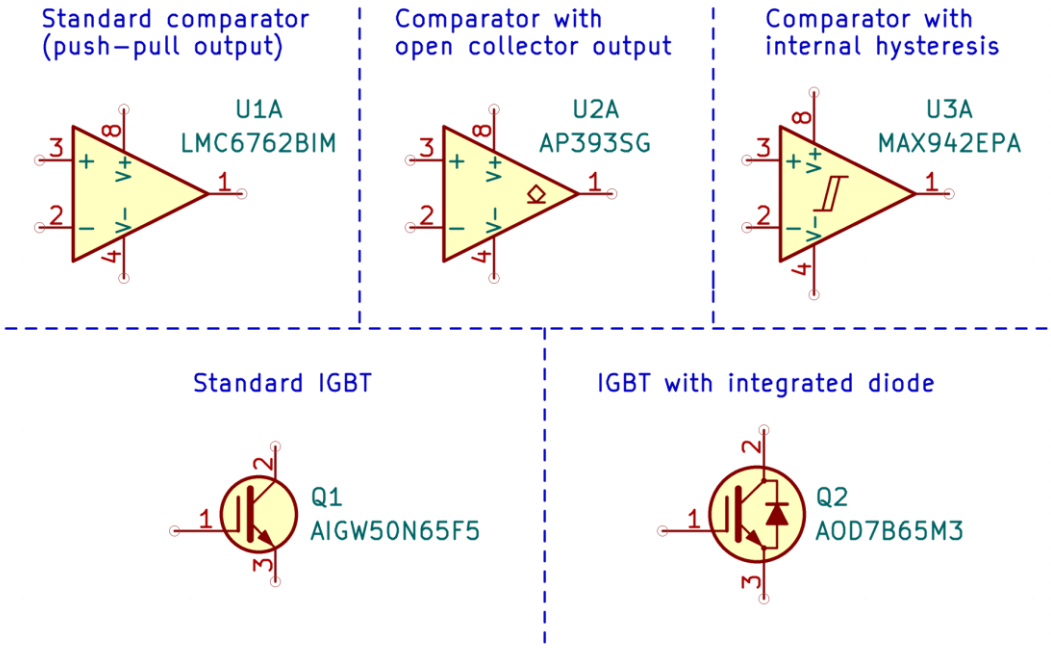


Figure 2.15. Top: Comparator symbols with different properties as indicated on the symbol body. Bottom: IGBT (Insulated Gate Bipolar Transistor) symbols showing whether or not the device has an integrated protection diode.

2.1.7. Electrical Rule Check (ERC) Compatibility

KiCad's schematic editor contains an ERC tool that examines the schematic for improperly connected pins. Each pin on a symbol can have a number of different electrical types with 'input', 'output', 'passive', 'open collector', 'power input' and 'power output' being the most common. ERC then flags warnings and errors according to the pin conflict map shown on figure 2.12. This map can be reviewed and adjusted as needed in the schematic setup.

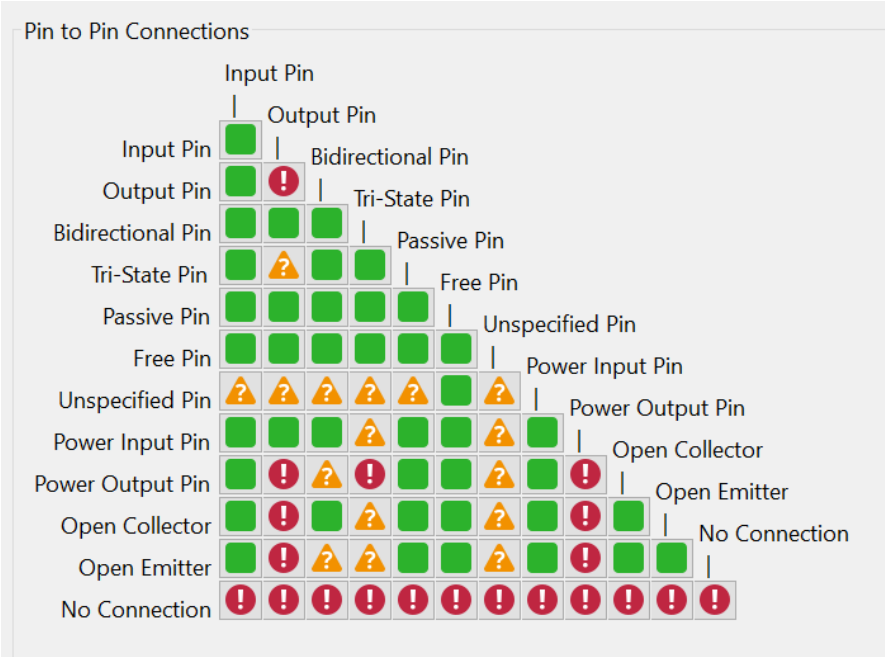


Figure 2.16 *KiCad's default pin conflict map. Yellow question marks will generate warnings and red exclamation marks – errors.*

AKL symbols always have defined pin electrical types that best suit their intended role. You can always review the pin type either by opening the symbol in the symbol editor, or by selecting the pin and reading information on the bottom of the screen as shown on figure 2.13.

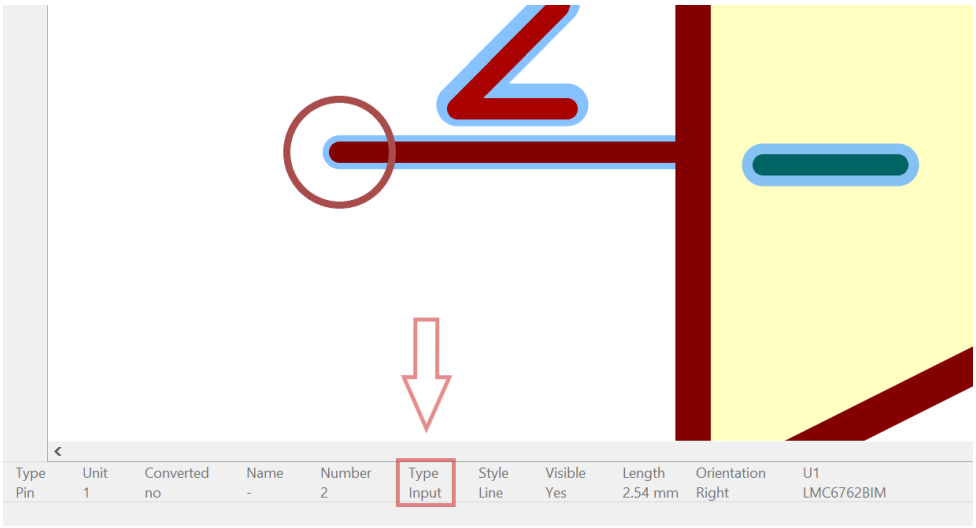


Figure 2.17 *After selecting the pin, its electrical type is indicated near the bottom of the screen.*

2.1.8. No-connect Pins

Some devices have unused pins that are not internally connected to the die. Typically, those NC pins are left floating. KiCad's default behavior prevents the PCB designer from making any connection to these pins.

There might be some scenarios where such connection is advantageous – for some devices, manufacturers recommend that those NC pins be tied to ground or other heat-sinking plane to improve heat dissipation (example: LT1121) and some devices use the NC pins as an additional shield or guard for sensitive signals (example: LM308 in DIP-14 package).

In high-density layout scenarios routing signals through NC pads might be advantageous, but routing high-speed signals (i.e. traces with controlled impedance) through NC pads will degrade signal integrity and might cause increased crosstalk.

In Alternate KiCad Library, all of the NC pin electrical type is defined as *free*. Because of this, assigning new nets to these pads in PCB editor is possible, and happens automatically when routing tracks (figure 2.18). To connect NC pads to a plane, either select those pads and change the net manually, or route a track from another pad connected to the plane to the NC pad.

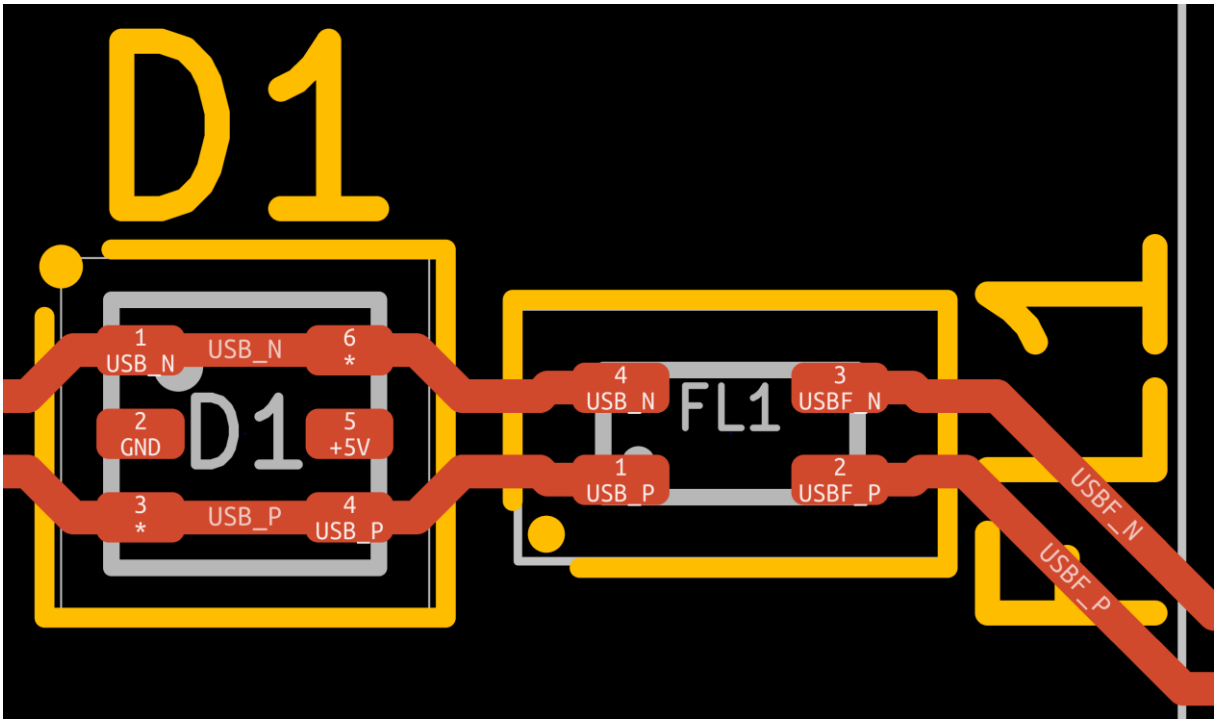


Figure 2.18. An example of layout utilizing free NC pads (3 and 6) of an ESD protection circuit.

It's recommended to draw tracks around free pads with caution. When there is no net assigned to the free pad, tracks can be laid closer to it than the minimum clearance. **Always use DRC after you complete a design that utilizes free pads.**

Some devices have pins marked as Do Not Connect by the manufacturer (example: AD8027). Electrical type of such pins is set to *Unconnected*, thus making it impossible to connect these pads to any other net in the PCB designer.

Always check the datasheet of the part before utilizing free pads.

In case there is an indication in the device's datasheet, that those pads are not to be connected to anything, despite being set to *free* in the library, place a keepout zone around them to ensure no accidental connection, or assign a random new net name to them as a workaround. See section 1.4 on how to report these issues.

Caution: Some old devices (example: LM361) have internal connection to the NC pins, despite no mentions of it in the datasheet. Before using old and poorly documented devices with free pads in your design, check a sample with a multimeter to verify that no internal connection is present.

2.1.9. Default Reference Designators

Reference designator is a unique string of letters and digits referring to a single, specific component on a schematic or a PCB.

Standard syntax of a reference designator in KiCad:

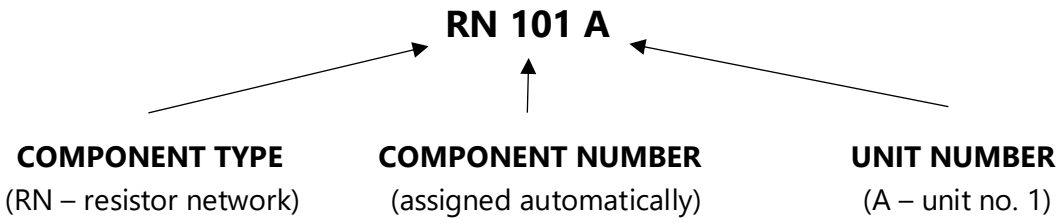


Table 2.1. Component types and their respective reference designators as used by AKL symbols.

Reference Designator	Component Type(s)
C	Capacitors, Polarized Capacitors, Trimmer Capacitors
D	Diodes, Diode Arrays, Diode Bridges, Capacitance Diodes, Current Limiting Diodes, Schottky Diodes, TVS Diodes, DIACs
DZ	Zener Diodes
F	Fuses, Dual Fuses
FB	Ferrite Beads, Ferrite Bead Arrays, Ferrite Filters
LED	Light Emitting Diodes
OC	Optocouplers, Optically Isolated Gate Drivers
Q	Transistors, Thyristors, TRIACs
R	Resistors
RN	Resistor Networks
U	Integrated Circuits (Includes: Isolation Amplifiers)
X	Crystal Resonators

2.2. Difference Amplifier Library

This symbol library contains integrated difference amplifiers. Difference amplifiers are integrated circuits performing differential to single-ended voltage amplification, usually consisting of a single operational amplifier and a resistor network that sets a fixed gain.

Simplified internal circuit diagram is incorporated into all of the symbols (if available).

Symbols incorporating resistors have an alternate symbol with US-style resistors. (Section 2.1.5)

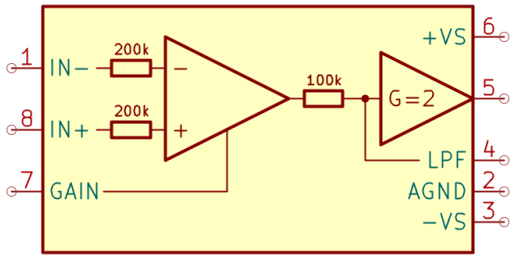
All dual difference amplifiers are included as multi-unit symbols with power pins on the first unit (Unit A).

All available orderable part numbers for each device with different package, temperature range and accuracy grade have separate specific symbols.

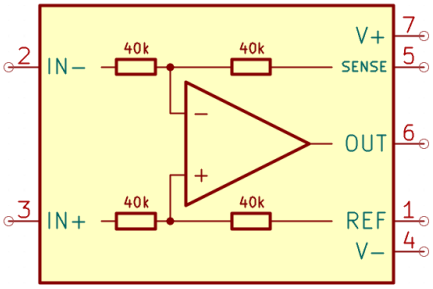
THT integrated circuits in DIP packages use 'LongPads' footprint variant by default.

Filename: **Amplifier_Difference_AKL**	
Total symbols:	**95**
Generic symbols:	**0**
Specific symbols:	**95**

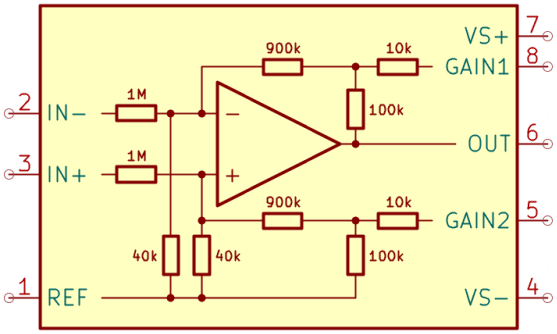
U2
AD626BN



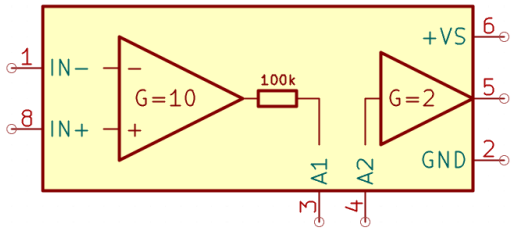
U3
AD8276ARMZ



U4
LT1990HS8



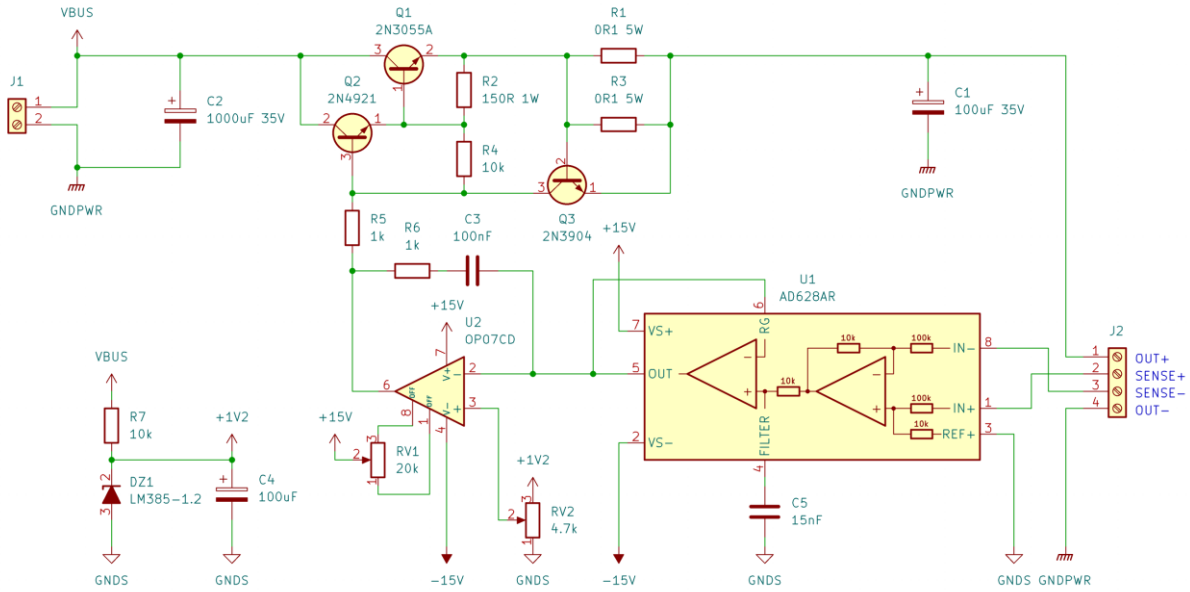
U1
AD8202WYRMZ



Schematic examples

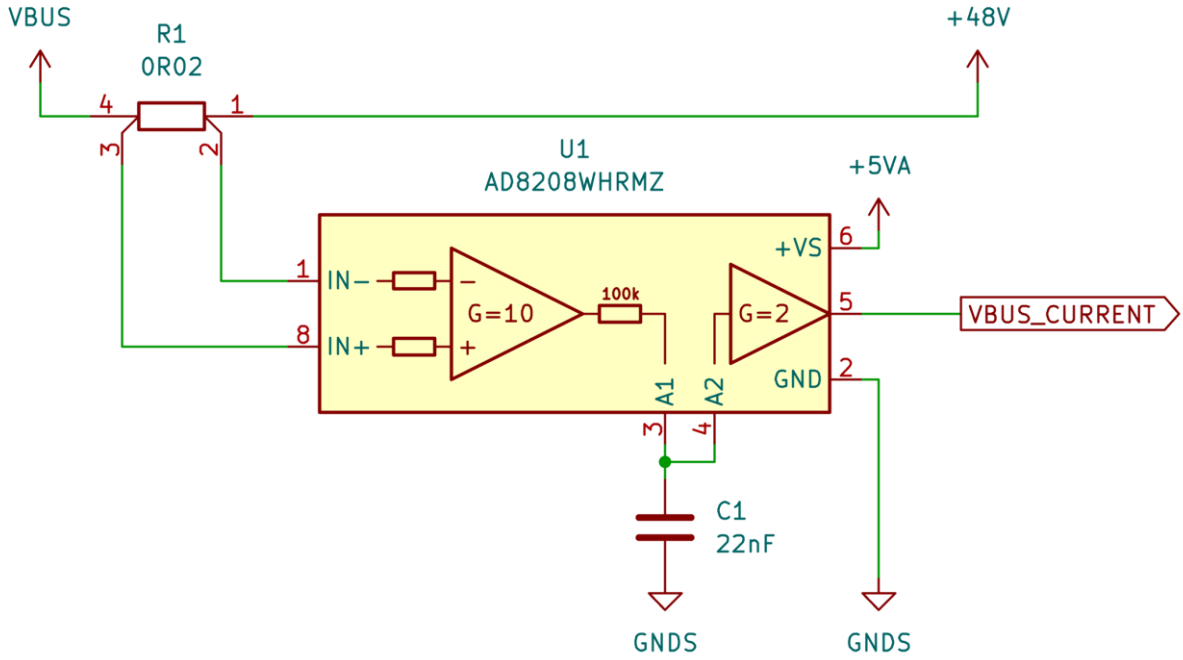
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Power supply with external voltage sensing using AD628 difference amplifier.



Example 2

Power monitoring circuit using AD8208 difference amplifier.

Table 2.2. List of all devices included Amplifier_Difference_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AD626	4	1	None	US-style resistors
AD628	2	1	None	US-style resistors
AD629	4	1	Free	US-style resistors
AD8202	4	1	Free	US-style resistors
AD8203	2	1	Free	US-style resistors
AD8208	4	1	Free	US-style resistors
AD8209	2	1	Free	US-style resistors
AD8216	2	1	Free	US-style resistors
AD8271	2	1	None	US-style resistors
AD8275	2	1	None	US-style resistors
AD8276	3	1	None	US-style resistors
AD8277	2	2	Free	US-style resistors
AD8278	4	1	Free	US-style resistors
AD8279	2	2	Free	US-style resistors
AD8479	2	1	Do Not Connect	US-style resistors
AD22057	1	1	None	US-style resistors
AMP03	4	1	Free	US-style resistors
INA105	4	1	Free	US-style resistors
INA106	2	1	Free	US-style resistors
INA117	4	1	None	US-style resistors
INA132	4	1	Free	US-style resistors
INA133	2	1	Free	US-style resistors
INA134	2	1	Free	US-style resistors
INA137	2	1	Free	US-style resistors
INA143	2	1	Free	US-style resistors
INA145	1	1	None	US-style resistors
INA146	1	1	None	US-style resistors
INA149	1	1	Free	US-style resistors
INA154	2	1	Free	US-style resistors
INA157	2	1	Free	US-style resistors
INA592	3	1	Free	US-style resistors
INA2132	2	2	Free	US-style resistors
INA2133	2	2	Free	US-style resistors
INA2134	2	2	Free	US-style resistors
INA2137	2	2	Free	US-style resistors
INA2143	2	2	Free	US-style resistors
LTC1990	6	1	None	US-style resistors

2.3. Differential Amplifier Library

This library contains integrated fully differential amplifiers. Differential amplifiers perform differential voltage amplification (differential input, differential output).

Common mode voltage of the output stage usually needs to be set externally via the 'VCM' terminal.

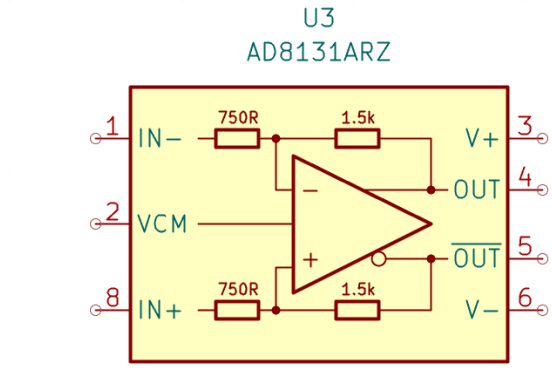
Differential amplifiers might have integrated resistor network allowing for a fixed gain or a couple of selectable gains. Most differential amplifiers need external gain setting resistors. Any internal gain resistors are incorporated into a symbol.

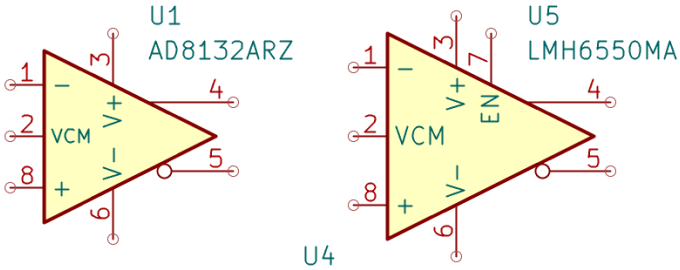
Symbols incorporating resistors have an alternate symbol with US-style resistors. (Section 2.1.5)

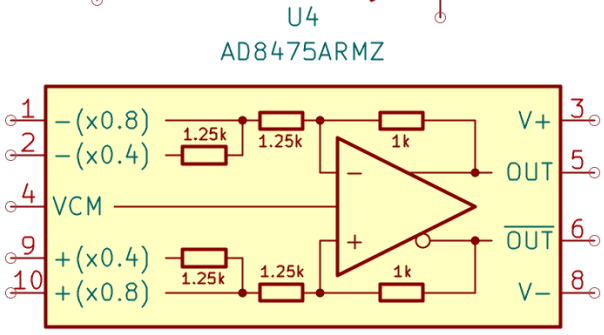
All available orderable part numbers for each device with different package, gain configuration, temperature range and accuracy grade have separate specific symbols.

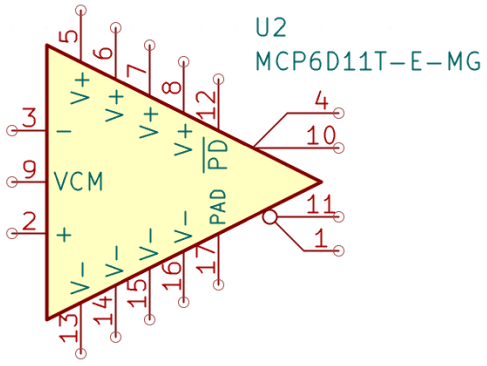
THT integrated circuits in DIP packages use 'LongPads' footprint variant by default.

Filename: **Amplifier_Differential_AKL**	
Total symbols:	**49**
Generic symbols:	**0**
Specific symbols:	**49**





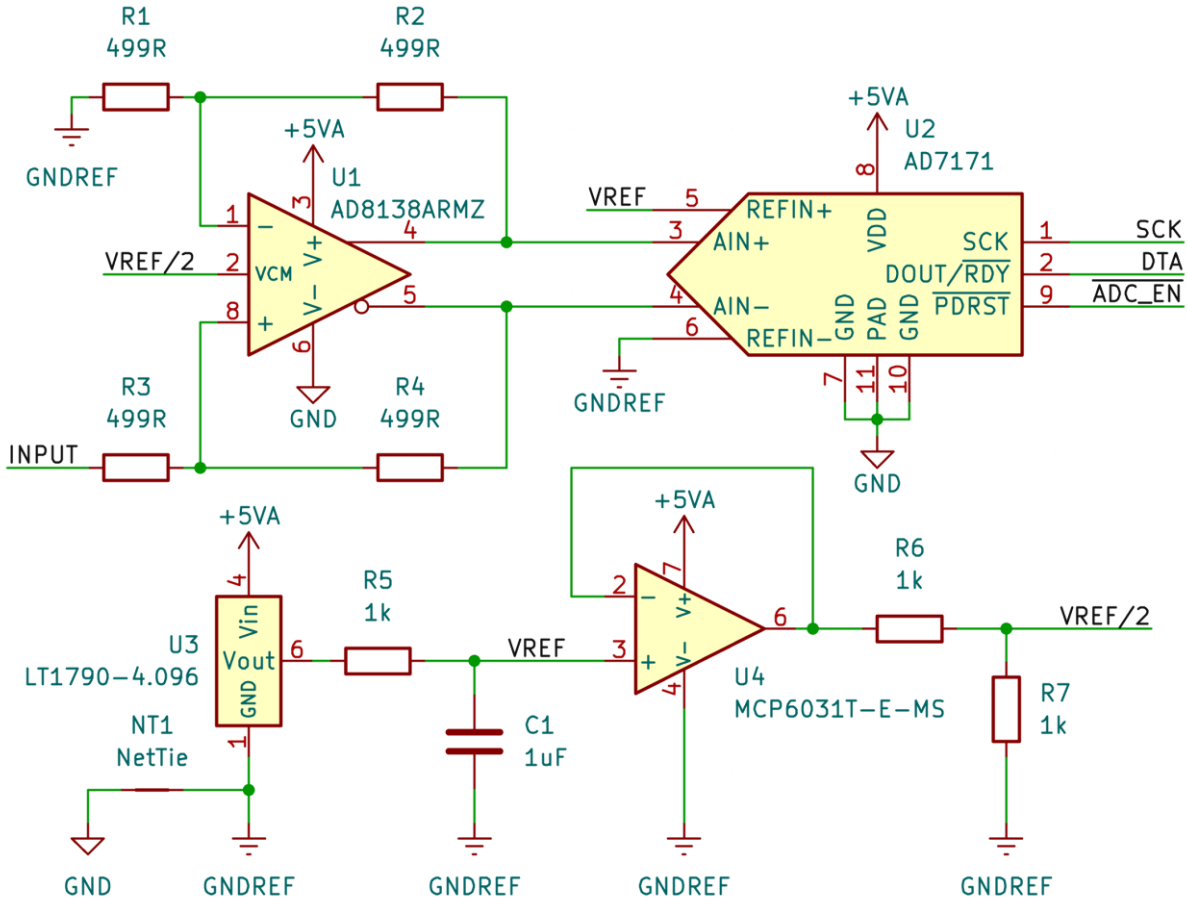




Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Differential ADC driver using AD8138 differential amplifier.

Table 2.3. List of all devices included in Amplifier_Differential_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AD8131	2	1	Free	US-style resistors
AD8132	2	1	Free	None
AD8137	2	1	None	None
AD8138	2	1	Free	None
AD8139	2	1	Free	None
AD8475	3	1	Free	US-style resistors
AD8476	4	1	Free	US-style resistors
LMH6550	2	1	None	None
LT1994	5	1	None	None
LTC1992	15	1	None	US-style resistors (fixed gain devices only)
LTC6362	6	1	None	None
MCP6D11	2	1	None	None
OPA1632	2	1	None	None

2.4. Instrumentation Amplifier Library

This library contains integrated instrumentation amplifiers. Instrumentation amplifiers perform differential to single-ended voltage multiplication, but have significantly better performance and gain-setting flexibility than standard difference amplifiers.

Filename: **Amplifier_Instrumentation_AKL**	
Total symbols:	**245**
Generic symbols:	**0**
Specific symbols:	**245**

Most instrumentation amplifiers require a single gain-setting resistor. Symbols have been created in a way that allows for a convenient placement of the gain-setting resistor close to the amplifier symbol.

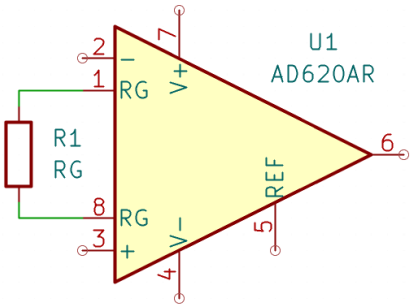
All dual instrumentation amplifiers are included as a multi-unit symbol with power pins on the first unit (Unit A).

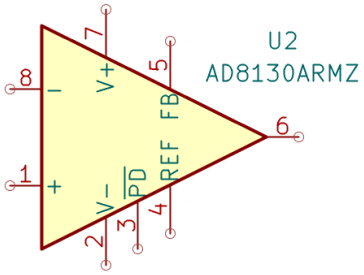
Instrumentation amplifiers that have non-standard internal architecture (that is indicated in the part's respective datasheet), have simplified internal diagrams incorporated into the symbol.

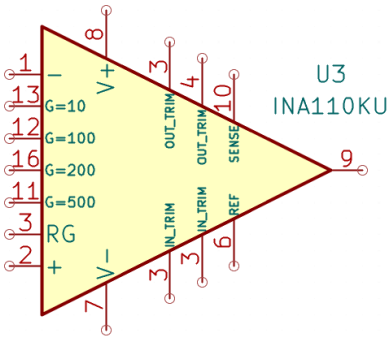
Symbols incorporating resistors have an alternate symbol with US-style resistors. (Section 2.1.5)

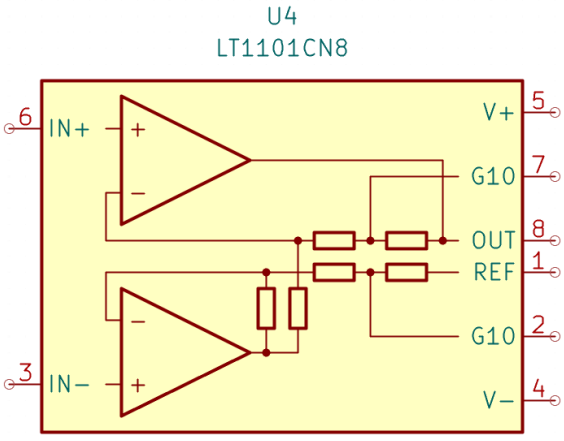
All available orderable part numbers for each device with different package, gain range, temperature range and accuracy grade have separate specific symbols.

THT integrated circuits in DIP packages use 'LongPads' footprint variant by default.









Schematic examples

Disclaimer

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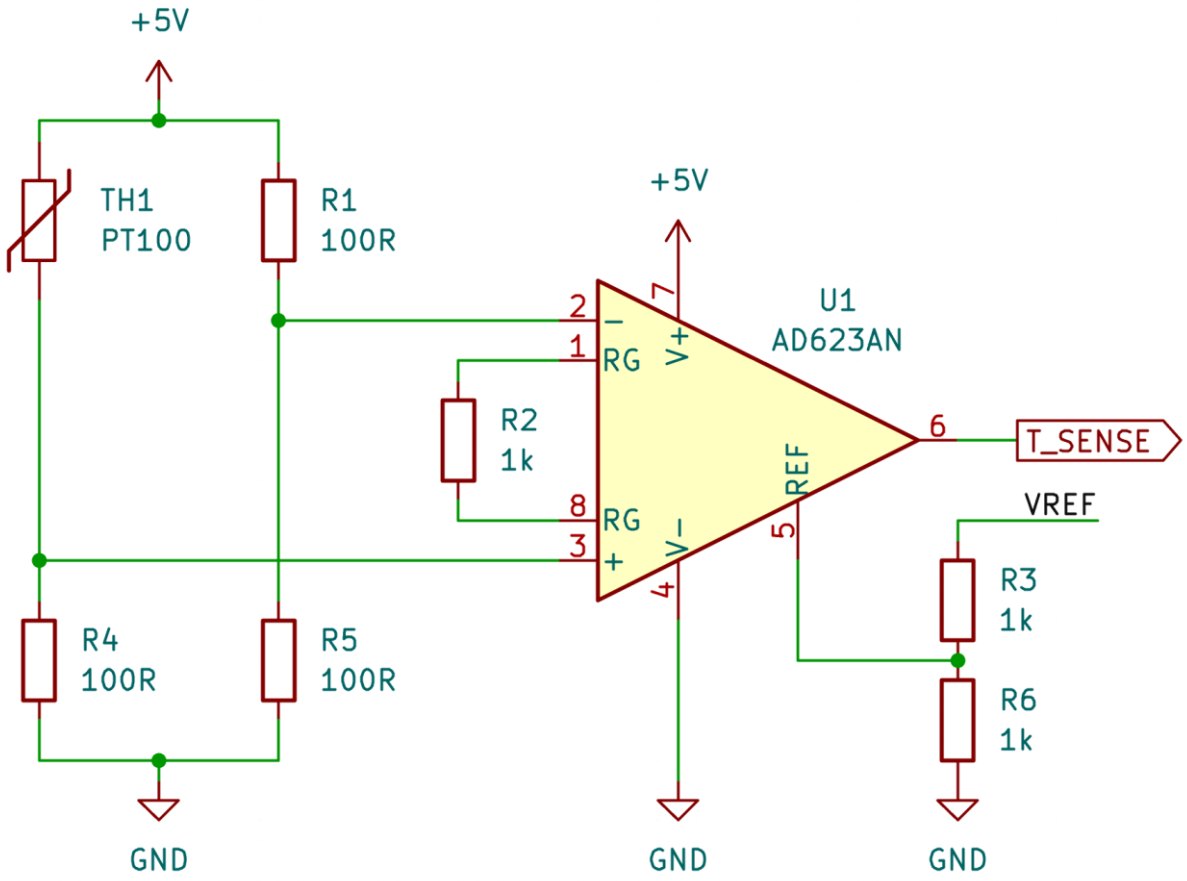


Example 1
RTD temperature sensor analog front-end using AD623 instrumentation amplifier.

Table 2.4. List of all devices included in Amplifier_Instrumentation_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AD521	1	1	None	None
AD620	4	1	None	None
AD621	4	1	None	None
AD622	2	1	None	None
AD623	5	1	None	None
AD627	4	1	None	None
AD8129	2	1	None	None
AD8130	2	1	None	None
AD8220	3	1	None	None
AD8221	3	1	None	None
AD8222	4	2	None	None
AD8223	4	1	None	None
AD8226	4	1	None	None
AD8227	4	1	None	None
AD8230	1	1	None	None
AD8237	1	1	None	None
AD8420	1	1	Do not connect	None
AD8421	4	1	None	None
AD8422	4	1	None	None
AD8428	2	1	None	None
AD8429	2	1	None	None
AD8553	1	1	None	None
AMP01	5	1	Do not connect	None
AMP04	4	1	None	None
INA101	6	1	None	None
INA103	2	1	None	None
INA110	2	1	None	None
INA111	4	1	Free	None
INA114	4	1	Free	None
INA115	2	1	Free	None
INA116	2	1	Free	None
INA118	4	1	None	None
INA121	4	1	Free	None
INA122	4	1	Free	None
INA125	4	1	None	US-style resistors
INA126	6	1	None	None
INA128	4	1	None	None
INA129	4	1	None	None
INA131	2	1	None	None
INA141	4	1	None	None
INA155	4	1	None	None
INA163	1	1	Free	None
INA166	1	1	Free	None
INA188	2	1	Free	None
INA217	2	1	Free	None
INA321	2	1	None	None
INA322	1	1	None	None
INA332	1	1	None	None
INA333	2	1	None	None
INA337	1	1	None	None
INA338	1	1	None	None
INA818	1	1	None	None
INA819	3	1	None	None
INA821	3	1	None	None
INA826	3	1	None	None
INA828	1	1	None	None
INA2126	4	2	None	None
INA2321	1	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
INA2332	1	2	None	None
LT1101	6	1	None	US-style resistors
LT1167	8	1	None	None
LT1168	8	1	None	None
LT1789	4	1	None	None
LT1920	4	1	None	None
LTC2053	8	1	None	None
MAX4194	1	1	None	None
MAX4195	1	1	None	None
MAX4196	1	1	None	None
MAX4197	1	1	None	None
MAX4208	1	1	None	None
MAX4209	1	1	None	None
MAX4460	3	1	Free	None
MAX4461	9	1	Free	None
MAX4462	9	1	Free	None
MCP6N11	10	1	None	None
MCP6N16	6	1	None	None

2.5. Isolation Amplifier Library

This library contains isolated amplifiers. Isolated amplifiers provide galvanic isolation for analog signals.

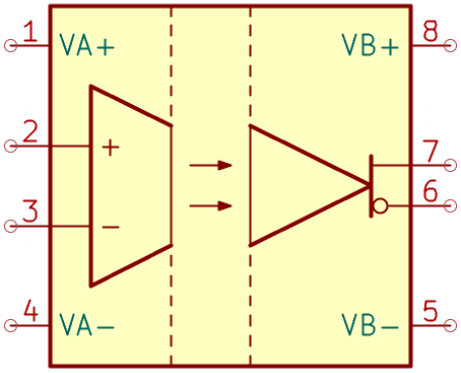
Isolated amplifiers can either have a fully differential output or single-ended output referenced to a pin on the output side.

All available orderable part numbers for each device with different package and gain tolerance have separate specific symbols.

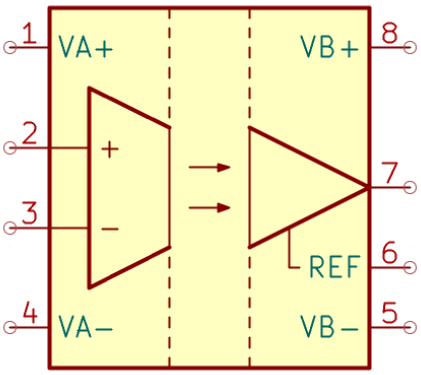
THT integrated circuits in DIP packages use 'LongPads' footprint variant by default.

Filename: **Amplifier_Isolation_AKL**	
Total symbols:	**39**
Generic symbols:	**2**
Specific symbols:	**37**

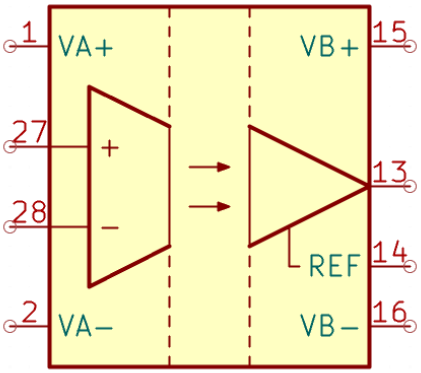
U1
ACPL-790A



U2
HCPL-7510



U3
ISO122JU



Schematic examples

Disclaimer

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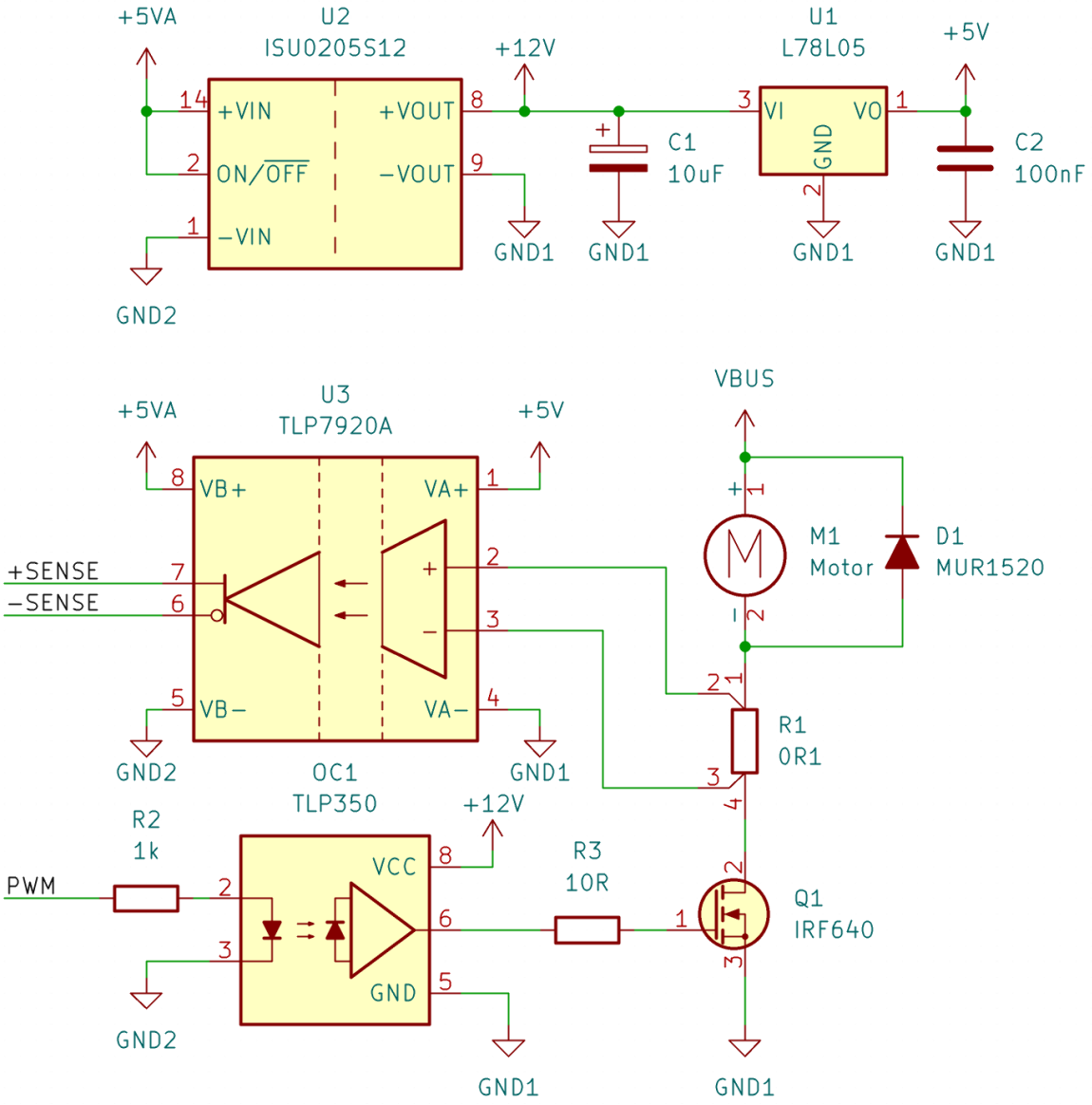


Example 1

Isolated motor driver with current sensing circuit using TLP7920A isolation amplifier.

Table 2.5. List of all devices included in Amplifier_Isolation_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
ACPL-782	2	1	None	None
ACPL-790	6	1	None	None
ACPL-C78	3	1	None	None
HCPL-7510	2	1	None	None
HCPL-7520	2	1	None	None
HCPL-7800	4	1	None	None
HCPL-7840	2	1	None	None
ISO122	4	1	None	None
ISO124	2	1	None	None
Si8920	4	1	Free	None
TLP7820	3	1	None	None
TLP7920	3	1	None	None

2.6. Operational Amplifier Library

This library contains operational amplifiers, current feedback amplifiers, Norton amplifiers and operational transconductance amplifiers (OTA).

Inverting input of the operational amplifier is placed on the top side, with the non-inverting input on the bottom side of the symbol.

All dual/triple/quad operational amplifiers are added as a multi-unit symbol. Most multi-unit symbols have the power pins on the first unit (Unit A) of the symbol, however if there are enable or chip select pins affecting more than one unit, then an additional unit is included with all power and control pins.

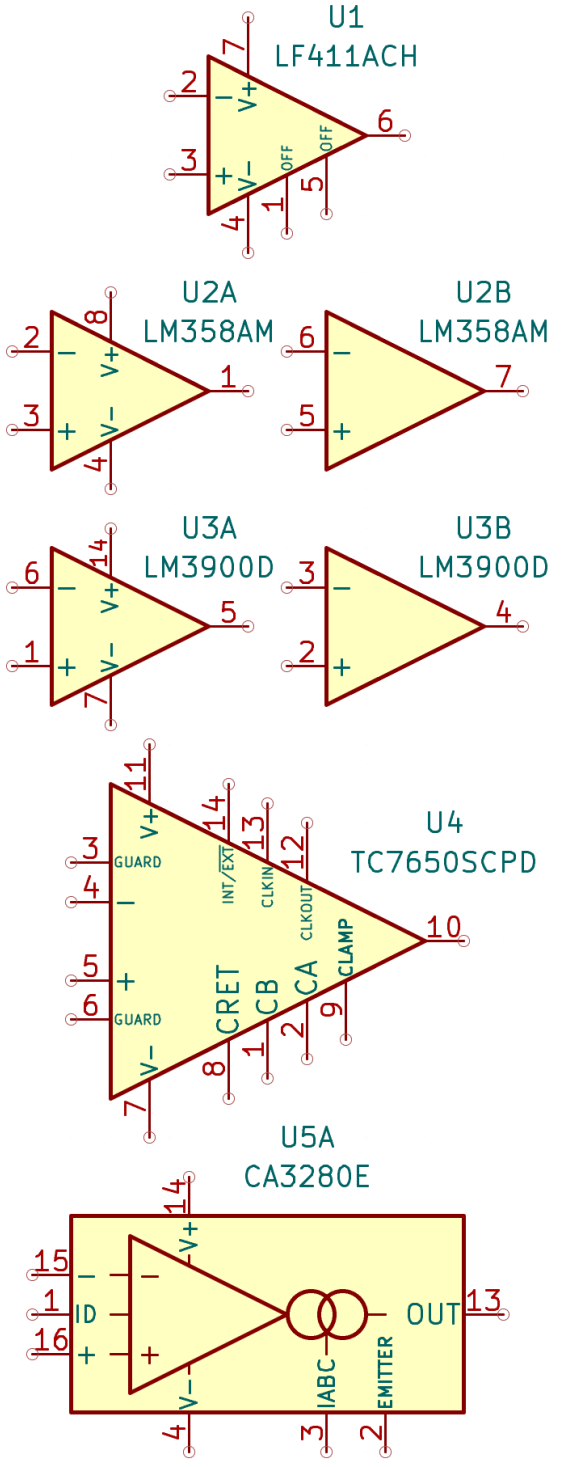
Operational transconductance amplifiers and other complex devices in this library have their simplified internal diagram incorporated into the symbol.

All available orderable part numbers for each device with different package, temperature range and accuracy grade have separate specific symbols.

Certain parts with '/' (slash) in the name caused issues with the symbol editor. Symbols were renamed to replace '/' (slash) with '-' (dash).

THT integrated circuits in DIP and SIP packages use 'LongPads' footprint variant by default.

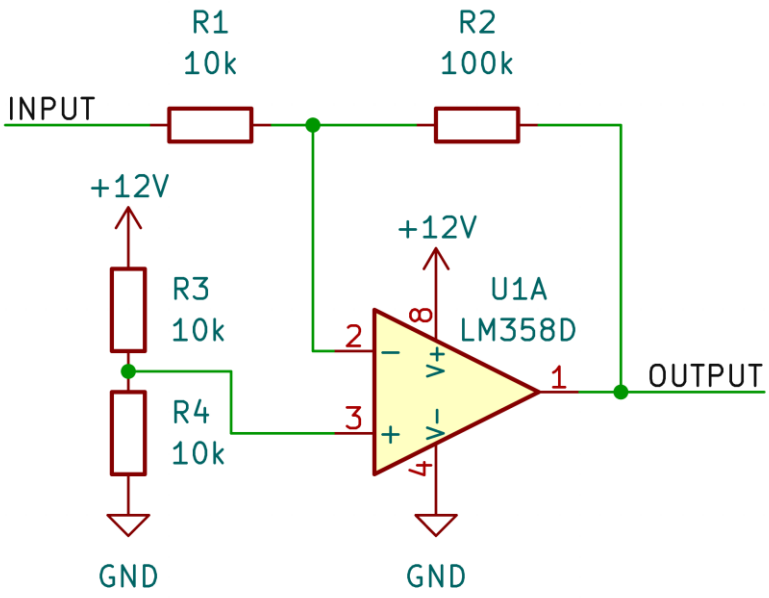
Filename: **Amplifier_Operational_AKL**	
Total symbols:	**4276**
Generic symbols:	**12**
Specific symbols:	**4264**



Schematic examples

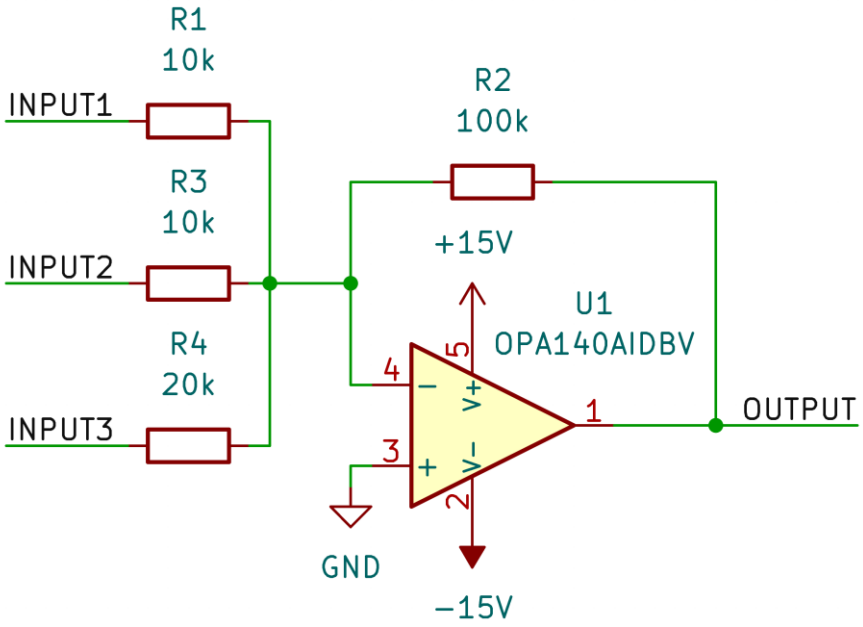
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



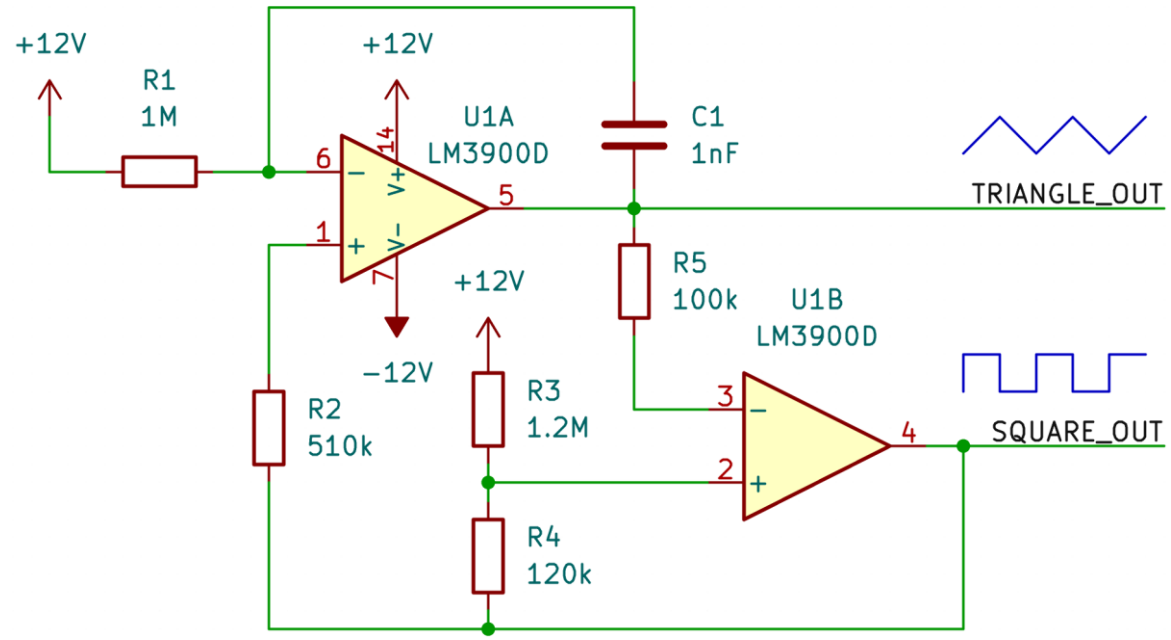
Example 1

Single-supply inverting amplifier using LM358 operational amplifier with the common-mode voltage set to ½ of supply voltage.



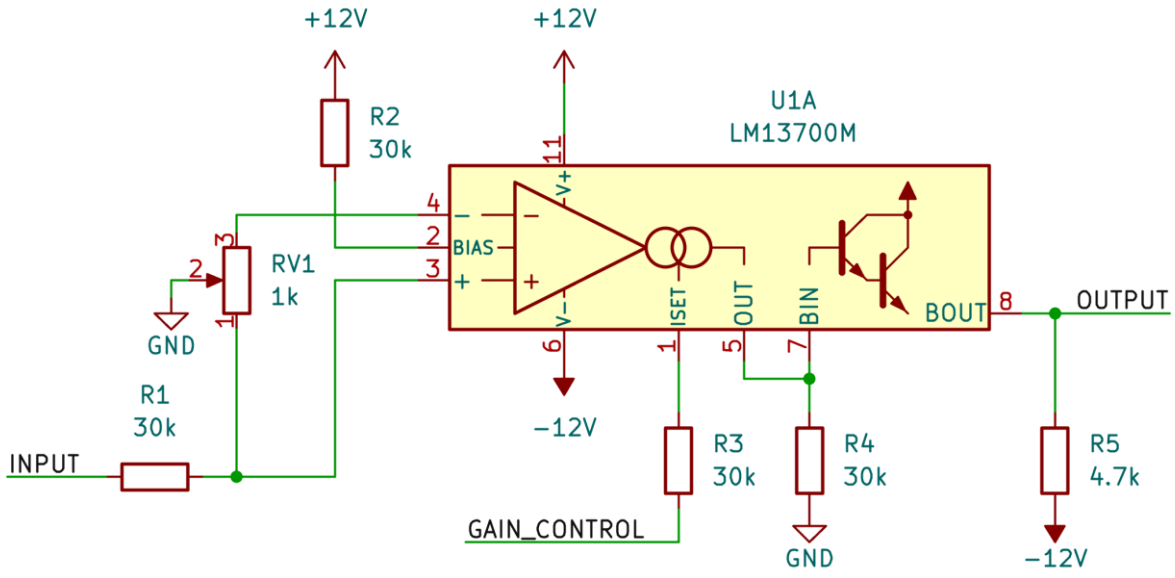
Example 2

Summing amplifier based on OPA140 operational amplifier.



Example 3

Square and triangle wave oscillator based on LM3900 Norton operational amplifiers.



Example 4

Voltage Controlled Amplifier using LM13700 Operational Transconductance Amplifier (OTA).

Table 2.6. List of all devices included in Amplifier_Operational_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AD548	4	1	Free	None
AD648	4	2	None	None
AD704	5	4	Free	None
AD706	3	2	None	None
AD708	3	2	None	None
AD711	8	1	Free	None
AD712	5	2	None	None
AD713	5	4	Free	None
AD744	7	1	None	None
AD795	1	1	Free	None
AD797	4	1	None	None
AD810	2	1	None	None
AD811	4	1	Free	None
AD812	2	2	None	None
AD817	2	1	None	None
AD818	1	1	Free	None
AD820	4	1	Free	None
AD822	4	2	None	None
AD823	2	2	None	None
AD824	2	4	Free	None
AD825	1	1	Free	None
AD826	1	2	None	None
AD828	1	2	None	None
AD829	4	1	None	None
AD847	4	1	Free	None
AD8000	2	1	Free	None
AD8001	4	1	Free	None
AD8002	2	2	None	None
AD8004	1	4	None	None
AD8005	3	1	Free	None
AD8007	2	1	Free	None
AD8008	2	2	None	None
AD8009	2	1	Free	None
AD8011	2	1	Free	None
AD8012	2	2	None	None
AD8013	2	3	None	None
AD8014	2	1	Free	None
AD8021	2	1	None	None
AD8022	2	2	None	None
AD8024	1	5	None	None
AD8027	2	1	Do not connect	None
AD8028	2	2	None	None
AD8029	2	1	Free	None
AD8030	2	2	None	None
AD8031	5	1	Free	None
AD8032	5	2	None	None
AD8033	2	1	Free	None
AD8034	2	2	None	None
AD8038	2	1	Free	None
AD8039	2	2	None	None
AD8040	2	4	None	None
AD8041	2	1	Free	None
AD8042	2	2	None	None
AD8045	2	1	Free	None
AD8047	2	1	Free	None
AD8048	2	1	Free	None
AD8051	2	1	Free	None
AD8052	2	2	None	None
AD8054	2	4	None	None
AD8055	3	1	Free	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AD8056	3	2	None	None
AD8057	2	1	Free	None
AD8058	2	2	None	None
AD8061	2	1	Free	None
AD8062	2	2	None	None
AD8063	2	1	Free	None
AD8065	2	1	Free	None
AD8066	2	2	None	None
AD8091	2	1	Free	None
AD8092	2	2	None	None
AD8099	2	1	None	None
AD8397	2	2	None	None
AD8510	3	1	Free	None
AD8512	3	2	None	None
AD8513	2	4	None	None
AD8531	3	1	Free	None
AD8532	3	2	None	None
AD8534	2	4	None	None
AD8538	3	1	Free	None
AD8539	2	2	None	None
AD8541	3	1	Free	None
AD8542	3	2	None	None
AD8544	3	4	None	None
AD8551	2	1	Free	None
AD8552	2	2	None	None
AD8554	2	4	None	None
AD8571	2	1	Free	None
AD8572	2	2	None	None
AD8574	2	4	None	None
AD8597	2	1	Free	None
AD8599	1	2	None	None
AD8601	3	1	None	None
AD8602	5	2	None	None
AD8603	1	1	None	None
AD8604	4	4	None	None
AD8605	2	1	None	None
AD8606	3	2	None	None
AD8607	2	2	None	None
AD8608	2	4	None	None
AD8609	2	4	None	None
AD8610	3	1	Free	None
AD8614	1	1	None	None
AD8615	1	1	None	None
AD8616	2	2	None	None
AD8618	2	4	None	None
AD8620	2	2	None	None
AD8622	2	2	None	None
AD8624	2	4	Free	None
AD8625	2	4	None	None
AD8626	2	2	None	None
AD8627	2	1	Free	None
AD8628	6	1	Free	None
AD8629	3	2	None	None
AD8630	2	4	None	None
AD8638	2	1	Free	None
AD8639	4	2	None	None
AD8641	2	1	Free	None
AD8642	2	2	None	None
AD8643	2	4	Free	None
AD8644	2	4	None	None
AD8646	2	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AD8647	1	2	None	None
AD8648	2	4	None	None
AD8651	2	1	Free	None
AD8652	2	2	None	None
AD8655	3	1	Free	None
AD8656	3	2	None	None
AD8661	2	1	Free	None
AD8662	2	2	None	None
AD8663	2	1	DNC for LFCSP-8 Free for SO-8	None
AD8664	2	4	None	None
AD8667	2	2	None	None
AD8669	2	4	None	None
AD8671	2	1	Free	None
AD8672	2	2	None	None
AD8674	2	4	None	None
AD8675	2	1	Free	None
AD8676	4	2	None	None
AD8691	3	1	None	None
AD8692	3	2	None	None
AD8694	3	4	None	None
ADA4001-2	1	2	None	None
ADA4075-2	2	2	None	None
ADA4084-1	2	1	Free	None
ADA4084-2	3	2	None	None
ADA4084-4	2	4	Free	None
ADA4091-2	2	2	None	None
ADA4091-4	2	4	Free	None
ADA4096-2	2	2	None	None
ADA4096-4	2	4	Free	None
ADA4522-1	2	1	Free	None
ADA4522-2	2	2	None	None
ADA4522-4	2	4	None	None
ADA4528-1	2	1	Free	None
ADA4528-2	2	2	None	None
ADA4622-1	2	1	Free	None
ADA4622-2	4	2	None	None
ADA4622-4	2	4	Free	None
ADA4638-1	2	1	Do not connect	None
ADA4700-1	1	1	Do not connect	None
ADA4817-1	2	1	Free	None
ADA4817-2	1	2	Free	None
ADA4857-1	2	1	Do not connect	None
ADA4857-2	1	2	Do not connect	None
ADA4891-1	2	1	Free	None
ADA4891-2	3	2	None	None
ADA4891-3	3	3	None	None
ADA4891-4	3	4	None	None
ADA4896-2	2	2	None	None
ADA4897-1	2	1	Do not connect	None
ADA4897-2	1	2	None	None
ADA4898-1	1	1	Free	None
ADA4898-2	1	2	None	None
ADA4899-1	2	1	Free	None
AP358	2	2	None	None
APX321	2	1	None	None
APX324	1	4	None	None
APX358	2	2	None	None
APX4558	1	2	None	None
AS321	1	1	None	None
AS358	7	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AZ4558	2	2	None	None
AZ4580	3	2	None	None
AZV831	2	1	None	None
AZV832	2	2	None	None
BA4560	10	2	None	None
BA4564	2	4	None	None
CA3130	4	1	None	None
CA3140	4	1	None	None
CA3160	2	1	None	None
CA3240	2	2	None	None
CA3280	2	2	Free	None
CA5620	2	2	None	None
HFA1130	1	1	Free	None
ICL7611	2	1	None	None
ICL7612	3	1	None	None
ICL7621	2	2	None	None
ICL7650	3	1	None	None
ISL28117	6	1	Free	None
ISL28134	2	1	Free	None
ISL28217	5	2	None	None
ISL28417	4	4	None	None
ISL55001	1	1	Free	None
ISL55002	1	2	None	None
ISL55004	1	4	None	None
L272	3	2 for L272D/M, 3 for L272	Free	None
LA6515	1	2	None	None
LF147	2	4	None	None
LF151	2	1	Free	None
LF156	1	1	Free	None
LF247	2	4	None	None
LF251	2	1	Free	None
LF256	1	1	Free	None
LF347	4	4	None	None
LF351	2	1	Free	None
LF353	2	2	None	None
LF356	2	1	Free	None
LF411	8	1	Free	None
LF412	3	2	None	None
LF444	3	4	None	None
LM10	5	1	None	None
LM101	2	1	None	None
LM108	4	1	Free	None
LM118	1	1	None	None
LM124	4	4	None	None
LM148	1	4	None	None
LM158	5	2	None	None
LM201	3	1	None	None
LM224	6	4	Free	None
LM248	2	4	None	None
LM258	7	2	None	None
LM301	3	1	None	None
LM308	5	1	Free	None
LM318	5	1	None	None
LM321	1	1	None	None
LM324	10	4	Free	None
LM348	3	4	None	None
LM358	12	2	None	None
LM392	3	2	None	None
LM675	1	1	None	None
LM741	4	1	Free	None
LM833	4	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
LM2900	2	4	None	None
LM2902	9	4	Free	None
LM2904	11	2	None	None
LM3900	2	4	None	None
LM4562	3	2	None	None
LM6132	3	2	None	None
LM6134	3	4	None	None
LM6142	3	2	None	None
LM6144	3	4	None	None
LM6152	2	2	None	None
LM6154	1	4	None	None
LM6171	3	1	Free	None
LM6172	2	2	None	None
LM7121	2	1	Free	None
LM7321	3	1	Free	None
LM7322	3	2	None	None
LM8261	1	1	None	None
LM13600	3	2	None	None
LM13700	2	2	None	None
LMC660	4	4	None	None
LMC662	4	2	None	None
LMC6001	3	1	Free	None
LMC6032	2	2	None	None
LMC6034	1	4	None	None
LMC6041	3	1	Free	None
LMC6042	4	2	None	None
LMC6044	3	4	None	None
LMC6061	2	1	Free	None
LMC6062	3	2	None	None
LMC6064	3	4	None	None
LMC6081	3	1	Free	None
LMC6082	4	2	None	None
LMC6084	2	4	None	None
LMC6462	4	2	None	None
LMC6464	3	4	None	None
LMC6482	5	2	None	None
LMC6484	4	4	None	None
LMC7101	2	1	None	None
LMC7111	1	1	None	None
LMH6611	1	1	None	None
LMH6612	1	2	None	None
LMH6618	1	1	None	None
LMH6619	1	2	None	None
LMH6645	2	1	Free	None
LMH6646	2	2	None	None
LMH6647	2	1	Free	None
LMH6672	1	2	None	None
LMH6702	2	1	Free	None
LMP7701	2	1	Free	None
LMP7702	2	2	None	None
LMP7704	2	4	None	None
LMP7715	1	1	None	None
LMP7716	1	2	None	None
LMP7721	1	1	Free	None
LMV321	13	1	None	None
LMV324	13	4	None	None
LMV341	2	1	None	None
LMV342	2	2	None	None
LMV344	2	4	None	None
LMV358	18	2	None	None
LMV721	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
LMV722	2	2	None	None
LMV751	1	1	None	None
LMV771	1	1	None	None
LMV772	3	2	None	None
LMV774	1	4	None	None
LMV821	2	1	None	None
LMV822	3	2	None	None
LMV824	4	4	None	None
LMV931	2	1	None	None
LMV932	2	2	None	None
LMV934	2	4	None	None
LMV981	2	1	None	None
LMV982	1	2	None	None
LP324	5	4	None	None
LP358	1	2	None	None
LP2902	4	4	None	None
LP2904	1	2	None	None
LT1001	5	1	Free	None
LT1006	3	1	None	None
LT1007	6	1	Free	None
LT1013	7	2	None	None
LT1014	6	4	Free	None
LT1028	4	2	Free	None
LT1037	6	1	Free	None
LT1055	3	1	Free	None
LT1056	3	1	Free	None
LT1057	7	2	Free	None
LT1058	4	4	Free	None
LT1077	7	1	Free	None
LT1078	5	2	None	None
LT1079	7	4	Free	None
LT1112	6	2	None	None
LT1114	5	4	None	None
LT1115	2	1	Free	None
LT1122	6	1	None	None
LT1124	5	2	None	None
LT1125	3	4	Free	None
LT1126	3	2	None	None
LT1127	3	4	Free	None
LT1128	3	1	None	None
LT1178	6	2	Free	None
LT1179	4	4	Free	None
LT1206	4	1	Free	None
LT1210	3	1	Free	None
LT1211	5	2	None	None
LT1212	4	4	Free	None
LT1213	3	2	None	None
LT1214	2	4	Free	None
LT1218	4	1	None	None
LT1219	4	1	None	None
LT1222	3	1	None	None
LT1223	2	1	None	None
LT1229	2	2	None	None
LT1230	2	4	None	None
LT1253	2	2	None	None
LT1254	2	4	None	None
LT1259	4	3	None	None
LT1260	4	4	None	None
LT1352	4	2	None	None
LT1353	1	4	None	None
LT1354	2	1	Free	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
LT1355	2	2	None	None
LT1356	2	2	Free	None
LT1357	2	1	Free	None
LT1358	4	2	None	None
LT1359	4	4	Free	None
LT1360	2	1	Free	None
LT1361	2	2	None	None
LT1362	2	4	Free	None
LT1363	2	1	Free	None
LT1364	2	2	None	None
LT1365	2	4	Free	None
LT1366	2	2	None	None
LT1367	1	4	None	None
LT1368	2	2	None	None
LT1369	1	4	None	None
LT1395	3	1	Free	None
LT1396	3	2	None	None
LT1397	4	4	Free	None
LT1398	1	3	None	None
LT1399	5	4	None	None
LT1413	3	2	None	None
LT1468	4	1	Do not connect	None
LT1469	4	2	None	None
LT1490	5	2	None	None
LT1491	4	4	None	None
LT1492	2	2	None	None
LT1493	1	4	Free	None
LT1494	7	1	Free	None
LT1495	5	2	None	None
LT1496	5	4	None	None
LT1498	4	2	None	None
LT1499	2	4	None	None
LT1636	9	1	None	None
LT1637	10	1	None	None
LT1638	9	2	None	None
LT1639	5	4	None	None
LT1677	4	1	Free	None
LT1678	2	2	None	None
LT1679	2	4	None	None
LT1722	4	1	Free	None
LT1723	4	2	None	None
LT1724	2	4	None	None
LT1782	6	1	None	None
LT1783	6	1	None	None
LT1806	4	1	Free	None
LT1807	4	2	None	None
LT1813	10	2	None	None
LT1814	4	4	Free	None
LT1881	8	2	None	None
LT1882	2	4	None	None
LT6003	6	1	None	None
LT6004	6	2	None	None
LT6005	6	4	Free	None
LT6015	3	1	None	None
LT6016	3	2	None	None
LT6017	3	4	Free	None
LT6202	4	1	Free	None
LT6203	6	2	None	None
LT6204	4	4	Free	None
LT6220	4	1	Free	None
LT6221	4	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
LT6222	1	4	Free	None
LT6230	4	1	None	None
LT6231	4	2	None	None
LT6232	2	4	Free	None
LT6233	4	1	None	None
LT6234	4	2	None	None
LT6235	2	4	Free	None
LT6274	2	1	None	None
LT6275	2	2	None	None
LTC1047	2	1	Free	None
LTC1049	2	1	Free	None
LTC1050	6	1	Free	None
LTC1051	2	2	Free	None
LTC1052	3	1	Free	None
LTC1053	2	4	Free	None
LTC1150	2	1	None	None
LTC1152	4	1	None	None
LTC1250	2	1	Free	None
LTC2050	16	1	Free	None
LTC2051	20	2	None	None
LTC2052	12	4	Free	None
LTC6240	12	1	Free	None
LTC6241	10	2	None	None
LTC6242	10	4	Free	None
LTC6244	11	2	None	None
MAX406	8	1	None	None
MAX407	4	2	None	None
MAX409	7	1	Do not connect	None
MAX417	4	2	None	None
MAX418	4	4	None	None
MAX419	4	4	None	None
MAX492	4	2	None	None
MAX494	4	4	None	None
MAX495	5	1	Free	None
MAX4040	3	1	Free	None
MAX4041	2	1	Free	None
MAX4042	2	2	None	None
MAX4043	2	2	Free	None
MAX4044	1	4	None	None
MAX4162	2	1	Free	None
MAX4163	2	2	None	None
MAX4164	1	4	None	None
MAX4212	1	1	None	None
MAX4213	2	1	Free	None
MAX4216	2	2	None	None
MAX4218	2	3	Free	None
MAX4220	2	4	Free	None
MAX4236	5	1	Free	None
MAX4237	5	1	Free	None
MAX4238	3	1	Free	None
MAX4239	3	1	Free	None
MAX4249	2	2	Free	None
MAX4250	2	1	None	None
MAX4251	2	1	Free	None
MAX4252	2	2	None	None
MAX4253	2	2	Free	None
MAX4254	1	4	None	None
MAX4255	1	1	Free	None
MAX4256	2	1	Free	None
MAX4257	2	2	None	None
MAX4464	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MAX4470	2	1	None	None
MAX4471	2	2	None	None
MAX4472	2	4	None	None
MAX4474	3	2	None	None
MAX4493	2	1	None	None
MAX4494	3	2	None	None
MAX4495	2	4	None	None
MAX9910	1	1	None	None
MAX9911	1	1	None	None
MAX9912	1	2	None	None
MAX9913	1	2	None	None
MC1458	3	2	None	None
MC4558	4	2	None	None
MC33071	4	1	Free	None
MC33072	4	2	None	None
MC33074	6	4	None	None
MC33078	5	2	None	None
MC33079	2	4	None	None
MC33171	2	1	Free	None
MC33172	3	2	None	None
MC33174	4	4	None	None
MC33178	3	2	None	None
MC33179	3	4	None	None
MC33201	2	1	Free	None
MC33202	3	2	None	None
MC33204	3	4	None	None
MC33272	2	2	None	None
MC33274	3	4	None	None
MC34071	4	1	Free	None
MC34072	7	2	Free	None
MC34074	6	4	None	None
MCP6H01	2	1	Free	None
MCP6H02	2	2	None	None
MCP6H71	2	1	Free	None
MCP6H72	2	2	None	None
MCP6H74	2	4	None	None
MCP6H81	2	1	Free	None
MCP6H82	2	2	None	None
MCP6H84	2	4	None	None
MCP6H91	2	1	Free	None
MCP6H92	2	2	None	None
MCP6H94	2	4	None	None
MCP6L01	4	1	None	None
MCP6L02	2	2	None	None
MCP6L04	2	4	None	None
MCP6L1	4	1	Free	None
MCP6L2	2	2	None	None
MCP6L4	2	4	None	None
MCP6L71	4	1	Free	None
MCP6L72	2	2	None	None
MCP6L74	2	4	None	None
MCP6L91	4	1	Free	None
MCP6L92	2	2	None	None
MCP6L94	2	4	None	None
MCP6V01	2	1	Free	None
MCP6V02	2	2	None	None
MCP6V03	2	1	Free	None
MCP6V06	2	1	Free	None
MCP6V07	2	2	None	None
MCP6V08	2	1	Free	None
MCP6V11	3	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MCP6V12	2	2	None	None
MCP6V14	1	4	None	None
MCP6V16	3	1	None	None
MCP6V17	2	2	None	None
MCP6V19	1	4	None	None
MCP6V26	3	1	Free	None
MCP6V27	3	2	None	None
MCP6V28	2	1	Free	None
MCP6V31	3	1	None	None
MCP6V32	2	2	None	None
MCP6V34	1	4	None	None
MCP6V36	3	1	None	None
MCP6V37	2	2	None	None
MCP6V39	1	4	None	None
MCP6V51	2	1	Free	None
MCP6V61	3	1	None	None
MCP6V62	2	2	None	None
MCP6V64	1	4	None	None
MCP6V66	3	1	None	None
MCP6V67	2	2	None	None
MCP6V69	1	4	None	None
MCP6V71	3	1	None	None
MCP6V72	2	2	None	None
MCP6V74	1	4	None	None
MCP6V76	3	1	None	None
MCP6V77	2	2	None	None
MCP6V79	1	4	None	None
MCP6V81	3	1	None	None
MCP6V91	3	1	None	None
MCP6V92	2	2	None	None
MCP6V94	1	4	None	None
MCP601	10	1	Free	None
MCP602	6	2	None	None
MCP603	8	1	Free	None
MCP604	6	4	None	None
MCP606	8	1	Free	None
MCP607	6	2	None	None
MCP608	6	1	Free	None
MCP609	6	4	None	None
MCP616	6	1	Free	None
MCP617	6	2	None	None
MCP618	6	1	Free	None
MCP619	6	4	None	None
MCP621	3	1	Free	None
MCP622	2	2	None	None
MCP623	1	1	None	None
MCP624	2	4	None	None
MCP625	2	2	None	None
MCP629	1	5	None	None
MCP631	3	1	Free	None
MCP632	2	2	None	None
MCP633	2	1	Free	None
MCP634	2	4	None	None
MCP635	2	2	None	None
MCP639	1	5	None	None
MCP651	3	1	Free	None
MCP652	2	2	None	None
MCP653	1	1	None	None
MCP654	2	4	None	None
MCP655	2	2	None	None
MCP659	1	5	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MCP660	2	3	Free	None
MCP661	2	1	Free	None
MCP662	3	2	None	None
MCP663	2	1	Free	None
MCP664	2	4	None	None
MCP665	2	2	None	None
MCP669	1	5	None	None
MCP6001	4	1	None	None
MCP6002	5	2	None	None
MCP6004	4	4	None	None
MCP6006	5	1	None	None
MCP6007	2	2	None	None
MCP6009	2	4	None	None
MCP6021	8	1	Free	None
MCP6022	6	2	None	None
MCP6023	6	1	Free	None
MCP6024	6	4	None	None
MCP6031	4	1	Free	None
MCP6032	2	2	None	None
MCP6033	3	1	Free	None
MCP6034	2	4	None	None
MCP6041	8	1	Free	None
MCP6042	6	2	None	None
MCP6043	8	1	Free	None
MCP6044	6	4	None	None
MCP6051	3	1	Free	None
MCP6052	2	2	None	None
MCP6054	2	4	None	None
MCP6061	3	1	Free	None
MCP6062	2	2	None	None
MCP6064	2	4	None	None
MCP6071	3	1	Free	None
MCP6072	2	2	None	None
MCP6074	2	4	None	None
MCP6141	6	1	Free	None
MCP6142	6	2	None	None
MCP6043	8	1	Free	None
MCP6144	6	4	None	None
MCP6231	15	1	Free	None
MCP6232	8	2	None	None
MCP6234	6	4	None	None
MCP6241	16	1	Free	None
MCP6242	6	2	None	None
MCP6244	6	4	None	None
MCP6271	10	1	Free	None
MCP6272	6	2	None	None
MCP6273	8	1	Free	None
MCP6274	6	4	None	None
MCP6275	6	1	None	None
MCP6281	10	1	Free	None
MCP6282	6	2	None	None
MCP6283	8	1	Free	None
MCP6284	6	4	None	None
MCP6285	6	1	None	None
MCP6286	1	1	None	None
MCP6291	10	1	Free	None
MCP6292	6	2	None	None
MCP6293	8	1	Free	None
MCP6294	6	4	None	None
MCP6295	6	1	None	None
MCP6401	5	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MCP6402	3	2	None	None
MCP6404	3	4	None	None
MCP6406	1	1	None	None
MCP6407	1	2	None	None
MCP6409	1	4	None	None
MCP6421	2	1	None	None
MCP6422	2	2	None	None
MCP6424	2	4	None	None
MCP6441	2	1	None	None
MCP6442	2	2	None	None
MCP6444	2	4	None	None
MCP6471	2	1	None	None
MCP6472	3	2	None	None
MCP6474	2	4	None	None
MCP6476	5	1	None	None
MCP6477	2	2	None	None
MCP6479	1	4	None	None
MCP6481	2	1	None	None
MCP6482	3	2	None	None
MCP6484	2	4	None	None
MCP6491	2	1	None	None
MCP6492	3	2	None	None
MCP6494	2	4	None	None
MIC863	1	2	None	None
MIC6211	1	1	None	None
MIC7300	2	1	None	None
NSC20071	2	1	None	None
NCS20072	3	2	None	None
NCS20074	2	4	None	None
NSV20071	2	1	None	None
NCV20072	3	2	None	None
NCV20074	2	4	None	None
NE5532	6	2	None	None
NE5534	4	1	None	None
NJM2902	3	4	None	None
NJM2904	6	2	None	None
NJM3403	3	4	None	None
NJM4556	4	2	None	None
NJM4558	5	2	None	None
NJM4559	3	2	None	None
NJM4565	5	2	None	None
NJM13403	4	4	None	None
NJM13404	6	2	None	None
OA1MPA	1	1	None	None
OA2MPA	2	2	None	None
OA4MPA	1	4	None	None
OA1NP	1	1	None	None
OA2NP	2	2	None	None
OA4NP	1	4	None	None
OA1ZHA	1	1	None	None
OA2ZHA	2	2	None	None
OA4ZHA	1	4	None	None
OP07	7	1	Do not connect	None
OP27	8	1	Free	None
OP37	7	1	Free	None
OP77	5	1	Free	None
OP90	4	1	Free	None
OP97	3	1	None	None
OP113	2	1	Free	None
OP162	1	1	Free	None
OP177	4	1	Free	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
OP179	1	1	None	None
OP184	2	1	Do not connect	None
OP191	1	1	Free	None
OP193	1	1	Free	None
OP196	1	1	Free	None
OP200	4	2	Free	None
OP213	3	2	None	None
OP221	1	2	None	None
OP249	4	2	None	None
OP262	3	2	None	None
OP270	4	2	Free	None
OP275	2	2	None	None
OP279	2	2	None	None
OP281	2	2	None	None
OP282	2	2	None	None
OP284	3	2	None	None
OP290	1	2	None	None
OP291	1	2	None	None
OP293	2	2	None	None
OP295	2	2	None	None
OP296	3	2	None	None
OP297	5	2	None	None
OP400	7	4	Free	None
OP413	2	4	Free	None
OP462	2	4	None	None
OP467	4	4	Free	None
OP470	5	4	None	None
OP481	2	4	None	None
OP482	2	4	None	None
OP484	3	4	None	None
OP490	4	4	Free	None
OP491	3	4	None	None
OP495	2	4	Free	None
OP496	3	4	None	None
OP497	4	4	Free	None
OP727	2	2	None	None
OP747	2	4	None	None
OP777	2	1	Free	None
OP1177	2	1	Free	None
OP2177	4	2	None	None
OP4177	2	4	None	None
OPA27	2	1	Free	None
OPA37	2	1	Free	None
OPA128	4	1	None	None
OPA130	1	1	Free	None
OPA131	3	1	Free	None
OPA132	2	1	Free	None
OPA134	2	1	Free	None
OPA137	4	1	Free	None
OPA140	3	1	Free	None
OPA141	2	1	Free	None
OPA145	3	1	Free	None
OPA170	3	1	Free	None
OPA171	3	1	Free	None
OPA177	3	1	Free	None
OPA187	3	1	Free	None
OPA188	3	1	Free	None
OPA192	3	1	Free	None
OPA196	3	1	Free	None
OPA227	4	1	Free	None
OPA228	4	1	Free	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
OPA234	6	1	Free	None
OPA237	2	1	Free	None
OPA241	2	1	Free	None
OPA244	2	1	Free	None
OPA251	1	1	Free	None
OPA277	5	1	Free	None
OPA300	2	1	Free	None
OPA301	2	1	Free	None
OPA313	2	1	None	None
OPA320	2	1	None	None
OPA330	3	1	Free	None
OPA333	3	1	Free	None
OPA336	5	1	Free	None
OPA337	3	1	Free	None
OPA338	2	1	Free	None
OPA340	3	1	Free	None
OPA341	2	1	Free	None
OPA342	2	1	Free	None
OPA343	2	1	Free	None
OPA344	3	1	Free	None
OPA345	2	1	Free	None
OPA347	4	1	Free	None
OPA348	3	1	Free	None
OPA350	3	1	Free	None
OPA353	2	1	Free	None
OPA355	2	1	Free	None
OPA357	1	1	None	None
OPA363	4	1	Free	None
OPA364	4	1	Free	None
OPA365	2	1	Free	None
OPA379	3	1	Free	None
OPA388	3	1	Free	None
OPA404	5	4	Free	None
OPA445	4	1	Free	None
OPA541	4	1	Free	None
OPA544	2	1	None	None
OPA547	2	1	None	None
OPA548	2	1	None	None
OPA549	1	1	None	None
OPA551	3	1	Free	None
OPA552	3	1	Free	None
OPA602	3	1	Free	None
OPA604	2	1	Free	None
OPA606	3	1	Free	None
OPA627	6	1	Free	None
OPA637	6	1	Free	None
OPA656	4	1	Free	None
OPA683	2	1	Free	None
OPA703	3	1	Free	None
OPA704	2	1	Free	None
OPA725	2	1	Free	None
OPA726	2	1	Free	None
OPA734	2	1	Free	None
OPA735	2	1	Free	None
OPA847	2	1	Free	None
OPA1611	1	1	Free	None
OPA1612	2	2	None	None
OPA2107	2	2	None	None
OPA2130	1	2	None	None
OPA2131	2	2	None	None
OPA2132	2	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
OPA2134	2	2	None	None
OPA2137	6	2	None	None
OPA2140	2	2	None	None
OPA2141	2	2	None	None
OPA2145	2	2	None	None
OPA2156	2	2	None	None
OPA2170	4	2	None	None
OPA2171	4	2	None	None
OPA2187	2	2	None	None
OPA2188	2	2	None	None
OPA2192	2	2	None	None
OPA2196	2	2	None	None
OPA2227	4	2	None	None
OPA2228	4	2	None	None
OPA2234	4	2	None	None
OPA2237	2	2	None	None
OPA2241	2	2	None	None
OPA2244	3	2	None	None
OPA2251	2	2	None	None
OPA2277	5	2	None	None
OPA2300	1	2	None	None
OPA2301	2	2	None	None
OPA2313	3	2	None	None
OPA2320	4	2	None	None
OPA2330	3	2	None	None
OPA2333	3	2	None	None
OPA2336	6	2	None	None
OPA2337	3	2	None	None
OPA2338	2	2	None	None
OPA2340	2	2	None	None
OPA2341	1	2	None	None
OPA2342	2	2	None	None
OPA2343	2	2	None	None
OPA2344	2	2	None	None
OPA2345	1	2	None	None
OPA2347	2	2	None	None
OPA2348	3	2	None	None
OPA2350	2	2	None	None
OPA2353	2	2	None	None
OPA2355	1	2	None	None
OPA2357	1	2	None	None
OPA2363	3	2	Free	None
OPA2364	4	2	None	None
OPA2365	1	2	None	None
OPA2379	2	2	None	None
OPA2388	2	2	None	None
OPA2677	3	2	Free	None
OPA2703	2	2	None	None
OPA2704	2	2	None	None
OPA2725	2	2	None	None
OPA2726	1	2	None	None
OPA2734	1	2	None	None
OPA2735	2	2	None	None
OPA2889	2	2	None	None
OPA3355	1	3	None	None
OPA4130	1	4	None	None
OPA4131	5	4	None	None
OPA4132	2	4	None	None
OPA4134	2	4	None	None
OPA4137	4	4	None	None
OPA4140	2	4	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
OPA4141	2	4	None	None
OPA4170	2	4	None	None
OPA4171	2	4	None	None
OPA4187	3	4	None	None
OPA4192	2	4	None	None
OPA4196	1	4	None	None
OPA4227	2	4	None	None
OPA4228	2	4	None	None
OPA4234	3	4	None	None
OPA4241	2	4	None	None
OPA4244	1	4	None	None
OPA4251	1	4	None	None
OPA4277	2	4	None	None
OPA4313	1	4	None	None
OPA4330	3	4	None	None
OPA4336	1	4	Free	None
OPA4340	2	4	Free	None
OPA4342	2	4	None	None
OPA4343	2	4	None	None
OPA4344	1	4	None	None
OPA4345	1	4	None	None
OPA4347	2	4	None	None
OPA4348	2	4	None	None
OPA4350	2	4	Free	None
OPA4353	1	4	None	None
OPA4364	2	4	None	None
OPA4379	1	4	None	None
OPA4388	2	4	None	None
OPA4703	2	4	None	None
OPA4704	2	4	None	None
RC4136	2	4	None	None
RC4558	9	2	None	None
RC4560	3	2	None	None
RV4136	2	4	None	None
SA5532	4	2	None	None
SA5534	5	1	None	None
SN10501	4	1	Free	None
SN10502	3	2	None	None
SN10503	2	3	Free	None
SSM2135	1	2	None	None
TC913	4	2	None	None
TC7650	2	1	None	None
TC7652	2	1	None	None
THS4061	4	1	Free	None
THS4062	4	2	None	None
THS4081	4	1	Free	None
THS4082	4	2	None	None
THS4281	3	1	Free	None
TJM4558	6	2	None	None
TL022	3	2	None	None
TL031	4	1	Free	None
TL032	9	2	None	None
TL034	10	4	None	None
TL051	4	1	Free	None
TL052	9	2	None	None
TL054	8	4	None	None
TL061	16	1	Free	None
TL062	19	2	None	None
TL064	16	4	None	None
TL071	20	1	Free	None
TL072	22	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TL074	16	4	None	None
TL081	12	1	Free	None
TL082	17	2	None	None
TL084	15	4	None	None
TL3414	2	2	None	None
TL3472	4	2	None	None
TLC27L1	6	1	None	None
TLC27L2	16	2	None	None
TLC27L4	15	4	None	None
TLC27L7	5	2	None	None
TLC27L9	5	4	None	None
TLC27M2	16	2	None	None
TLC27M4	15	4	None	None
TLC27M7	5	2	None	None
TLC27M9	4	4	None	None
TLC070	6	1	None	None
TLC071	8	1	Free	None
TLC072	8	2	None	None
TLC073	5	2	Free	None
TLC074	7	4	Free	None
TLC075	5	5	Free	None
TLC080	7	1	None	None
TLC081	8	1	Free	None
TLC082	8	2	None	None
TLC083	6	2	Free	None
TLC084	8	4	Free	None
TLC085	5	5	Free	None
TLC271	17	1	None	None
TLC272	15	2	None	None
TLC274	18	4	None	None
TLC277	5	2	None	None
TLC279	4	4	None	None
TLC2262	10	2	None	None
TLC2264	9	4	None	None
TLC2272	17	2	None	None
TLC2274	18	4	None	None
TLC4501	4	1	Free	None
TLC4502	6	2	None	None
TLE2021	10	1	Free	None
TLE2022	13	2	Free	None
TLE2024	12	4	Free	None
TLE2061	10	1	Free	None
TLE2062	10	2	None	None
TLE2064	11	4	None	None
TLE2071	9	1	Free	None
TLE2072	8	2	None	None
TLE2074	8	4	Free	None
TLE2081	8	1	Free	None
TLE2082	8	2	None	None
TLE2084	5	4	Free	None
TLE2141	9	1	Free	None
TLE2142	9	2	None	None
TLE2144	7	4	Free	None
TLV172	3	1	Free	None
TLV271	4	1	Free	None
TLV272	4	2	None	None
TLV341	5	1	None	None
TLV342	5	2	Free	None
TLV2172	2	2	None	None
TLV2370	3	1	Free	None
TLV2371	3	1	Free	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TLV2372	3	2	None	None
TLV2373	3	2	Free	None
TLV2374	3	4	None	None
TLV2375	3	5	None	None
TLV2381	2	1	Free	None
TLV2382	1	2	None	None
TLV2401	5	1	Free	None
TLV2402	5	2	None	None
TLV2404	5	4	None	None
TLV2442	8	2	None	None
TLV2444	6	4	None	None
TLV2450	7	1	Free	None
TLV2451	8	1	Free	None
TLV2452	7	2	None	None
TLV2453	4	2	Free	None
TLV2454	9	4	None	None
TLV2455	6	5	None	None
TLV2460	9	1	Free	None
TLV2461	8	1	Free	None
TLV2462	11	2	None	None
TLV2463	7	2	Free	None
TLV2464	9	4	None	None
TLV2620	2	1	Free	None
TLV2621	2	1	Free	None
TLV2622	2	2	None	None
TLV2623	1	2	None	None
TLV2624	2	2	None	None
TLV2770	6	1	Free	None
TLV2771	5	1	Free	None
TLV2772	11	2	None	None
TLV2773	3	2	Free	None
TLV2774	9	4	None	None
TLV2775	5	5	None	None
TLV2780	3	1	Free	None
TLV2781	3	1	Free	None
TLV2782	6	2	None	None
TLV2783	2	2	Free	None
TLV2784	4	4	None	None
TLV2785	4	5	None	None
TLV4110	3	1	Free	None
TLV4111	4	1	Free	None
TLV4112	6	2	None	None
TLV4113	3	2	Free	None
TLV4172	2	4	None	None
TS27L2	18	2	None	None
TS27L4	12	4	None	None
TS27M2	18	2	None	None
TS27M4	12	4	None	None
TS271	9	1	None	None
TS272	18	2	None	None
TS274	12	4	None	None
TS321	5	1	Free	None
TS461	2	1	Free	None
TS462	3	2	None	None
TS464	2	4	None	None
TS507	4	1	Free	None
TS512	2	2	None	None
TS514	4	4	None	None
TS522	2	2	None	None
TS524	2	4	None	None
TS912	5	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TS914	2	4	None	None
TS921	3	1	Free	None
TS922	4	2	None	None
TS924	4	4	None	None
TS931	6	1	Free	None
TS932	3	2	None	None
TS934	6	4	None	None
TS941	6	1	Free	None
TS942	6	2	None	None
TS944	6	4	None	None
TS951	3	1	Free	None
TS952	2	2	None	None
TS954	2	4	None	None
TS971	2	1	Free	None
TS972	3	2	None	None
TS974	2	4	None	None
TS982	1	2	None	None
TS1851	4	1	Free	None
TS1852	6	2	None	None
TS1854	4	4	None	None
TS1871	4	1	Free	None
TS1872	6	2	None	None
TS1874	4	4	None	None
TS9222	2	2	None	None
TS9224	2	4	None	None
TS9511	2	1	None	None
TSB571	1	1	None	None
TSB572	3	2	None	None
TSB611	1	1	None	None
TSB612	2	2	None	None
TSB711	2	1	None	None
TSB712	4	2	None	None
TSB714	4	4	None	None
TSB7191	2	1	None	None
TSB7192	4	2	None	None
THS22	2	2	None	None
THS24	2	4	None	None
THS80	2	1	Free	None
THS81	1	1	Free	None
THS82	2	2	None	None
THS84	1	4	None	None
TSM103	2	2	None	None
TSU101	4	1	None	None
TSU102	2	2	None	None
TSU104	2	4	Free	None
TSU111	2	1	Free	None
TSU112	2	2	None	None
TSU114	2	4	Free	None
TSV321	2	1	None	None
TSV324	2	4	None	None
TSV358	5	2	None	None
TSV521	2	1	None	None
TSV522	4	2	None	None
TSV524	4	4	Free	None
TSV611	4	1	None	None
TSV612	4	2	None	None
TSV620	4	1	None	None
TSV621	4	1	None	None
TSV622	4	2	None	None
TSV623	2	2	None	None
TSV624	2	4	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TSV625	2	5	None	None
TSV630	6	1	Free	None
TSV631	4	1	None	None
TSV632	8	2	None	None
TSV633	2	2	None	None
TSV634	3	4	Free	None
TSV635	2	5	None	None
TSV731	1	1	None	None
TSV732	2	2	None	None
TSV734	2	4	Free	None
TSV791	1	1	None	None
TSV792	3	2	None	None
TSV911	2	1	None	None
TSV912	5	2	None	None
TSV914	2	4	None	None
TSV991	5	1	Free	None
TSV992	5	2	None	None
TSV994	4	4	None	None
TSV6191	4	1	None	None
TSV6192	4	2	None	None
TSV7721	1	1	None	None
TSV7722	3	2	None	None
TSV7723	1	2	None	None
TSX631	2	1	None	None
TSX632	3	2	None	None
TSX634	3	4	Free	None
TSZ121	2	1	None	None
TSZ122	3	2	None	None
TSZ124	2	4	Free	None
TSZ181	2	1	Free	None
TSZ182	3	2	None	None
µA702	2	1	Free	None
µA709	3	1	Free	None
µA715	2	1	Free	None
µA725	2	1	None	None
µA741	6	1	Free	None
µA747	2	2	Free	None
µA776	3	1	Free	None

2.7. Programmable Gain Amplifier Library

This library contains operational and instrumentation amplifiers with digitally programmable or selectable gain.

Each programmable gain amplifier (PGA) has its simplified internal diagram incorporated into the symbol (if available).

Symbols incorporating resistors have an alternate symbol with US-style resistors. (Section 2.1.5)

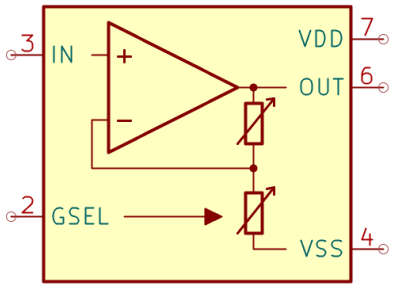
Dual or quad PGAs are included as multi-unit symbols with power pins on the first unit (Unit A).

All available orderable part numbers for each device with different package, temperature range and accuracy grade have separate specific symbols.

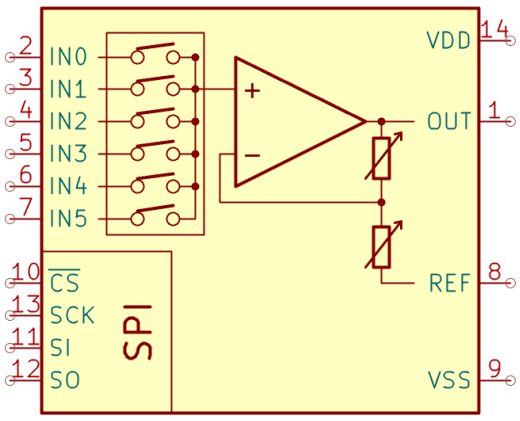
THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

Filename: **Amplifier_Programmable_AKL**	
Total symbols:	**69**
Generic symbols:	**0**
Specific symbols:	**69**

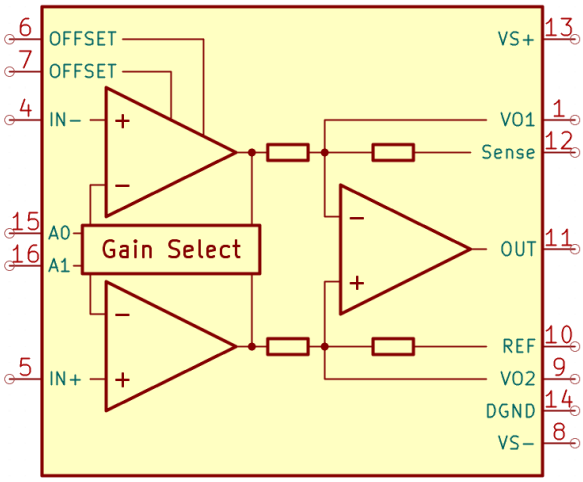
U1
MCP6G01T-E-MS



U2
MCP6S26-E-P



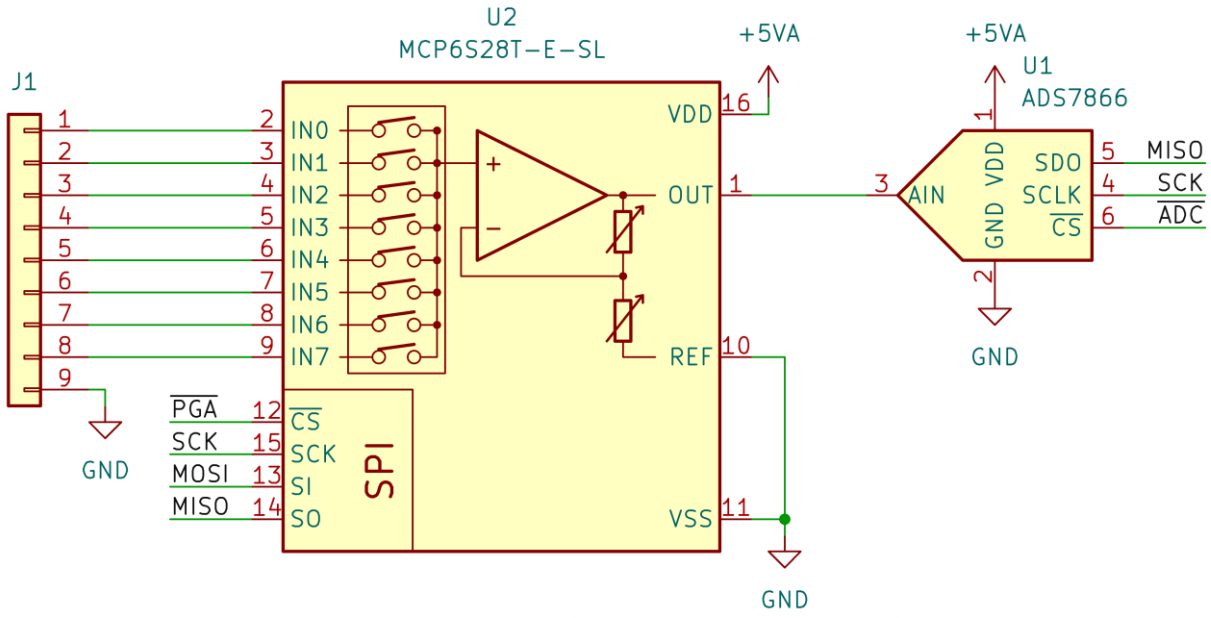
U3
PGA204AP



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Analog front-end using MCP6S28 programmable gain amplifier with 8-input multiplexer.

Table 2.7. List of all devices included in Amplifier_Programmable_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AD8231	2	2	Free	None
AD8250	1	1	None	None
AD8251	1	1	None	None
AD8253	1	1	None	None
MCP6G01	5	1	Free	US-style resistors
MCP6G02	2	2	None	US-style resistors
MCP6G03	2	1	Free	US-style resistors
MCP6G04	2	4	None	US-style resistors
MCP6S21	6	1	None	US-style resistors
MCP6S22	6	1	None	US-style resistors
MCP6S26	6	1	None	US-style resistors
MCP6S28	4	1	None	US-style resistors
MCP6S91	6	1	None	US-style resistors
MCP6S92	6	1	None	US-style resistors
MCP6S93	2	1	None	US-style resistors
PGA103	1	1	Free	None
PGA202	1	1	None	US-style resistors
PGA203	1	1	None	US-style resistors
PGA204	4	1	Free	US-style resistors
PGA205	4	1	Free	US-style resistors
PGA206	2	1	Free	US-style resistors
PGA207	1	1	Free	US-style resistors

2.8. Miscellaneous Analog IC Library

This library contains sample-and-hold circuits, logarithmic amplifiers, variable gain amplifiers and other analog ICs.

All symbols have the simplified internal diagram incorporated (if available).

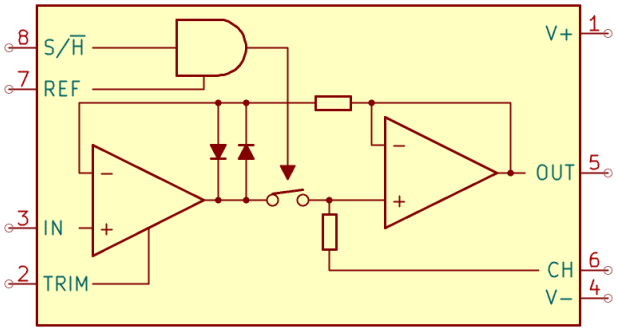
Symbols incorporating resistors have an alternate symbol with US-style resistors. (Section 2.1.5)

All available orderable part numbers for each device with different package, temperature range and accuracy grade have separate specific symbols.

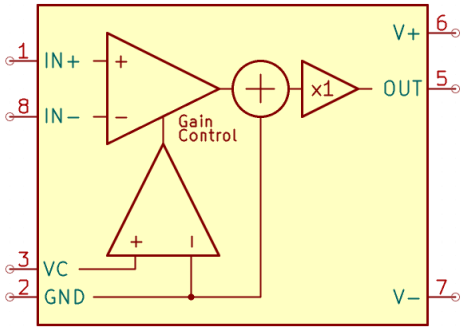
THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

Filename: **Analog_AKL**	
Total symbols:	**30**
Generic symbols:	**0**
Specific symbols:	**30**

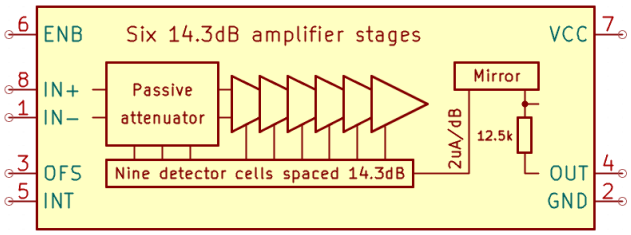
U1
LF398N



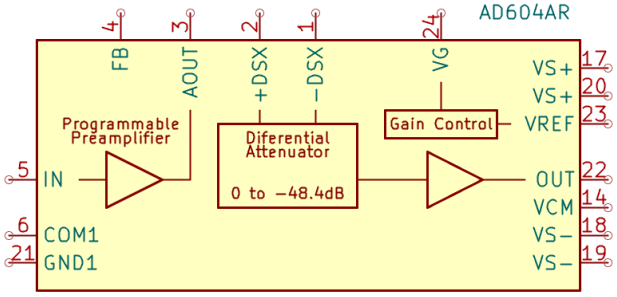
U2
VCA810AID



U3
AD8307AN



U4A
AD604AR



Schematic examples

Disclaimer

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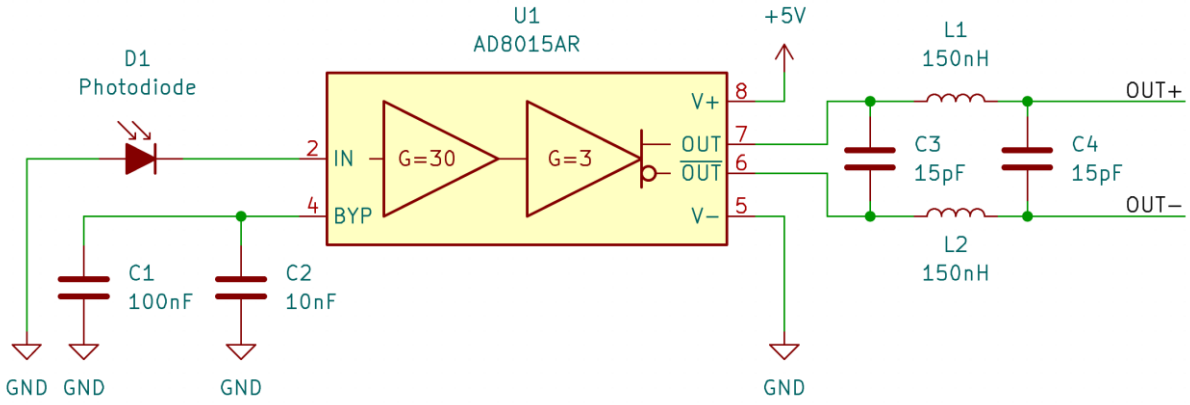
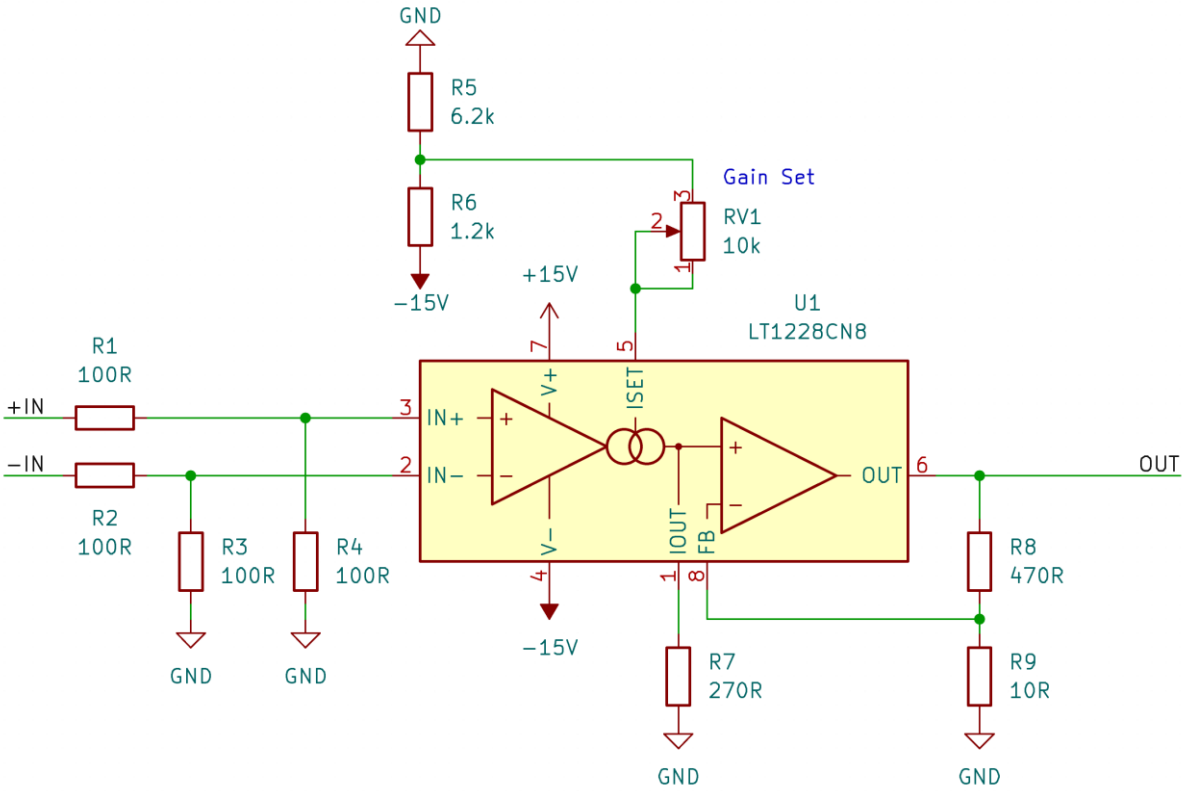


Example 1

Fiber optic receiver using AD8015 transimpedance amplifier.



Example 2

Fast difference amplifier with variable gain using LT1228.

Table 2.8. List of all devices included in Analog_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AD585	3	1	Free	US-style resistors
AD603	2	1	None	US-style resistors
AD604	3	1	None	None
AD781	3	1	Free	None
AD8015	1	1	Free	None
AD8307	2	1	None	US-style resistors
AD8310	1	1	None	US-style resistors
AD8330	2	1	None	None
LF198	2	1	None	US-style resistors
LF298	1	1	Free	US-style resistors
LF398	4	1	Free	US-style resistors
LT1228	4	1	None	None
VCA810	2	1	Free	None

2.9. Analog Comparator Library

This library contains analog voltage comparators.

Non-inverting input is on the top side of the comparator symbol, inverting input is on the bottom side. This is opposite of the standard operational amplifier inputs.

Comparators with open collector or open drain outputs have a ◇ symbol near the output.

Comparators with built-in internal hysteresis have a hysteresis indication in the middle of the symbol.

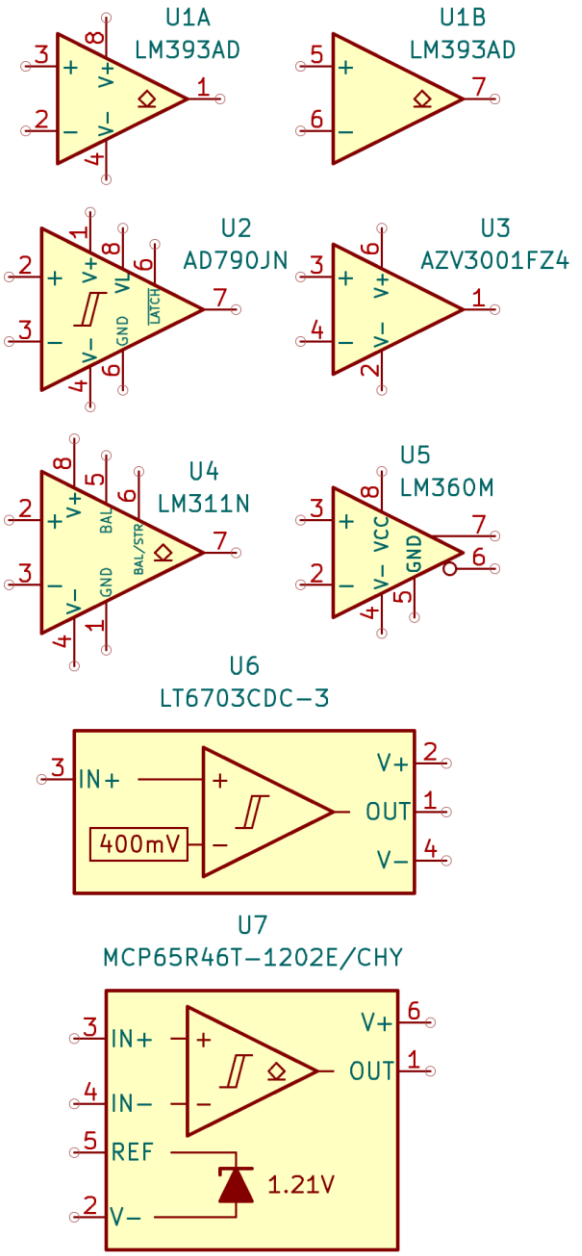
Comparators with internal references or complex internal structure have their simplified internal diagrams incorporated into the symbol.

Dual/triple/quad comparators are included as multi-unit symbols with power pins on the first unit (Unit A). Devices with single internal reference or shutdown input per multiple comparators have all the common pins (power, reference etc.) on an additional unit instead.

All available orderable part numbers for each device with different package, temperature range and accuracy grade have a separate specific symbol.

THT integrated circuits in DIP packages use 'LongPads' footprint variants by default.

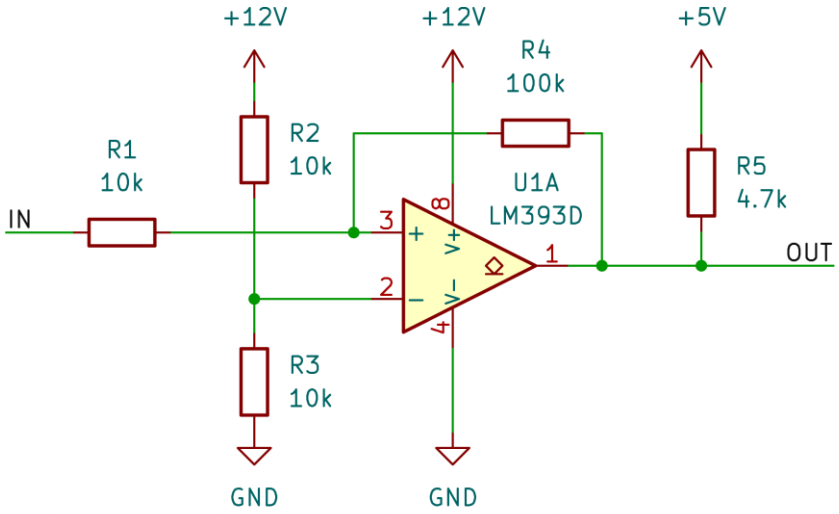
Filename: **Analog_Comparator_AKL**	
Total symbols:	**802**
Generic symbols:	**30**
Specific symbols:	**772**



Schematic examples

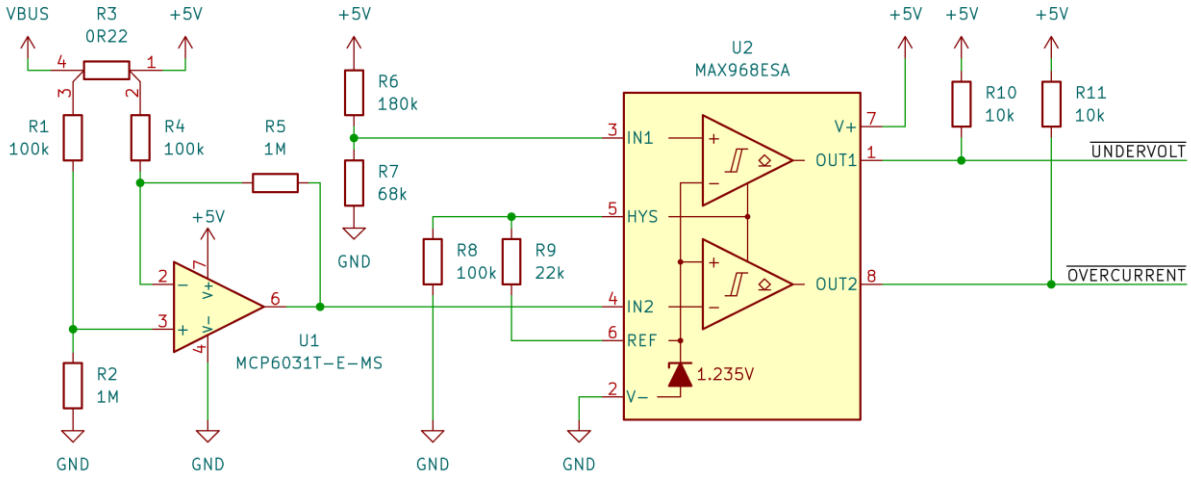
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



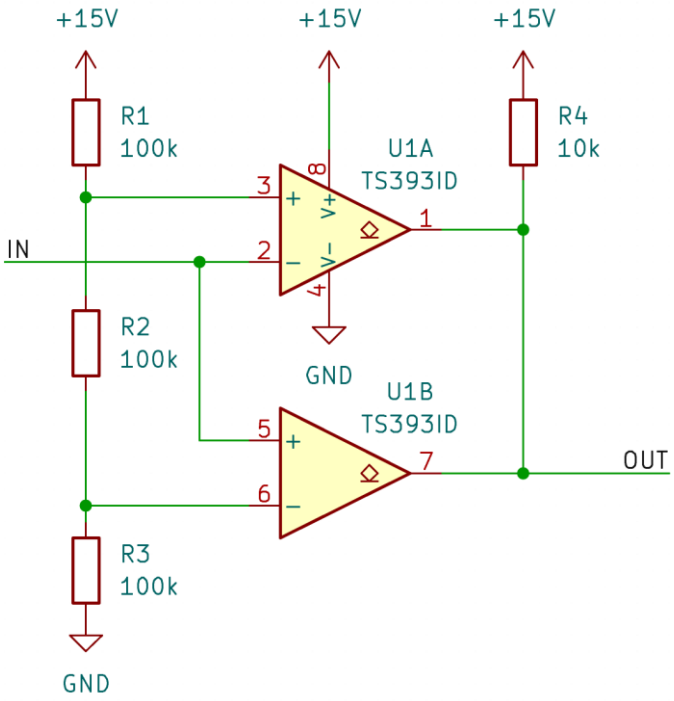
Example 1

Non-inverting single-supply comparator with hysteresis using LM393.



Example 2

Power supply monitoring circuit based on MAX968 dual comparator with integrated reference and internal hysteresis.



Example 3

Window comparator using TS393 dual comparator.

Table 2.9. List of all devices included in Analog_Comparator_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AD790	3	1	None	None
AD8469	1	1	None	None
AD8561	3	1	None	None
AD8611	2	1	None	None
AD8612	1	2	None	None
ADCMP391	1	1	Free	None
ADCMP392	1	2	None	None
ADCMP393	2	4	None	None
ADCMP394	1	1	None	None
ADCMP395	1	3	Free	None
ADCMP396	1	5	Free	None
ADCMP551	1	2	None	None
ADCMP552	1	2	None	None
ADCMP553	1	1	None	None
AP331	2	1	None	None
AP393	2	2	None	None
AS339	4	4	None	None
AS393	7	2	None	None
AZV331	2	1	None	None
AZV393	3	2	None	None
AZV3001	1	1	Free	None
AZV3002	1	2	None	None
LM111	2	1	None	None
LM119	4	2	Do not connect	None
LM139	4	4	None	None
LM160	1	1	Do not connect	None
LM193	2	2	None	None
LM211	2	1	None	None
LM219	2	2	Do not connect	None
LM239	7	4	Free	None
LM293	8	2	None	None
LM306	2	1	None	None
LM311	4	1	None	None
LM319	4	2	Do not connect	None
LM339	12	4	Free	None
LM360	2	1	Do not connect	None
LM361	3	1	Do not connect	None
LM393	17	2	None	None
LM397	1	1	None	None
LM2901	9	4	None	None
LM2903	19	2	None	None
LM6511	1	1	None	None
LMC6762	2	2	None	None
LMC6772	4	2	None	None
LMC7211	4	1	Free	None
LMC7215	2	1	Free	None
LMC7221	4	1	Free	None
LMC7225	1	1	None	None
LMP7300	2	1	None	None
LMV331	8	1	None	None
LMV339	6	4	None	None
LMV393	10	2	None	None
LMV761	2	1	Free	None
LMV762	2	2	None	None
LMV7219	2	1	None	None
LMV7235	2	1	None	None
LMV7239	2	1	None	None
LMV7271	2	1	None	None
LMV7275	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
LMV7291	1	1	None	None
LP339	2	4	None	None
LP2901	2	4	None	None
LPV7215	2	1	None	None
LT1011	5	1	None	None
LT1016	4	1	None	None
LT1017	5	2	Free	None
LT1018	4	2	Free	None
LT1394	1	1	None	None
LT1711	2	1	None	None
LT1712	2	2	None	None
LT1713	2	1	None	None
LT1714	2	2	None	None
LT1715	2	2	None	None
LT1716	3	1	None	None
LT1719	4	1	None	None
LT1720	6	2	None	None
LT1721	4	4	None	None
LT6700	33	1	None	None
LT6703	12	1	None	None
LTC1042	1	1	None	None
LTC1440	8	1	None	None
LTC1441	4	2	None	None
LTC1442	2	1	None	None
LTC1443	6	5	None	None
LTC1444	6	5	None	None
LTC1445	6	5	None	None
LTC1540	6	1	None	None
LTC1841	2	2	None	None
LTC1842	2	1	None	None
LTC1843	2	1	None	None
MAX907	5	2	None	None
MAX908	4	4	None	None
MAX909	4	1	None	None
MAX921	5	1	None	None
MAX922	5	2	None	None
MAX923	5	1	None	None
MAX924	4	5	None	None
MAX931	5	1	None	None
MAX932	5	1	None	None
MAX933	5	1	None	None
MAX934	4	5	None	None
MAX941	6	1	Free	None
MAX942	6	2	None	None
MAX944	4	4	None	None
MAX961	2	1	None	None
MAX962	2	2	None	None
MAX963	1	2	None	None
MAX964	1	4	Free	None
MAX965	2	1	Free	None
MAX966	2	2	None	None
MAX967	2	1	None	None
MAX968	2	1	None	None
MAX969	2	5	None	None
MAX970	2	4	Free	None
MAX971	5	1	None	None
MAX972	5	2	None	None
MAX973	5	1	None	None
MAX974	4	5	None	None
MAX981	5	1	None	None
MAX982	5	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MAX983	5	1	None	None
MAX984	4	5	None	None
MAX997	2	1	Free	None
MAX999	2	1	None	None
MAX9015	1	1	Free	None
MAX9016	1	1	Free	None
MAX9017	2	2	None	None
MAX9018	2	2	None	None
MAX9019	1	2	None	None
MAX9020	1	2	None	None
MAX9021	2	1	None	None
MAX9022	3	2	None	None
MAX9024	2	4	None	None
MAX9030	2	1	None	None
MAX9031	2	1	None	None
MAX9032	2	2	None	None
MAX9034	2	4	None	None
MAX9075	2	1	None	None
MAX9077	3	2	None	None
MAX9600	1	2	None	None
MAX9601	1	2	None	None
MAX9602	1	4	None	None
MC3302	3	4	None	None
MCP65R41	2	1	None	None
MCP65R46	2	1	None	None
MCP6541	6	1	Free	None
MCP6542	3	2	None	None
MCP6543	2	1	Free	None
MCP6544	4	4	None	None
MCP6546	6	1	Free	None
MCP6547	3	2	None	None
MCP6548	3	1	Free	None
MCP6549	4	4	None	None
MCP6561	4	1	None	None
MCP6562	2	2	None	None
MCP6564	2	4	None	None
MCP6566	4	1	None	None
MCP6567	2	2	None	None
MCP6569	2	4	None	None
TA75S393	1	1	None	None
TC75S57	2	1	None	None
TL331	3	1	None	None
TL391	1	1	None	None
TL3016	4	1	None	None
TL3116	4	1	None	None
TLC339	9	4	None	None
TLC352	6	2	None	None
TLC372	6	2	None	None
TLC374	6	4	None	None
TLC393	7	2	None	None
TLC3702	7	2	None	None
TLC3704	7	4	None	None
TLV1391	2	1	None	None
TLV1701	3	1	None	None
TLV1702	2	2	None	None
TLV1704	1	4	None	None
TLV3011	2	1	None	None
TLV3012	2	1	None	None
TLV3201	2	1	None	None
TLV3202	2	2	None	None
TLV3401	5	1	Free	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TLV3402	5	2	None	None
TLV3404	5	4	None	None
TLV3491	2	1	Free	None
TLV3492	2	2	None	None
TLV3494	2	4	None	None
TLV3501	2	1	Free	None
TLV3502	2	2	None	None
TLV3691	2	1	Free	None
TLV3701	5	1	Free	None
TLV3702	5	2	None	None
TLV3704	5	4	None	None
TLV7211	6	1	Free	None
TLV7256	1	2	None	None
TS331	3	1	Free	None
TS332	3	2	None	None
TS334	3	4	Free	None
TS339	3	4	None	None
TS372	4	2	None	None
TS374	4	4	None	None
TS391	4	1	Free	None
TS393	5	2	None	None
TS861	4	1	Free	None
TS862	4	2	None	None
TS864	4	4	None	None
TS881	2	1	None	None
TS882	2	2	None	None
TS884	3	4	None	None
TS3011	2	1	None	None
TS3021	3	1	None	None
TS3022	2	2	None	None
TS3702	5	2	None	None
TS3704	5	4	None	None
TS7211	2	1	None	None
TS7221	2	1	None	None
TSM109	4	2	None	None
TSX393	4	2	None	None
TSX3702	4	2	None	None
TSX3704	3	4	Free	None

2.10. Capacitor Library (European Symbol)

This library contains capacitor symbols with pre-assigned footprints.

Specific capacitor symbols have the footprint pre-assigned, but the user still needs to fill in the correct value. This helps reduce time spent assigning footprints before transferring to PCB layout.

Alternate symbols rotated by 45 degrees are available (Section 2.1.5).

Polarized capacitor symbol name prefix has been shortened to CP instead of C_POL.

Trimmer symbol has pin 1 on the side of the arrow, and pin 2 away from the arrow. On all AKL trimmer footprints external electrode of the variable capacitor is connected to pad 2 and it is recommended to connect it to a low impedance net (ground) to provide shielding.

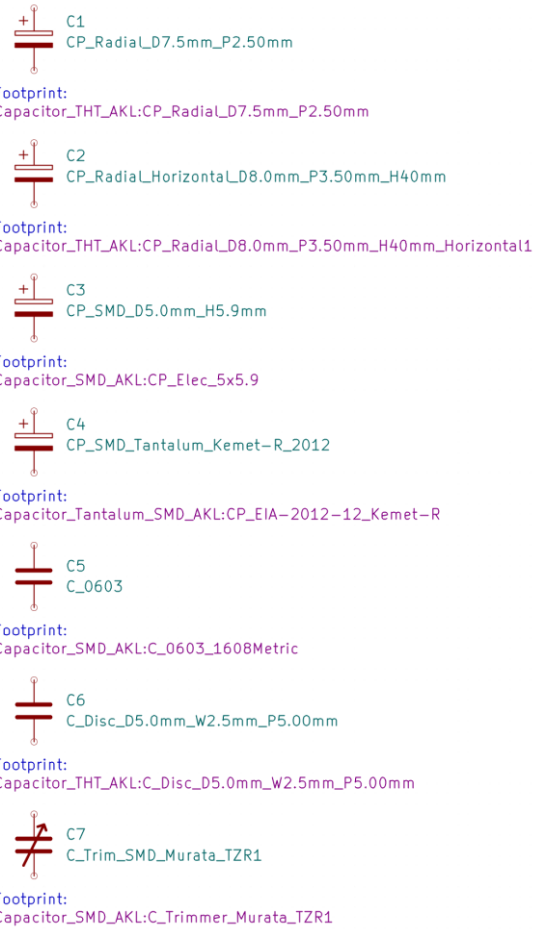
Capacitor symbol names mostly correspond to their respective capacitor footprint names.

Capacitor symbol library grabs footprints from

- Capacitor_SMD_AKL,
- Capacitor_Tantalum_SMD_AKL,
- Capacitor_THT_AKL.

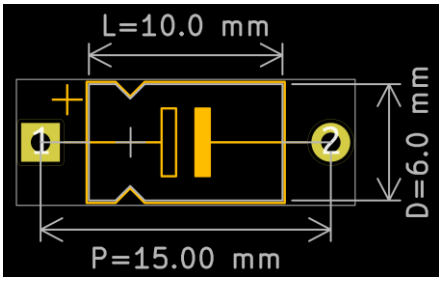
Capacitor_AKL symbol library is functionally equivalent to Capacitor_US_AKL with the only difference being the graphical shape of the electrolytic capacitor symbol and linked footprint libraries. You can omit installation of this library if you want to use capacitor library with US symbols instead. Linked footprint libraries are also inter-changeable, see Section 3.1.7 for more details.

Filename: **Capacitor_AKL**	
Total symbols:	**519**
Generic symbols:	**3**
Specific symbols:	**516**



Axial polarized capacitors

Symbol count: **55**



Axial polarized capacitor footprint with length, diameter and pin pitch indicated.

Symbol naming convention:
CP_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm**

Name examples:
CP_Axial_L10.0mm_D4.5mm_P15.00mm
CP_Axial_L18mm_D8.0mm_P25.00mm

Corresponding footprints:
Capacitor_THT_AKL:CP_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_Horizontal**

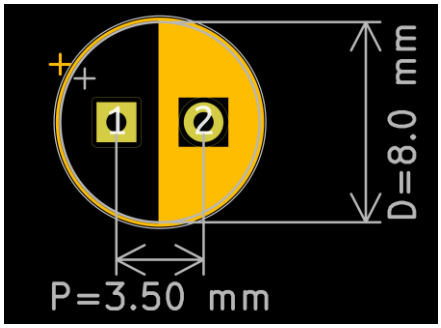
Keywords:
cap capacitor polarized eu tht axial electrolytic <length>x<diameter> <pitch>

Length and diameter values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**axial electrolytic 10x4.5**' will yield all axial capacitors with 10mm body length and 4.5mm diameter as results
Searching '**axial electrolytic 15.00**' will yield all axial polarized capacitors with pin pitch equal to 15mm as results.

Radial polarized capacitors

Symbol count: **28**



Radial polarized capacitor footprint with length and pin pitch indicated

Symbol naming convention:
CP_Radial_D<diameter>**mm_P**<pitch>**mm**

Name examples:
CP_Axial_L10.0mm_D4.5mm_P15.00mm
CP_Axial_L18mm_D8.0mm_P25.00mm

Corresponding footprints:
Capacitor_THT_AKL:CP_Radial_D<diameter>**mm_P**<pitch>**mm**

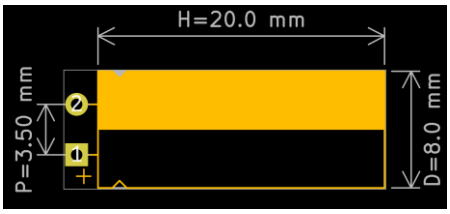
Keywords:
cap capacitor polarized eu tht radial electrolytic <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**radial electrolytic 4**' will yield radial capacitors with 4mm diameter as a result.
Searching '**radial electrolytic 1.50**' will yield all radial polarized capacitors with pin pitch equal to 1.5mm.

Radial horizontal polarized capacitors

Symbol count: **34**



Radial polarized capacitor footprint with diameter, height and pin pitch indicated.

Symbol naming convention:
CP_Radial_Horizontal_D<diameter>**mm_P**<pitch>**mm_H**<height>**mm**

Name examples:
CP_Radial_Horizontal_D8.0mm_P3.50mm_H20mm
CP_Radial_Horizontal_D12.5mm_P5.00mm_H30mm

Corresponding footprints:
Capacitor_THT_AKL:CP_Radial_D<diameter>**mm_P**<pitch>**mm_H**<height>**mm_Horizontal1**

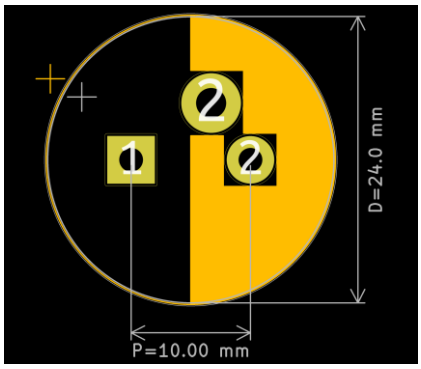
Keywords:
cap capacitor polarized eu tht radial electrolytic horizontal <diameter>x<height> <pitch>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**radial electrolytic horizontal 12.5x30**' will yield radial horizontal polarized capacitors with 12.5mm diameter and 30mm height as a result.
Searching '**radial electrolytic horizontal 5.00**' will yield all radial polarized capacitors with pin pitch equal to 5mm.

Radial Snap-In polarized capacitors

Symbol count: **14**



Radial 3-pin Snap-In capacitor footprint with diameter and pin pitch indicated

Symbol naming convention:
CP_Radial_Snap-in_D<diameter>**mm_P**<pitch>**mm**
With optional **_3-Pin** suffix

Name examples:
CP_Radial_Snap-in_D22.0mm_P10.00mm
CP_Radial_Snap-in_D25.0mm_P10.00mm_3-Pin

Corresponding footprints:
Capacitor_THT_AKL:CP_Radial_D<diameter>**mm_P**<pitch>**mm_SnapIn (**or 3-pin_SnapIn**)**

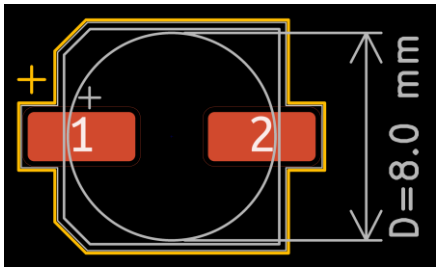
Keywords:
cap capacitor polarized eu tht radial electrolytic snapin snap in <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**radial electrolytic snap in 40**' will yield radial snap-in polarized capacitors with 40mm diameter as a result.

SMD Aluminum Electrolytic Capacitors

Symbol count: 40



SMD polarized capacitor footprint with diameter indicated.

Symbol naming convention:
CP_SMD_D<diameter>**mm_H**<height>**mm**

Name examples:
CP_SMD_D6.3mm_H5.4mm
CP_SMD_D10.0mm_H12.5mm

Corresponding footprints:
Capacitor_SMD_AKL:CP_Elec_<diameter>**x**<height>

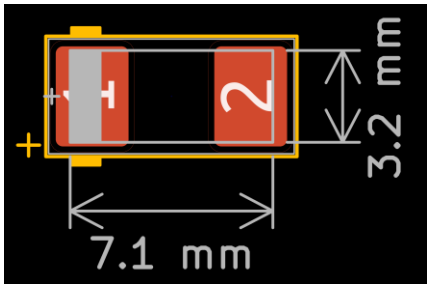
Keywords:
cap capacitor polarized eu smd electrolytic <diameter>x<height> <diameter>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Search examples:
Searching '**smd electrolytic 5x5.4**' will yield SMD polarized capacitors with 5mm diameter and 5.4mm height as a result.
Searching '**smd electrolytic 5**' will yield all SMD polarized capacitors with 5mm diameter.

SMD Tantalum Electrolytic Capacitors

Symbol count: 26



SMD Tantalum capacitor footprint, AVX-C 7132 with case size indicated.

Symbol naming convention:
CP_SMD_Tantalum_<manufacturer>**-**<size code>
With the code consisting of a letter and 4-digit metric size.

Name examples:
CP_SMD_Tantalum_AVX-C_7132
CP_SMD_Tantalum_Kemet-T_3528

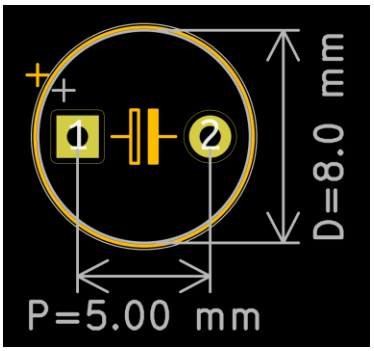
Corresponding footprints:
Capacitor_THT_AKL:CP_EIA-<metric size code>_<manufacturer>**-**<letter size code>

Keywords:
cap capacitor polarized eu smd tantalum electrolytic <size code>

Search examples:
Searching '**smd tantalum kemet-r**' will yield Kemet size R tantalum capacitor as a result.
Searching '**smd tantalum 2012**' will yield all tantalum capacitors with 2x1.2mm body size.

THT Tantalum Electrolytic Capacitors

Symbol count: **16**



Tantalum capacitor footprint with diameter and pin pitch indicated

Symbol naming convention:
CP_Tantalum_ D<diameter>**mm_P**<pitch>**mm**

Name examples:
CP_Tantalum_D4.5mm_P2.50mm
CP_Tantalum_D7.0mm_P5.00mm

Corresponding footprints:
Capacitor_THT_AKL:CP_Radial_Tantal_D<diameter>**mm_P**<pitch>**mm**

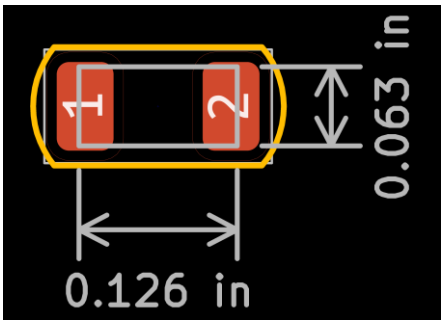
Keywords:
cap capacitor polarized eu tht radial electrolytic tantalum <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**tht tantalum 5**' will yield tantalum capacitors with 5mm diameter as a result.
Searching '**tht tantalum 2.50**' will yield all tantalum capacitors with pin pitch equal to 2.5mm.

SMD Chip Capacitors

Symbol count: **17**



SMD Chip capacitor footprint with size code of 1206 with dimensions in inches.

Symbol naming convention:
C_<imperial size code>

Name examples:
C_0603
C_1206
C_2220

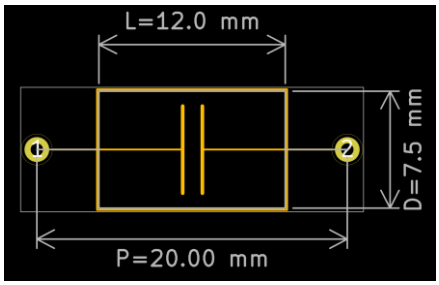
Corresponding footprints:
Capacitor_SMD_AKL:C_<imperial size code>_<metric size code>**Metric**

Keywords:
cap capacitor ceramic chip mlcc smd <imperial size code>

Search examples:
Searching '**capacitor 0805**' will yield SMD chip capacitor with the imperial size code of 0805 as a result.
Searching '**smd capacitor chip**' will yield all SMD chip capacitors.

Axial Capacitors

Symbol count: 19



Axial capacitor footprint with length, diameter and pin pitch indicated.

Symbol naming convention:
C_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm**

Name examples:
C_Axial_L3.0mm_D2.3mm_P5.00mm
C_Axial_L17.0mm_D6.5mm_P20.00mm

Corresponding footprints:
Capacitor_THT_AKL:C_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_Horizontal**

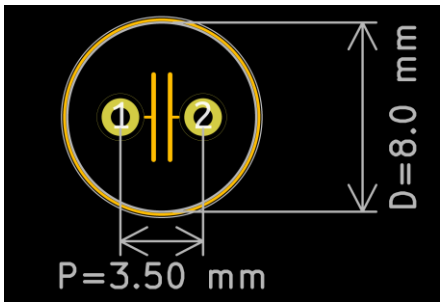
Keywords:
cap capacitor tht axial <length>x<diameter> <pitch>

Diameter and length values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**capacitor axial 19x9.5**' will yield axial capacitors with 19mm length and 9.5mm diameter as a result.
Searching '**capacitor axial 25.00**' will yield all axial capacitors with 25mm pin pitch.

Radial bipolar electrolytic capacitors

Symbol count: 18



Bipolar electrolytic capacitor footprint with diameter and pin pitch indicated.

Symbol naming convention:
C_Bipolar_D<diameter>**mm_H**<height>**mm_P**<pitch>**mm**

Name examples:
C_Bipolar_D4.0mm_H5.0mm_P1.50mm
C_Bipolar_D8.0mm_H11.5mm_P3.50mm

Corresponding footprints:
Capacitor_THT_AKL:C_Radial_D<diameter>**mm_H**<height>**mm_P**<pitch>**mm**

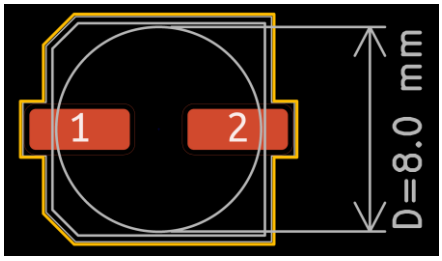
Keywords:
cap capacitor tht bipolar electrolytic <diameter>x<height> <pitch>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**bipolar electrolytic 4**' will yield bipolar capacitors with 4mm diameter as a result.
Searching '**bipolar electrolytic 1.50**' will yield all bipolar polarized capacitors with pin pitch equal to 1.5mm.

SMD Bipolar Electrolytic Capacitors

Symbol count: 9



SMD non-polarized (bipolar) capacitor footprint with diameter indicated.

Symbol naming convention:
C_Bipolar_SMD_D<diameter>**mm_H**<height>**mm**

Name examples:
C_Bipolar_SMD_D5.0mm_H5.8mm
C_Bipolar_SMD_D10.0mm_H10.2mm

Corresponding footprints:
Capacitor_SMD_AKL:C_Elec_<diameter>**x**<height>

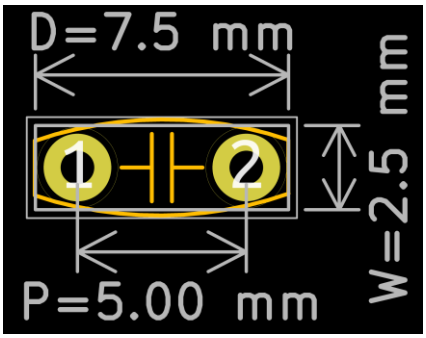
Keywords:
cap capacitor smd electrolytic bipolar <diameter>x<height> <diameter>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Search examples:
Searching '**smd bipolar 8x5.4**' will yield SMD bipolar capacitors with 8mm diameter and 5.4mm height as a result.
Searching '**smd bipolar 5**' will yield all SMD bipolar capacitors with 5mm diameter.

Ceramic disc capacitors

Symbol count: 39



Ceramic capacitor footprint with diameter, width and pitch indicated.

Symbol naming convention:
C_Disc_D<diameter>**mm_W**<width>**mm_P**<pitch>**mm**

Name examples:
C_Disc_D3.0mm_W1.6mm_P2.50mm
C_Disc_D6.0mm_W2.5mm_P5.00mm

Corresponding footprints:
Capacitor_THT_AKL: C_Disc_D<diameter>**mm_W**<width>**mm_P**<pitch>**mm**

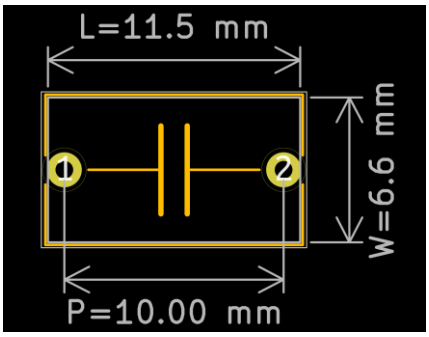
Keywords:
cap capacitor tht ceramic disc <diameter>x<width> <pitch>

Diameter and width values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**disc ceramic 3.8x2.6**' will yield ceramic disc capacitors with 3.8mm diameter and 2.6mm width as a result.
Searching '**disc ceramic 2.50**' will yield all ceramic disc capacitors with pin pitch equal to 2.5mm.

Rectangular (box) capacitors

Symbol count: **178**



Ceramic capacitor footprint with diameter, width and pitch indicated.

Symbol naming convention:
C_Rect_L<length>**mm_W**<width>**mm_P**<pitch>**mm**

Name examples:
C_Rect_L4.6mm_W3.0mm_P2.50mm
C_Disc_D9.0mm_W3.6mm_P7.50mm

Corresponding footprints:
Capacitor_THT_AKL: C_Rect_L<length>**mm_W**<width>**mm_P**<pitch>**mm**

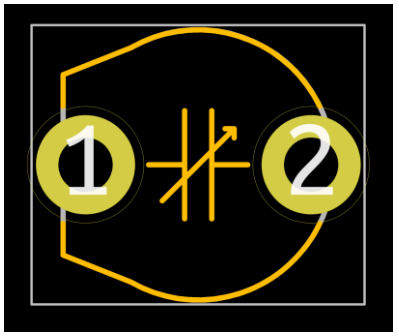
Keywords:
cap capacitor polarized tht film rect <length>x<width> <pitch>

Length and width values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**capacitor rect 9x7.7**' will yield rectangular capacitors with 9mm length and 7.7mm width as a result.
Searching '**capacitor rect 7.50**' will yield all rectangular capacitors with pin pitch equal to 7.5mm.

Trimmers

Symbol count: **11**



GKG15 Series trimmer footprint

Symbol naming convention:
C_Trim_<manufacturer>_<device family>

Name examples:
C_Trim_Sprague_GKT
C_Trim_Vishay_BFC2-808_D7.5mm

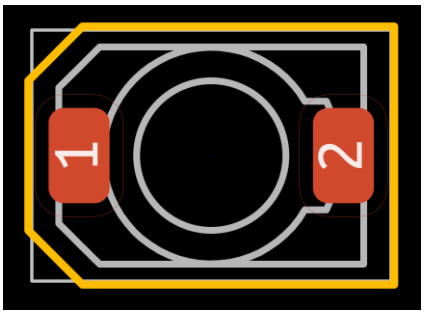
Corresponding footprints:
Capacitor_THT_AKL: C_Trimmer_<device family>**_L**<length>**mm_W**<width>**mm_P**<pitch>**mm**

Keywords:
cap capacitor tht trimmer variable <device family> <manufacturer>

Search examples:
Searching '**tht trimmer vishay**' will yield all THT Vishay trimmers as a result.

SMD Trimmers

Symbol count: **12**



JZ series SMD trimmer footprint

Symbol naming convention:
C_Trim_SMD_<manufacturer>_<device family>

Name examples:
C_Trim_SMD_Murate_TZB4-A
C_Trim_SMD_Voltronics_JV

Corresponding footprints:
Capacitor_SMD_AKL: C_Trimmer_<manufacturer>_<device family>

Keywords:
cap capacitor variable smd trimmer <manufacturer> <device family>

Search examples:
Searching '**smd trimmer murata**' will yield all SMD Murata trimmers as a result.

2.11. Capacitor Library (US Symbol)

This library contains capacitor symbols with pre-assigned footprints.

Specific capacitor symbols have the footprint pre-assigned, but the user still needs to fill in the correct value. This helps reduce time spent assigning footprints before transferring to PCB layout.

Polaryzed capacitor symbol name prefix has been shortened to CP instead of C_POL.

Alternate symbols rotated by 45 degrees are available (Section 2.1.5).

Capacitor symbol names mostly correspond to their respective capacitor footprint names.

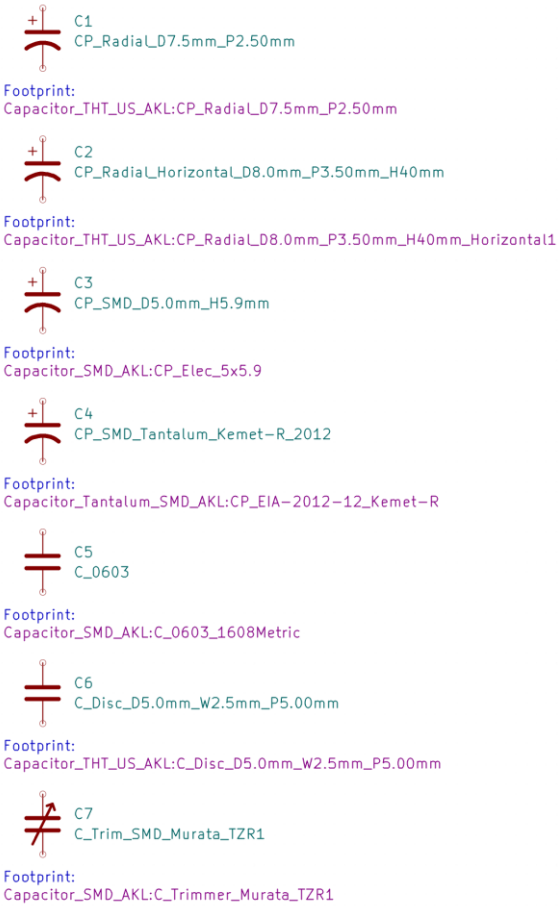
Trimmer symbol has pin 1 on the side of the arrow, and pin 2 away from the arrow. On all AKL trimmer footprints external electrode of the variable capacitor is connected to pad 2 and it is recommended to connect it to a low impedance net (ground) to provide shielding.

Capacitor symbol library grabs footprints from

- Capacitor_SMD_AKL,
- Capacitor_Tantalum_SMD_AKL,
- Capacitor_THT_US_AKL.

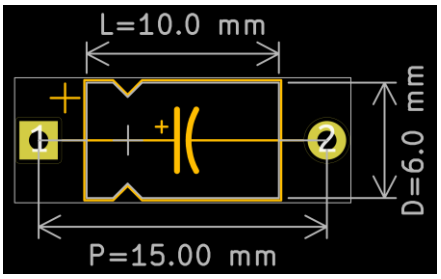
Capacitor_US_AKL symbol library is functionally equivalent to Capacitor_AKL with the only difference being the graphical shape of the electrolytic capacitor symbol and linked footprint libraries. You can omit installation of this library if you want to use capacitor library with European symbols instead. Linked footprint libraries are also inter-changeable, see Section 3.1.7 for more details.

Filename: **Capacitor_US_AKL**	
Total symbols:	**519**
Generic symbols:	**3**
Specific symbols:	**516**



Axial polarized capacitors

Symbol count: 55



Axial polarized capacitor footprint with length, diameter and pin pitch indicated.

Symbol naming convention:
CP_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm**

Name examples:
CP_Axial_L10.0mm_D4.5mm_P15.00mm
CP_Axial_L18mm_D8.0mm_P25.00mm

Corresponding footprints:
Capacitor_THT_US_AKL:CP_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_Horizontal**

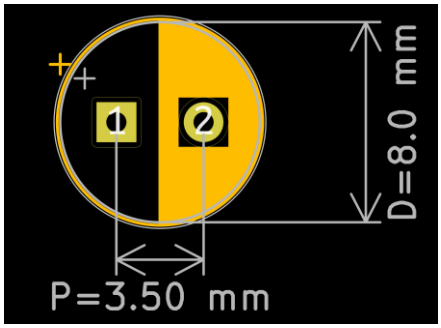
Keywords:
cap capacitor polarized us tht axial electrolytic <length>x<diameter> <pitch>

Length and diameter values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**axial electrolytic 10x4.5**' will yield all axial capacitors with 10mm body length and 4.5mm diameter as results
Searching '**axial electrolytic 15.00**' will yield all axial polarized capacitors with pin pitch equal to 15mm as results.

Radial polarized capacitors

Symbol count: 28



Radial polarized capacitor footprint with length and pin pitch indicated

Symbol naming convention:
CP_Radial_D<diameter>**mm_P**<pitch>**mm**

Name examples:
CP_Axial_L10.0mm_D4.5mm_P15.00mm
CP_Axial_L18mm_D8.0mm_P25.00mm

Corresponding footprints:
Capacitor_THT_US_AKL:CP_Radial_D<diameter>**mm_P**<pitch>**mm**

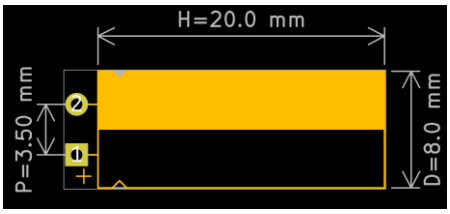
Keywords:
cap capacitor polarized us tht radial electrolytic <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**radial electrolytic 4**' will yield radial capacitors with 4mm diameter as a result.
Searching '**radial electrolytic 1.50**' will yield all radial polarized capacitors with pin pitch equal to 1.5mm.

Radial horizontal polarized capacitors

Symbol count: **34**



Radial polarized capacitor footprint with diameter, height and pin pitch indicated.

Symbol naming convention:
CP_Radial_Horizontal_D<diameter>**mm_P**<pitch>**mm_H**<height>**mm**

Name examples:
CP_Radial_Horizontal_D8.0mm_P3.50mm_H20mm
CP_Radial_Horizontal_D12.5mm_P5.00mm_H30mm

Corresponding footprints:
Capacitor_THT_US_AKL:CP_Radial_D<diam.>**mm_P**<pitch>**mm_H**<height>**mm_Horizontal1**

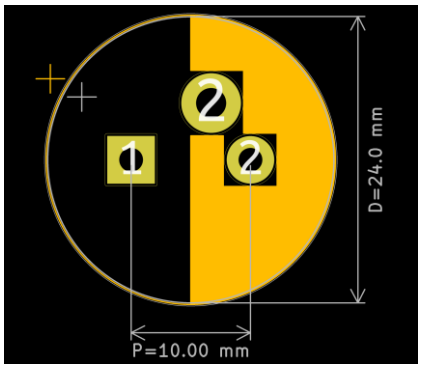
Keywords:
cap capacitor polarized us tht radial electrolytic horizontal <diameter>x<height> <pitch>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**radial electrolytic horizontal 12.5x30**' will yield radial horizontal polarized capacitors with 12.5mm diameter and 30mm height as a result.
Searching '**radial electrolytic horizontal 5.00**' will yield all radial polarized capacitors with pin pitch equal to 5mm.

Radial Snap-In polarized capacitors

Symbol count: **14**



Radial 3-pin Snap-In capacitor footprint with diameter and pin pitch indicated

Symbol naming convention:
CP_Radial_Snap-in_D<diameter>**mm_P**<pitch>**mm**
With optional **_3-Pin** suffix

Name examples:
CP_Radial_Snap-in_D22.0mm_P10.00mm
CP_Radial_Snap-in_D25.0mm_P10.00mm_3-Pin

Corresponding footprints:
Capacitor_THT_US_AKL:CP_Radial_D<diameter>**mm_P**<pitch>**mm_SnapIn (**or 3-pin_SnapIn**)**

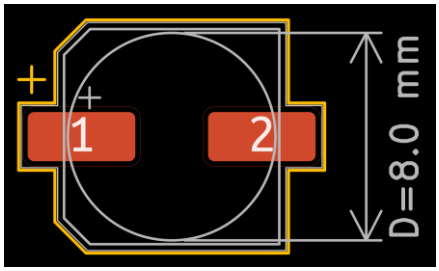
Keywords:
cap capacitor polarized us tht radial electrolytic snapin snap in <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**radial electrolytic snap in 40**' will yield radial snap-in polarized capacitors with 40mm diameter as a result.

SMD Aluminum Electrolytic Capacitors

Symbol count: 40



SMD polarized capacitor footprint with diameter indicated.

Symbol naming convention:
CP_SMD_D<diameter>**mm_H**<height>**mm**

Name examples:
CP_SMD_D6.3mm_H5.4mm
CP_SMD_D10.0mm_H12.5mm

Corresponding footprints:
Capacitor_SMD_AKL:CP_Elec_<diameter>**x**<height>

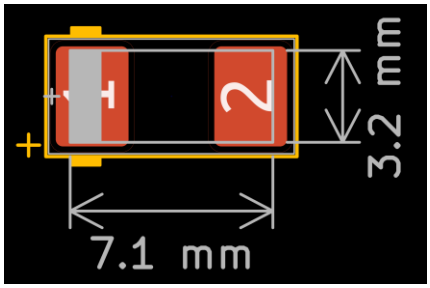
Keywords:
cap capacitor polarized us smd electrolytic <diameter>x<height> <diameter>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Search examples:
Searching '**smd electrolytic 5x5.4**' will yield SMD polarized capacitors with 5mm diameter and 5.4mm height as a result.
Searching '**smd electrolytic 5**' will yield all SMD polarized capacitors with 5mm diameter.

SMD Tantalum Electrolytic Capacitors

Symbol count: 26



SMD Tantalum capacitor footprint, AVX-C 7132 with case size indicated.

Symbol naming convention:
CP_SMD_Tantalum_<manufacturer>**-**<size code>
With the code consisting of a letter and 4-digit metric size.

Name examples:
CP_SMD_Tantalum_AVX-C_7132
CP_SMD_Tantalum_Kemet-T_3528

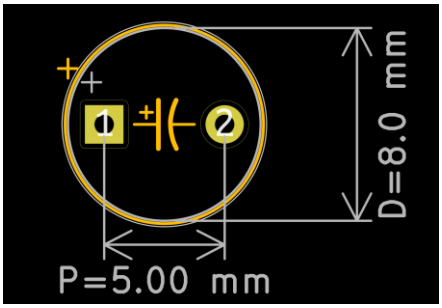
Corresponding footprints:
Capacitor_THT_US_AKL:CP_EIA-<metric size code>_<manufacturer>**-**<letter size code>

Keywords:
cap capacitor polarized us smd tantalum electrolytic <size code>

Search examples:
Searching '**smd tantalum kemet-r**' will yield Kemet size R tantalum capacitor as a result.
Searching '**smd tantalum 2012**' will yield all tantalum capacitors with 2x1.2mm body size.

THT Tantalum Electrolytic Capacitors

Symbol count: **16**



Tantalum capacitor footprint with diameter and pin pitch indicated.

Symbol naming convention:
CP_Tantalum_ D<diameter>**mm_P**<pitch>**mm**

Name examples:
CP_Tantalum_D4.5mm_P2.50mm
CP_Tantalum_D7.0mm_P5.00mm

Corresponding footprints:
Capacitor_THT_US_AKL:CP_Radial_Tantal_D<diameter>**mm_P**<pitch>**mm**

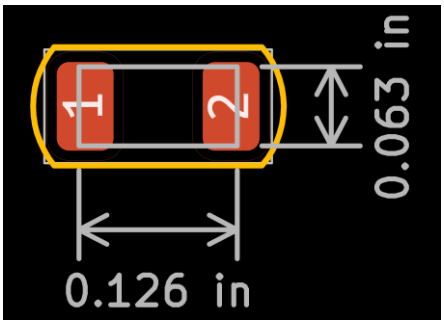
Keywords:
cap capacitor polarized us tht radial electrolytic tantalum <diameter> <pitch>

Diameter values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**tht tantalum 5**' will yield tantalum capacitors with 5mm diameter as a result.
Searching '**tht tantalum 2.50**' will yield all tantalum capacitors with pin pitch equal to 2.5mm.

SMD Chip Capacitors

Symbol count: **17**



SMD Chip capacitor footprint with size code of 1206 with dimensions in inches.

Symbol naming convention:
C_<imperial size code>

Name examples:
C_0603
C_1206
C_2220

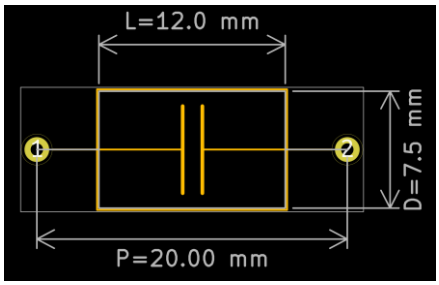
Corresponding footprints:
Capacitor_SMD_AKL:C_<imperial size code>_<metric size code>**Metric**

Keywords:
cap capacitor ceramic chip mlcc smd <imperial size code>

Search examples:
Searching '**capacitor 0805**' will yield SMD chip capacitor with the imperial size code of 0805 as a result.
Searching '**smd capacitor chip**' will yield all SMD chip capacitors.

Axial Capacitors

Symbol count: 19



Axial capacitor footprint with length, diameter and pin pitch indicated.

Symbol naming convention:
C_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm**

Name examples:
C_Axial_L3.0mm_D2.3mm_P5.00mm
C_Axial_L17.0mm_D6.5mm_P20.00mm

Corresponding footprints:
Capacitor_THT_US_AKL:C_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_Horizontal**

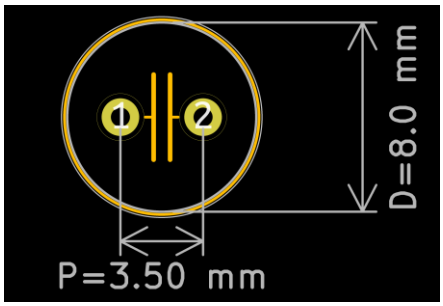
Keywords:
cap capacitor tht axial <length>x<diameter> <pitch>

Diameter and length values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**capacitor axial 19x9.5**' will yield axial capacitors with 19mm length and 9.5mm diameter as a result.
Searching '**capacitor axial 25.00**' will yield all axial capacitors with 25mm pin pitch.

Radial bipolar electrolytic capacitors

Symbol count: 18



Bipolar electrolytic capacitor footprint with diameter and pin pitch indicated.

Symbol naming convention:
C_Bipolar_D<diameter>**mm_H**<height>**mm_P**<pitch>**mm**

Name examples:
C_Bipolar_D4.0mm_H5.0mm_P1.50mm
C_Bipolar_D8.0mm_H11.5mm_P3.50mm

Corresponding footprints:
Capacitor_THT_US_AKL:C_Radial_D<diameter>**mm_H**<height>**mm_P**<pitch>**mm**

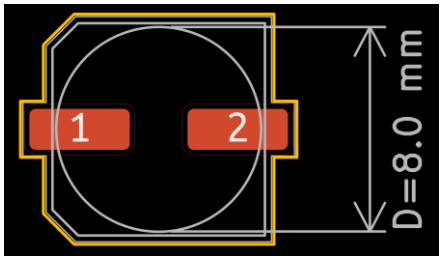
Keywords:
cap capacitor tht bipolar electrolytic <diameter>x<height> <pitch>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**bipolar electrolytic 4**' will yield bipolar capacitors with 4mm diameter as a result.
Searching '**bipolar electrolytic 1.50**' will yield all bipolar polarized capacitors with pin pitch equal to 1.5mm.

SMD Bipolar Electrolytic Capacitors

Symbol count: 9



SMD non-polarized (bipolar) capacitor footprint with diameter indicated.

Symbol naming convention:
C_Bipolar_SMD_D<diameter>**mm_H**<height>**mm**

Name examples:
C_Bipolar_SMD_D5.0mm_H5.8mm
C_Bipolar_SMD_D10.0mm_H10.2mm

Corresponding footprints:
Capacitor_SMD_AKL:C_Elec_<diameter>**x**<height>

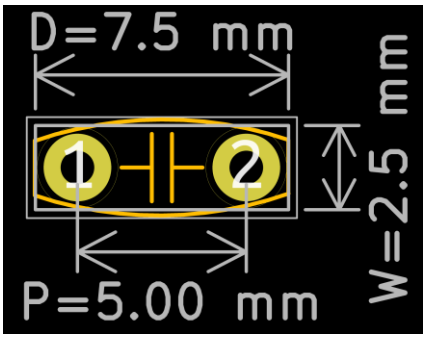
Keywords:
cap capacitor smd electrolytic bipolar <diameter>x<height> <diameter>

Diameter and height values always have no trailing zeroes (10 instead of 10.00).

Search examples:
Searching '**smd bipolar 8x5.4**' will yield SMD bipolar capacitors with 8mm diameter and 5.4mm height as a result.
Searching '**smd bipolar 5**' will yield all SMD bipolar capacitors with 5mm diameter.

Ceramic disc capacitors

Symbol count: 39



Ceramic capacitor footprint with diameter, width and pitch indicated.

Symbol naming convention:
C_Disc_D<diameter>**mm_W**<width>**mm_P**<pitch>**mm**

Name examples:
C_Disc_D3.0mm_W1.6mm_P2.50mm
C_Disc_D6.0mm_W2.5mm_P5.00mm

Corresponding footprints:
Capacitor_THT_US_AKL: C_Disc_D<diameter>**mm_W**<width>**mm_P**<pitch>**mm**

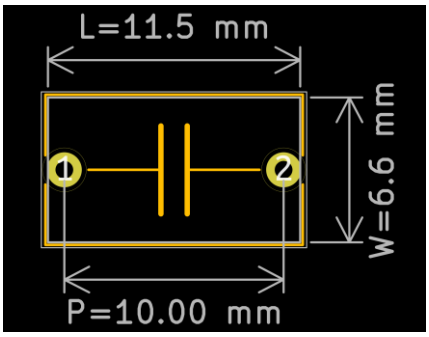
Keywords:
cap capacitor tht ceramic disc <diameter>x<width> <pitch>

Diameter and width values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**disc ceramic 3.8x2.6**' will yield ceramic disc capacitors with 3.8mm diameter and 2.6mm width as a result.
Searching '**disc ceramic 2.50**' will yield all ceramic disc capacitors with pin pitch equal to 2.5mm.

Rectangular (box) capacitors

Symbol count: **178**



Ceramic capacitor footprint with diameter, width and pitch indicated.

Symbol naming convention:
C_Rect_L<length>**mm_W**<width>**mm_P**<pitch>**mm**

Name examples:
C_Rect_L4.6mm_W3.0mm_P2.50mm
C_Disc_D9.0mm_W3.6mm_P7.50mm

Corresponding footprints:
Capacitor_THT_US_AKL: C_Rect_L<length>**mm_W**<width>**mm_P**<pitch>**mm**

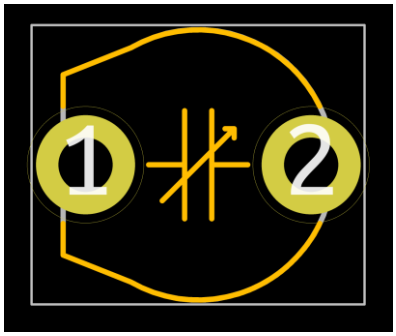
Keywords:
cap capacitor polarized tht film rect <length>x<width> <pitch>

Length and width values always have no trailing zeroes (10 instead of 10.00).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**capacitor rect 9x7.7**' will yield rectangular capacitors with 9mm length and 7.7mm width as a result.
Searching '**capacitor rect 7.50**' will yield all rectangular capacitors with pin pitch equal to 7.5mm.

Trimmers

Symbol count: **11**



GKG15 Series trimmer footprint

Symbol naming convention:
C_Trim_<manufacturer>_<device family>

Name examples:
C_Trim_Sprague_GKT
C_Trim_Vishay_BFC2-808_D7.5mm

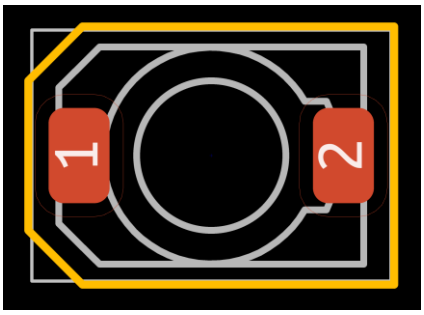
Corresponding footprints:
Capacitor_THT_US_AKL:C_Trimmer_<device family>**_L**<len.>**mm_W**<wid>**mm_P**<pitch>**mm**

Keywords:
cap capacitor tht trimmer variable <device family> <manufacturer>

Search examples:
Searching '**tht trimmer vishay**' will yield all THT Vishay trimmers as a result.

SMD Trimmers

Symbol count: **12**



JZ series SMD trimmer footprint

Symbol naming convention:
C_Trim_SMD_<manufacturer>_<device family>

Name examples:
C_Trim_SMD_Murate_TZB4-A
C_Trim_SMD_Voltronics_JV

Corresponding footprints:
Capacitor_SMD_AKL: C_Trimmer_<manufacturer>_<device family>

Keywords:
cap capacitor variable smd trimmer <manufacturer> <device family>

Search examples:
Searching '**smd trimmer murata**' will yield all SMD Murata trimmers as a result.

2.12. Crystal Resonator Library (new)

This library contains quartz crystal resonator symbols with pre-assigned footprints.

Specific crystal symbols have the footprint pre-assigned, but the user still needs to fill in the correct value. This helps reduce time spent assigning footprints before transferring to PCB layout.

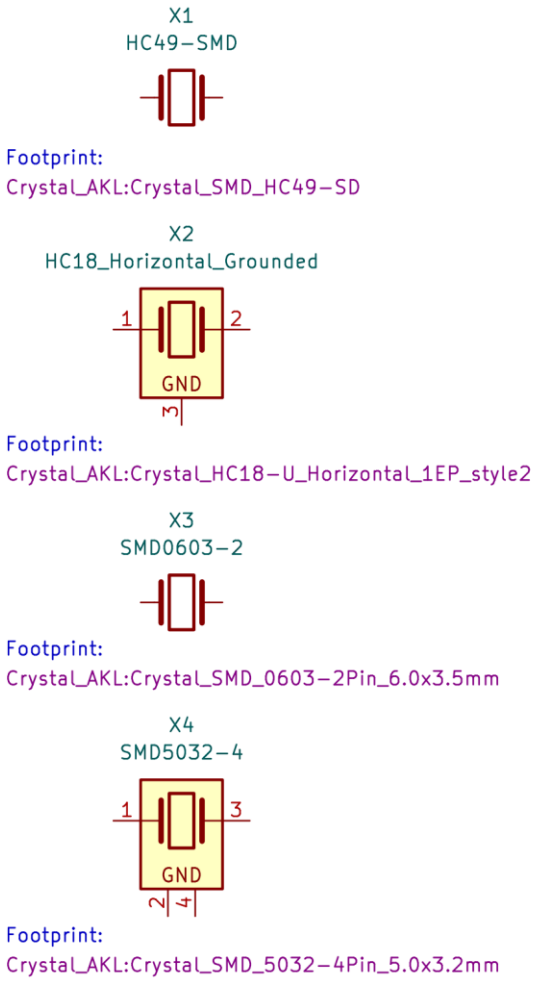
Crystal symbol names mostly correspond to their respective capacitor footprint names.

Additional 'Grounded' symbol variants are available for devices with footprints that have additional ground pads.

Crystal symbol library grabs footprints from Crystal_AKL footprint library.

Footprints with double-sided silkscreen markings are available in Crystal_AKL_Double footprint library.

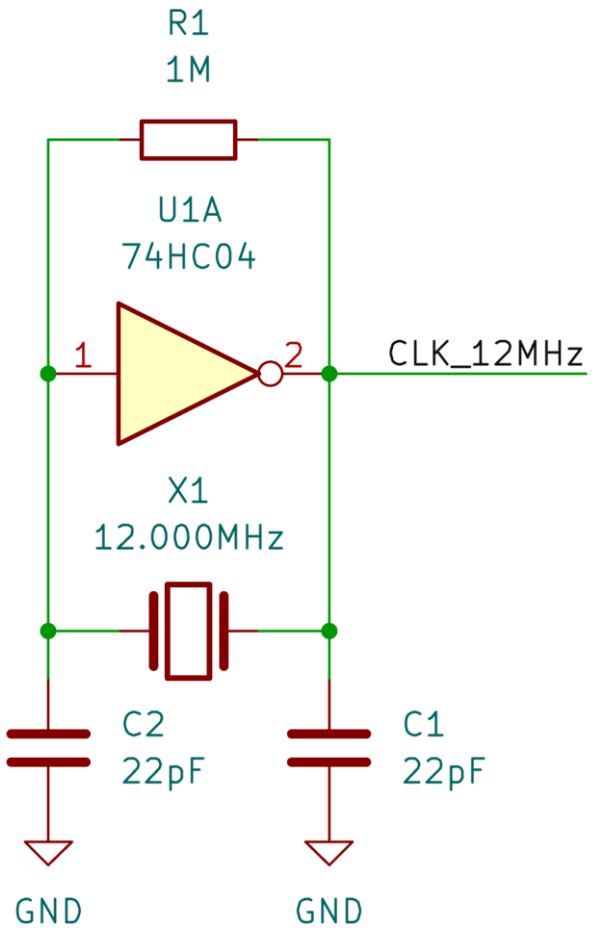
Filename: **Crystal_US_AKL (new)**	
Total symbols:	**63**
Generic symbols:	**6**
Specific symbols:	**57**



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
Crystal oscillator using a standard crystal symbol.

Table 2.10. List of all devices included in Crystal_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AT310	3	1	None	None
C26-LF	3	1	None	None
C38-LF	3	1	None	None
DS10	3	1	None	None
DS15	3	1	None	None
DS26	3	1	None	None
HC18	3	1	None	None
HC33	3	1	None	None
HC49	5	1	None	None
HC50	3	1	None	None
HC51	3	1	None	None
HC52-6mm	3	1	None	None
HC52-8mm	3	1	None	None
HC52	3	1	None	None
IQD 85SMX	1	1	Free	None
Generic 2-pad 0603	1	1	None	None
Generic 4-pad 0603	1	1	None	None
Generic 2-pad 2012	1	1	None	None
Generic 4-pad 2016	1	1	None	None
Generic 4-pad 2520	1	1	None	None
Generic 2-pad 3215	1	1	None	None
Generic 4-pad 3225	1	1	None	None
Generic 2-pad 5032	1	1	None	None
Generic 4-pad 5032	1	1	None	None
Generic 2-pad 7050	1	1	None	None
Generic 4-pad 7050	1	1	None	None
YIC MC306	1	1	Free	None

2.13. Diac Library

This library contains AC trigger diodes (Diacs).

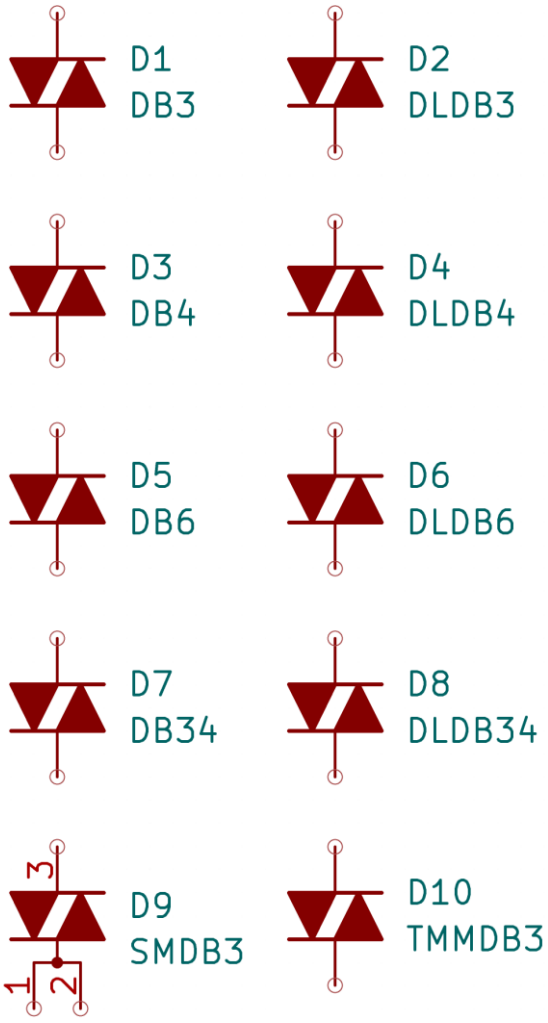
Diacs switch on after a certain breakover voltage across it was reached and are often used to trigger triacs and other AC switching circuits.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT Diac symbols use the 'Diac' variants of THT diode footprints by default.

SMD Diac symbols use the 'TVS' variants of SMD diode footprints by default.

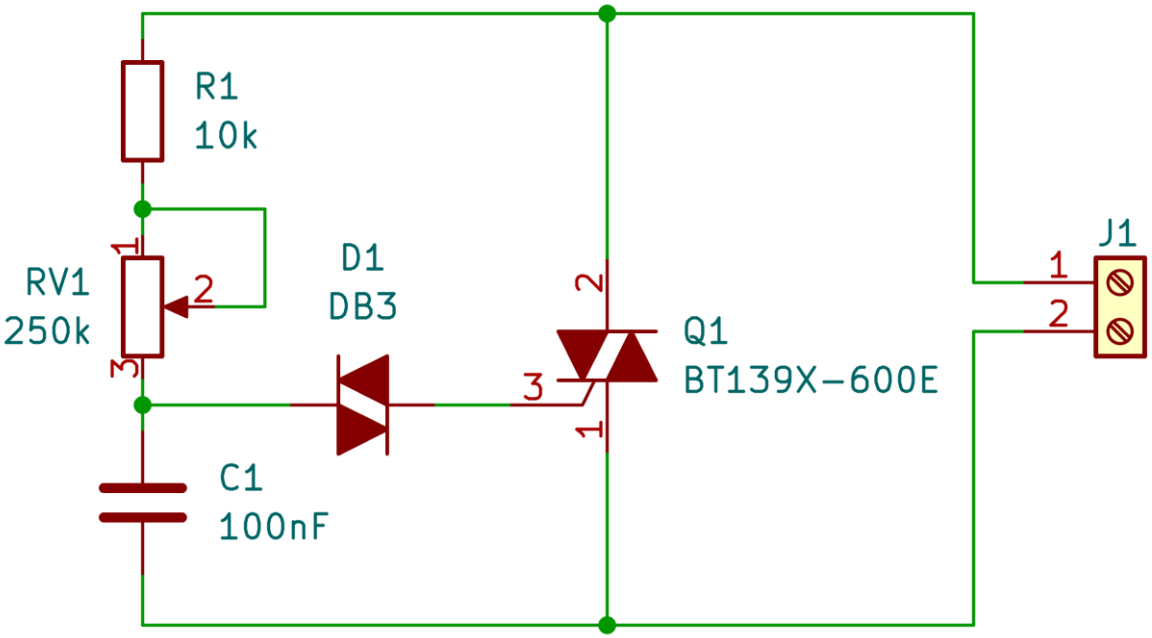
Filename: **Diac_AKL**	
Total symbols:	**12**
Generic symbols:	**2**
Specific symbols:	**10**



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
AC power control using DB3 Diac triggering a Triac.

Table 2.11. List of all devices included in Diac_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DB3	1	1	None	None
DB4	1	1	None	None
DB6	1	1	None	None
DB34	1	1	None	None
DLDB3	1	1	None	None
DLDB4	1	1	None	None
DLDB6	1	1	None	None
DLDB34	1	1	None	None
SMDB3	1	1	None	None
TMMDB3	1	1	None	None

2.14. Diode Library

This library contains rectifier, switching, PIN diodes and diode arrays.

Dual and triple isolated diodes have 2 variants of their symbol. Standard symbol is a single-unit symbol with all diodes in one place. Disaggregated symbol ends in a lowercase 's' and is a multi-unit symbol.

Parts with two dual diode common cathode/anode/series arrays always have multi-unit symbols.

Diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol. Parts with multiple pads connected to cathode or anode have multiple pins on the symbol.

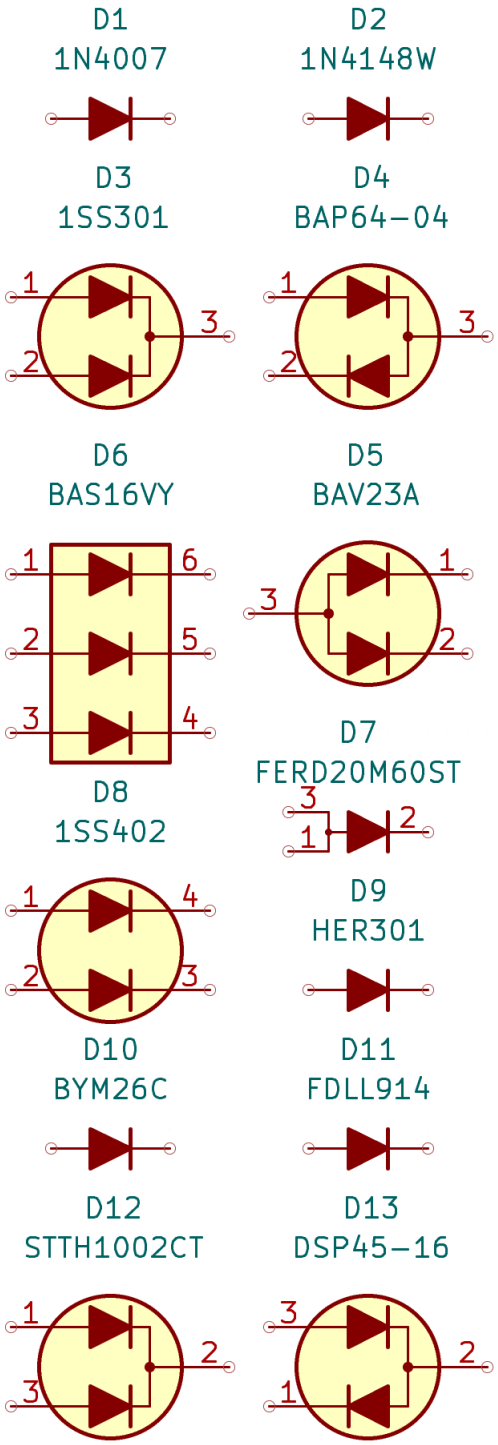
Single 2-terminal diodes and dual common anode, common cathode, series and independent separated diode arrays have alternate symbols, see Section 2.1.5 for more details.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT Diode symbols use the standard variants of THT diode footprints by default.

SMD Diode symbols use the standard variants of SMD diode footprints by default.

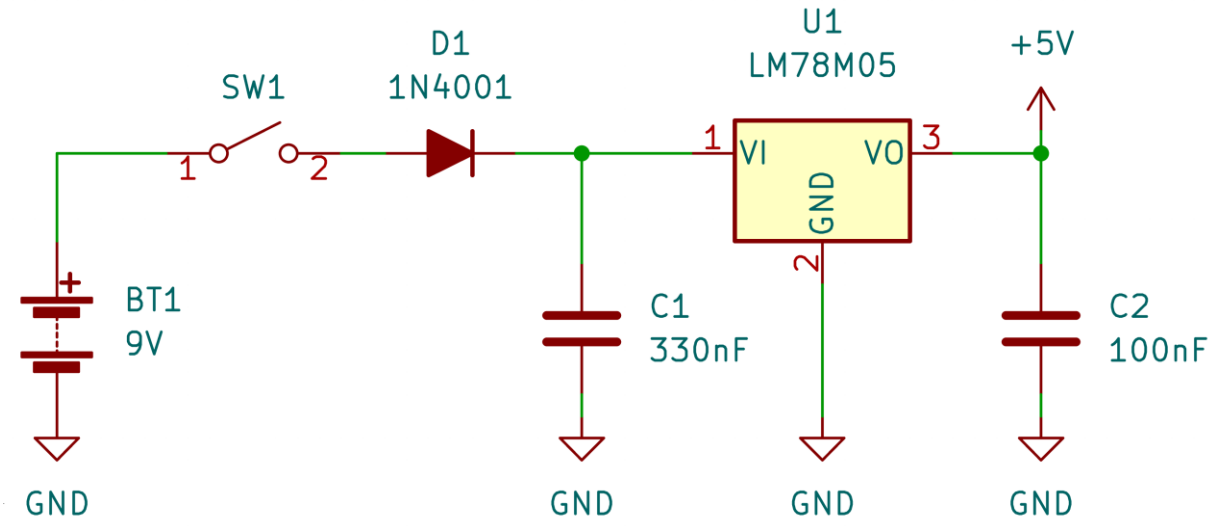
Filename: **Diode_AKL**	
Total symbols:	**3300** (+1141)
Generic symbols:	**55**(+11)
Specific symbols:	**3245**(+1130)



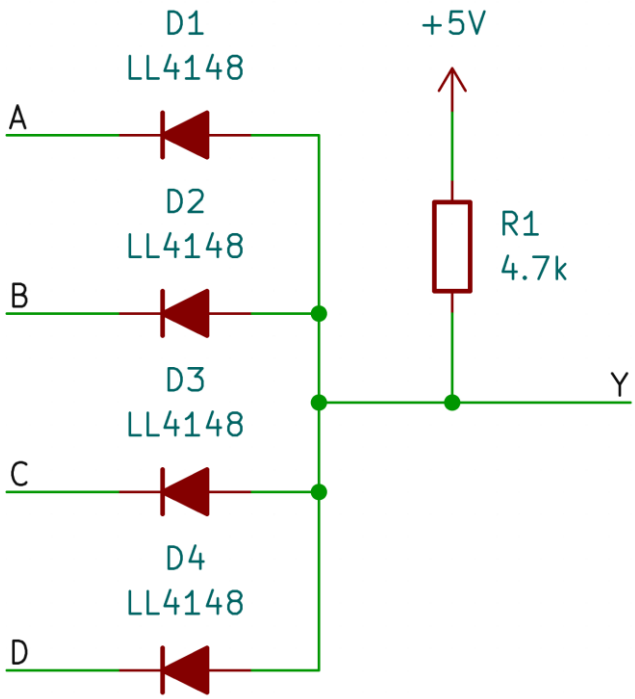
Schematic examples

Disclaimer

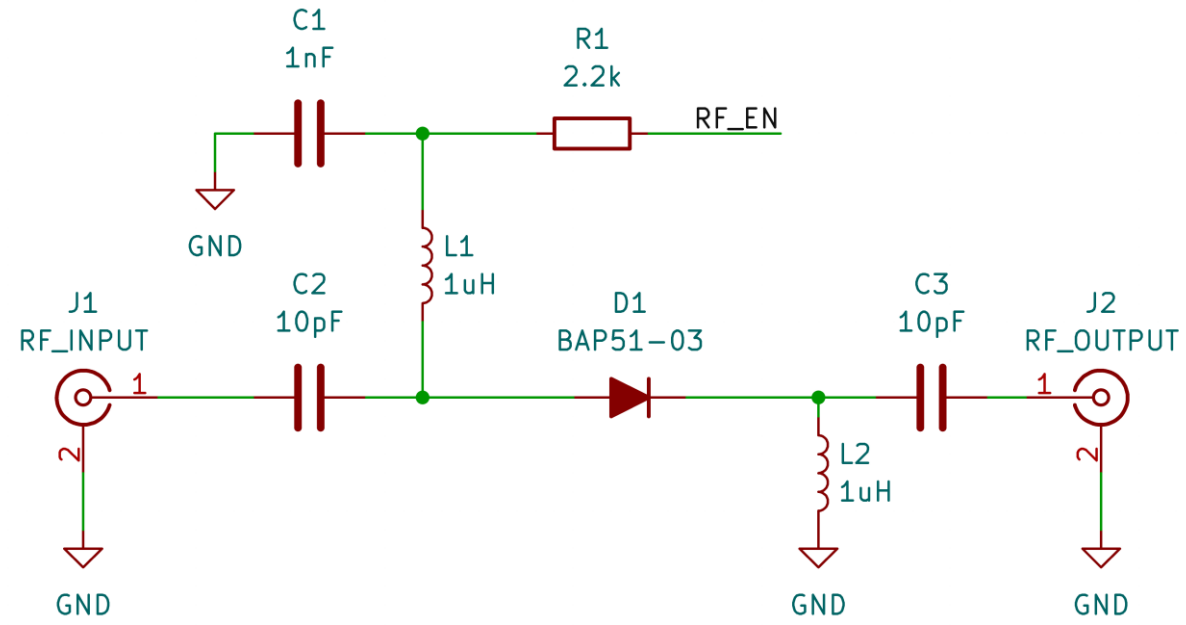
Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
Reverse battery protection using 1N4001 rectifier diode.

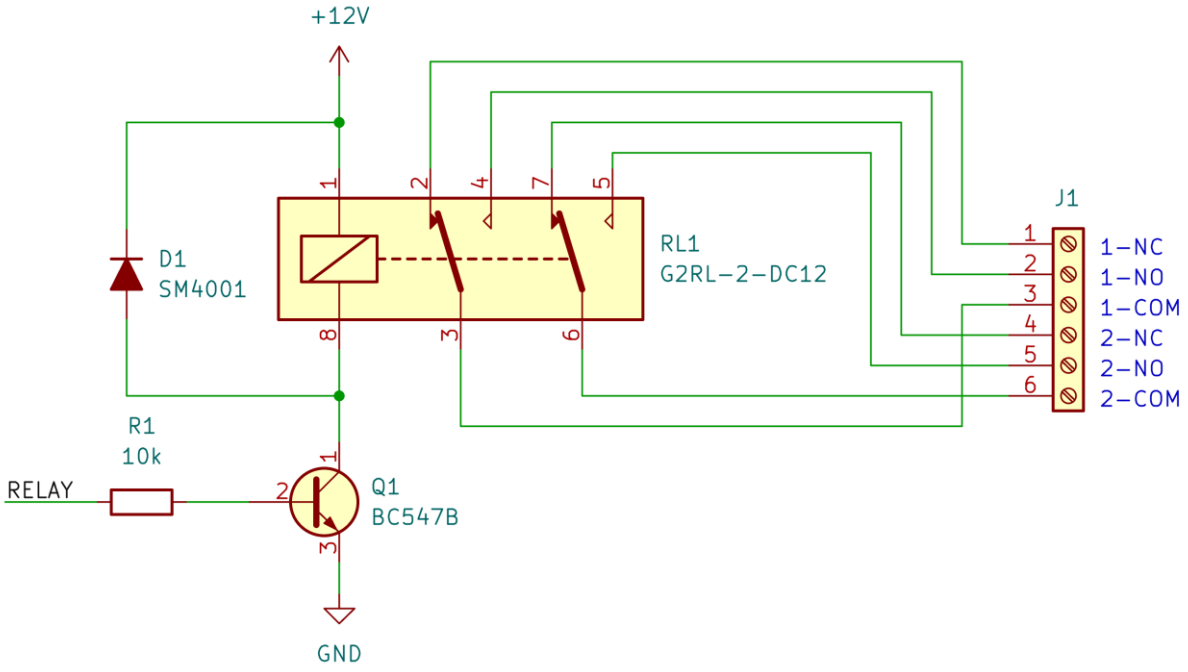


Example 2
Diode-Resistor Logic 4-input AND gate using LL4148 switching diodes.



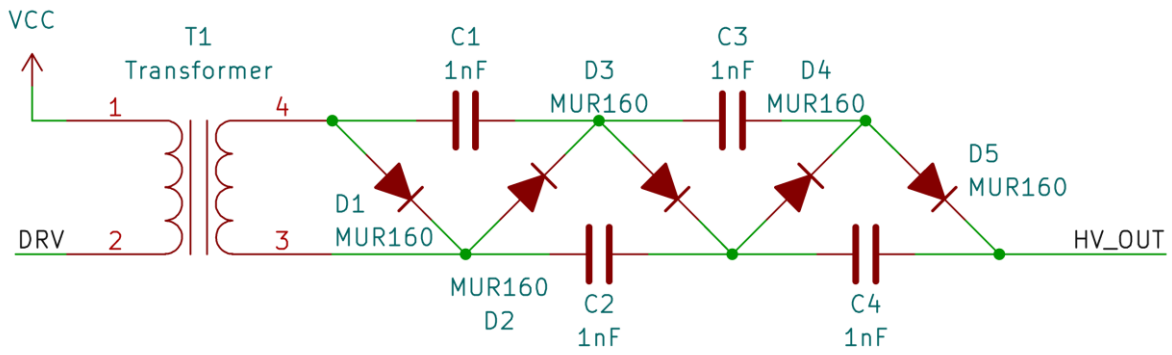
Example 3

RF voltage-controlled switch using BAP51-03 RF PIN diode.



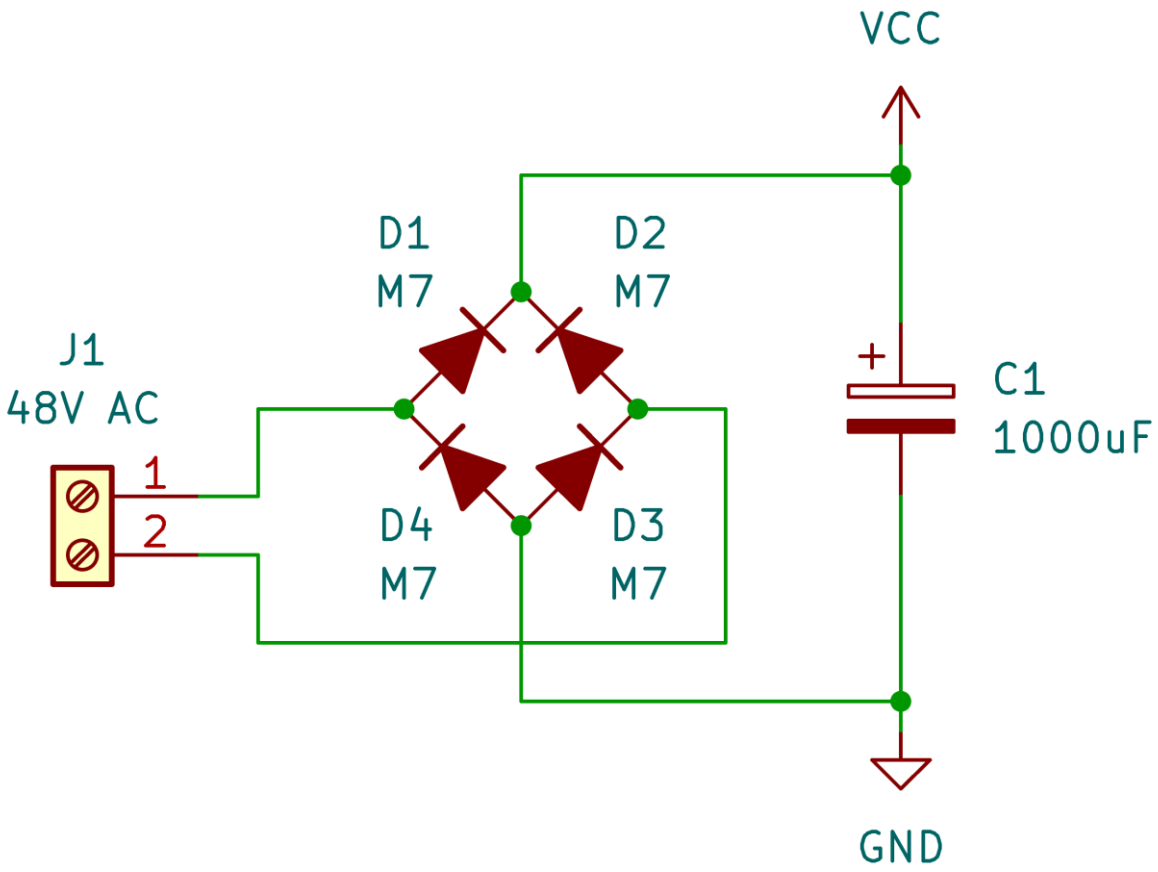
Example 4

Relay back EMF protection using SM4001 diode.



Example 5

Voltage multiplier using 5 MUR160 diodes. Utilizes the alternate body style to achieve the 45-degree rotation.



Example 6

Discrete bride rectifier using 4 M7 diodes. Utilizes the alternate body style to achieve the 45-degree rotation.

Table 2.12. List of all devices included in Diode_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*1N456	1	1	None	45-degree rotation
1N457	1	1	None	45-degree rotation
*1N458	1	1	None	45-degree rotation
*1N459	1	1	None	45-degree rotation
*1N461A	1	1	None	45-degree rotation
*1N462A	1	1	None	45-degree rotation
*1N463A	1	1	None	45-degree rotation
*1N464A	1	1	None	45-degree rotation
*1N482B	1	1	None	45-degree rotation
*1N483B	1	1	None	45-degree rotation
*1N484B	1	1	None	45-degree rotation
*1N485B	1	1	None	45-degree rotation
*1N486B	1	1	None	45-degree rotation
*1N625	1	1	None	45-degree rotation
*1N626	1	1	None	45-degree rotation
*1N627	1	1	None	45-degree rotation
*1N628	1	1	None	45-degree rotation
*1N629	1	1	None	45-degree rotation
*1N643	1	1	None	45-degree rotation
*1N658	1	1	None	45-degree rotation
*1N659	1	1	None	45-degree rotation
*1N660	1	1	None	45-degree rotation
*1N661	1	1	None	45-degree rotation
*1N662	1	1	None	45-degree rotation
*1N663	1	1	None	45-degree rotation
1N914	3	1	None	45-degree rotation
*1N916	1	1	None	45-degree rotation
1N2069	1	1	None	45-degree rotation
1N2070	1	1	None	45-degree rotation
1N2071	1	1	None	45-degree rotation
*1N3062	1	1	None	45-degree rotation
*1N3063	1	1	None	45-degree rotation
*1N3064	1	1	None	45-degree rotation
*1N3069	1	1	None	45-degree rotation
*1N3070	1	1	None	45-degree rotation
*1N3071	1	1	None	45-degree rotation
1N3595	2	1	None	45-degree rotation
*1N3600	1	1	None	45-degree rotation
*1N3611GP	1	1	None	45-degree rotation
*1N3612GP	1	1	None	45-degree rotation
*1N3613GP	1	1	None	45-degree rotation
*1N3614GP	1	1	None	45-degree rotation
*1N3957GP	1	1	None	45-degree rotation
1N4001	1	1	None	45-degree rotation
1N4002	1	1	None	45-degree rotation
1N4003	1	1	None	45-degree rotation
1N4004	1	1	None	45-degree rotation
1N4005	1	1	None	45-degree rotation
1N4006	1	1	None	45-degree rotation
1N4007	1	1	None	45-degree rotation
1N4148	6	1	None	45-degree rotation
1N4149	1	1	None	45-degree rotation
1N4150	2	1	None	45-degree rotation
1N4151	2	1	None	45-degree rotation
*1N4152	1	1	None	45-degree rotation
*1N4153	1	1	None	45-degree rotation
1N4154	1	1	None	45-degree rotation
*1N4244	1	1	None	45-degree rotation
*1N4245GP	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*1N4246GP	1	1	None	45-degree rotation
*1N4247GP	1	1	None	45-degree rotation
*1N4248GP	1	1	None	45-degree rotation
*1N4149GP	1	1	None	45-degree rotation
*1N4305	1	1	None	45-degree rotation
*1N4376	1	1	None	45-degree rotation
*1N4383GP	1	1	None	45-degree rotation
*1N4384GP	1	1	None	45-degree rotation
*1N4385GP	1	1	None	45-degree rotation
*1N4446	1	1	None	45-degree rotation
*1N4447	1	1	None	45-degree rotation
1N4448	5	1	None	45-degree rotation
*1N4449	1	1	None	45-degree rotation
*1N4450	1	1	None	45-degree rotation
*1N4454	1	1	None	45-degree rotation
1N4531	1	1	None	45-degree rotation
1N4532	1	1	None	45-degree rotation
*1N4585GP	1	1	None	45-degree rotation
*1N4586GP	1	1	None	45-degree rotation
1N4933	1	1	None	45-degree rotation
1N4934	1	1	None	45-degree rotation
1N4935	1	1	None	45-degree rotation
1N4936	1	1	None	45-degree rotation
1N4937	1	1	None	45-degree rotation
*1N4938	1	1	None	45-degree rotation
1N4942	1	1	None	45-degree rotation
1N4944	1	1	None	45-degree rotation
1N4946	1	1	None	45-degree rotation
1N4947	1	1	None	45-degree rotation
1N4948	1	1	None	45-degree rotation
1N5059	2	1	None	45-degree rotation
1N5060	2	1	None	45-degree rotation
1N5061	2	1	None	45-degree rotation
1N5062	2	1	None	45-degree rotation
*1N5282	1	1	None	45-degree rotation
1N5391	1	1	None	45-degree rotation
1N5392	1	1	None	45-degree rotation
1N5393	1	1	None	45-degree rotation
1N5394	1	1	None	45-degree rotation
1N5395	1	1	None	45-degree rotation
1N5396	1	1	None	45-degree rotation
1N5397	1	1	None	45-degree rotation
1N5398	1	1	None	45-degree rotation
1N5399	1	1	None	45-degree rotation
1N5400	1	1	None	45-degree rotation
1N5401	1	1	None	45-degree rotation
1N5402	1	1	None	45-degree rotation
1N5403	1	1	None	45-degree rotation
1N5404	1	1	None	45-degree rotation
1N5405	1	1	None	45-degree rotation
1N5406	1	1	None	45-degree rotation
1N5407	1	1	None	45-degree rotation
1N5408	1	1	None	45-degree rotation
*1N5615GP	1	1	None	45-degree rotation
*1N5617GP	1	1	None	45-degree rotation
*1N5619GP	1	1	None	45-degree rotation
*1N5621GP	1	1	None	45-degree rotation
*1N5623GP	1	1	None	45-degree rotation
1N5624	1	1	None	45-degree rotation
1N5625	1	1	None	45-degree rotation
1N5626	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
1N5627	1	1	None	45-degree rotation
*1N5719	1	1	None	45-degree rotation
*1N6101	2	1 (7 for separated)	None	45-deg (sep. only)
1N6478	1	1	None	45-degree rotation
1N6479	1	1	None	45-degree rotation
1N6480	1	1	None	45-degree rotation
1N6481	1	1	None	45-degree rotation
1N6482	1	1	None	45-degree rotation
1N6483	1	1	None	45-degree rotation
1N6484	1	1	None	45-degree rotation
*1NU41	1	1	None	45-degree rotation
*1PS181	1	1	None	Dual straight
*1PS184	1	1	None	Dual straight
*1PS193	1	1	Free	45-degree rotation
*1PS226	1	1	None	Dual straight
1PS300	1	1	None	Dual straight
1PS301	1	1	None	Dual straight
1PS302	1	1	None	Dual straight
*1S921	1	1	None	45-degree rotation
*1S922	1	1	None	45-degree rotation
*1S923	1	1	None	45-degree rotation
*1S1585	1	1	None	45-degree rotation
*1S1586	1	1	None	45-degree rotation
*1S1587	1	1	None	45-degree rotation
*1S1588	1	1	None	45-degree rotation
*1S1830	1	1	None	45-degree rotation
*1S1832	1	1	None	45-degree rotation
*1S1834	1	1	None	45-degree rotation
*1S1835	1	1	None	45-degree rotation
*1S1885	1	1	None	45-degree rotation
*1S1887	1	1	None	45-degree rotation
*1S1888	1	1	None	45-degree rotation
*1S1941	1	1	None	45-degree rotation
*1S1942	1	1	None	45-degree rotation
*1S1943	1	1	None	45-degree rotation
*1S1944	1	1	None	45-degree rotation
*1S1948	1	1	None	45-degree rotation
*1S1949	1	1	None	45-degree rotation
*1S1950	1	1	None	45-degree rotation
*1S2080	1	1	None	45-degree rotation
*1S2081	1	1	None	45-degree rotation
*1S2082	1	1	None	45-degree rotation
*1S2455	1	1	None	45-degree rotation
*1S2456	1	1	None	45-degree rotation
*1S2457	1	1	None	45-degree rotation
*1S2458	1	1	None	45-degree rotation
*1S2459	1	1	None	45-degree rotation
*1S2471	1	1	None	45-degree rotation
*1S2472	1	1	None	45-degree rotation
*1S2473	1	1	None	45-degree rotation
*1S2787	1	1	None	45-degree rotation
*1S2788	1	1	None	45-degree rotation
*1S2835	1	1	None	Dual straight
*1S2836	1	1	None	Dual straight
*1S2837	1	1	None	Dual straight
*1S2838	1	1	None	Dual straight
*1SR35	3	1	None	45-degree rotation
*1SR124	3	1	None	45-degree rotation
*1SR153	1	1	None	45-degree rotation
*1SR156	1	1	None	45-degree rotation
*1SR159	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*1SS41	1	1	None	45-degree rotation
*1SS53	1	1	None	45-degree rotation
*1SS54	1	1	None	45-degree rotation
*1SS55	1	1	None	45-degree rotation
*1SS81	1	1	None	45-degree rotation
*1SS82	1	1	None	45-degree rotation
*1SS83	1	1	None	45-degree rotation
*1SS103	1	1	None	45-degree rotation
*1SS110	1	1	None	45-degree rotation
*1SS119	1	1	None	45-degree rotation
*1SS120	1	1	None	45-degree rotation
*1SS130	1	1	None	45-degree rotation
*1SS132	1	1	None	45-degree rotation
*1SS133	1	1	None	45-degree rotation
*1SS153	1	1	Free	45-degree rotation
1SS181	1	1	None	Dual straight
1SS184	1	1	None	Dual straight
*1SS187	1	1	Free	45-degree rotation
*1SS190	1	1	Free	45-degree rotation
1SS193	1	1	Free	45-degree rotation
*1SS196	1	1	Free	45-degree rotation
*1SS200	1	1	None	Dual straight
*1SS201	1	1	None	Dual straight
*1SS220	1	1	Free	45-degree rotation
*1SS221	1	1	Free	45-degree rotation
1SS226	1	1	None	Dual straight
1SS250	1	1	Free	45-degree rotation
*1SS268	1	1	None	Dual straight
*1SS269	1	1	None	Dual straight
*1SS270	1	1	None	45-degree rotation
*1SS290	1	1	None	45-degree rotation
*1SS291	1	1	None	45-degree rotation
*1SS292	1	1	None	45-degree rotation
1SS300	1	1	None	Dual straight
1SS301	1	1	None	Dual straight
1SS302	1	1	None	Dual straight
1SS307	1	1	None	45-degree rotation
*1SS308	1	1	None	None
*1SS309	1	1	None	None
*1SS312	1	1	None	Dual straight
*1SS313	1	1	None	Dual straight
1SS314	1	1	None	45-degree rotation
*1SS318	1	1	None	45-degree rotation
*1SS336	1	1	None	Dual straight
*1SS337	1	1	None	Dual straight
1SS352	1	1	None	45-degree rotation
*1SS353	1	1	None	45-degree rotation
*1SS354	1	1	None	45-degree rotation
1SS355	1	1	None	45-degree rotation
*1SS356	1	1	None	45-degree rotation
*1SS360	1	1	None	Dual straight
1SS361	1	1	None	Dual straight
1SS362	2	1	None	Dual straight
*1SS364	1	1	None	Dual straight
1SS370	1	1	Free	45-degree rotation
*1SS379	1	1	None	Dual straight
*1SS380	1	1	None	45-degree rotation
1SS381	1	1	None	45-degree rotation
*1SS382	2	1 (2 for separated)	None	45-degree for separated
1SS387	1	1	None	45-degree rotation
1SS387CT	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*1SS390	1	1	None	45-degree rotation
1SS400	1	1	None	45-degree rotation
*1SS402	2	1 (2 for separated)	None	45-degree for separated
1SS403	1	1	None	45-degree rotation
1SS427	1	1	None	45-degree rotation
2A01	1	1	None	45-degree rotation
2A02	1	1	None	45-degree rotation
2A03	1	1	None	45-degree rotation
2A04	1	1	None	45-degree rotation
2A05	1	1	None	45-degree rotation
2A06	1	1	None	45-degree rotation
2A07	1	1	None	45-degree rotation
*2NH45	1	1	None	45-degree rotation
*2NU41	1	1	None	45-degree rotation
*3BH41	1	1	None	45-degree rotation
*3BZ41	1	1	None	45-degree rotation
*3GH41	1	1	None	45-degree rotation
*3GZ41	1	1	None	45-degree rotation
*3JH41	1	1	None	45-degree rotation
*3JH45	1	1	None	45-degree rotation
*3JU41	1	1	None	45-degree rotation
*3JZ41	1	1	None	45-degree rotation
*3NH41	1	1	None	45-degree rotation
*3NZ41	1	1	None	45-degree rotation
*3TH41	1	1	None	45-degree rotation
*5DL2C41A	1	1	None	Dual straight
*5DL2C48A	1	1	None	Dual straight
*5DL2CZ47A	1	1	None	Dual straight
*5FL2C48A	1	1	None	Dual straight
*5FL2CZ47A	1	1	None	Dual straight
*5GL2CZ47A	1	1	None	Dual straight
*5GLZ47A	1	1	None	45-degree rotation
*05HN46	1	1	None	45-degree rotation
*5JL2CZ47	1	1	None	Dual straight
*5JLZ47	1	1	None	45-degree rotation
*5JUZ47	1	1	None	45-degree rotation
*5THZ52	1	1	None	45-degree rotation
6A05	1	1	None	45-degree rotation
6A1	1	1	None	45-degree rotation
6A2	1	1	None	45-degree rotation
6A4	1	1	None	45-degree rotation
6A6	1	1	None	45-degree rotation
6A8	1	1	None	45-degree rotation
6A10	1	1	None	45-degree rotation
10A05	1	1	None	45-degree rotation
10A1	1	1	None	45-degree rotation
10A2	1	1	None	45-degree rotation
10A4	1	1	None	45-degree rotation
10A6	1	1	None	45-degree rotation
10A8	1	1	None	45-degree rotation
10A10	1	1	None	45-degree rotation
*10DL2C41A	1	1	None	Dual straight
*10DL2C48A	1	1	None	Dual straight
*10DL2CZ47A	1	1	None	Dual straight
*10FL2C48A	1	1	None	Dual straight
*10FL2CZ47A	1	1	None	Dual straight
*10GL2CZ47A	1	1	None	Dual straight
*10JL2CZ47	1	1	None	Dual straight
*16DL2C41A	1	1	None	Dual straight
*16DL2CZ47A	1	1	None	Dual straight
*16FL2C41A	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*16FL2CZ47A	1	1	None	Dual straight
*20DL2C41A	1	1	None	Dual straight
*20DL2CZ47A	1	1	None	Dual straight
*20FL2C41A	1	1	None	Dual straight
*20FL2CZ47A	1	1	None	Dual straight
*20GL2C41A	1	1	None	Dual straight
*20JL2C41	1	1	None	Dual straight
31DF4	1	1	None	45-degree rotation
31DF6	1	1	None	45-degree rotation
31GF6	1	1	None	45-degree rotation
40EPS08	1	1	None	45-degree rotation
40EPS12	1	1	None	45-degree rotation
*AG01	1	1	None	45-degree rotation
*AG01A	1	1	None	45-degree rotation
AL1A	1	1	None	45-degree rotation
AL1B	1	1	None	45-degree rotation
AL1D	1	1	None	45-degree rotation
AL1G	1	1	None	45-degree rotation
AL1J	1	1	None	45-degree rotation
AL1K	1	1	None	45-degree rotation
AL1M	1	1	None	45-degree rotation
*AL01Z	1	1	None	45-degree rotation
*AM01	1	1	None	45-degree rotation
AM2000	1	1	None	45-degree rotation
AS3BD	1	1	None	45-degree rotation
AS3BG	1	1	None	45-degree rotation
AS3BJ	1	1	None	45-degree rotation
*AU01	1	1	None	45-degree rotation
AU1PD	1	1	None	45-degree rotation
AU1PG	1	1	None	45-degree rotation
AU1PJ	1	1	None	45-degree rotation
AU1PK	1	1	None	45-degree rotation
AU1PM	1	1	None	45-degree rotation
*BA100	1	1	None	45-degree rotation
*BA127	1	1	None	45-degree rotation
*BA128	1	1	None	45-degree rotation
*BA129	1	1	None	45-degree rotation
*BA130	1	1	None	45-degree rotation
*BA133F	1	1	None	45-degree rotation
*BA136	1	1	None	45-degree rotation
*BA136A	1	1	None	45-degree rotation
*BA137	1	1	None	45-degree rotation
*BA147	6	1	None	45-degree rotation
BA157	1	1	None	45-degree rotation
BA158	1	1	None	45-degree rotation
BA159	1	1	None	45-degree rotation
BA159D	1	1	None	45-degree rotation
*BA170	1	1	None	45-degree rotation
*BA171	1	1	None	45-degree rotation
*BA172	1	1	None	45-degree rotation
*BA173	1	1	None	45-degree rotation
*BA176	1	1	None	45-degree rotation
*BA177	1	1	None	45-degree rotation
*BA178	1	1	None	45-degree rotation
*BA180	1	1	None	45-degree rotation
*BA181	1	1	None	45-degree rotation
*BA182	1	1	None	45-degree rotation
*BA204	1	1	None	45-degree rotation
*BA216	1	1	None	45-degree rotation
*BA217	1	1	None	45-degree rotation
*BA218	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*BA219	1	1	None	45-degree rotation
*BA220	1	1	None	45-degree rotation
*BA221	1	1	None	45-degree rotation
*BA224	3	1	None	45-degree rotation
*BA243	1	1	None	45-degree rotation
*BA244	1	1	None	45-degree rotation
BA282	1	1	None	45-degree rotation
BA283	1	1	None	45-degree rotation
*BA284	1	1	None	45-degree rotation
*BA316	1	1	None	45-degree rotation
*BA317	1	1	None	45-degree rotation
*BA318	1	1	None	45-degree rotation
*BA479G	1	1	None	45-degree rotation
*BA479S	1	1	None	45-degree rotation
BA482	1	1	None	45-degree rotation
BA483	1	1	None	45-degree rotation
BA484	1	1	None	45-degree rotation
BA591	1	1	None	45-degree rotation
BA592	1	1	None	45-degree rotation
BA595	1	1	None	45-degree rotation
*BA596	1	1	None	45-degree rotation
*BA604	1	1	None	45-degree rotation
BA679	1	1	None	45-degree rotation
*BA682	1	1	None	45-degree rotation
*BA683	1	1	None	45-degree rotation
*BA779	1	1	Free	45-degree rotation
*BA779S	1	1	Free	45-degree rotation
BA782	1	1	None	45-degree rotation
*BA782S	1	1	None	45-degree rotation
BA783	1	1	None	45-degree rotation
*BA783	1	1	None	45-degree rotation
BA885	1	1	Free	45-degree rotation
BA891	1	1	None	45-degree rotation
BA892	1	1	None	45-degree rotation
BA895	1	1	None	45-degree rotation
*BA979	1	1	None	45-degree rotation
*BA979S	1	1	None	45-degree rotation
*BA1282	1	1	None	45-degree rotation
*BA1283	1	1	None	45-degree rotation
BAL74	1	1	Free	45-degree rotation
BAL99	1	1	Free	45-degree rotation
BAP50-02	1	1	None	45-degree rotation
BAP50-03	1	1	None	45-degree rotation
BAP50-04	1	1	None	Dual straight
BAP50-05	1	1	None	Dual straight
BAP51-02	1	1	None	45-degree rotation
BAP51-03	1	1	None	45-degree rotation
BAP64-02	1	1	None	45-degree rotation
BAP64-03	1	1	None	45-degree rotation
BAP64-04	1	1	None	Dual straight
BAP64-05	1	1	None	Dual straight
BAP64-06	1	1	None	Dual straight
BAP65-03	1	1	None	45-degree rotation
BAP65-05	1	1	None	Dual straight
BAP70-02	1	1	None	45-degree rotation
BAP70-03	1	1	None	45-degree rotation
BAP70-05	1	1	None	Dual straight
*BAP794	1	1	None	45-degree rotation
*BAP794A	1	1	None	45-degree rotation
*BAP795	1	1	None	45-degree rotation
*BAP795A	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BAQ33	1	1	None	45-degree rotation
BAQ34	1	1	None	45-degree rotation
BAQ35	1	1	None	45-degree rotation
*BAQ133	1	1	None	45-degree rotation
*BAQ134	1	1	None	45-degree rotation
*BAQ135	1	1	None	45-degree rotation
BAQ333	1	1	None	45-degree rotation
BAQ334	1	1	None	45-degree rotation
BAQ335	1	1	None	45-degree rotation
BAR14	1	1	None	Dual straight
BAR15	1	1	None	Dual straight
BAR16	1	1	None	Dual straight
BAR61	1	1	None	None
BAR63-02W	1	1	None	45-degree rotation
BAR63-03W	1	1	None	45-degree rotation
BAR63-04	1	1	None	Dual straight
BAR63-04W	1	1	None	Dual straight
BAR63-05	1	1	None	Dual straight
BAR63-05W	1	1	None	Dual straight
BAR63-06	1	1	None	Dual straight
BAR63-06W	1	1	None	Dual straight
BAR66	1	1	None	Dual straight
*BAR74	1	1	Free	45-degree rotation
BAR81W	1	1	None	None
*BAR99	1	1	Free	45-degree rotation
BAS16	1	1	Free	45-degree rotation
BAS16G	1	1	None	45-degree rotation
BAS16H	1	1	None	45-degree rotation
BAS16HT	1	1	None	45-degree rotation
BAS16J	1	1	None	45-degree rotation
BAS16L	1	1	None	45-degree rotation
BAS16T	1	1	Free	45-degree rotation
BAS16VV	2	1 (3 for separated)	None	45-degree for separated
BAS16VY	2	1 (3 for separated)	None	45-degree for separated
BAS16W	1	1	Free	45-degree rotation
*BAS17	1	1	Free	45-degree rotation
BAS19	1	1	Free	45-degree rotation
BAS19DW5	2	1 (2 for separated)	Free	45-degree for separated
BAS20	1	1	Free	45-degree rotation
BAS20DW5	2	1 (2 for separated)	Free	45-degree for separated
BAS20H	1	1	None	45-degree rotation
BAS21	1	1	Free	45-degree rotation
BAS21AH	1	1	None	45-degree rotation
BAS21DW5	2	1 (2 for separated)	Free	45-degree for separated
BAS21H	1	1	None	45-degree rotation
BAS21J	1	1	None	45-degree rotation
BAS21U	2	1 (3 for separated)	None	45-degree for separated
BAS28	2	1 (2 for separated)	None	45-degree for separated
BAS28W	2	1 (2 for separated)	None	45-degree for separated
*BAS29	1	1	None	45-degree rotation
BAS31	1	1	None	Dual straight
BAS32	1	1	None	45-degree rotation
BAS32L	1	1	None	45-degree rotation
BAS33	1	1	None	45-degree rotation
BAS34	1	1	None	45-degree rotation
BAS35	1	1	None	Dual straight
BAS45	1	1	None	45-degree rotation
*BAS45A	1	1	None	45-degree rotation
BAS45AL	1	1	None	45-degree rotation
BAS56	2	1 (2 for separated)	None	45-degree for separated
BAS78	2	1 (2 for separated)	None	45-degree for separated

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BAS79	1	1	None	Dual straight
BAS101	1	1	Free	45-degree rotation
BAS101S	1	1	None	Dual straight
BAS116	1	1	Free	45-degree rotation
BAS116H	1	1	None	45-degree rotation
BAS116T	1	1	Free	45-degree rotation
BAS216	1	1	None	45-degree rotation
BAS216WT	1	1	None	45-degree rotation
BAS316	1	1	None	45-degree rotation
BAS321	1	1	None	45-degree rotation
BAS416	1	1	None	45-degree rotation
BAS516	1	1	None	45-degree rotation
BAS521	1	1	None	45-degree rotation
BAS678	1	1	None	45-degree rotation
BAS716	1	1	None	45-degree rotation
BAT18-04	1	1	None	Dual straight
BAT18-05	1	1	None	Dual straight
*BAV10	1	1	None	45-degree rotation
BAV16WS	1	1	None	45-degree rotation
BAV17	1	1	None	45-degree rotation
BAV18	1	1	None	45-degree rotation
BAV19	1	1	None	45-degree rotation
BAV19W	1	1	None	45-degree rotation
BAV19WS	1	1	None	45-degree rotation
BAV20	1	1	None	45-degree rotation
BAV20W	1	1	None	45-degree rotation
BAV20WS	1	1	None	45-degree rotation
BAV21	1	1	None	45-degree rotation
BAV21W	1	1	None	45-degree rotation
BAV21WS	1	1	None	45-degree rotation
BAV23	2	1 (2 for separated)	None	45-degree for separated
BAV23A	1	1	None	Dual straight
BAV23C	1	1	None	Dual straight
BAV23S	1	1	None	Dual straight
BAV45	1	1	None	45-degree rotation
BAV70	1	1	None	Dual straight
BAV70M	1	1	None	Dual straight
BAV70S	1	2	None	Dual straight
BAV70T	1	1	None	Dual straight
BAV70W	1	1	None	Dual straight
BAV74	1	1	None	Dual straight
BAV99	1	1	None	Dual straight
BAV99S	1	2	None	Dual straight
BAV99W	1	1	None	Dual straight
BAV100	1	1	None	45-degree rotation
BAV101	1	1	None	45-degree rotation
BAV102	1	1	None	45-degree rotation
BAV103	1	1	None	45-degree rotation
*BAV105	1	1	None	45-degree rotation
BAV170	1	1	None	Dual straight
BAV170T	1	1	None	Dual straight
BAV199	1	1	None	Dual straight
BAV199DWQ	1	2	None	Dual straight
BAV199T	1	1	None	Dual straight
BAV199W	1	1	None	Dual straight
BAV200	1	1	None	45-degree rotation
BAV201	1	1	None	45-degree rotation
BAV202	1	1	None	45-degree rotation
BAV203	1	1	None	45-degree rotation
BAV300	1	1	None	45-degree rotation
BAV301	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BAV302	1	1	None	45-degree rotation
BAV303	1	1	None	45-degree rotation
BAV756DW	1	2	None	Dual straight
BAV3004W	1	1	None	45-degree rotation
*BAW21	1	1	None	45-degree rotation
BAW56	1	1	None	Dual straight
BAW56M	1	1	None	Dual straight
BAW56S	1	2	None	Dual straight
BAW56T	1	1	None	Dual straight
BAW56W	1	1	None	Dual straight
*BAW62	1	1	None	45-degree rotation
*BAW63-03	1	1	None	45-degree rotation
*BAW75	1	1	None	45-degree rotation
*BAW76	1	1	None	45-degree rotation
*BAW78	4	1	None	45-degree rotation
*BAW79	4	1	None	45-degree rotation
*BAW100	2	1 (2 for separated)	None	45-degree for separated
BAW101	2	1 (2 for separated)	None	45-degree for separated
BAW101S	2	1 (2 for separated)	Free	45-degree for separated
BAW156	1	1	None	Dual straight
BAW156T	1	1	None	Dual straight
*BAX12	1	1	None	45-degree rotation
*BAX12A	1	1	None	45-degree rotation
*BAX16	1	1	None	45-degree rotation
BAX18	1	1	None	45-degree rotation
*BAX78	1	1	None	45-degree rotation
*BAX81	1	1	None	45-degree rotation
*BAX82	1	1	None	45-degree rotation
*BAY17	1	1	None	45-degree rotation
*BAY18	1	1	None	45-degree rotation
*BAY19	1	1	None	45-degree rotation
*BAY20	1	1	None	45-degree rotation
*BAY21	1	1	None	45-degree rotation
*BAY31	1	1	None	45-degree rotation
*BAY32	1	1	None	45-degree rotation
*BAY33	1	1	None	45-degree rotation
*BAY36	1	1	None	45-degree rotation
*BAY38	1	1	None	45-degree rotation
*BAY39	1	1	None	45-degree rotation
BAY44	1	1	None	45-degree rotation
BAY45	1	1	None	45-degree rotation
BAY46	1	1	None	45-degree rotation
*BAY52	1	1	None	45-degree rotation
*BAY60	1	1	None	45-degree rotation
*BAY67	1	1	None	45-degree rotation
*BAY68	1	1	None	45-degree rotation
*BAY69	1	1	None	45-degree rotation
*BAY71	1	1	None	45-degree rotation
*BAY72	1	1	None	45-degree rotation
*BAY73	1	1	None	45-degree rotation
*BAY74	1	1	None	45-degree rotation
*BAY80	1	1	None	45-degree rotation
*BAY82	1	1	None	45-degree rotation
*BAY86	1	1	None	45-degree rotation
*BAY87	1	1	None	45-degree rotation
*BAY88	1	1	None	45-degree rotation
*BAY89	1	1	None	45-degree rotation
*BAY90	1	1	None	45-degree rotation
*BAY91	1	1	None	45-degree rotation
*BAY91A	1	1	None	45-degree rotation
*BAY92	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*BAY93	1	1	None	45-degree rotation
*BAY135	1	1	None	45-degree rotation
BGX50A	1	1	None	None
*BY4	1	1	None	45-degree rotation
*BY6	1	1	None	45-degree rotation
*BY8	1	1	None	45-degree rotation
*BY12	1	1	None	45-degree rotation
*BY16	1	1	None	45-degree rotation
BY133	1	1	None	45-degree rotation
BY134	1	1	None	45-degree rotation
BY135	1	1	None	45-degree rotation
BY203	3	1	None	45-degree rotation
*BY208	3	1	None	45-degree rotation
*BY210	3	1	None	45-degree rotation
*BY214	4	1	None	45-degree rotation
BY228	1	1	None	45-degree rotation
*BY229	4	1	None	45-degree rotation
*BY229B	4	1	None	45-degree rotation
*BY229X	4	1	None	45-degree rotation
*BY239	4	1	None	45-degree rotation
*BY249	4	1	None	45-degree rotation
BY251	1	1	None	45-degree rotation
BY252	1	1	None	45-degree rotation
BY253	1	1	None	45-degree rotation
BY254	1	1	None	45-degree rotation
BY255	1	1	None	45-degree rotation
BY268	1	1	None	45-degree rotation
BY269	1	1	None	45-degree rotation
*BY278	1	1	None	45-degree rotation
BY296	1	1	None	45-degree rotation
BY297	1	1	None	45-degree rotation
BY298	1	1	None	45-degree rotation
BY299	1	1	None	45-degree rotation
*BY328	1	1	None	45-degree rotation
*BY329	6	1	None	45-degree rotation
*BY329X	5	1	None	45-degree rotation
BY359	2	1	None	45-degree rotation
*BY359F	2	1	None	45-degree rotation
BY396	1	1	None	45-degree rotation
BY397	1	1	None	45-degree rotation
BY398	1	1	None	45-degree rotation
BY399	1	1	None	45-degree rotation
*BY428	1	1	None	45-degree rotation
BY448	2	1	None	45-degree rotation
BY458	1	1	None	45-degree rotation
*BY459	2	1	None	45-degree rotation
*BY459X	2	1	None	45-degree rotation
*BY479X	1	1	None	45-degree rotation
BY500	7	1	None	45-degree rotation
*BY505	1	1	None	45-degree rotation
BY527	1	1	None	45-degree rotation
BY550	7	1	None	45-degree rotation
*BY559	1	1	None	45-degree rotation
*BY584	1	1	None	45-degree rotation
*BY609	1	1	None	45-degree rotation
*BY610	1	1	None	45-degree rotation
*BY614	1	1	None	45-degree rotation
*BY715	1	1	None	45-degree rotation
*BY716	1	1	None	45-degree rotation
*BY717	1	1	None	45-degree rotation
*BY718	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*BY719	1	1	None	45-degree rotation
*BY720	1	1	None	45-degree rotation
*BY721	1	1	None	45-degree rotation
*BY722	1	1	None	45-degree rotation
*BY723	1	1	None	45-degree rotation
*BY724	1	1	None	45-degree rotation
BY880	9	1	None	45-degree rotation
BY1600	1	1	None	45-degree rotation
BY1800	1	1	None	45-degree rotation
BY2000	1	1	None	45-degree rotation
*BY8004	1	1	None	45-degree rotation
*BY8006	1	1	None	45-degree rotation
BYC5-600	1	1	None	45-degree rotation
BYC5B-600	1	1	None	45-degree rotation
BYC5D-500	1	1	None	45-degree rotation
BYC5DX-500	1	1	None	45-degree rotation
BYC5X-600	1	1	None	45-degree rotation
BYC8-600	1	1	None	45-degree rotation
BYC8B-600	1	1	None	45-degree rotation
BYC8D-600	1	1	None	45-degree rotation
BYC8DX-600	1	1	None	45-degree rotation
BYC8X-600	1	1	None	45-degree rotation
BYC10-600	1	1	None	45-degree rotation
BYC10-600CT	1	1	None	Dual straight
BYC10B-600	1	1	None	45-degree rotation
BYC10D-600	1	1	None	45-degree rotation
BYC10DX-600	1	1	None	45-degree rotation
BYC10X-600	1	1	None	45-degree rotation
BYC15-600	1	1	None	45-degree rotation
BYC15X-600	1	1	None	45-degree rotation
BYC20-600	1	1	None	45-degree rotation
BYC20D-600	1	1	None	45-degree rotation
BYC20DX-600	1	1	None	45-degree rotation
BYC20X-600	1	1	None	45-degree rotation
BYC30-600	1	1	None	45-degree rotation
BYC30W-600	1	1	None	45-degree rotation
BYC30WT-600	1	1	None	None
BYC30X-600	1	1	None	45-degree rotation
BYC60W-600	1	1	None	45-degree rotation
*BYD13	5	1	None	45-degree rotation
*BYD17	5	1	None	45-degree rotation
BYD33	7	1	None	45-degree rotation
*BYD37	5	1	None	45-degree rotation
*BYD43	5	1	None	45-degree rotation
*BYD47	3	1	None	45-degree rotation
*BYD53	7	1	None	45-degree rotation
*BYD57	7	1	None	45-degree rotation
*BYD63	1	1	None	45-degree rotation
*BYD73	7	1	None	45-degree rotation
*BYD77	7	1	None	45-degree rotation
*BYD123	1	1	None	45-degree rotation
*BYD127	1	1	None	45-degree rotation
*BYD143	1	1	None	45-degree rotation
*BYD147	1	1	None	45-degree rotation
*BYD163	1	1	None	45-degree rotation
*BYD167	1	1	None	45-degree rotation
*BYD1100	1	1	None	45-degree rotation
BYG10	6	1	None	45-degree rotation
BYG20	3	1	None	45-degree rotation
BYG21	2	1	None	45-degree rotation
BYG22	3	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BYG23	2	1	None	45-degree rotation
*BYG50	5	1	None	45-degree rotation
*BYG60	5	1	None	45-degree rotation
*BYG70	3	1	None	45-degree rotation
*BYG80	7	1	None	45-degree rotation
*BYM07	6	1	None	45-degree rotation
BYM10	7	1	None	45-degree rotation
BYM11	7	1	None	45-degree rotation
BYM12	6	1	None	45-degree rotation
BYM26	7	1	None	45-degree rotation
BYM36	5	1	None	45-degree rotation
*BYM56	5	1	None	45-degree rotation
*BYM64	1	1	None	45-degree rotation
*BYM99	1	1	None	45-degree rotation
*BYP100	1	1	None	45-degree rotation
*BYP101	1	1	None	45-degree rotation
*BYP102	1	1	None	45-degree rotation
*BYP103	1	1	None	45-degree rotation
*BYP300	1	1	None	45-degree rotation
*BYP301	1	1	None	45-degree rotation
*BYP302	1	1	None	45-degree rotation
*BYP303	1	1	None	45-degree rotation
BYQ28E	3	1	None	Dual straight
BYQ28EB	3	1	None	Dual straight
BYQ28EF	3	1	None	Dual straight
*BYQ30E	2	1	None	Dual straight
*BYQ30EB	2	1	None	Dual straight
*BYQ30ED	2	1	None	Dual straight
*BYQ30EX	2	1	None	Dual straight
*BYQ40EW	2	1	None	Dual straight
*BYQ60EW	2	1	None	Dual straight
*BYQ63	1	1	None	45-degree rotation
BYR16W-1200	1	1	None	45-degree rotation
BYR29	4	1	None	45-degree rotation
*BYR29F	4	1	None	45-degree rotation
BYR29X	2	1	None	45-degree rotation
*BYT01-400	1	1	None	45-degree rotation
*BYT03-400	1	1	None	45-degree rotation
*BYT08P	3	1	None	45-degree rotation
*BYT11-1000	1	1	None	45-degree rotation
*BYT13	3	1	None	45-degree rotation
BYT28	3	1	None	Dual straight
BYT28B	2	1	None	Dual straight
BYT28F	2	1	None	Dual straight
BYT42	7	1	None	45-degree rotation
BYT51	7	1	None	45-degree rotation
BYT52	7	1	None	45-degree rotation
BYT53	6	1	None	45-degree rotation
BYT54	7	1	None	45-degree rotation
BYT56	7	1	None	45-degree rotation
*BYT71-800	1	1	None	45-degree rotation
BYT77	1	1	None	45-degree rotation
BYT78	1	1	None	45-degree rotation
BYT79	4	1	None	45-degree rotation
BYT79X-600	1	1	None	45-degree rotation
*BYT86	3	1	None	45-degree rotation
*BYT87	3	1	None	45-degree rotation
*BYT3400B	1	1	Free	45-degree rotation
BYV12	1	1	None	45-degree rotation
BYV13	1	1	None	45-degree rotation
BYV14	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BYV15	1	1	None	45-degree rotation
BYV16	1	1	None	45-degree rotation
BYV25D-600	1	1	None	45-degree rotation
BYV25F-600	1	1	None	45-degree rotation
BYV25FB-600	1	1	None	45-degree rotation
BYV25FD-600	1	1	None	45-degree rotation
BYV25FX-600	1	1	None	45-degree rotation
BYV25G-600	1	1	None	45-degree rotation
BYV25X-600	1	1	None	45-degree rotation
BYV26	5	1	None	45-degree rotation
BYV27	5	1	None	45-degree rotation
BYV28	1	1	None	45-degree rotation
BYV29	1	1	None	45-degree rotation
BYV29B	3	1	None	45-degree rotation
BYV29FX-600	1	1	None	45-degree rotation
BYV29G-600	1	1	None	45-degree rotation
BYV29X	4	1	None	45-degree rotation
BYV32	4	1	None	Dual straight
*BYV32B	4	1	None	Dual straight
*BYV32F	4	1	None	Dual straight
BYV34	3	1	None	Dual straight
BYV34X-600	1	1	None	Dual straight
*BYV36	7	1	None	45-degree rotation
BYV37	1	1	None	45-degree rotation
BYV38	1	1	None	45-degree rotation
*BYV40E	2	1	None	Dual straight
*BYV42E	2	1	None	Dual straight
*BYV42EB	2	1	None	Dual straight
BYV44	3	1	None	Dual straight
*BYV52-200	1	1	None	Dual straight
BYV60W-600	1	1	None	45-degree rotation
*BYV72E	3	1	None	Dual straight
BYV79E	2	1	None	Dual straight
BYV95	3	1	None	45-degree rotation
*BYV96	2	1	None	45-degree rotation
*BYV97	2	1	None	45-degree rotation
BYV98	4	1	None	45-degree rotation
*BYV99	1	1	None	45-degree rotation
BYV410-600	1	1	None	Dual straight
BYV410X-600	1	1	None	Dual straight
BYV415J-600	1	1	None	Dual straight
*BYV1100	1	1	None	45-degree rotation
*BYV2100	1	1	None	45-degree rotation
*BYV4100	1	1	None	45-degree rotation
BYW27	7	1	None	45-degree rotation
BYW29	4	1	None	45-degree rotation
BYW29B	4	1	None	45-degree rotation
BYW29F	4	1	None	45-degree rotation
BYW32	1	1	None	45-degree rotation
BYW33	1	1	None	45-degree rotation
BYW34	1	1	None	45-degree rotation
BYW35	1	1	None	45-degree rotation
BYW36	1	1	None	45-degree rotation
BYW51-200	1	1	None	Dual straight
BYW52	1	1	None	45-degree rotation
BYW53	1	1	None	45-degree rotation
BYW54	1	1	None	45-degree rotation
BYW55	1	1	None	45-degree rotation
BYW56	1	1	None	45-degree rotation
BYW72	1	1	None	45-degree rotation
BYW73	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BYW74	1	1	None	45-degree rotation
BYW75	1	1	None	45-degree rotation
BYW76	1	1	None	45-degree rotation
BYW80-200	1	1	None	45-degree rotation
BYW82	1	1	None	45-degree rotation
BYW83	1	1	None	45-degree rotation
BYW84	1	1	None	45-degree rotation
BYW85	1	1	None	45-degree rotation
BYW86	1	1	None	45-degree rotation
BYW95	3	1	None	45-degree rotation
*BYW96	2	1	None	45-degree rotation
*BYW97	2	1	None	45-degree rotation
*BYW98-200	1	1	None	45-degree rotation
*BYW99P-200	1	1	None	Dual straight
*BYW99W-200	1	1	None	Dual straight
*BYW100-200	1	1	None	45-degree rotation
BYW172	3	1	None	45-degree rotation
BYW178	1	1	None	45-degree rotation
*BYW4200B	1	1	Free	45-degree rotation
*BYX36	3	1	None	45-degree rotation
*BYX82	1	1	None	45-degree rotation
*BYX83	1	1	None	45-degree rotation
*BYX84	1	1	None	45-degree rotation
*BYX85	1	1	None	45-degree rotation
*BYX86	1	1	None	45-degree rotation
CD4148	3	1	None	45-degree rotation
*CMF01	1	1	None	45-degree rotation
*CMF02	1	1	None	45-degree rotation
*CMF03	1	1	None	45-degree rotation
*CMF04	1	1	None	45-degree rotation
*CMF05	1	1	None	45-degree rotation
*CMG02	1	1	None	45-degree rotation
*CMG03	1	1	None	45-degree rotation
*CMG05	1	1	None	45-degree rotation
*CMG06	1	1	None	45-degree rotation
*CMG07	1	1	None	45-degree rotation
*CMG08	1	1	None	45-degree rotation
*CMH01	1	1	None	45-degree rotation
*CMH04	1	1	None	45-degree rotation
*CMH07	1	1	None	45-degree rotation
CMMR1	5	1	None	45-degree rotation
*CFR02	1	1	None	45-degree rotation
*CRF03	1	1	None	45-degree rotation
*CRG03	1	1	None	45-degree rotation
*CRG04	1	1	None	45-degree rotation
*CRG05	1	1	None	45-degree rotation
*CRG07	1	1	None	45-degree rotation
*CRG09	1	1	None	45-degree rotation
*CRH01	1	1	None	45-degree rotation
*CRH02	1	1	None	45-degree rotation
D4015L	1	1	None	45-degree rotation
D4020L	1	1	None	45-degree rotation
D4025L	1	1	None	45-degree rotation
D6015L	1	1	None	45-degree rotation
D6020L	1	1	None	45-degree rotation
D6025L	1	1	None	45-degree rotation
D8015L	1	1	None	45-degree rotation
D8020L	1	1	None	45-degree rotation
D8025L	1	1	None	45-degree rotation
DAA10EM1800	1	1	None	None
DAA10P1800	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*DE3L40	1	1	None	45-degree rotation
DFE10I600PM	1	1	None	45-degree rotation
DFE25I600HA	1	1	None	45-degree rotation
DFLR1200	1	1	None	45-degree rotation
DFLR1400	1	1	None	45-degree rotation
DFLR1600	1	1	None	45-degree rotation
DFLR1800	1	1	None	45-degree rotation
DFLU1200	1	1	None	45-degree rotation
DFLU1400	1	1	None	45-degree rotation
DH20-18A	1	1	None	45-degree rotation
DH40-18A	1	1	None	45-degree rotation
DH60	3	1	None	45-degree rotation
DHG5I600PA	1	1	None	45-degree rotation
DHG5I600PM	1	1	None	45-degree rotation
DHG10C600PB	1	1	None	Dual straight
DHG10I600PA	1	1	None	45-degree rotation
DHG10I600PM	1	1	None	45-degree rotation
DHG10I1200PM	1	1	None	45-degree rotation
DHG10I1800PA	1	1	None	45-degree rotation
DHG20C600PB	1	1	None	Dual straight
DHG20C600QB	1	1	None	Dual straight
DHG20C1200PB	1	1	None	Dual straight
DHG20I600HA	1	1	None	45-degree rotation
DHG20I600PA	1	1	None	45-degree rotation
DHG20I1200HA	1	1	None	45-degree rotation
DHG20I1200PA	1	1	None	45-degree rotation
DHG30I600HA	1	1	None	45-degree rotation
DHG30I600PA	1	1	None	45-degree rotation
DHG30I1200HA	1	1	None	45-degree rotation
DHG30IM600	1	1	None	None
DHG40C600HB	1	1	None	Dual straight
DHG40C1200HB	1	1	None	Dual straight
DHG60C600HB	1	1	None	Dual straight
DHG60I600HA	1	1	None	45-degree rotation
DHG60I1200HA	1	1	None	45-degree rotation
DK015L	1	1	None	45-degree rotation
DK020L	1	1	None	45-degree rotation
DK025L	1	1	None	45-degree rotation
DL4001	1	1	None	45-degree rotation
DL4002	1	1	None	45-degree rotation
DL4003	1	1	None	45-degree rotation
DL4004	1	1	None	45-degree rotation
DL4005	1	1	None	45-degree rotation
DL4006	1	1	None	45-degree rotation
DL4007	1	1	None	45-degree rotation
DL4933	1	1	None	45-degree rotation
DL4934	1	1	None	45-degree rotation
DL4935	1	1	None	45-degree rotation
DL4936	1	1	None	45-degree rotation
DL4937	1	1	None	45-degree rotation
DLA5P800UC	1	1	None	Dual straight
DLA10IM800UC	1	1	None	None
DLA20IM800PC	1	1	None	None
DLA40IM800PC	1	1	None	None
DLA60I1200HA	1	1	None	45-degree rotation
DMA10I1600PA	1	1	None	45-degree rotation
DMA10IM1200UZ	1	1	None	None
DMA10IM1600UZ	1	1	None	None
DMA10P1200HR	1	1	None	Dual straight
DMA10P1200UZ	1	1	None	Dual straight
DMA10P1600PZ	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DMA10P1600UZ	1	1	None	Dual straight
DMA10P1800PZ	1	1	None	Dual straight
DMA30IM1600PZ	1	1	None	None
DMA30P1600HR	1	1	None	Dual straight
DMA50P1200HR	1	1	None	Dual straight
DMV1500	1	1	None	Dual straight
DNA30E2200PA	1	1	None	45-degree rotation
DNA30E2200PZ	1	1	None	None
DNA30EM2200PZ	1	1	None	None
DPF30P600HR	1	1	None	Dual straight
DPG10I400PA	1	1	None	45-degree rotation
DPG10IM300UC	1	1	None	None
DPG20C400PC	1	1	None	Dual straight
DPG30C200PC	1	1	None	Dual straight
DPG30C300PC	1	1	None	Dual straight
DPG30IM300PC	1	1	None	None
DPG60C300HB	1	1	None	Dual straight
DPG60C300PC	1	1	None	Dual straight
DPG60I400HA	1	1	None	Dual straight
DSDI60	3	1	None	45-degree rotation
DSEC16-12AS	1	1	None	Dual straight
DSEC30-06	1	1	None	Dual straight
DSEI8-06	1	1	None	45-degree rotation
DSEI8-06AS	1	1	Free	45-degree rotation
DSEI12	2	1	None	45-degree rotation
DSEI12-06AS	1	1	Free	45-degree rotation
DSEI19-06AS	1	1	Free	45-degree rotation
DSEI20-12	1	1	None	45-degree rotation
DSEI25-06	1	1	None	45-degree rotation
DSEI30	3	1	None	45-degree rotation
DSEI36-06AS	1	1	Free	45-degree rotation
DSEI60	4	1	None	45-degree rotation
DSEI120	2	1	None	45-degree rotation
DSEI120-12AZ	1	1	None	None
DSEK60-06	1	1	None	Dual straight
DSEP6-06AS	1	1	None	None
DSEP6-06BS	1	1	None	None
DSEP8-12	1	1	None	45-degree rotation
DSEP12-12	1	1	None	45-degree rotation
DSEP12-06AS	1	1	None	None
DSEP12-06BS	1	1	None	None
DSEP15	2	1	None	45-degree rotation
DSEP29	2	1	None	45-degree rotation
DSEP29-06AS	1	1	None	None
DSEP30	2	1	None	45-degree rotation
DSEP40-03AS	1	1	None	None
DSEP60	2	1	None	45-degree rotation
DSEP60-06AT	1	1	None	None
DSI30	3	1	None	45-degree rotation
DSI30-xxAS	3	1	None	None
DSI45	3	1	None	45-degree rotation
DSP8	3	1	None	Dual straight
DSP25	3	1	None	Dual straight
DSP45	4	1	None	Dual straight
*DTV16	2	1	None	45-degree rotation
*DTV32	2	1	None	45-degree rotation
*DTV56	2	1	None	45-degree rotation
*DTV64	2	1	None	45-degree rotation
*DTV82	2	1	None	45-degree rotation
*DTV110	2	1	None	45-degree rotation
DTV1500	2	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*EGF1	4	1	None	45-degree rotation
EGL1	7	1	None	45-degree rotation
EGL34	4	1	None	45-degree rotation
EGL41	6	1	None	45-degree rotation
EGP10	6	1	None	45-degree rotation
EGP20	6	1	None	45-degree rotation
*EGP30	6	1	None	45-degree rotation
EGP50	6	1	None	45-degree rotation
EGP51	6	1	None	45-degree rotation
EM513	1	1	None	45-degree rotation
EM516	1	1	None	45-degree rotation
EM518	1	1	None	45-degree rotation
ER1	7	1	None	45-degree rotation
ER2	7	1	None	45-degree rotation
ER3	7	1	None	45-degree rotation
ER30	7	1	None	45-degree rotation
ES1	7	1	None	45-degree rotation
ES2	7	1	None	45-degree rotation
*ES2xA	4	1	None	45-degree rotation
ES3	7	1	None	45-degree rotation
*ES3xB	4	1	None	45-degree rotation
ESH3	3	1	None	45-degree rotation
*ESM765	5	1	None	45-degree rotation
F5K120	1	1	None	45-degree rotation
F12K120	1	1	None	45-degree rotation
F1200	4	1	None	45-degree rotation
FDH300	1	1	None	45-degree rotation
FDH333	1	1	None	45-degree rotation
*FDH400	1	1	None	45-degree rotation
*FDH444	1	1	None	45-degree rotation
*FDH600	1	1	None	45-degree rotation
FDLL300	1	1	None	45-degree rotation
FDLL333	1	1	None	45-degree rotation
*FDLL400	1	1	None	45-degree rotation
*FDLL600	1	1	None	45-degree rotation
FDLL914	1	1	None	45-degree rotation
*FDLL3595	1	1	None	45-degree rotation
*FDLL4148	1	1	None	45-degree rotation
*FDLL4150	1	1	None	45-degree rotation
*FDLL4448	1	1	None	45-degree rotation
FE1	4	1	None	45-degree rotation
FE2	4	1	None	45-degree rotation
FE3	4	1	None	45-degree rotation
FE6	5	1	None	45-degree rotation
FEP16	8	1	None	Dual straight
FEP30	8	1	None	Dual straight
FEPB16	8	1	None	Dual straight
FEPF16	8	1	None	Dual straight
FERD20M60SR	1	1	None	None
FERD20M60ST	1	1	None	None
FERD20S100SB	1	1	None	None
FERD20S100SH	1	1	None	None
FERD20S100STS	1	1	None	None
FERD30H60CG	1	1	None	Dual straight
FERD30H60CTS	1	1	None	Dual straight
FERD30H100SB	1	1	None	None
FERD30H100SH	1	1	None	None
FERD30H100STS	1	1	None	None
FERD30M45CG	1	1	None	Dual straight
FERD30M45CCR	1	1	None	Dual straight
FERD30M45CT	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
FERD30SM100S	1	1	None	None
FERD40H100SFP	1	1	None	None
FERD40H100SG	1	1	None	None
FERD40H100STS	1	1	None	None
FERD40L60CG	1	1	None	Dual straight
FERD40L60CTS	1	1	None	Dual straight
FERD40M45CG	1	1	None	Dual straight
FERD40M45CT	1	1	None	Dual straight
FERD40U45CG	1	1	None	Dual straight
FERD40U45CT	1	1	None	Dual straight
FERD40U50CFP	1	1	None	Dual straight
FERD60M45CT	1	1	None	Dual straight
FERD60U45CT	1	1	None	Dual straight
FES8	8	1	None	45-degree rotation
FES16	8	1	None	45-degree rotation
FESB8	8	1	None	45-degree rotation
FESB16	8	1	None	45-degree rotation
*FESF8	8	1	None	45-degree rotation
*FESF16	8	1	None	45-degree rotation
FFA60UP30DN	1	1	None	Dual straight
FFPF30UP20S	1	1	None	45-degree rotation
FMG-G2CS	1	1	None	45-degree rotation
*FMMD914	1	1	Free	45-degree rotation
FMMD2836	1	1	None	Dual straight
*FMMD6050	1	1	Free	45-degree rotation
FR1	7	1	None	45-degree rotation
FR2	7	1	None	45-degree rotation
FR2xSMA	4	1	None	45-degree rotation
FR3	7	1	None	45-degree rotation
FR05xFL	7	1	None	45-degree rotation
FR101	1	1	None	45-degree rotation
FR102	1	1	None	45-degree rotation
FR103	1	1	None	45-degree rotation
FR104	1	1	None	45-degree rotation
FR105	2	1	None	45-degree rotation
FR106	1	1	None	45-degree rotation
FR107	2	1	None	45-degree rotation
FR151	1	1	None	45-degree rotation
FR152	1	1	None	45-degree rotation
FR153	1	1	None	45-degree rotation
FR154	1	1	None	45-degree rotation
FR155	1	1	None	45-degree rotation
FR156	1	1	None	45-degree rotation
FR157	1	1	None	45-degree rotation
FR201	1	1	None	45-degree rotation
FR202	1	1	None	45-degree rotation
FR203	1	1	None	45-degree rotation
FR204	1	1	None	45-degree rotation
FR205	2	1	None	45-degree rotation
FR206	1	1	None	45-degree rotation
FR207	2	1	None	45-degree rotation
FR301	1	1	None	45-degree rotation
FR302	1	1	None	45-degree rotation
FR303	1	1	None	45-degree rotation
FR304	1	1	None	45-degree rotation
FR305	2	1	None	45-degree rotation
FR306	1	1	None	45-degree rotation
FR307	2	1	None	45-degree rotation
*FR501	1	1	None	45-degree rotation
*FR502	1	1	None	45-degree rotation
*FR503	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*FR504	1	1	None	45-degree rotation
*FR505	1	1	None	45-degree rotation
*FR506	1	1	None	45-degree rotation
*FR507	1	1	None	45-degree rotation
*FRS1	7	1	None	45-degree rotation
*FRS2	7	1	None	45-degree rotation
FS1	7	1	None	45-degree rotation
FT2000A	4	1	None	45-degree rotation
FT2000K	4	1	None	45-degree rotation
FX2000	5	1	None	45-degree rotation
GF1	1	1	None	45-degree rotation
*GI250	4	1	None	45-degree rotation
*GI500	1	1	None	45-degree rotation
*GI501	1	1	None	45-degree rotation
*GI502	1	1	None	45-degree rotation
*GI504	1	1	None	45-degree rotation
*GI506	1	1	None	45-degree rotation
*GI508	1	1	None	45-degree rotation
*GI510	1	1	None	45-degree rotation
GI750	1	1	None	45-degree rotation
GI751	1	1	None	45-degree rotation
GI752	1	1	None	45-degree rotation
GI753	1	1	None	45-degree rotation
GI754	1	1	None	45-degree rotation
GI755	1	1	None	45-degree rotation
GI756	1	1	None	45-degree rotation
GI758	1	1	None	45-degree rotation
*GI810	1	1	None	45-degree rotation
*GI811	1	1	None	45-degree rotation
*GI812	1	1	None	45-degree rotation
*GI814	1	1	None	45-degree rotation
*GI816	1	1	None	45-degree rotation
*GI817	1	1	None	45-degree rotation
*GI818	1	1	None	45-degree rotation
*GI820	1	1	None	45-degree rotation
*GI821	1	1	None	45-degree rotation
*GI822	1	1	None	45-degree rotation
*GI824	1	1	None	45-degree rotation
*GI826	1	1	None	45-degree rotation
*GI828	1	1	None	45-degree rotation
*GI850	1	1	None	45-degree rotation
*GI851	1	1	None	45-degree rotation
*GI852	1	1	None	45-degree rotation
*GI853	1	1	None	45-degree rotation
*GI854	1	1	None	45-degree rotation
*GI856	1	1	None	45-degree rotation
*GI858	1	1	None	45-degree rotation
*GI910	1	1	None	45-degree rotation
*GI911	1	1	None	45-degree rotation
*GI912	1	1	None	45-degree rotation
*GI914	1	1	None	45-degree rotation
*GI916	1	1	None	45-degree rotation
*GI917	1	1	None	45-degree rotation
*GI1401	1	1	None	45-degree rotation
*GI1402	1	1	None	45-degree rotation
*GI1403	1	1	None	45-degree rotation
*GI1404	1	1	None	45-degree rotation
*GI2401	1	1	None	Dual straight
*GI2402	1	1	None	Dual straight
*GI2403	1	1	None	Dual straight
*GI2404	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*GIB1401	1	1	None	45-degree rotation
*GIB1402	1	1	None	45-degree rotation
*GIB1403	1	1	None	45-degree rotation
*GIB1404	1	1	None	45-degree rotation
*GIB2401	1	1	None	Dual straight
*GIB2402	1	1	None	Dual straight
*GIB2403	1	1	None	Dual straight
*GIB2404	1	1	None	Dual straight
GL1	7	1	None	45-degree rotation
GL34	7	1	None	45-degree rotation
GL41	9	1	None	45-degree rotation
GP02	5	1	None	45-degree rotation
*GP08	5	1	None	45-degree rotation
*GP10	13	1	None	45-degree rotation
*GP15	7	1	None	45-degree rotation
*GP30	7	1	None	45-degree rotation
GS1	7	1	None	45-degree rotation
GUF20	8	1	None	45-degree rotation
GUF30	8	1	None	45-degree rotation
*HD2A	1	1	None	Dual straight
*HD3A	1	1	Free	45-degree rotation
*HD4A	1	1	None	Dual straight
HER101	1	1	None	45-degree rotation
HER102	1	1	None	45-degree rotation
HER103	1	1	None	45-degree rotation
HER104	1	1	None	45-degree rotation
HER105	1	1	None	45-degree rotation
HER106	1	1	None	45-degree rotation
HER107	1	1	None	45-degree rotation
HER108	1	1	None	45-degree rotation
HER151	1	1	None	45-degree rotation
HER152	1	1	None	45-degree rotation
HER153	1	1	None	45-degree rotation
HER154	1	1	None	45-degree rotation
HER155	1	1	None	45-degree rotation
HER156	1	1	None	45-degree rotation
HER157	1	1	None	45-degree rotation
HER158	1	1	None	45-degree rotation
HER201	1	1	None	45-degree rotation
HER202	1	1	None	45-degree rotation
HER203	1	1	None	45-degree rotation
HER204	1	1	None	45-degree rotation
HER205	1	1	None	45-degree rotation
HER206	1	1	None	45-degree rotation
HER207	1	1	None	45-degree rotation
HER208	1	1	None	45-degree rotation
HER301	1	1	None	45-degree rotation
HER302	1	1	None	45-degree rotation
HER303	1	1	None	45-degree rotation
HER304	1	1	None	45-degree rotation
HER305	1	1	None	45-degree rotation
HER306	1	1	None	45-degree rotation
HER307	1	1	None	45-degree rotation
HER308	1	1	None	45-degree rotation
HER501	1	1	None	45-degree rotation
HER502	1	1	None	45-degree rotation
HER503	1	1	None	45-degree rotation
HER504	1	1	None	45-degree rotation
HER505	1	1	None	45-degree rotation
HER506	1	1	None	45-degree rotation
HER507	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
HER508	1	1	None	45-degree rotation
HER801	1	1	None	45-degree rotation
HER802	1	1	None	45-degree rotation
HER803	1	1	None	45-degree rotation
HER804	1	1	None	45-degree rotation
HER805	1	1	None	45-degree rotation
HER806	1	1	None	45-degree rotation
HER1601	1	1	None	Dual straight
HER1602	1	1	None	Dual straight
HER1603	1	1	None	Dual straight
HER1604	1	1	None	Dual straight
HER1605	1	1	None	Dual straight
HER1606	1	1	None	Dual straight
HER3001	1	1	None	Dual straight
HER3002	1	1	None	Dual straight
HER3003	1	1	None	Dual straight
HER3004	1	1	None	Dual straight
HER3005	1	1	None	Dual straight
HER3006	1	1	None	Dual straight
HFA08TB60	1	1	None	45-degree rotation
*HN1D01F	2	2	None	Dual straight
*HN1D02F	2	2	None	Dual straight
*HN2D01F	4	1 (3 for separated)	None	45-degree for separated
*HN2D02F	2	1 (3 for separated)	None	45-degree for separated
*HSB123	1	1	None	Dual straight
*HSB2836	1	1	None	Dual straight
*HSB2838	1	1	None	Dual straight
*HSM122	1	1	Free	45-degree rotation
*HSM123	1	1	None	Dual straight
*HSM124S	1	1	None	Dual straight
*HSM221C	1	1	Free	45-degree rotation
*HSM2694	1	1	None	Dual straight
*HSM2836C	1	1	None	Dual straight
*HSU83	1	1	None	45-degree rotation
*HSU119	1	1	None	45-degree rotation
*HSU277	1	1	None	45-degree rotation
*HV1.5	1	1	None	45-degree rotation
*HV2	1	1	None	45-degree rotation
*HV3	1	1	None	45-degree rotation
*HV4	1	1	None	45-degree rotation
*HV5	1	1	None	45-degree rotation
*HV6	1	1	None	45-degree rotation
IDB15E60	1	1	Free	45-degree rotation
IDB30E60	1	1	Free	45-degree rotation
IDB30E120	1	1	Free	45-degree rotation
IDD06E60	1	1	Free	45-degree rotation
IDD15E60	1	1	Free	45-degree rotation
IDFW40E65D1E	1	1	Free	45-degree rotation
IDP08E65D1	1	1	None	45-degree rotation
IDP15E60	1	1	None	45-degree rotation
IDP15E65D1	1	1	None	45-degree rotation
IDP15E65D2	1	1	None	45-degree rotation
IDP18E120	1	1	None	45-degree rotation
IDP30E60	1	1	None	45-degree rotation
IDP30E120	1	1	None	45-degree rotation
IDP40E65D2	1	1	None	45-degree rotation
IDV08E65D2	1	1	None	45-degree rotation
IDV15E65D2	1	1	None	45-degree rotation
IDW15E65D2	1	1	Free	45-degree rotation
IDW30E60	1	1	Free	45-degree rotation
IDW30E65D1	1	1	Free	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IDW40E65D1	1	1	Free	45-degree rotation
IDW40E65D2	1	1	Free	45-degree rotation
IDW50E60	1	1	Free	45-degree rotation
IDW75E60	1	1	Free	45-degree rotation
IDW100E60	1	1	Free	45-degree rotation
*IMDB4148	1	1	Free	45-degree rotation
*IMDB4448	1	1	Free	45-degree rotation
ISL9K3060G3	1	1	None	Dual straight
ISL9R860P2	1	1	None	45-degree rotation
ISL9R860S3ST	1	1	Free	45-degree rotation
ISL9R1560G2	1	1	None	45-degree rotation
ISL9R1560P2	1	1	None	45-degree rotation
ISL9R1560S2	1	1	None	45-degree rotation
ISL9R1560S3S	1	1	Free	45-degree rotation
ISL9R3060G2	1	1	Free	45-degree rotation
ISL9R3060P2	1	1	Free	45-degree rotation
*KDS181	1	1	None	Dual straight
*KDS184	1	1	None	Dual straight
*KDS187	1	1	Free	45-degree rotation
*KDS193	1	1	Free	45-degree rotation
*KDS226	1	1	None	Dual straight
LL4148	1	1	None	45-degree rotation
LL4150	1	1	None	45-degree rotation
LL4151	1	1	None	45-degree rotation
LL4154	1	1	None	45-degree rotation
LL4448	1	1	None	45-degree rotation
*LS4148	1	1	None	45-degree rotation
*LS4150	1	1	None	45-degree rotation
*LS4151	1	1	None	45-degree rotation
*LS4154	1	1	None	45-degree rotation
*LS4448	1	1	None	45-degree rotation
M1	1	1	None	45-degree rotation
M2	1	1	None	45-degree rotation
M3	1	1	None	45-degree rotation
M4	1	1	None	45-degree rotation
M5	1	1	None	45-degree rotation
M6	1	1	None	45-degree rotation
M7	1	1	None	45-degree rotation
M1MA141WAT1G	1	1	None	Dual straight
M1MA142WAT1G	1	1	None	Dual straight
*MAD130P	2	1 (2 for separated)	None	None
*MAD1103P	1	1	Free	None
*MAD1107P	2	1 (2 for separated)	Free	None
*MAD1108P	2	1 (8 for separated)	None	45-degree for separated
*MAD1109P	2	1 (7 for separated)	None	45-degree for separated
MCL4148	1	1	None	45-degree rotation
MCL4151	1	1	None	45-degree rotation
*MCL4154	1	1	None	45-degree rotation
MCL4448	1	1	None	45-degree rotation
*MDV03-400	1	1	None	45-degree rotation
*MDV04-600	1	1	None	45-degree rotation
MMBD914	1	1	Free	45-degree rotation
*MMBD1201	1	1	Free	45-degree rotation
*MMBD1202	1	1	Free	45-degree rotation
*MMBD1203	1	1	None	Dual straight
*MMBD1204	1	1	None	Dual straight
*MMBD1205	1	1	None	Dual straight
*MMBD1401	1	1	Free	45-degree rotation
*MMBD1403	1	1	None	Dual straight
*MMBD1404	1	1	None	Dual straight
*MMBD1405	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MMBD1501	1	1	Free	45-degree rotation
MMBD1503	1	1	None	Dual straight
MMBD1504	1	1	None	Dual straight
MMBD1505	1	1	None	Dual straight
MMBD1701	1	1	Free	45-degree rotation
MMBD1703	1	1	None	Dual straight
MMBD1704	1	1	None	Dual straight
MMBD1705	1	1	None	Dual straight
*MMBD2835	1	1	None	Dual straight
*MMBD2836	1	1	None	Dual straight
MMBD2837	1	1	None	Dual straight
MMBD2838	1	1	None	Dual straight
MMBD3000A	1	1	None	Dual straight
MMBD3000C	1	1	None	Dual straight
MMBD3000S	1	1	None	Dual straight
MMBD4148	1	1	Free	45-degree rotation
MMBD4148CC	1	1	None	Dual straight
MMBD4148CA	1	1	None	Dual straight
MMBD4148SE	1	1	None	Dual straight
MMBD4148W	1	1	Free	45-degree rotation
MMBD4148TW	2	1 (3 for separated)	None	45-degree for separated
MMBD4448	1	1	Free	45-degree rotation
MMBD4148TW	2	1 (2 for separated)	Free	45-degree for separated
MMBD4448HW	1	1	Free	45-degree rotation
MMBD4448W	1	1	Free	45-degree rotation
*MMBD6050	1	1	Free	45-degree rotation
MMBD6100	1	1	None	Dual straight
MMBD7000	1	1	None	Dual straight
MMDL914	1	1	None	45-degree rotation
MMSD914	1	1	None	45-degree rotation
*MPG06	7	1	None	45-degree rotation
*MR750	1	1	None	45-degree rotation
*MR751	1	1	None	45-degree rotation
*MR752	1	1	None	45-degree rotation
*MR753	1	1	None	45-degree rotation
*MR754	1	1	None	45-degree rotation
*MR756	1	1	None	45-degree rotation
*MR760	1	1	None	45-degree rotation
*MR810	1	1	None	45-degree rotation
*MR811	1	1	None	45-degree rotation
*MR812	1	1	None	45-degree rotation
*MR813	1	1	None	45-degree rotation
*MR814	1	1	None	45-degree rotation
*MR816	1	1	None	45-degree rotation
*MR817	1	1	None	45-degree rotation
*MR818	1	1	None	45-degree rotation
MR820	1	1	None	45-degree rotation
MR821	1	1	None	45-degree rotation
MR822	1	1	None	45-degree rotation
MR824	1	1	None	45-degree rotation
MR826	1	1	None	45-degree rotation
MR828	1	1	None	45-degree rotation
MRA4003T3G	1	1	None	45-degree rotation
MRA4004T3G	1	1	None	45-degree rotation
MRA4005T3G	1	1	None	45-degree rotation
MRA4006T3G	1	1	None	45-degree rotation
MRA4007T3G	1	1	None	45-degree rotation
*MSD6100	1	1	None	Dual straight
*MSD6101	1	1	None	Dual straight
*MSD6102	1	1	None	Dual straight
*MSD6150	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MSE1P	4	1	None	45-degree rotation
MUR105	1	1	None	45-degree rotation
MUR110	1	1	None	45-degree rotation
MUR115	1	1	None	45-degree rotation
MUR120	1	1	None	45-degree rotation
MUR130	1	1	None	45-degree rotation
MUR140	1	1	None	45-degree rotation
MUR160	1	1	None	45-degree rotation
MUR180E	1	1	None	45-degree rotation
MUR405	1	1	None	45-degree rotation
MUR410	1	1	None	45-degree rotation
MUR415	1	1	None	45-degree rotation
MUR420	1	1	None	45-degree rotation
MUR440	1	1	None	45-degree rotation
MUR460	1	1	None	45-degree rotation
MUR480EG	1	1	None	45-degree rotation
MUR805	1	1	None	45-degree rotation
MUR810	1	1	None	45-degree rotation
MUR815	1	1	None	45-degree rotation
MUR820	1	1	None	45-degree rotation
MUR840	1	1	None	45-degree rotation
MUR860	1	1	None	45-degree rotation
MUR880E	1	1	None	45-degree rotation
MUR1100E	1	1	None	45-degree rotation
MUR1510	1	1	None	45-degree rotation
MUR1515	1	1	None	45-degree rotation
MUR1520	1	1	None	45-degree rotation
MUR1540	1	1	None	45-degree rotation
MUR1560	1	1	None	45-degree rotation
MUR1610CT	1	1	None	Dual straight
MUR1615CT	1	1	None	Dual straight
MUR1620CT	1	1	None	Dual straight
MUR1640CT	1	1	None	Dual straight
MUR1660CT	1	1	None	Dual straight
*MUR3020PTG	1	1	None	Dual straight
MUR3020WTG	1	1	None	Dual straight
*MUR3040PTG	1	1	None	Dual straight
MUR3040WTG	1	1	None	Dual straight
*MUR3060PTG	1	1	None	Dual straight
MUR3060WTG	1	1	None	Dual straight
MUR4100EG	1	1	None	45-degree rotation
*MUR5150E	1	1	None	45-degree rotation
*MUR6040	1	1	None	45-degree rotation
MUR8100	1	1	None	45-degree rotation
*MURB1610CT	1	1	None	Dual straight
*MURB1620CT	1	1	None	Dual straight
*MURB1660CT	1	1	None	Dual straight
MURD620CTG	1	1	None	Dual straight
MURF860	1	1	None	45-degree rotation
MURF1560	1	1	None	45-degree rotation
*MURF1620CT	1	1	None	Dual straight
*MURF1660CT	1	1	None	Dual straight
MURF2060CT	1	1	None	Dual straight
*MURH840CTG	1	1	None	Dual straight
*MURH860CTG	1	1	None	Dual straight
*MURHB840CTG	1	1	None	Dual straight
MURS120	1	1	None	45-degree rotation
MURS140	1	1	None	45-degree rotation
MURS160	1	1	None	45-degree rotation
MURS220	1	1	None	45-degree rotation
MURS240	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MURS260	1	1	None	45-degree rotation
MURS320	1	1	None	45-degree rotation
MURS340	1	1	None	45-degree rotation
MURS360	1	1	None	45-degree rotation
*NS8	7	1	None	45-degree rotation
*NSB8	7	1	None	45-degree rotation
NSD914	1	1	None	45-degree rotation
NSD914F3T5G	1	1	Free	45-degree rotation
*NSF8	7	1	None	45-degree rotation
*OA200	1	1	None	45-degree rotation
*OA202	1	1	None	45-degree rotation
P600	9	1	None	45-degree rotation
P1000	8	1	None	45-degree rotation
P2000	7	1	None	45-degree rotation
P2500	11	1	None	45-degree rotation
*PCT1600	7	1	None	Dual straight
*PFR850	8	1	None	45-degree rotation
*PFR851	8	1	None	45-degree rotation
*PFR852	8	1	None	45-degree rotation
*PFR854	8	1	None	45-degree rotation
*PFR856	8	1	None	45-degree rotation
*PMBD914	1	1	Free	45-degree rotation
*PMBD7000	1	1	None	Dual straight
PR1001	1	1	None	45-degree rotation
PR1002	1	1	None	45-degree rotation
PR1003	1	1	None	45-degree rotation
PR1004	1	1	None	45-degree rotation
PR1005	1	1	None	45-degree rotation
PR1006	1	1	None	45-degree rotation
PR1007	1	1	None	45-degree rotation
*PR1501	4	1	None	45-degree rotation
*PR1502	4	1	None	45-degree rotation
*PR1503	4	1	None	45-degree rotation
*PR1504	4	1	None	45-degree rotation
*PR1505	4	1	None	45-degree rotation
*PR1506	2	1	None	45-degree rotation
*PR1507	2	1	None	45-degree rotation
*PR2001G	1	1	None	45-degree rotation
*PR2002G	1	1	None	45-degree rotation
*PR2003G	1	1	None	45-degree rotation
*PR2004G	1	1	None	45-degree rotation
*PR2005G	1	1	None	45-degree rotation
*PR2006G	1	1	None	45-degree rotation
*PR2007G	1	1	None	45-degree rotation
*PR3001	1	1	None	45-degree rotation
*PR3002	1	1	None	45-degree rotation
*PR3003	1	1	None	45-degree rotation
*PR3004	1	1	None	45-degree rotation
*PR3005	1	1	None	45-degree rotation
*PR6001	1	1	None	45-degree rotation
*PR6002	1	1	None	45-degree rotation
*PR6003	1	1	None	45-degree rotation
*PR6004	1	1	None	45-degree rotation
*PR6005	1	1	None	45-degree rotation
PT800	7	1	None	45-degree rotation
PX1500	7	1	None	45-degree rotation
R1200	1	1	None	45-degree rotation
R1500	1	1	None	45-degree rotation
R1800	1	1	None	45-degree rotation
R2000	1	1	None	45-degree rotation
R2500	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
R3000	1	1	None	45-degree rotation
R4000	1	1	None	45-degree rotation
R5000	1	1	None	45-degree rotation
RAL1	7	1	None	45-degree rotation
RGF1	7	1	None	45-degree rotation
RGL1	7	1	None	45-degree rotation
RGL34	7	1	None	45-degree rotation
RGL41	7	1	None	45-degree rotation
RGP02	7	1	None	45-degree rotation
RGP10	7	1	None	45-degree rotation
RGP15	7	1	None	45-degree rotation
*RGP20	5	1	None	45-degree rotation
*RGP25	7	1	None	45-degree rotation
RGP30	7	1	None	45-degree rotation
RHRG3040	1	1	None	45-degree rotation
RHRG3060	1	1	None	45-degree rotation
RHRG5060	1	1	None	45-degree rotation
RHRG30120	1	1	None	45-degree rotation
RHRG75120	1	1	None	45-degree rotation
RHRP860	1	1	None	45-degree rotation
RHRP1540	1	1	None	45-degree rotation
RHRP1560	1	1	None	45-degree rotation
RHRP3060	1	1	None	45-degree rotation
RHRP8120	1	1	None	45-degree rotation
RHRP15120	1	1	None	45-degree rotation
RHRP30120	1	1	None	45-degree rotation
RL101	1	1	None	45-degree rotation
RL102	1	1	None	45-degree rotation
RL103	1	1	None	45-degree rotation
RL104	1	1	None	45-degree rotation
RL105	1	1	None	45-degree rotation
RL106	1	1	None	45-degree rotation
RL107	1	1	None	45-degree rotation
RL201	1	1	None	45-degree rotation
RL202	1	1	None	45-degree rotation
RL203	1	1	None	45-degree rotation
RL204	1	1	None	45-degree rotation
RL205	1	1	None	45-degree rotation
RL206	1	1	None	45-degree rotation
RL207	1	1	None	45-degree rotation
RMPG06	6	1	None	45-degree rotation
RS1	7	1	None	45-degree rotation
RS2	6	1	None	45-degree rotation
*RS2xA	7	1	None	45-degree rotation
RS3	6	1	None	45-degree rotation
*RS3xB	7	1	None	45-degree rotation
RS07	5	1	None	45-degree rotation
RURG1520CC	1	1	None	Dual straight
RURG3020CC	1	1	None	Dual straight
RURG3060	1	1	None	45-degree rotation
RURG3060CC	1	1	None	Dual straight
RURP3060	1	1	None	45-degree rotation
S1	11	1	None	45-degree rotation
S1xB	7	1	None	45-degree rotation
S1xF	7	1	None	45-degree rotation
S2	11	1	None	45-degree rotation
S2xF	7	1	None	45-degree rotation
S3	11	1	None	45-degree rotation
S3xBF	7	1	None	45-degree rotation
S3xF	7	1	None	45-degree rotation
S3xFL	7	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
S4P	6	1	None	None
S5	11	1	None	45-degree rotation
S05xFL	7	1	None	45-degree rotation
S07	5	1	None	45-degree rotation
S07xFL	7	1	None	45-degree rotation
S10	7	1	None	45-degree rotation
SA154	1	1	None	45-degree rotation
SA155	1	1	None	45-degree rotation
SA156	1	1	None	45-degree rotation
SA157	1	1	None	45-degree rotation
SA158	1	1	None	45-degree rotation
SA159	1	1	None	45-degree rotation
SA160	1	1	None	45-degree rotation
SA261	1	1	None	45-degree rotation
SA262	1	1	None	45-degree rotation
SA263	1	1	None	45-degree rotation
SA264	1	1	None	45-degree rotation
SA265	1	1	None	45-degree rotation
*SBYV27	4	1	None	45-degree rotation
*SBYV28	4	1	None	45-degree rotation
SE15P	4	1	None	45-degree rotation
*SF10	8	1	None	45-degree rotation
SF12	1	1	None	45-degree rotation
SF13	1	1	None	45-degree rotation
SF15	1	1	None	45-degree rotation
SF16	1	1	None	45-degree rotation
SF18	1	1	None	45-degree rotation
*SF20	8	1	None	45-degree rotation
SF21	1	1	None	45-degree rotation
SF22	1	1	None	45-degree rotation
SF23	1	1	None	45-degree rotation
SF24	1	1	None	45-degree rotation
*SF30	8	1	None	45-degree rotation
SF1200	1	1	None	45-degree rotation
SF1600	1	1	None	45-degree rotation
SF4001	1	1	None	45-degree rotation
SF4002	1	1	None	45-degree rotation
SF4003	1	1	None	45-degree rotation
SF4004	1	1	None	45-degree rotation
SF4005	1	1	None	45-degree rotation
SF4006	1	1	None	45-degree rotation
SF4007	1	1	None	45-degree rotation
SF5401	1	1	None	45-degree rotation
SF5402	1	1	None	45-degree rotation
SF5403	1	1	None	45-degree rotation
SF5404	1	1	None	45-degree rotation
SF5405	1	1	None	45-degree rotation
SF5406	1	1	None	45-degree rotation
SF5407	1	1	None	45-degree rotation
SF5408	1	1	None	45-degree rotation
*SFE1	7	1	None	45-degree rotation
SK3	4	1	None	45-degree rotation
SL1	7	1	None	45-degree rotation
SM513	1	1	None	45-degree rotation
SM516	1	1	None	45-degree rotation
SM518	1	1	None	45-degree rotation
SM2000	1	1	None	45-degree rotation
SM3000	1	1	None	45-degree rotation
SM4001	3	1	None	45-degree rotation
SM4002	3	1	None	45-degree rotation
SM4003	3	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SM4004	3	1	None	45-degree rotation
SM4005	3	1	None	45-degree rotation
SM4006	3	1	None	45-degree rotation
SM4007	3	1	None	45-degree rotation
SM5059	1	1	None	45-degree rotation
SM5060	1	1	None	45-degree rotation
SM5061	1	1	None	45-degree rotation
SM5062	1	1	None	45-degree rotation
SM5063	1	1	None	45-degree rotation
SM5391	1	1	None	45-degree rotation
SM5392	1	1	None	45-degree rotation
SM5393	1	1	None	45-degree rotation
SM5395	1	1	None	45-degree rotation
SM5397	1	1	None	45-degree rotation
SM5398	1	1	None	45-degree rotation
SM5399	1	1	None	45-degree rotation
SM5400	1	1	None	45-degree rotation
SM5401	1	1	None	45-degree rotation
SM5402	1	1	None	45-degree rotation
SM5404	1	1	None	45-degree rotation
SM5406	1	1	None	45-degree rotation
SM5407	1	1	None	45-degree rotation
SM5408	1	1	None	45-degree rotation
*SMBD914	1	1	Free	45-degree rotation
*SMBD2835	1	1	None	Dual straight
*SMBD2836	1	1	None	Dual straight
*SMBD2837	1	1	None	Dual straight
*SMBD2838	1	1	None	Dual straight
*SMBD6050	1	1	Free	45-degree rotation
*SMBD7000	1	1	None	Dual straight
*SMBYT01-400	1	1	None	45-degree rotation
*SMBYT03-400	1	1	None	45-degree rotation
*SMBYW02-200	1	1	None	45-degree rotation
*SMBYW04-200	1	1	None	45-degree rotation
*SRP100	6	1	None	45-degree rotation
*SRP300	6	1	None	45-degree rotation
*SRP600	1	1	None	45-degree rotation
*STPR120A	1	1	None	45-degree rotation
*STPR310	2	1	None	45-degree rotation
*STPR320	2	1	None	45-degree rotation
*STPR620C	2	1	None	Dual straight
*STPR805D	2	1	None	45-degree rotation
*STPR810D	2	1	None	45-degree rotation
*STPR815D	2	1	None	45-degree rotation
*STPR820D	2	1	None	45-degree rotation
*STPR830DF	1	1	None	45-degree rotation
*STPR840DF	1	1	None	45-degree rotation
*STPR850DF	1	1	None	45-degree rotation
*STPR860DF	1	1	None	45-degree rotation
*STPR1020C	5	1	None	Dual straight
*STPR1210	2	1	None	45-degree rotation
*STPR1220	2	1	None	45-degree rotation
*STPR1505D	1	1	None	45-degree rotation
*STPR1510D	1	1	None	45-degree rotation
*STPR1515D	1	1	None	45-degree rotation
*STPR1520D	1	1	None	45-degree rotation
*STPR1610CT	1	1	None	Dual straight
*STPR1620C	3	1	None	Dual straight
*STPR2410CT	1	1	None	Dual straight
*STPR2420CT	1	1	None	Dual straight
*STTA212S	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*STTA306B	1	1	Free	45-degree rotation
*STTA406	1	1	None	45-degree rotation
*STTA506	3	1	None	45-degree rotation
*STTA512	3	1	None	45-degree rotation
*STTA806	2	1	None	45-degree rotation
*STTA812	2	1	None	45-degree rotation
*STTA1206	2	1	None	45-degree rotation
*STTA1212D	1	1	None	45-degree rotation
*STTA2006P	1	1	None	45-degree rotation
*STTA2512P	1	1	None	45-degree rotation
*STTA3006C	2	1	None	Dual straight
*STTA3006P	1	1	None	45-degree rotation
*STTA6006P	1	1	None	45-degree rotation
STTH1L06	3	1	None	45-degree rotation
STTH1R02	4	1	None	45-degree rotation
STTH1R04	3	1	None	45-degree rotation
STTH1R06	3	1	None	45-degree rotation
STTH2R02	3	1	None	45-degree rotation
STTH3R02	3	1	None	45-degree rotation
STTH4R02B	1	1	None	None
STTH4R02S	1	1	None	45-degree rotation
STTH4R02U	1	1	None	45-degree rotation
STTH5R06B	1	1	Free	45-degree rotation
STTH5R06D	1	1	None	45-degree rotation
STTH5R06FP	1	1	None	45-degree rotation
STTH5R06G	1	1	Free	45-degree rotation
STTH8R04D	1	1	None	45-degree rotation
STTH8R04FP	1	1	None	45-degree rotation
STTH8R04G	1	1	Free	45-degree rotation
STTH8R06D	1	1	None	45-degree rotation
STTH8R06FP	1	1	None	45-degree rotation
STTH8R06G	1	1	Free	45-degree rotation
STTH8R06R	1	1	Free	45-degree rotation
STTH12R06D	1	1	None	45-degree rotation
STTH12R06FP	1	1	None	45-degree rotation
STTH12R06G	1	1	Free	45-degree rotation
STTH12T06	1	1	None	45-degree rotation
STTH30AC06	2	1	None	None
STTH30R06	2	1	None	None
STTH60L06CW	1	1	None	Dual straight
STTH60R04W	1	1	None	45-degree rotation
STTH102	2	1	None	45-degree rotation
STTH106	1	1	None	45-degree rotation
STTH108	2	1	None	45-degree rotation
STTH110	2	1	None	45-degree rotation
STTH112	3	1	None	45-degree rotation
*STTH506D	1	1	None	45-degree rotation
STTH802B	1	1	Free	45-degree rotation
STTH802D	1	1	None	45-degree rotation
STTH802FP	1	1	None	45-degree rotation
STTH802G	1	1	Free	45-degree rotation
*STTH803D	1	1	None	45-degree rotation
*STTH803G	1	1	Free	45-degree rotation
STTH806D	1	1	None	45-degree rotation
*STTH806G	1	1	Free	45-degree rotation
STTH810D	1	1	None	45-degree rotation
STTH810FP	1	1	None	45-degree rotation
*STTH810G	1	1	Free	45-degree rotation
STTH1002CB	1	1	None	Dual straight
STTH1002CFP	1	1	None	Dual straight
STTH1002CG	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STTH1002CR	1	1	None	Dual straight
STTH1002CT	1	1	None	Dual straight
STTH1210D	1	1	None	45-degree rotation
STTH1210FP	1	1	None	45-degree rotation
STTH1210G	1	1	Free	45-degree rotation
STTH1212D	1	1	None	45-degree rotation
STTH1212G	1	1	Free	45-degree rotation
STTH1502D	1	1	None	45-degree rotation
STTH1502FP	1	1	None	45-degree rotation
STTH1502G	1	1	Free	45-degree rotation
*STTH1506D	1	1	None	45-degree rotation
STTH1506DPI	1	1	None	45-degree rotation
STTH1512D	1	1	None	45-degree rotation
STTH1512G	1	1	None	None
STTH1512PI	1	1	None	45-degree rotation
STTH1512W	1	1	None	45-degree rotation
STTH2002D	1	1	None	45-degree rotation
STTH2002G	1	1	Free	45-degree rotation
STTH2003CFP	1	1	None	Dual straight
STTH2003CG	1	1	None	Dual straight
STTH2003CR	1	1	None	Dual straight
STTH2003CT	1	1	None	Dual straight
STTH3002CG	1	1	None	Dual straight
STTH3002CPI	1	1	None	Dual straight
STTH3002CR	1	1	None	Dual straight
STTH3002CT	1	1	None	Dual straight
STTH3002CW	1	1	None	Dual straight
STTH3003CW	1	1	None	Dual straight
*STTH3006CW	1	1	None	Dual straight
STTH3012D	1	1	None	45-degree rotation
STTH3012W	1	1	None	45-degree rotation
STTH6002CPI	1	1	None	Dual straight
STTH6002CW	1	1	None	Dual straight
STTH6003CW	1	1	None	Dual straight
*SUF15	2	1	None	45-degree rotation
*SUF30	2	1	None	45-degree rotation
SUF4001	1	1	None	45-degree rotation
SUF4002	1	1	None	45-degree rotation
SUF4003	1	1	None	45-degree rotation
SUF4004	1	1	None	45-degree rotation
SUF4005	1	1	None	45-degree rotation
SUF4006	1	1	None	45-degree rotation
SUF4007	1	1	None	45-degree rotation
*TDA1061	1	1	None	None
TS4448-RZ	1	1	None	45-degree rotation
TVR10	4	1	None	45-degree rotation
U05	5	1	None	45-degree rotation
U5DL2C48A	1	1	None	Dual straight
U5FL2C48A	1	1	None	Dual straight
U10DL2C48A	1	1	None	Dual straight
U10FL2C48A	1	1	None	Dual straight
UF1	7	1	None	45-degree rotation
UF1xFL	7	1	None	45-degree rotation
UF2	7	1	None	45-degree rotation
UF2xFP	7	1	None	45-degree rotation
UF3	7	1	None	45-degree rotation
UF03xFL	7	1	None	45-degree rotation
UF05xFL	7	1	None	45-degree rotation
UF600	7	1	None	45-degree rotation
UF4001	1	1	None	45-degree rotation
UF4002	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
UF4003	1	1	None	45-degree rotation
UF4004	1	1	None	45-degree rotation
UF4005	1	1	None	45-degree rotation
UF4006	1	1	None	45-degree rotation
UF4007	1	1	None	45-degree rotation
UF5400	1	1	None	45-degree rotation
UF5401	1	1	None	45-degree rotation
UF5402	1	1	None	45-degree rotation
UF5403	1	1	None	45-degree rotation
UF5404	1	1	None	45-degree rotation
UF5405	1	1	None	45-degree rotation
UF5406	1	1	None	45-degree rotation
UF5407	1	1	None	45-degree rotation
UF5408	1	1	None	45-degree rotation
UFT800	6	1	None	45-degree rotation
UG30	4	1	None	Dual straight
UGB8	5	1	None	45-degree rotation
US1	7	1	None	45-degree rotation
US1xF	7	1	None	45-degree rotation
US1xBF	7	1	None	45-degree rotation
US2	7	1	None	45-degree rotation
US2xF	7	1	None	45-degree rotation
US2xBF	7	1	None	45-degree rotation
US3	7	1	None	45-degree rotation
USL1	7	1	None	45-degree rotation
*V03	3	1	None	45-degree rotation
*V06	3	1	None	45-degree rotation
VS-8ETH03-1-M3	1	1	Free	45-degree rotation
VS-8ETH03-N3	1	1	None	45-degree rotation
VS-8ETH03S-M3	1	1	Free	45-degree rotation
VS-8EWF10S-M3	1	1	None	None
VS-8EWF12S-M3	1	1	None	None
VS-8EWS16S-M3	1	1	None	None
VS-12EWH06	1	1	Free	45-degree rotation
VS-15ETL06	1	1	None	45-degree rotation
VS-20CTH03FP	1	1	None	Dual straight
VS-20ETS08FP	1	1	None	45-degree rotation
VS-20ETS08S	1	1	None	None
VS-20ETS12FP	1	1	None	45-degree rotation
VS-20ETS12S	1	1	None	None
VS-30APF10	1	1	None	None
VS-30APF12	1	1	None	None
VS-30CPH03	1	1	None	Dual straight
VS-30EPF10	1	1	None	45-degree rotation
VS-30EPF12	1	1	None	45-degree rotation
VS-60APH03	1	1	None	None
VS-60APU02	1	1	None	None
VS-60EPU02	1	1	None	45-degree rotation
VS-ETH3006	2	1	None	45-degree rotation
VS-ETU1506	2	1	None	45-degree rotation
VS-HFA04SD60S-M3	1	1	Free	45-degree rotation
VS-HFA08PB120	1	1	None	45-degree rotation
VS-HFA08TA60C	1	1	None	Dual straight
VS-HFA08TB60-M3	1	1	None	45-degree rotation
VS-HFA08TB60S	1	1	Free	45-degree rotation
VS-HFA15TB60	1	1	Free	45-degree rotation
VS-HFA16PB120	1	1	Free	45-degree rotation
VS-HFA25TB60	1	1	Free	45-degree rotation
VS-HFA30PB120	1	1	Free	45-degree rotation

* Denotes a symbol that was added to the most recent version of the library

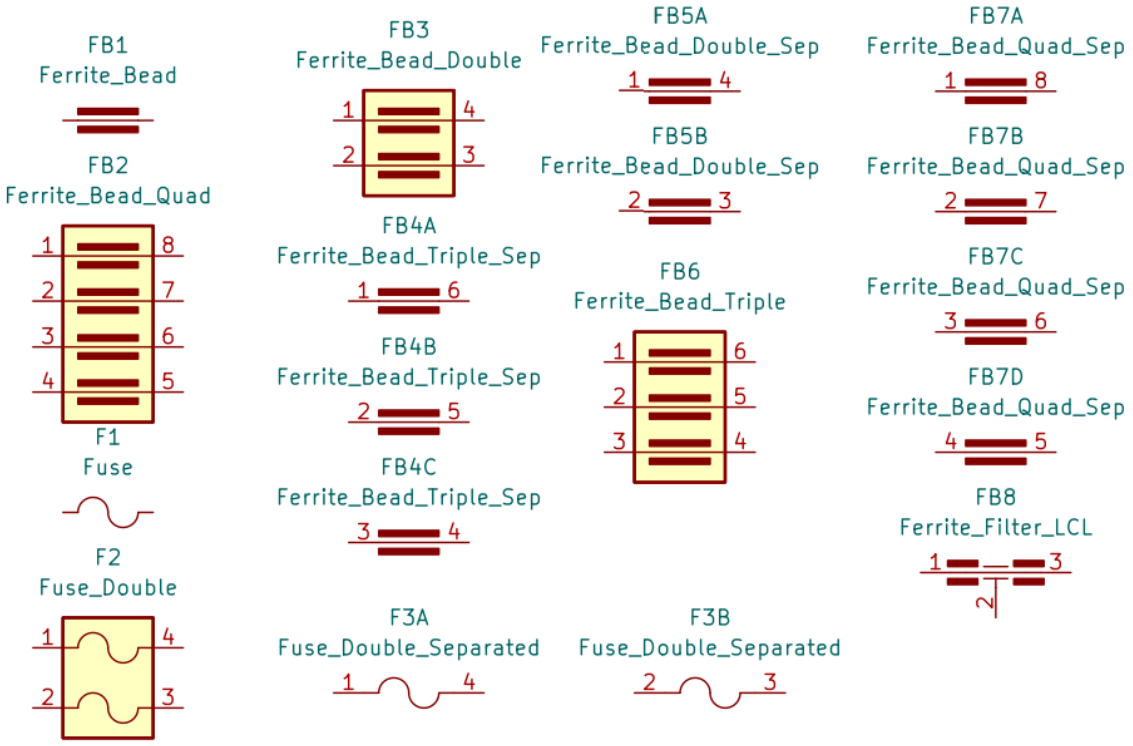
2.15. Generic Device Library

This library contains generic device symbols (without any footprint associoation) for fuses, ferrite beads and filters.

Double, triple or quad ferrites or fuses are provided as either aggregated (standard) or multi-unit symbols (_Sep suffix on the symbol name).

Symbols in this library are meant to complement the standard KiCad "Device" library with US-style fuse and AKL-style ferrite symbols.

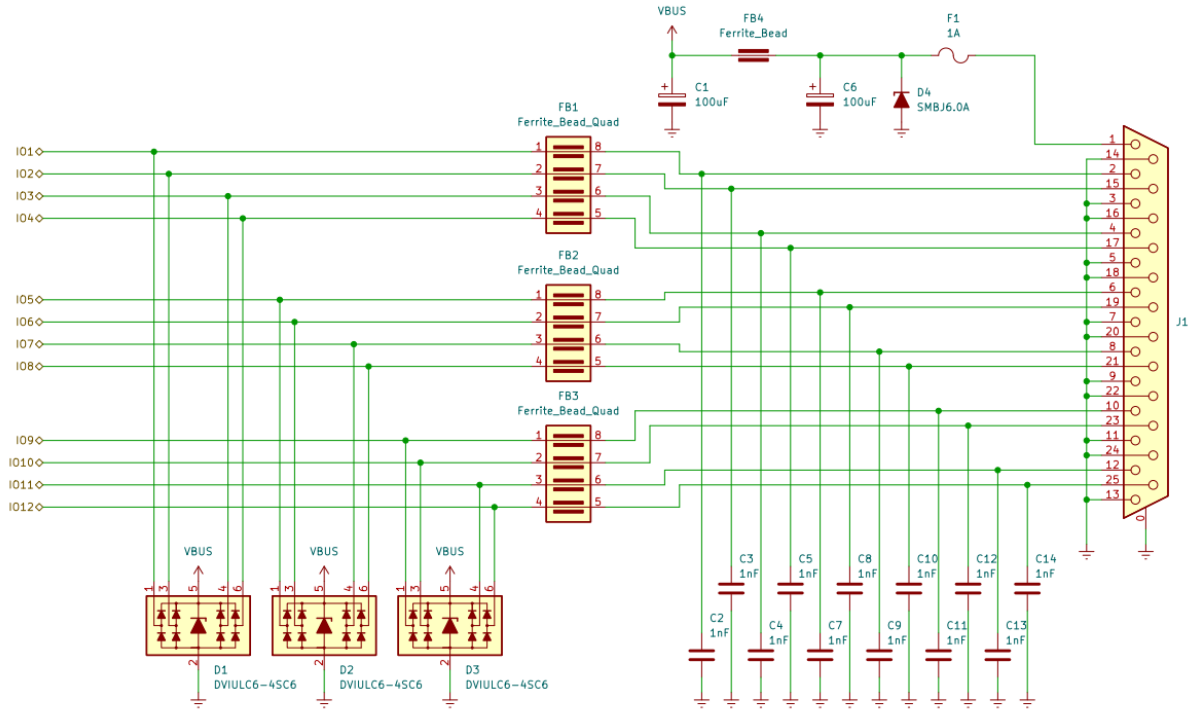
Filename: **Diode_AKL**	
Total symbols:	**11**
Generic symbols:	**11**
Specific symbols:	**0**



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Digital interface with EMI and ESD suppression on digital lines and protected power input showcasing ferrite and fuse generic symbols.

2.16. Bridge Rectifier Library

This library contains single and triple phase AC to DC bridge rectifiers.

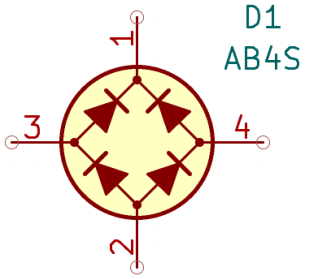
By default, all symbols are oriented so the positive DC output is on the top of the symbol and negative DC output is on the bottom.

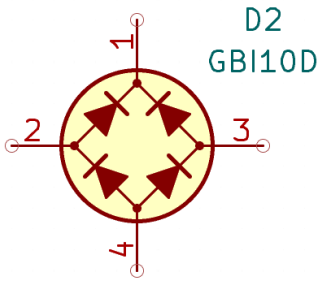
All symbols have pin numbers clearly indicated.

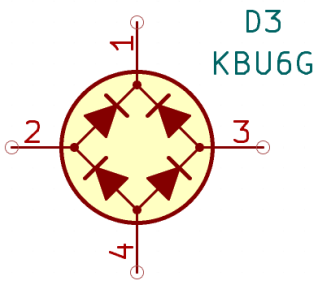
Devices based on Schottky diodes have Schottky diodes instead of standard diodes on the symbol.

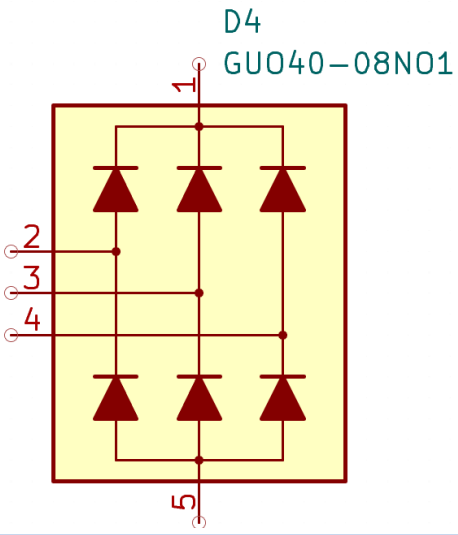
Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode bridge family has a separate specific symbol.

Filename: **Diode_Bridge_AKL**	
Total symbols:	**848**(+6)
Generic symbols:	**7**(+1)
Specific symbols:	**841**(+5)





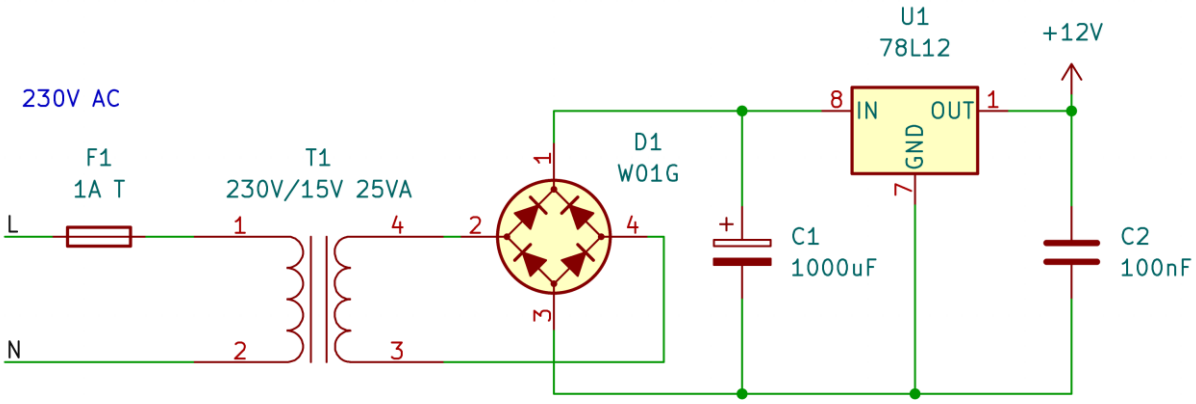




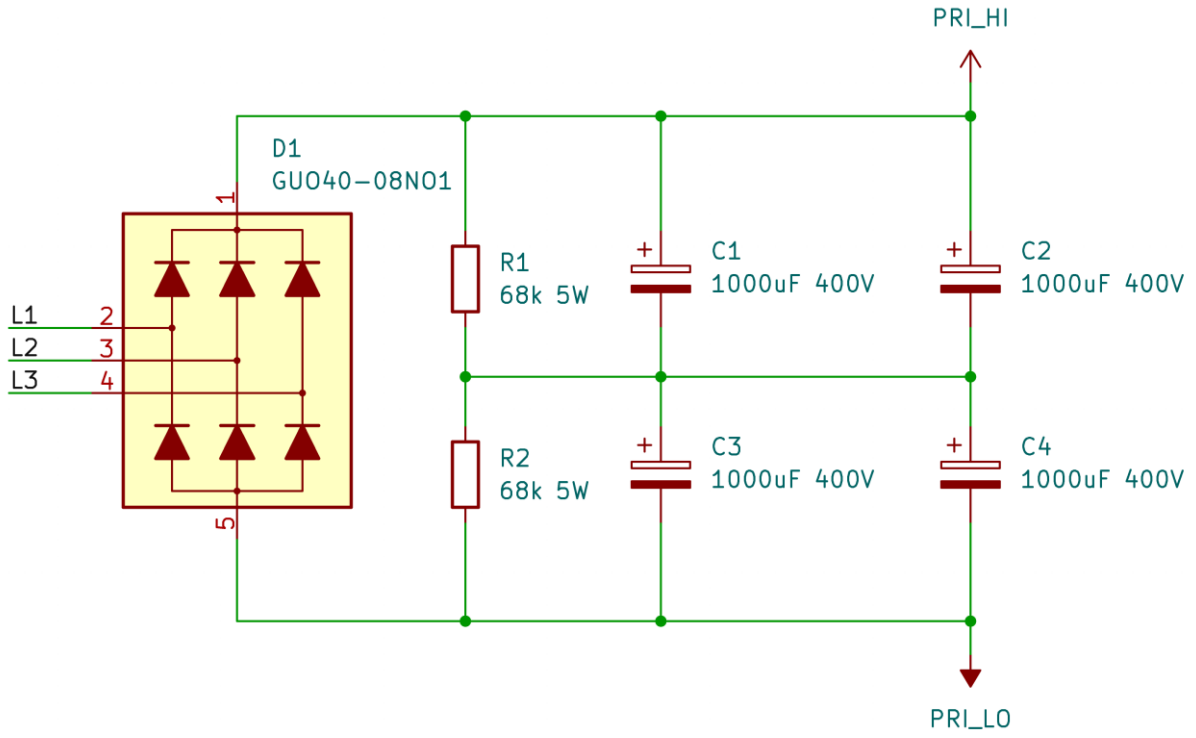
Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
12VDC 100mA linear power supply using W01G bridge rectifier.



Example 2
3-Phase AC rectifier and filter based on GUO40-08NO1 bridge rectifier.

Table 2.13. List of all devices included in Diode_Bridge_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2W01G	1	1	None	None
2W02G	1	1	None	None
2W04G	1	1	None	None
2W005G	1	1	None	None
2W06G	1	1	None	None
2W08G	1	1	None	None
2W10G	1	1	None	None
AB1S	1	1	None	None
AB2S	1	1	None	None
AB4S	1	1	None	None
AB05S	1	1	None	None
AB6S	1	1	None	None
AB10S	1	1	None	None
ABS2	1	1	None	None
ABS4	1	1	None	None
ABS8	1	1	None	None
ABS10	1	1	None	None
ABS15	7	1	None	None
*ADB18PS	1	1	Do not connect	None
B1xF	7	1	None	None
B2S	1	1	None	None
B4M	1	1	None	None
B6M	1	1	None	None
B2S	1	1	None	None
B4S	1	1	None	None
B6S	1	1	None	None
B04xF	7	1	None	None
B40C800	2	1	None	None
B40C1000G	1	1	None	None
B40C1500G	1	1	None	None
B40C2300-1500	2	1	None	None
B40C3200-2200	2	1	None	None
B40C3700-2200A	1	1	None	None
B40C5000-3000A	1	1	None	None
B40C7000-4000A	1	1	None	None
B40D	1	1	None	None
B40FD	1	1	None	None
B40FS	1	1	None	None
B40R	1	1	None	None
B40S	1	1	None	None
B40S2A	1	1	None	None
B40S15A	1	1	None	None
B80C800G	1	1	None	None
B80C1000G	1	1	None	None
B80C1500G	1	1	None	None
B80C2300-1500	2	1	None	None
B80C3200-2200A	1	1	None	None
B80C3700-2200A	1	1	None	None
B80C5000-3000A	1	1	None	None
B80C7000-4000A	1	1	None	None
B80D	1	1	None	None
B80FS	1	1	None	None
B80FS	1	1	None	None
B80R	1	1	None	None
B80S	1	1	None	None
B80S2A	1	1	None	None
B80S15A	1	1	None	None
B125C800	2	1	None	None
B125C1000G	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
B125C1500G	1	1	None	None
B125C2300-1500	2	1	None	None
B125C3200-2200A	1	1	None	None
B125C3700-2200A	1	1	None	None
B125C5000-3000A	1	1	None	None
B125C7000-4000A	1	1	None	None
B125D	1	1	None	None
B125FD	1	1	None	None
B125FS	1	1	None	None
B125R	1	1	None	None
B125S	1	1	None	None
B125S2A	1	1	None	None
B125S15A	1	1	None	None
B250C800	2	1	None	None
B250C1000G	1	1	None	None
B250C1500G	1	1	None	None
B250C2300-1500	2	1	None	None
B250C3200-2200A	1	1	None	None
B250C3700-2200A	1	1	None	None
B250C5000-3000A	1	1	None	None
B250C7000-4000A	1	1	None	None
B250D	1	1	None	None
B250FD	1	1	None	None
B250FS	1	1	None	None
B250R	1	1	None	None
B250S	1	1	None	None
B250S2A	1	1	None	None
B250S15A	1	1	None	None
B380C800	2	1	None	None
B380C1000G	1	1	None	None
B380C1500G	1	1	None	None
B380C2300-1500	2	1	None	None
B380C3200-2200A	1	1	None	None
B380C3700-2200A	1	1	None	None
B380C5000-3000A	1	1	None	None
B380C7000-4000A	1	1	None	None
B380D	1	1	None	None
B380FD	1	1	None	None
B380FS	1	1	None	None
B380R	1	1	None	None
B380S	1	1	None	None
B380S2A	1	1	None	None
B380S15A	1	1	None	None
B500C2300-1500	2	1	None	None
B500C3200-2200A	1	1	None	None
B500C3700-2200A	1	1	None	None
B500C5000-3000A	1	1	None	None
B500C7000-4000A	1	1	None	None
B500D	1	1	None	None
B500R	1	1	None	None
B500S	1	1	None	None
B500S2A	1	1	None	None
B500S15A	1	1	None	None
BR31	1	1	None	None
BR32	1	1	None	None
BR34	1	1	None	None
BR36	1	1	None	None
BR38	1	1	None	None
BR151	2	1	None	None
BR152	2	1	None	None
BR154	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BR156	2	1	None	None
BR158	2	1	None	None
BR251	2	1	None	None
BR252	2	1	None	None
BR254	2	1	None	None
BR256	2	1	None	None
BR258	2	1	None	None
BR305	1	1	None	None
BR310	1	1	None	None
BR351	2	1	None	None
BR352	2	1	None	None
BR354	2	1	None	None
BR356	2	1	None	None
BR358	2	1	None	None
BR501W	1	1	None	None
BR502W	1	1	None	None
BR504W	1	1	None	None
BR506W	1	1	None	None
BR508W	1	1	None	None
BR1505	2	1	None	None
BR1510	2	1	None	None
BR2510	2	1	None	None
BR3505	2	1	None	None
BR3510	2	1	None	None
BR5005W	1	1	None	None
BR5010W	1	1	None	None
BU1506	1	1	None	None
BU1508	1	1	None	None
BU1510	1	1	None	None
CS10	2	1	None	None
CS20	2	1	None	None
CS30	2	1	None	None
CS40	2	1	None	None
CS50	2	1	None	None
DB101	2	1	None	None
DB102	2	1	None	None
DB103	2	1	None	None
DB104	2	1	None	None
DB105	2	1	None	None
DB106	2	1	None	None
DB107	2	1	None	None
DB151	2	1	None	None
DB152	2	1	None	None
DB153	2	1	None	None
DB154	2	1	None	None
DB155	2	1	None	None
DB156	2	1	None	None
DB157	2	1	None	None
DB201S	1	1	None	None
DB202S	1	1	None	None
DB203S	1	1	None	None
DB204S	1	1	None	None
DB205S	1	1	None	None
DB206S	1	1	None	None
DB207S	1	1	None	None
DBI6	7	1	None	None
DBI20	3	1	None	None
DBI25	10	1	None	None
DBL101G	1	1	None	None
DBL102G	1	1	None	None
DBL103G	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DBL104G	1	1	None	None
DBL105G	1	1	None	None
DBL106G	1	1	None	None
DBL107G	1	1	None	None
DF01	2	1	None	None
DF02	2	1	None	None
DF04	2	1	None	None
DF005	2	1	None	None
DF06	2	1	None	None
DF08	2	1	None	None
DF10	2	1	None	None
DF1501	2	1	None	None
DF1502	2	1	None	None
DF1504	2	1	None	None
DF1506	2	1	None	None
DF1508	2	1	None	None
DF1510	2	1	None	None
DF15005	2	1	None	None
EDF1	8	1	None	None
GBI10	7	1	None	None
GBI15	7	1	None	None
GBI25	7	1	None	None
GBI35	7	1	None	None
GBI40	6	1	None	None
GBJ8	7	1	None	None
GBJ10	7	1	None	None
GBJ15	7	1	None	None
GBJ20	1	1	None	None
*GBJ601	1	1	None	None
*GBJ602	1	1	None	None
*GBJ604	1	1	None	None
*GBJ606	1	1	None	None
*GBJ608	1	1	None	None
*GBJ610	1	1	None	None
*GBJ6005	1	1	None	None
GBK6	7	1	None	None
GBK8	7	1	None	None
GBK10	7	1	None	None
GBK15	7	1	None	None
GBK20	7	1	None	None
GBK25	7	1	None	None
GBK35	7	1	None	None
GBK50	7	1	None	None
GBL01	1	1	None	None
GBL02	1	1	None	None
GBL2	7	1	None	None
GBL04	1	1	None	None
GBL005	1	1	None	None
GBL06	1	1	None	None
GBL6	7	1	None	None
GBL08	1	1	None	None
GBL10	1	1	None	None
GBO25	2	1	None	None
GBPC101	1	1	None	None
GBPC102	1	1	None	None
GBPC104	1	1	None	None
GBPC106	1	1	None	None
GBPC108	1	1	None	None
GBPC110	1	1	None	None
GBPC601	1	1	None	None
GBPC602	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
GBPC604	1	1	None	None
GBPC606	1	1	None	None
GBPC608	1	1	None	None
GBPC610	1	1	None	None
GBPC801	1	1	None	None
GBPC802	1	1	None	None
GBPC804	1	1	None	None
GBPC806	1	1	None	None
GBPC808	1	1	None	None
GBPC810	1	1	None	None
GBPC1001	1	1	None	None
GBPC1002	1	1	None	None
GBPC1004	1	1	None	None
GBPC1006	1	1	None	None
GBPC1008	1	1	None	None
GBPC1010	1	1	None	None
GBPC1501W	1	1	None	None
GBPC1502W	1	1	None	None
GBPC1504W	1	1	None	None
GBPC1506W	1	1	None	None
GBPC1508W	1	1	None	None
GBPC1510W	1	1	None	None
GBPC2501W	1	1	None	None
GBPC2502W	1	1	None	None
GBPC2504W	1	1	None	None
GBPC2506W	1	1	None	None
GBPC2508W	1	1	None	None
GBPC2510W	1	1	None	None
GBPC3501W	1	1	None	None
GBPC3502W	1	1	None	None
GBPC3504W	1	1	None	None
GBPC3506W	1	1	None	None
GBPC3508W	1	1	None	None
GBPC3510W	1	1	None	None
GBPC5001W	1	1	None	None
GBPC5002W	1	1	None	None
GBPC5004W	1	1	None	None
GBPC5006W	1	1	None	None
GBPC5008W	1	1	None	None
GBPC5010W	1	1	None	None
GBPC6005	1	1	None	None
GBPC8005	1	1	None	None
GBPC10005	1	1	None	None
GBPC15005W	1	1	None	None
GBPC25005W	1	1	None	None
GBPC35005W	1	1	None	None
GBPC50005W	1	1	None	None
GBS4	7	1	None	None
GBU4	7	1	None	None
GBU6	7	1	None	None
GBU8	7	1	None	None
GBU10	7	1	None	None
GBU12	7	1	None	None
GBU15	7	1	None	None
GBU25	7	1	None	None
GBV15	7	1	None	None
GSIB620	1	1	None	None
GSIB640	1	1	None	None
GSIB660	1	1	None	None
GSIB680	1	1	None	None
GSIB2520	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
GSIB2540	1	1	None	None
GSIB2560	1	1	None	None
GSIB2580	1	1	None	None
GUO40	3	1	None	None
KBJ401G	1	1	None	None
KBJ402G	1	1	None	None
KBJ404G	1	1	None	None
KBJ406W	1	1	None	None
KBJ408G	1	1	None	None
KBJ410G	1	1	None	None
KBJ601G	1	1	None	None
KBJ602G	1	1	None	None
KBJ604G	1	1	None	None
KBJ606G	1	1	None	None
KBJ608G	1	1	None	None
KBJ610G	1	1	None	None
KBJ4005G	1	1	None	None
KBJ6005G	1	1	None	None
KBL01	1	1	None	None
KBL02	1	1	None	None
KBL04	1	1	None	None
KBL005	1	1	None	None
KBL06	1	1	None	None
KBL08	1	1	None	None
KBL10	1	1	None	None
KBP01G	1	1	None	None
KBP02G	1	1	None	None
KBP04G	1	1	None	None
KBP005G	1	1	None	None
KBP06G	1	1	None	None
KBP08G	1	1	None	None
KBP10G	1	1	None	None
KBP201G	1	1	None	None
KBP202G	1	1	None	None
KBP204G	1	1	None	None
KBP206G	1	1	None	None
KBP208G	1	1	None	None
KBP210G	1	1	None	None
KBP302G	1	1	None	None
KBP304G	1	1	None	None
KBP306G	1	1	None	None
KBP308G	1	1	None	None
KBP310G	1	1	None	None
KBP2005G	1	1	None	None
KBPC101	1	1	None	None
KBPC102	1	1	None	None
KBPC104	1	1	None	None
KBPC106	1	1	None	None
KBPC108	1	1	None	None
KBPC110	1	1	None	None
KBPC600	1	1	None	None
KBPC601	1	1	None	None
KBPC602	1	1	None	None
KBPC604	1	1	None	None
KBPC606	1	1	None	None
KBPC608	1	1	None	None
KBPC610	1	1	None	None
KBPC800	1	1	None	None
KBPC801	1	1	None	None
KBPC802	1	1	None	None
KBPC804	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
KBPC806	1	1	None	None
KBPC808	1	1	None	None
KBPC810	1	1	None	None
KBPC1005	1	1	None	None
KBPC1501W	1	1	None	None
KBPC1502W	1	1	None	None
KBPC1504W	1	1	None	None
KBPC1506W	1	1	None	None
KBPC1508W	1	1	None	None
KBPC1510W	1	1	None	None
KBPC15005W	1	1	None	None
KBU6	7	1	None	None
KBU8	7	1	None	None
KBU10	7	1	None	None
KBU12	7	1	None	None
MB1	2	1	None	None
MB2	2	1	None	None
MB4	2	1	None	None
MB05	2	1	None	None
MB6	2	1	None	None
MB8	2	1	None	None
MB10	2	1	None	None
MB151W	1	1	None	None
MB152W	1	1	None	None
MB154W	1	1	None	None
MB156W	1	1	None	None
MB158W	1	1	None	None
MB251W	1	1	None	None
MB252W	1	1	None	None
MB254W	1	1	None	None
MB256W	1	1	None	None
MB258W	1	1	None	None
MB351W	1	1	None	None
MB352W	1	1	None	None
MB354W	1	1	None	None
MB356W	1	1	None	None
MB358W	1	1	None	None
MB1505W	1	1	None	None
MB1510W	1	1	None	None
MB2505W	1	1	None	None
MB2510W	1	1	None	None
MB3505W	1	1	None	None
MB3510W	1	1	None	None
MBR151W	1	1	None	None
MBR152W	1	1	None	None
MBR154W	1	1	None	None
MBR156W	1	1	None	None
MBR158W	1	1	None	None
MBR251W	1	1	None	None
MBR252W	1	1	None	None
MBR254W	1	1	None	None
MBR256W	1	1	None	None
MBR258W	1	1	None	None
MBR351W	1	1	None	None
MBR352W	1	1	None	None
MBR354W	1	1	None	None
MBR356W	1	1	None	None
MBR358W	1	1	None	None
MBR1505W	1	1	None	None
MBR1510W	1	1	None	None
MBR2505W	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MBR2510W	1	1	None	None
MBR3505W	1	1	None	None
MBR3510W	1	1	None	None
MBS2	1	1	None	None
MBS4	1	1	None	None
MBS6	1	1	None	None
MBS8	1	1	None	None
MBS10	1	1	None	None
MMB151W	1	1	None	None
MMB152W	1	1	None	None
MMB154W	1	1	None	None
MMB156W	1	1	None	None
MMB158W	1	1	None	None
MMB251W	1	1	None	None
MMB252W	1	1	None	None
MMB254W	1	1	None	None
MMB256W	1	1	None	None
MMB258W	1	1	None	None
MMB351W	1	1	None	None
MMB352W	1	1	None	None
MMB354W	1	1	None	None
MMB356W	1	1	None	None
MMB358W	1	1	None	None
MMB1505W	1	1	None	None
MMB1510W	1	1	None	None
MMB2505W	1	1	None	None
MMB2510W	1	1	None	None
MMB3505W	1	1	None	None
MMB3510W	1	1	None	None
MP601	1	1	None	None
MP602	1	1	None	None
MP604	1	1	None	None
MP606	1	1	None	None
MP608	1	1	None	None
MP610	1	1	None	None
MP801	1	1	None	None
MP802	1	1	None	None
MP804	1	1	None	None
MP806	1	1	None	None
MP808	1	1	None	None
MP810	1	1	None	None
MP1001	1	1	None	None
MP1002	1	1	None	None
MP1004	1	1	None	None
MP1006	1	1	None	None
MP1008	1	1	None	None
MP1010	1	1	None	None
MP6005	1	1	None	None
MP8005	1	1	None	None
MP10005	1	1	None	None
MYS40	1	1	None	None
MYS80	1	1	None	None
MYS125	1	1	None	None
MYS250	1	1	None	None
MYS380	1	1	None	None
PB1000	1	1	None	None
PB1001	1	1	None	None
PB1002	1	1	None	None
PB1004	1	1	None	None
PB1006	1	1	None	None
PB1008	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
PB1010	1	1	None	None
RS401	1	1	None	None
RS402	1	1	None	None
RS403	1	1	None	None
RS404	1	1	None	None
RS405	1	1	None	None
RS406	1	1	None	None
RS407	1	1	None	None
RS601	1	1	None	None
RS602	1	1	None	None
RS603	1	1	None	None
RS604	1	1	None	None
RS605	1	1	None	None
RS606	1	1	None	None
RS607	1	1	None	None
RS801	1	1	None	None
RS802	1	1	None	None
RS803	1	1	None	None
RS804	1	1	None	None
RS805	1	1	None	None
RS806	1	1	None	None
RS807	1	1	None	None
S40	1	1	None	None
S80	1	1	None	None
S125	1	1	None	None
S250	1	1	None	None
S380	1	1	None	None
S500	1	1	None	None
TB1S	1	1	None	None
TB2S	1	1	None	None
TB4S	1	1	None	None
TB05S	1	1	None	None
TB6S	1	1	None	None
TB8S	1	1	None	None
TB10S	1	1	None	None
VS-GBPC2502W	1	1	None	None
VS-GBPC2504W	1	1	None	None
VS-GBPC2506W	1	1	None	None
VS-GBPC2508W	1	1	None	None
VS-GBPC2510W	1	1	None	None
VS-GBPC2512W	1	1	None	None
VS-GBPC3502W	1	1	None	None
VS-GBPC3504W	1	1	None	None
VS-GBPC3506W	1	1	None	None
VS-GBPC3508W	1	1	None	None
VS-GBPC3510W	1	1	None	None
VS-GBPC3512W	1	1	None	None
W01G	1	1	None	None
W02G	1	1	None	None
W04G	1	1	None	None
W005G	1	1	None	None
W06G	1	1	None	None
W08G	1	1	None	None
W10G	1	1	None	None

* Denotes a symbol that was added to the most recent version of the library

2.17. Capacitance Diode Library

This library contains variable capacitance diodes (varicaps/varactors) and diode arrays.

Diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol.

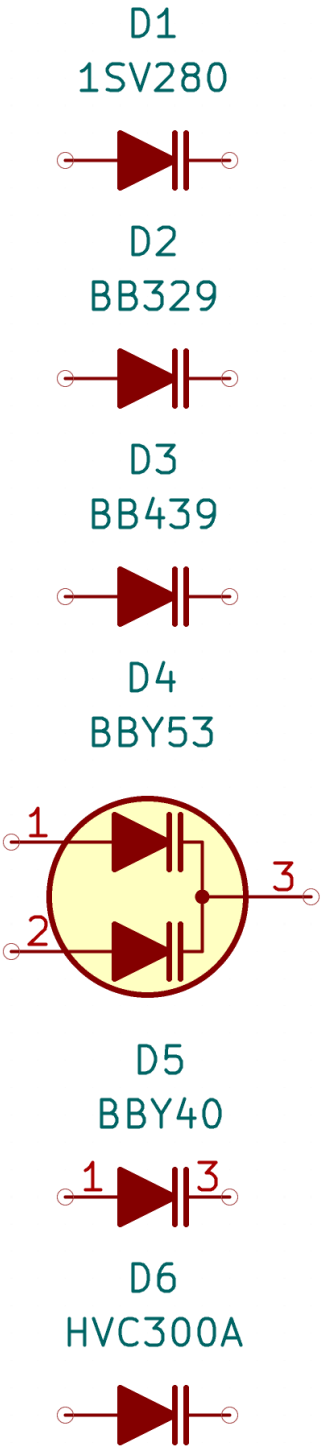
2-terminal capacitance diodes have alternate 45-degree symbols, see Section 2.1.5 for more details.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT capacitance diode symbols use standard variants of THT diode footprints by default.

SMD capacitance diode symbols use standard variants of SMD diode footprints by default.

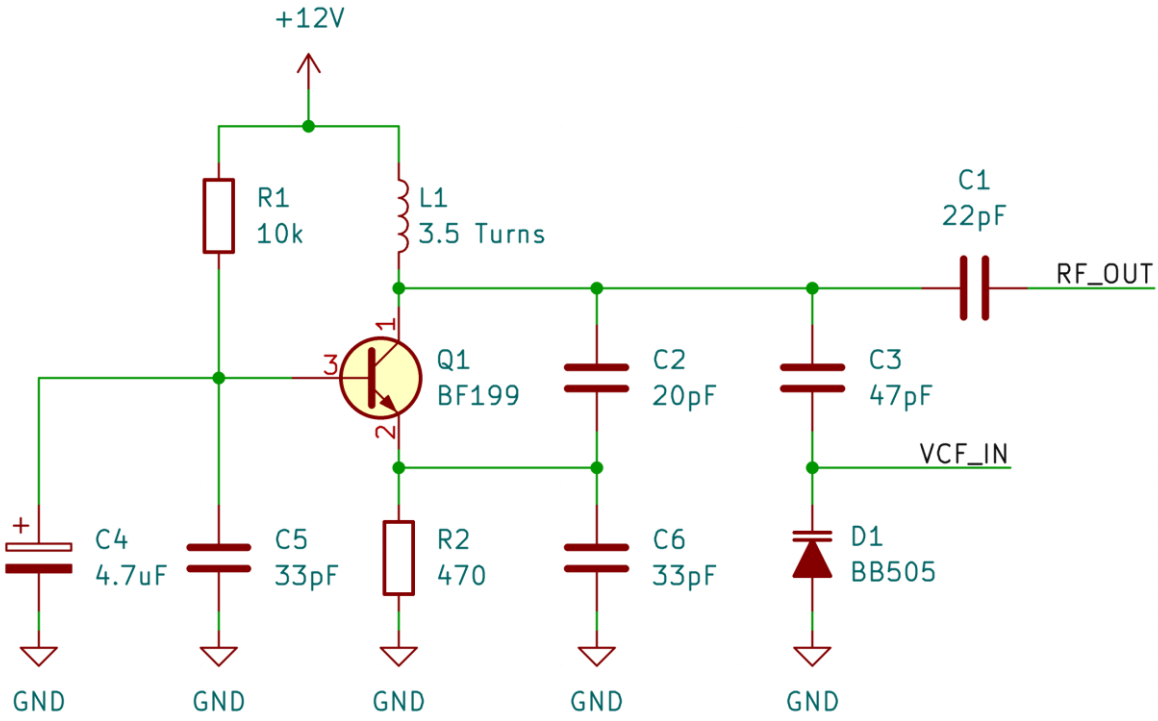
Filename: **Diode_Capacitance_AKL**	
Total symbols:	**34**
Generic symbols:	**4**
Specific symbols:	**30**



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
Voltage Controlled Oscillator (VCO) using BB505 varicap diode.

Table 2.14. List of all devices included in Diode_Capacitance_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
1SV277	1	1	None	45-degree rotation
1SV280	1	1	None	45-degree rotation
1SV282	1	1	None	45-degree rotation
1SV285	1	1	None	45-degree rotation
1SV311	1	1	None	45-degree rotation
1SV323	1	1	None	45-degree rotation
BA124	1	1	None	45-degree rotation
BB329	1	1	None	45-degree rotation
BB439	1	1	None	45-degree rotation
BB505	1	1	None	45-degree rotation
BB535	1	1	None	45-degree rotation
BB555	1	1	None	45-degree rotation
BB639	1	1	None	45-degree rotation
BB640	1	1	None	45-degree rotation
BB659	1	1	None	45-degree rotation
BB833	1	1	None	45-degree rotation
BB837	1	1	None	45-degree rotation
BB844	1	1	None	Dual straight
BB857	2	1	None	45-degree rotation
BBY40	1	1	Free	45-degree rotation
BBY53	1	1	None	Dual straight
BBY53-02V	1	1	None	45-degree rotation
BBY53-02W	1	1	None	45-degree rotation
BBY53-93W	1	1	None	45-degree rotation
BBY53-05W	1	1	None	Dual straight
BBY55-02V	1	1	None	Dual straight
BBY55-02W	1	1	None	Dual straight
BBY55-03W	1	1	None	Dual straight
HVC300A	1	1	None	Dual straight

2.18. Current Limiting Diode Library

This library contains current limiting diodes, also known as current regulating diodes.

Current limiting diodes act as 2-terminal unidirectional current sources/sinks

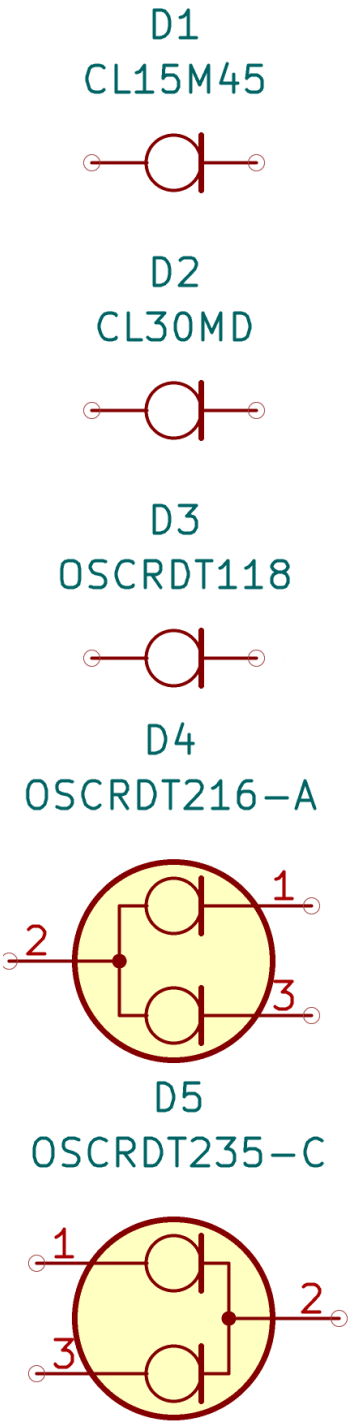
Current limiting diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode (terminal that normally has lower voltage) is pin 1, anode (terminal that normally has higher voltage) is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT current-limiting diode symbols use standard variants of THT diode footprints by default.

SMD current-limiting diode symbols use standard variants of SMD diode footprints by default.

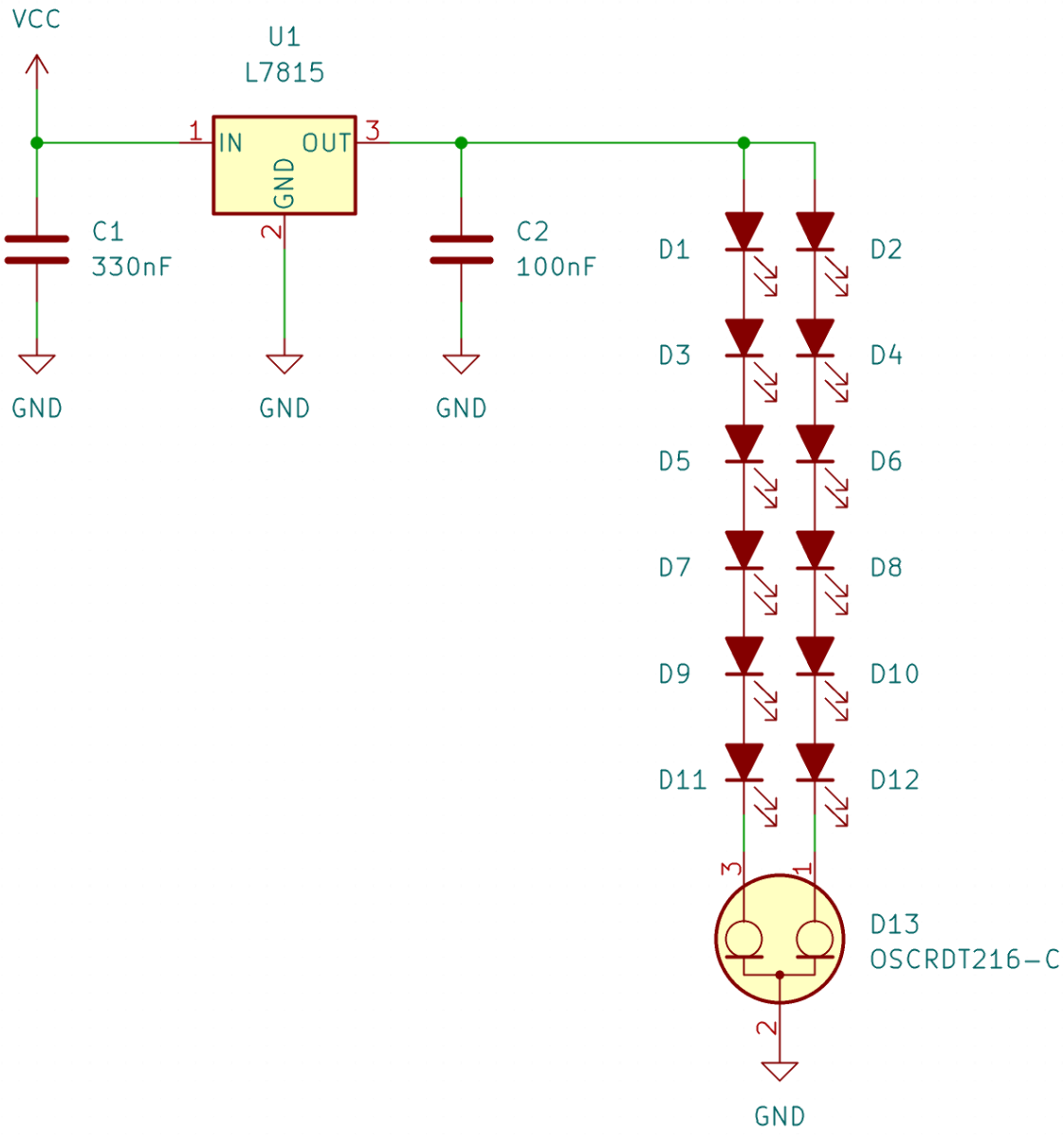
Filename: **Diode_Current_Limiting_AKL**	
Total symbols:	**31**(+16)
Generic symbols:	**3**
Specific symbols:	**28**(+16)



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
LED driver using OSCRDT216-C Dual Common-Cathode current limiting diode.

Table 2.15. List of all devices included in Diode_Current_Limiting_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*CCLHM080	1	1	None	None
*CCLHM100	1	1	None	None
*CCLHM120	1	1	None	None
*CCLHM150	1	1	None	None
*CCLM0035	1	1	None	None
*CCLM0130	1	1	None	None
*CCLM0300	1	1	None	None
*CCLM0500	1	1	None	None
*CCLM0750	1	1	None	None
*CCLM1000	1	1	None	None
*CCLM1500	1	1	None	None
*CCLM2000	1	1	None	None
*CCLM2700	1	1	None	None
*CCLM3500	1	1	None	None
*CCLM4500	1	1	None	None
*CCLM5750	1	1	None	None
CL10MD	1	1	None	None
CL15M	2	1	None	None
CL20M	2	1	None	None
CL30MD	1	1	None	None
CL40M45	1	1	None	None
OSCRDT118	1	1	None	None
OSCRDT216	2	1	None	None
OSCRDT235	2	1	None	None

* Denotes a symbol that was added to the most recent version of the library

2.19. Schottky Diode Library

This library contains Schottky diodes and Schottky diode arrays.

Dual and triple isolated Schottky diodes have two variants of their symbol. Standard symbol is a single-unit symbol with all diodes in one place. Disaggregated symbol ends in a lowercase 's' and is a multi-unit symbol.

Single 2-terminal Schottky diodes and dual common anode, common cathode and series Schottky diodes have alternate symbols, see Section 2.1.5 for more details.

Parts with two dual diode common cathode/anode/series arrays always have multi-unit symbols.

Schottky diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol. Parts with multiple pads connected to cathode or anode have multiple pins on the symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT Schottky diode symbols use standard variants of THT diode footprints by default.

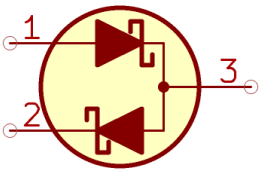
SMD Schottky diode symbols use standard variants of SMD diode footprints by default.

Filename: **Diode_Schottky_AKL**	
Total symbols:	**2159**(+396)
Generic symbols:	**53**(+3)
Specific symbols:	**2106**(+393)

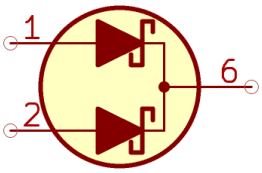
D1
1N5819

D2
BAT754

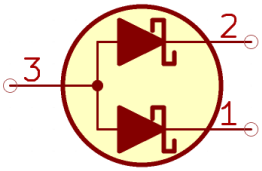
D3
BAT54S



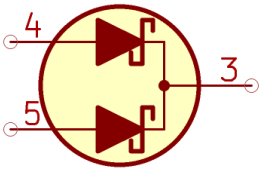
D4A
1PS88SB48



D5
BAT64-06

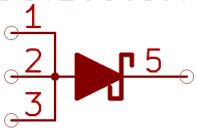


D4B
1PS88SB48



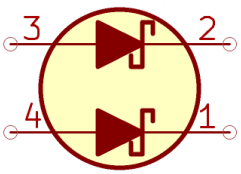
D6
DSA15IM200UC

D7
DST2060DJF



D8A
BAS70-07s

D9
BAS70-07

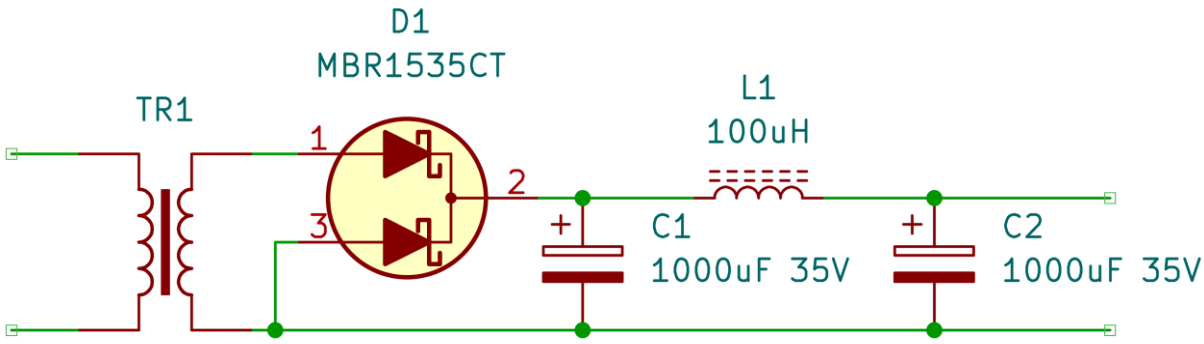


D8B
BAS70-07s

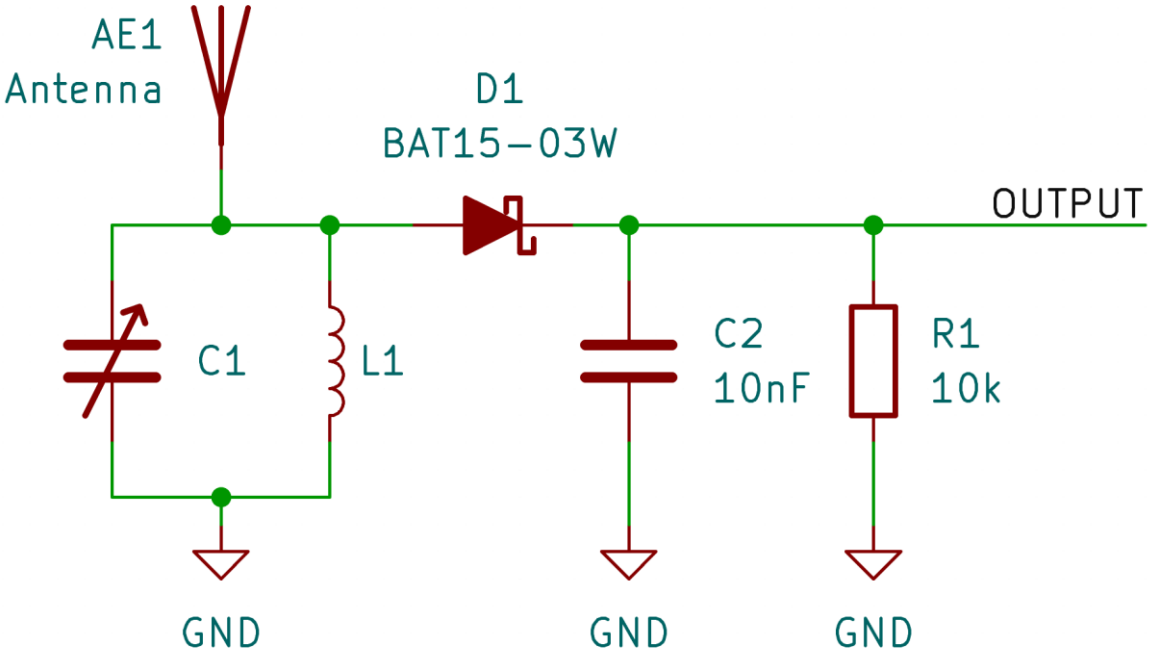
Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
Switching power supply secondary-side rectifier using MBR1535CT dual common-cathode Schottky diode.



Example 2
RF Detector (AM demodulator) circuit using BAT15-03W Schottky diode.

Table 2.16. List of all devices included in Diode_Schottky_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
1N5711	2	1	None	45-degree rotation
*1N5712	1	1	None	45-degree rotation
*1N5817	2	1	None	45-degree rotation
*1N5818	2	1	None	45-degree rotation
*1N5819	2	1	None	45-degree rotation
1N5820	1	1	None	45-degree rotation
1N5821	1	1	None	45-degree rotation
1N5822	1	1	None	45-degree rotation
*1N6263	2	1	None	45-degree rotation
*1N6492	1	1	Free	45-degree rotation
*1PS59SB10	1	1	None	45-degree rotation
*1PS59SB14	1	1	None	Dual straight
*1PS59SB15	1	1	None	Dual straight
*1PS59SB16	1	1	None	Dual straight
1PS66SB17	2	1 (3 for separated)	None	45-degree for separated
1PS70SB10	1	1	Free	45-degree rotation
1PS70SB14	1	1	None	Dual straight
1PS70SB15	1	1	None	Dual straight
1PS70SB16	1	1	None	Dual straight
1PS70SB20	1	1	Free	45-degree rotation
1PS70SB40	1	1	Free	45-degree rotation
1PS70SB44	1	1	None	Dual straight
1PS70SB45	1	1	None	Dual straight
1PS70SB46	1	1	None	Dual straight
1PS70SB82	1	1	Free	45-degree rotation
1PS70SB84	1	1	None	Dual straight
1PS70SB85	1	1	None	Dual straight
1PS70SB86	1	1	None	Dual straight
1PS74SB23	1	1	None	None
1PS75SB45	1	1	None	Dual straight
1PS76SB10	1	1	None	45-degree rotation
1PS76SB17	1	1	None	45-degree rotation
1PS76SB21	1	1	None	45-degree rotation
1PS76SB40	1	1	None	45-degree rotation
1PS76SB70	1	1	None	45-degree rotation
1PS79SB10	1	1	None	45-degree rotation
1PS79SB17	1	1	None	45-degree rotation
*1PS79SB30	1	1	None	45-degree rotation
1PS79SB31	1	1	None	45-degree rotation
1PS79SB40	1	1	None	45-degree rotation
1PS79SB70	1	1	None	45-degree rotation
1PS88SB48	1	2	None	Dual straight
*1SS86	1	1	None	45-degree rotation
*1SS88	1	1	None	45-degree rotation
*1SS106	1	1	None	45-degree rotation
*1SS108	1	1	None	45-degree rotation
*1SS154	1	1	Free	45-degree rotation
*1SS165	1	1	None	45-degree rotation
*1SS166	1	1	None	45-degree rotation
*1SS174	1	1	None	45-degree rotation
*1SS199	1	1	None	45-degree rotation
*1SS271	1	1	None	Dual straight
*1SS286	1	1	None	45-degree rotation
*1SS293	1	1	Free	45-degree rotation
*1SS294	1	1	Free	45-degree rotation
*1SS295	1	1	None	Dual straight
*1SS315	1	1	None	45-degree rotation
*1SS319	2	1 (2 for separated)	None	45-degree for separated
*1SS321	1	1	None	Dual straight
*1SS322	1	1	Free	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*1SS344	1	1	Free	45-degree rotation
*1SS348	1	1	Free	45-degree rotation
*1SS349	1	1	Free	45-degree rotation
*1SS351	1	1	None	Dual straight
*1SS357	1	1	None	45-degree rotation
1SS367	1	1	None	45-degree rotation
*1SS372	1	1	None	Dual straight
*1SS374	1	1	None	Dual straight
*1SS377	1	1	None	Dual straight
*1SS378	1	1	None	Dual straight
1SS389	1	1	None	45-degree rotation
1SS405	1	1	None	45-degree rotation
*10BQ015	1	1	None	45-degree rotation
*10BQ040	1	1	None	45-degree rotation
10SQ030	1	1	None	45-degree rotation
10SQ040	1	1	None	45-degree rotation
10SQ050	1	1	None	45-degree rotation
10SQ060	1	1	None	45-degree rotation
10SQ080	1	1	None	45-degree rotation
10SQ100	1	1	None	45-degree rotation
12SQ030	1	1	None	45-degree rotation
12SQ040	1	1	None	45-degree rotation
12SQ050	1	1	None	45-degree rotation
12SQ060	1	1	None	45-degree rotation
12SQ080	1	1	None	45-degree rotation
12SQ100	1	1	None	45-degree rotation
15SQ030	1	1	None	45-degree rotation
15SQ035	1	1	None	45-degree rotation
15SQ040	1	1	None	45-degree rotation
15SQ045	1	1	None	45-degree rotation
15SQ050	1	1	None	45-degree rotation
15SQ060	1	1	None	45-degree rotation
15SQ080	1	1	None	45-degree rotation
15SQ100	1	1	None	45-degree rotation
*20CJQ030	1	1	None	Dual straight
*20CJQ045	1	1	None	Dual straight
*20CJQ060	1	1	None	Dual straight
*20CJQ100	1	1	None	Dual straight
*30BQ015	1	1	None	45-degree rotation
*30BQ060	1	1	None	45-degree rotation
*30CPQ080	1	1	None	Dual straight
*30CPQ100	1	1	None	Dual straight
30CTQ035	1	1	None	Dual straight
30CTQ040	1	1	None	Dual straight
30CTQ045	1	1	None	Dual straight
80SQ05	1	1	None	45-degree rotation
80SQ045	1	1	None	45-degree rotation
5082-2800	1	1	None	45-degree rotation
5082-2810	1	1	None	45-degree rotation
5082-2811	1	1	None	45-degree rotation
5082-2835	1	1	None	45-degree rotation
APT30S20BCTG	1	1	None	Dual straight
APT30S20BG	1	1	None	45-degree rotation
APT30S20SG	1	1	Free	45-degree rotation
APT60S20BG	1	1	None	45-degree rotation
APT60S20SG	1	1	Free	45-degree rotation
APT100S20BG	1	1	None	45-degree rotation
APT100S20LCT	1	1	None	Dual straight
B120	2	1	None	45-degree rotation
B130	2	1	None	45-degree rotation
B140	2	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
B150	2	1	None	45-degree rotation
B160	2	1	None	45-degree rotation
B170	2	1	None	45-degree rotation
B180	2	1	None	45-degree rotation
B190	2	1	None	45-degree rotation
B220	2	1	None	45-degree rotation
B230	2	1	None	45-degree rotation
B240	2	1	None	45-degree rotation
B250	2	1	None	45-degree rotation
B260	2	1	None	45-degree rotation
B270	1	1	None	45-degree rotation
B280	1	1	None	45-degree rotation
B290	1	1	None	45-degree rotation
B320	3	1	None	45-degree rotation
B330	3	1	None	45-degree rotation
B340	3	1	None	45-degree rotation
B350	3	1	None	45-degree rotation
B360	3	1	None	45-degree rotation
B370	1	1	None	45-degree rotation
B380	1	1	None	45-degree rotation
B390	1	1	None	45-degree rotation
B520C	1	1	None	45-degree rotation
B0520	3	1	None	45-degree rotation
B530C	1	1	None	45-degree rotation
B0530	3	1	None	45-degree rotation
B540C	1	1	None	45-degree rotation
B0540	3	1	None	45-degree rotation
B550C	1	1	None	45-degree rotation
B560C	1	1	None	45-degree rotation
*B1100	1	1	None	45-degree rotation
*B2100	1	1	None	45-degree rotation
*B3100	1	1	None	45-degree rotation
*BA191	1	1	None	45-degree rotation
*BA280	1	1	None	45-degree rotation
*BA480	1	1	None	45-degree rotation
*BA481	1	1	None	45-degree rotation
BAR18	1	1	Free	45-degree rotation
*BAR19	1	1	None	45-degree rotation
*BAR28	1	1	None	45-degree rotation
*BAR42	1	1	Free	45-degree rotation
BAR43	1	1	Free	45-degree rotation
BAR43A	1	1	None	Dual straight
BAR43C	1	1	None	Dual straight
BAR43S	1	1	None	Dual straight
BAR46	1	1	Free	45-degree rotation
BAR46A	1	1	None	Dual straight
BAS40	1	1	Free	45-degree rotation
BAS40-04	2	1	None	Dual straight
BAS40-05	3	1	None	Dual straight
BAS40-06	2	1	None	Dual straight
BAS40-07	6	1 (2 for separated)	Free	45-degree for separated
BAS40H	1	1	None	45-degree rotation
BAS40L	1	1	None	45-degree rotation
BAS40W	1	1	Free	45-degree rotation
BAS40XY	1	2	None	Dual straight
BAS52-02V	1	1	None	45-degree rotation
BAS70	1	1	Free	45-degree rotation
BAS70-04	2	1	None	Dual straight
BAS70-05	2	1	None	Dual straight
BAS70-06	2	1	None	Dual straight
BAS70-07	8	1 (2 for separated)	Free	45-degree for separated

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BAS70H	1	1	None	45-degree rotation
BAS70J	1	1	None	45-degree rotation
BAS70K	1	1	None	45-degree rotation
BAS70L	1	1	None	45-degree rotation
BAS70V	1	1	None	45-degree rotation
BAS70VV	1	2	None	Dual straight
BAS70W	1	1	Free	45-degree rotation
BAS70XY	1	2	None	Dual straight
BAS81	1	1	None	45-degree rotation
BAS82	1	1	None	45-degree rotation
BAS83	1	1	None	45-degree rotation
BAS85	1	1	None	45-degree rotation
BAS86	1	1	None	45-degree rotation
BAS125-04W	1	1	None	Dual straight
BAS125-05W	1	1	None	Dual straight
BAS125-06W	1	1	None	Dual straight
BAS125-07W	2	1 (2 for separated)	Free	45-degree for separated
BAS140W	1	1	None	45-degree rotation
BAS170W	1	1	None	45-degree rotation
BAS281	1	1	None	45-degree rotation
BAS282	1	1	None	45-degree rotation
BAS283	1	1	None	45-degree rotation
BAS285	1	1	None	45-degree rotation
BAS286	1	1	None	45-degree rotation
BAS381	1	1	None	45-degree rotation
BAS382	1	1	None	45-degree rotation
BAS383	1	1	None	45-degree rotation
BAS385	1	1	None	45-degree rotation
BAS386	1	1	None	45-degree rotation
BAS3005A-02V	1	1	None	45-degree rotation
BAS3007A	1	1	None	None
BAS3010A-03W	1	1	None	45-degree rotation
BAS4002A	1	1	None	None
BAT15-03W	1	1	None	45-degree rotation
BAT15-04W	1	1	None	Dual straight
BAT15-04W	1	1	None	Dual straight
BAT15-099	2	1 (2 for separated)	Free	45-degree for separated
BAT15-099R	1	1	None	None
BAT17	1	1	Free	45-degree rotation
BAT17-04	2	1	None	Dual straight
BAT17-05	2	1	None	Dual straight
BAT17-06W	1	1	None	Dual straight
BAT17-07	2	1 (2 for separated)	None	45-degree for separated
*BAT19	1	1	None	45-degree rotation
BAT20J	1	1	None	45-degree rotation
*BAT29	1	1	None	45-degree rotation
BAT30CW	1	1	None	Dual straight
BAT30F4	1	1	None	45-degree rotation
BAT30K	1	1	None	45-degree rotation
BAT30SW	1	1	None	Dual straight
BAT40V	2	1 (2 for separated)	None	45-degree for separated
BAT41	1	1	None	45-degree rotation
BAT42	3	1	None	45-degree rotation
BAT43	3	1	None	45-degree rotation
*BAT45	1	1	None	45-degree rotation
BAT46	4	1	None	45-degree rotation
*BAT47	1	1	None	45-degree rotation
BAT48	1	1	None	45-degree rotation
*BAT49	1	1	None	45-degree rotation
BAT54	1	1	Free	45-degree rotation
BAT54-02V	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BAT54-03W	1	1	None	45-degree rotation
BAT54-04	2	1	None	Dual straight
BAT54-05	2	1	None	Dual straight
BAT54-06	2	1	None	Dual straight
BAT54A	1	1	None	Dual straight
BAT54ADW	1	2	None	Dual straight
BAT54AW	1	1	None	Dual straight
BAT54BRW	1	2	None	Dual straight
BAT54C	1	1	None	Dual straight
BAT54CDW	1	2	None	Dual straight
BAT54CW	1	1	None	Dual straight
BAT54J	1	1	None	45-degree rotation
BAT54K	1	1	None	45-degree rotation
BAT54S	1	1	None	Dual straight
BAT54SDW	1	2	None	Dual straight
BAT54SW	1	1	None	Dual straight
BAT54TW	2	1 (3 for separated)	None	45-degree for separated
BAT54V	2	1 (2 for separated)	None	45-degree for separated
BAT54W	1	1	Free	45-degree rotation
BAT54Z	1	1	None	45-degree rotation
BAT60	2	1	None	45-degree rotation
BAT62	2	1 (2 for separated)	None	45-degree for separated
BAT62-02V	1	1	None	45-degree rotation
BAT62-02W	1	1	None	45-degree rotation
BAT62-03W	1	1	None	45-degree rotation
BAT62-07W	2	1 (2 for separated)	None	45-degree for separated
BAT63-02V	1	1	None	45-degree rotation
BAT63-07W	2	1 (2 for separated)	None	45-degree for separated
BAT64	1	1	Free	45-degree rotation
BAT64-02	2	1	None	45-degree rotation
BAT64-04	2	1	None	45-degree rotation
BAT64-05	2	1	None	45-degree rotation
BAT64-06	2	1	None	45-degree rotation
BAT64-07	2	1 (2 for separated)	None	45-degree for separated
*BAT65	1	1	None	45-degree rotation
*BAT66-05	1	1	None	45-degree rotation
BAT68	1	1	Free	45-degree rotation
BAT68-04	2	1	None	45-degree rotation
BAT68-06	2	1	None	45-degree rotation
BAT68-07	2	1 (2 for separated)	None	45-degree for separated
BAT68-08	2	1 (3 for separated)	None	45-degree for separated
BAT74	2	1 (2 for separated)	None	45-degree for separated
BAT81	1	1	None	45-degree rotation
BAT82	1	1	None	45-degree rotation
BAT83	1	1	None	45-degree rotation
BAT85	1	1	None	45-degree rotation
BAT86	1	1	None	45-degree rotation
*BAT120	3	1	Free	Dual straight
*BAT140	3	1	Free	Dual straight
*BAT160	3	1	Free	Dual straight
BAT165A	1	1	None	45-degree rotation
BAT240	1	1	None	Dual straight
BAT720	1	1	Free	45-degree rotation
BAT721	1	1	Free	45-degree rotation
BAT721A	1	1	None	Dual straight
BAT721C	1	1	None	Dual straight
BAT721S	1	1	None	Dual straight
BAT754	1	1	Free	45-degree rotation
BAT754A	1	1	None	Dual straight
BAT754C	1	1	None	Dual straight
BAT754S	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BAT1000	1	1	Free	45-degree rotation
*BAX25	1	1	None	45-degree rotation
*BAX26	1	1	None	45-degree rotation
*BAX27	1	1	None	45-degree rotation
*BYG90	4	1	None	45-degree rotation
BYM13	5	1	None	45-degree rotation
BYS10	3	1	None	45-degree rotation
BYS11-90	1	1	None	45-degree rotation
BYS12-90	1	1	None	45-degree rotation
BYV10	3	1	None	45-degree rotation
*BYV73	4	1	None	Dual straight
*BYV116	2	1	None	Dual straight
*BYV116B	2	1	None	Dual straight
C3D02060A	1	1	None	45-degree rotation
C3D2060E	1	1	None	45-degree rotation
C3D02060F	1	1	None	45-degree rotation
C3D2065E	1	1	None	45-degree rotation
C3D03060A	1	1	None	45-degree rotation
C3D3060E	1	1	None	45-degree rotation
C3D03060F	1	1	None	45-degree rotation
C3D3065E	1	1	None	45-degree rotation
C3D04060A	1	1	None	45-degree rotation
C3D4060E	1	1	None	45-degree rotation
C3D04060F	1	1	None	45-degree rotation
C3D4065E	1	1	None	45-degree rotation
C3D06060A	1	1	None	45-degree rotation
C3D06060F	1	1	None	45-degree rotation
C3D6060G	1	1	None	45-degree rotation
C3D06065A	1	1	None	45-degree rotation
C3D6065E	1	1	None	45-degree rotation
C3D08060A	1	1	None	45-degree rotation
C3D8060G	1	1	None	45-degree rotation
C3D08065A	1	1	None	45-degree rotation
C3D8065E	1	1	None	45-degree rotation
C3D10060A	1	1	None	45-degree rotation
C3D10060G	1	1	None	45-degree rotation
C3D10065A	1	1	None	45-degree rotation
C3D10065E	1	1	None	45-degree rotation
C3D10170H	1	1	None	45-degree rotation
C3D12065A	1	1	None	45-degree rotation
C3D16060D	1	1	None	Dual straight
C3D16065A	1	1	None	45-degree rotation
C3D16065D	1	1	None	Dual straight
C3D20060D	1	1	None	Dual straight
C3D20065D	1	1	None	Dual straight
C3D25170H	1	1	None	45-degree rotation
C3D30065D	1	1	None	Dual straight
C4D02120A	1	1	None	45-degree rotation
C4D02120E	1	1	None	45-degree rotation
C4D05120A	1	1	None	45-degree rotation
C4D05120E	1	1	None	45-degree rotation
C4D08120A	1	1	None	45-degree rotation
C4D08120E	1	1	None	45-degree rotation
C4D10120A	1	1	None	45-degree rotation
C4D10120D	1	1	None	Dual straight
C4D10120E	1	1	None	45-degree rotation
C4D10120H	1	1	None	45-degree rotation
C4D15120A	1	1	None	45-degree rotation
C4D15120D	1	1	None	Dual straight
C4D15120H	1	1	None	45-degree rotation
C4D20120A	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
C4D20120D	1	1	None	Dual straight
C4D20120H	1	1	None	45-degree rotation
C4D30120D	1	1	None	Dual straight
C4D40120D	1	1	None	Dual straight
C5D05170H	1	1	None	45-degree rotation
C5D10170H	1	1	None	45-degree rotation
C5D25170H	1	1	None	45-degree rotation
C5D50065D	1	1	Free	45-degree rotation
C6D04065A	1	1	None	45-degree rotation
C6D06065A	1	1	None	45-degree rotation
C6D06065E	1	1	None	45-degree rotation
C6D08065A	1	1	None	45-degree rotation
C6D08065E	1	1	None	45-degree rotation
C6D10065A	1	1	None	45-degree rotation
C6D10065E	1	1	None	45-degree rotation
C6D16065D	1	1	None	Dual straight
C10P09Q	1	1	None	Dual straight
C10P10Q	1	1	None	Dual straight
CES388	1	1	None	45-degree rotation
CMDSH-3	1	1	None	45-degree rotation
*CMS01	1	1	None	45-degree rotation
*CMS03	1	1	None	45-degree rotation
*CMS04	1	1	None	45-degree rotation
*CMS05	1	1	None	45-degree rotation
*CMS06	1	1	None	45-degree rotation
*CMS07	1	1	None	45-degree rotation
*CMS08	1	1	None	45-degree rotation
*CMS09	1	1	None	45-degree rotation
*CMS10	1	1	None	45-degree rotation
*CMS10I30A	1	1	None	45-degree rotation
*CMS10I40A	1	1	None	45-degree rotation
*CMS11	1	1	None	45-degree rotation
*CMS14	1	1	None	45-degree rotation
*CMS15	1	1	None	45-degree rotation
*CMS15I40A	1	1	None	45-degree rotation
*CMS16	1	1	None	45-degree rotation
*CMS17	1	1	None	45-degree rotation
*CMS20I30A	1	1	None	45-degree rotation
*CMS30I30A	1	1	None	45-degree rotation
*CMS30I40A	1	1	None	45-degree rotation
CRS01	1	1	None	45-degree rotation
CRS03	1	1	None	45-degree rotation
CRS04	1	1	None	45-degree rotation
CRS05	1	1	None	45-degree rotation
CRS06	1	1	None	45-degree rotation
CRS08	1	1	None	45-degree rotation
CRS09	1	1	None	45-degree rotation
*CRS10I30	3	1	None	45-degree rotation
*CRS10I40	2	1	None	45-degree rotation
*CRS11	1	1	None	45-degree rotation
*CRS12	1	1	None	45-degree rotation
CRS13	1	1	None	45-degree rotation
CRS14	1	1	None	45-degree rotation
*CRS15	1	1	None	45-degree rotation
*CRS15I30	2	1	None	45-degree rotation
*CRS15I40A	1	1	None	45-degree rotation
*CRS20I30	2	1	None	45-degree rotation
*CRS20I40	2	1	None	45-degree rotation
*CRS30I30A	1	1	None	45-degree rotation
CSD01060	2	1	None	45-degree rotation
*CUS01	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*CUS02	1	1	None	45-degree rotation
*CUS03	1	1	None	45-degree rotation
*CUS04	1	1	None	45-degree rotation
*CUS05	1	1	None	45-degree rotation
*CUS06	1	1	None	45-degree rotation
CUS10F30	1	1	None	45-degree rotation
*CUS10I30A	1	1	None	45-degree rotation
*CUS10I40A	1	1	None	45-degree rotation
CUS10S30	1	1	None	45-degree rotation
*CUS15I30A	1	1	None	45-degree rotation
CUS520	1	1	None	45-degree rotation
CVFD20065A	1	1	None	45-degree rotation
DCG10P1200HR	1	1	None	Dual straight
DCG17P1200HR	1	1	None	Dual straight
DCG20C1200HR	1	1	None	Dual straight
DCG35C1200HR	1	1	None	Dual straight
*DE3S4M	1	1	None	45-degree rotation
*DE5S4M	1	1	None	45-degree rotation
*DE5S6M	1	1	None	45-degree rotation
*DE5SC6M	1	1	None	Dual straight
*DE10PC3	1	1	None	Dual straight
*DF40SC3L	1	1	None	Dual straight
DFLS130	1	1	None	45-degree rotation
DFLS160	1	1	None	45-degree rotation
DFLS240L	1	1	None	45-degree rotation
DFLS1100	1	1	None	45-degree rotation
DSA10C150PB	1	1	None	Dual straight
DSA10I100PM	1	1	None	45-degree rotation
DSA15I45PA	1	1	None	45-degree rotation
DSA15IM45IB	1	1	None	None
DSA20C45PB	1	1	None	Dual straight
DSA20C60PN	1	1	None	Dual straight
DSA20C100PB	1	1	None	Dual straight
DSA20C100PN	1	1	None	Dual straight
DSA20C150PB	1	1	None	Dual straight
DSA20C150PN	1	1	None	Dual straight
DSA30C45HB	1	1	None	Dual straight
DSA30C45PB	1	1	None	Dual straight
DSA30C45PC	1	1	None	Dual straight
DSA30C60PB	1	1	None	Dual straight
DSA30C100HB	1	1	None	Dual straight
DSA30C100PB	1	1	None	Dual straight
DSA30C100PN	1	1	None	Dual straight
DSA30C100QB	1	1	None	Dual straight
DSA30C150HB	1	1	None	Dual straight
DSA30C150PB	1	1	None	Dual straight
DSA30C200IB	1	1	None	Dual straight
DSA30C200PB	1	1	None	Dual straight
DSA30I100PA	1	1	None	45-degree rotation
DSA30I150PA	1	1	None	45-degree rotation
DSA50C100HB	1	1	None	Dual straight
DSA50C100QB	1	1	None	Dual straight
DSA50C150HB	1	1	None	Dual straight
DSA60C45HB	1	1	None	Dual straight
DSA60C45PB	1	1	None	Dual straight
DSA60C60HB	1	1	None	Dual straight
DSA60C60PB	1	1	None	Dual straight
DSA60C100PB	1	1	None	Dual straight
DSA60C150PB	1	1	None	Dual straight
DSA70C100HB	1	1	None	Dual straight
DSA70C150HB	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DSA70C200HB	1	1	None	Dual straight
DSA80C45HB	1	1	None	Dual straight
DSA80C100PB	1	1	None	Dual straight
DSA90C200HB	1	1	None	Dual straight
DSA120C150QB	1	1	None	Dual straight
DSB10I45PB	1	1	None	45-degree rotation
DSB15IM45IB	1	1	None	None
DSB20C60PN	1	1	None	Dual straight
DSB20I15PA	1	1	None	45-degree rotation
DSB30C30PB	1	1	None	Dual straight
DSB30C45HB	1	1	None	Dual straight
DSB30C45PB	1	1	None	Dual straight
DSB30C60PB	1	1	None	Dual straight
DSB40C15PB	1	1	None	Dual straight
DSB60C30HB	1	1	None	Dual straight
DSB60C45HB	1	1	None	Dual straight
DSB60C45PB	1	1	None	Dual straight
DSB60C60HB	1	1	None	Dual straight
DSB60C60PB	1	1	None	Dual straight
DSB80C45HB	1	1	None	Dual straight
DSS6-015AS	1	1	None	None
DSS6-0025BS	1	1	None	None
DSS6-0045AS	1	1	None	None
DSS10-01A	2	1	None	45-degree rotation
DSS10-006A	1	1	None	45-degree rotation
DSS10-0045B	1	1	None	45-degree rotation
DSS16-01A	2	1	None	45-degree rotation
DSS16-0045A	2	1	None	45-degree rotation
DSS17-06CR	1	1	None	45-degree rotation
DSS20-0015B	1	1	None	45-degree rotation
DSS25-0025B	1	1	None	45-degree rotation
DSS25-0045A	1	1	None	45-degree rotation
DSS40-0008D	1	1	None	45-degree rotation
DSS60-0045B	1	1	None	45-degree rotation
DSSK10-018A	1	1	None	Dual straight
DSSK16-01A	2	1	None	Dual straight
DSSK18-0025BS	1	1	None	Dual straight
DSSK20-015A	1	1	None	Dual straight
DSSK20-0045B	1	1	None	Dual straight
DSSK28-01AS	1	1	None	Dual straight
DSSK28-006BS	1	1	None	Dual straight
DSSK28-0045BS	1	1	None	Dual straight
DSSK30-01A	1	1	None	Dual straight
DSSK30-018A	1	1	None	Dual straight
DSSK38-0025B	2	1	None	Dual straight
DSSK40-006B	1	1	None	Dual straight
DSSK40-008B	1	1	None	Dual straight
DSSK40-0015B	1	1	None	Dual straight
DSSK48-003B	2	1	None	Dual straight
DSSK48-0025B	1	1	None	Dual straight
DSSK50-01A	1	1	None	Dual straight
DSSK50-0025B	1	1	None	Dual straight
DSSK60-02A	1	1	None	Dual straight
DSSK60-015A	1	1	None	Dual straight
DSSK60-0045A	1	1	None	Dual straight
DSSK70-008B	1	1	None	Dual straight
DSSK70-0015B	1	1	None	Dual straight
DSSK80-003B	1	1	None	Dual straight
DSSK80-006B	1	1	None	Dual straight
DSSK80-0008D	1	1	None	Dual straight
DSSK80-0025B	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DSSK80-0045B	1	1	None	Dual straight
DSSS30-01A	1	1	None	Dual straight
DSSS35-008A	1	1	None	Dual straight
DST1040S	1	1	None	None
DST1045S	1	1	None	None
DST2045AX	1	1	None	45-degree rotation
DST2060DJF	1	1	Free	None
DST2080S	1	1	None	None
DST3060DJF	1	1	Free	None
DST5200	1	1	None	45-degree rotation
DST10100S	1	1	None	None
DST40100C	1	1	None	Dual straight
DSTB60100C	1	1	None	Dual straight
DSTD5200	1	1	None	None
DSTF2050C	1	1	None	Dual straight
DSTF3060CR	1	1	None	Dual straight
DSTF10200C	1	1	None	Dual straight
DSTF20120C	2	1	None	Dual straight
DSTF30100C	1	1	None	Dual straight
DSTF40100C	1	1	None	Dual straight
DSTF60100C	1	1	None	Dual straight
E4D20120A	1	1	None	45-degree rotation
F10P09Q	1	1	None	Dual straight
F10P10Q	1	1	None	Dual straight
FCH10A04	1	1	None	Dual straight
FYP2010DN	1	1	None	Dual straight
GAP3SLT33-214	1	1	None	45-degree rotation
GB01SLT06-214	1	1	None	45-degree rotation
GB01SLT12-214	1	1	None	45-degree rotation
GB01SLT12-252	1	1	None	45-degree rotation
GB02SLT12-214	1	1	None	45-degree rotation
GB02SLT12-252	1	1	None	45-degree rotation
GB05MPS17-263	1	1	Free	None
GB05MPS33-263	1	1	Free	None
GB10MPS17-247	1	1	None	45-degree rotation
GB20SLT12-247	1	1	None	45-degree rotation
GB25MPS17-247	1	1	None	45-degree rotation
GB50SLT12-247	1	1	None	45-degree rotation
GC02MPS12-220	1	1	None	45-degree rotation
GC2X5MPS12-247	1	1	None	Dual straight
GC2X8MPS12-247	1	1	None	Dual straight
GC2X10MPS12-247	1	1	None	Dual straight
GC2X15MPS12-247	1	1	None	Dual straight
GC2X20MPS12-247	1	1	None	Dual straight
GC05MPS12-252	1	1	None	45-degree rotation
GC08MPS12-220	1	1	None	45-degree rotation
GC08MPS12-252	1	1	None	45-degree rotation
GC10MPS12-220	1	1	None	45-degree rotation
GC10MPS12-252	1	1	None	45-degree rotation
GC15MPS12-220	1	1	None	45-degree rotation
GC15MPS12-247	1	1	None	45-degree rotation
GC20MPS12-220	1	1	None	45-degree rotation
GC20MPS12-247	1	1	None	45-degree rotation
GD02MPS12E	1	1	None	45-degree rotation
GD10MPS17H	1	1	None	45-degree rotation
GD30MPS06H	1	1	None	45-degree rotation
GD30MPS06J	1	1	Free	None
GE2X8MPS06D	1	1	None	Dual straight
GE2X10MPS06D	1	1	None	Dual straight
GE06MPS06A	1	1	None	45-degree rotation
GE06MPS06E	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
GE08MPS06A	1	1	None	45-degree rotation
GE08MPS06E	1	1	None	45-degree rotation
GE10MPS06A	1	1	None	45-degree rotation
GE10MPS06E	1	1	None	45-degree rotation
*HRW34	1	1	None	Dual straight
*HRW0202	2	1	None	Dual straight
*HRW0302A	1	1	Free	45-degree rotation
*HRW0502A	1	1	Free	45-degree rotation
*HRW0503A	1	1	Free	45-degree rotation
*HRW0702A	1	1	Free	45-degree rotation
*HRW0703A	1	1	Free	45-degree rotation
*HSM88AS	2	1	None	Dual straight
*HSM107S	1	1	None	Dual straight
*HSM126S	1	1	None	Dual straight
*HSM276S	2	1	None	Dual straight
HSMS-280B	1	1	Free	45-degree rotation
HSMS-280C	1	1	None	Dual straight
HSMS-280E	1	1	None	Dual straight
HSMS-280F	1	1	None	Dual straight
HSMS-281B	1	1	Free	45-degree rotation
HSMS-281C	1	1	None	Dual straight
HSMS-281E	1	1	None	Dual straight
HSMS-281F	1	1	None	Dual straight
HSMS-2800	1	1	Free	45-degree rotation
HSMS-2802	1	1	None	Dual straight
HSMS-2803	1	1	None	Dual straight
HSMS-2804	1	1	None	Dual straight
HSMS-2805	2	1 (2 for separated)	None	45-degree for separated
HSMS-2808	1	1	None	None
HSMS-2810	1	1	Free	45-degree rotation
HSMS-2812	1	1	None	Dual straight
HSMS-2813	1	1	None	Dual straight
HSMS-2814	1	1	None	Dual straight
HSMS-2815	2	1 (2 for separated)	None	45-degree for separated
HSMS-2817	1	1	None	None
HSMS-2818	1	1	None	None
HSMS-8101	1	1	Free	45-degree rotation
HSMS-8202	1	1	None	Dual straight
HSMS-8207	1	1	None	None
HSMS-8209	1	1	None	None
*HSR101	1	1	None	45-degree rotation
*HSU276	1	1	None	45-degree rotation
IDD03SG60C	1	1	Free	45-degree rotation
IDD04SG60C	1	1	Free	45-degree rotation
IDD05SG60C	1	1	Free	45-degree rotation
IDD06SG60C	1	1	Free	45-degree rotation
IDD08SG60C	1	1	Free	45-degree rotation
IDD09SG60C	1	1	Free	45-degree rotation
IDD10SG60C	1	1	Free	45-degree rotation
IDD12SG60C	1	1	Free	45-degree rotation
IDH02G120C5	1	1	None	45-degree rotation
IDH03SG60C	1	1	None	45-degree rotation
IDH04G65C6	1	1	None	45-degree rotation
IDH05G120C5	1	1	None	45-degree rotation
IDH05SG60C	1	1	None	45-degree rotation
IDH06G65C6	1	1	None	45-degree rotation
IDH08G65C6	1	1	None	45-degree rotation
IDH08G120C5	1	1	None	45-degree rotation
IDH08S60C	1	1	None	45-degree rotation
IDH08SG60C	1	1	None	45-degree rotation
IDH09G65C5	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IDH09SG60C	1	1	None	45-degree rotation
IDH10G65C5	1	1	None	45-degree rotation
IDH10G65C6	1	1	None	45-degree rotation
IDH10G120C5	1	1	None	45-degree rotation
IDH10SG60C	1	1	None	45-degree rotation
IDH12G65C5	1	1	None	45-degree rotation
IDH12G65C6	1	1	None	45-degree rotation
IDH12SG60C	1	1	None	45-degree rotation
IDH16G65C6	1	1	None	45-degree rotation
IDH16G120C5	1	1	None	45-degree rotation
IDH20G65C6	1	1	None	45-degree rotation
IDH20G120C5	1	1	None	45-degree rotation
IDK02G65C5	1	1	None	45-degree rotation
IDM02G120C5	1	1	None	45-degree rotation
IDM08G120C5	1	1	None	45-degree rotation
IDM10G120C5	1	1	None	45-degree rotation
IDW10G120C5B	1	1	None	Dual straight
IDW12G65C5	1	1	None	Dual straight
IDW15G120C5B	1	1	None	Dual straight
IDW20G65C5B	1	1	None	Dual straight
IDW20G120C5B	1	1	None	Dual straight
IDW24G65C5B	1	1	None	Dual straight
IDW30G120C5B	1	1	None	Dual straight
IDW32G65C5B	1	1	None	Dual straight
IDW40G65C5B	1	1	None	Dual straight
IDW40G120C5B	1	1	None	Dual straight
JDH3D01FV	1	1	None	Dual straight
LFUSC10065A	1	1	None	45-degree rotation
LFUSCD04065A	1	1	None	45-degree rotation
LFUSCD05120A	1	1	None	45-degree rotation
LFUSCD06065A	1	1	None	45-degree rotation
LFUSCD10120A	1	1	None	45-degree rotation
LFUSCD15120A	1	1	None	45-degree rotation
LFUSCD16065B	1	1	None	45-degree rotation
LFUSCD20065B	1	1	None	45-degree rotation
LFUSCD20120B	1	1	None	45-degree rotation
LFUSCD30120B	1	1	None	45-degree rotation
LL41	1	1	None	45-degree rotation
LL42	1	1	None	45-degree rotation
LL43	1	1	None	45-degree rotation
LL46	1	1	None	45-degree rotation
LL101	3	1	None	45-degree rotation
LL103	3	1	None	45-degree rotation
LL5817	1	1	None	45-degree rotation
LL5818	1	1	None	45-degree rotation
LL5819	1	1	None	45-degree rotation
LL6263	1	1	None	45-degree rotation
*LLSD101	3	1	None	45-degree rotation
*LLSD103	3	1	None	45-degree rotation
LS103	3	1	None	45-degree rotation
LSIC2SD065A06A	1	1	None	45-degree rotation
LSIC2SD065A08A	1	1	None	45-degree rotation
LSIC2SD065A10A	1	1	None	45-degree rotation
LSIC2SD065A16A	1	1	None	45-degree rotation
LSIC2SD065A20A	1	1	None	45-degree rotation
LSIC2SD065C06A	1	1	Free	45-degree rotation
LSIC2SD065C08A	1	1	Free	45-degree rotation
LSIC2SD065C10A	1	1	Free	45-degree rotation
LSIC2SD065C16A	1	1	Free	45-degree rotation
LSIC2SD065C20A	1	1	Free	45-degree rotation
LSIC2SD065D06A	1	1	Free	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
LSIC2SD065D10A	1	1	Free	45-degree rotation
LSIC2SD065D16A	1	1	Free	45-degree rotation
LSIC2SD065E12CCA	1	1	None	Dual straight
LSIC2SD065E16CCA	1	1	None	Dual straight
LSIC2SD065E20CCA	1	1	None	Dual straight
LSIC2SD065E40CCA	1	1	None	Dual straight
LSIC2SD120A05	1	1	None	45-degree rotation
LSIC2SD120A08	1	1	None	45-degree rotation
LSIC2SD120A10	1	1	None	45-degree rotation
LSIC2SD120A15	1	1	None	45-degree rotation
LSIC2SD120A20	1	1	None	45-degree rotation
LSIC2SD120C05	1	1	Free	45-degree rotation
LSIC2SD120C08	1	1	Free	45-degree rotation
LSIC2SD120C10	1	1	Free	45-degree rotation
LSIC2SD120D10	1	1	Free	45-degree rotation
LSIC2SD120D15	1	1	Free	45-degree rotation
LSIC2SD120D20	1	1	Free	45-degree rotation
LSIC2SD120E10CC	1	1	None	Dual straight
LSIC2SD120E15CC	1	1	None	Dual straight
LSIC2SD120E20CC	1	1	None	Dual straight
LSIC2SD120E30CC	1	1	None	Dual straight
LSIC2SD120E40CC	1	1	None	Dual straight
*MA2D760	1	1	None	45-degree rotation
*MA2QD01	1	1	None	45-degree rotation
*MA2S101	1	1	None	45-degree rotation
*MA2S784	1	1	None	45-degree rotation
*MA700A	1	1	None	45-degree rotation
*MBD101	1	1	None	45-degree rotation
*MBD301	1	1	None	45-degree rotation
MBD701	1	1	None	45-degree rotation
MBR030	1	1	None	45-degree rotation
MBR30H60CT	1	1	None	Dual straight
MBR040	1	1	None	45-degree rotation
MBR41H100CT	1	1	None	Dual straight
MBR60H100CT	1	1	None	Dual straight
MBR60L45	2	1	None	Dual straight
MBR130SFT	1	1	None	45-degree rotation
MBR140SFT	1	1	None	45-degree rotation
MBR150	1	1	None	45-degree rotation
MBR160	1	1	None	45-degree rotation
MBR230SFT	1	1	None	45-degree rotation
*MBR320	1	1	None	45-degree rotation
*MBR330	1	1	None	45-degree rotation
*MBR340	1	1	None	45-degree rotation
MBR350	1	1	None	45-degree rotation
MBR360	1	1	None	45-degree rotation
*MBR380	1	1	None	45-degree rotation
MBR0520	1	1	None	45-degree rotation
MBR0530	1	1	None	45-degree rotation
MBR0540	1	1	None	45-degree rotation
*MBR730	1	1	None	45-degree rotation
MBR735	1	1	None	45-degree rotation
*MBR740	1	1	None	45-degree rotation
MBR745	1	1	None	45-degree rotation
MBR750	1	1	None	45-degree rotation
MBR760	1	1	None	45-degree rotation
*MBR1020	1	1	None	45-degree rotation
MBR1020VL	1	1	None	45-degree rotation
*MBR1030	1	1	None	45-degree rotation
*MBR1030CT	1	1	None	Dual straight
MBR1035	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*MBR1035CT	1	1	None	Dual straight
*MBR1040CT	1	1	None	Dual straight
MBR1045	1	1	None	45-degree rotation
*MBR1045CT	1	1	None	Dual straight
MBR1050	1	1	None	45-degree rotation
*MBR1050CT	1	1	None	Dual straight
MBR1060	1	1	None	45-degree rotation
*MBR1060CT	1	1	None	Dual straight
MBR1070	1	1	None	45-degree rotation
*MBR1070CT	1	1	None	Dual straight
MBR1080	1	1	None	45-degree rotation
*MBR1080CT	1	1	None	Dual straight
MBR1090	1	1	None	45-degree rotation
*MBR1090CT	1	1	None	Dual straight
MBR1100	1	1	None	45-degree rotation
*MBR1530CT	1	1	None	Dual straight
MBR1535CT	1	1	None	Dual straight
MBR1540CT	1	1	None	Dual straight
MBR1550CT	1	1	None	Dual straight
MBR1560CT	1	1	None	Dual straight
*MBR1630	1	1	None	45-degree rotation
MBR1635	1	1	None	45-degree rotation
MBR1640	1	1	None	45-degree rotation
MBR1645	1	1	None	45-degree rotation
MBR1650	1	1	None	45-degree rotation
MBR1660	1	1	None	45-degree rotation
*MBR2035CT	1	1	None	Dual straight
*MBR2045CT	1	1	None	Dual straight
*MBR2050CT	1	1	None	Dual straight
MBR2060	1	1	None	45-degree rotation
*MBR2060CT	1	1	None	Dual straight
MBR2090CT	1	1	None	Dual straight
*MBR2530CT	1	1	None	Dual straight
MBR2535CT	1	1	None	Dual straight
*MBR2040CT	1	1	None	Dual straight
MBR2045CT	1	1	None	Dual straight
MBR2050CT	1	1	None	Dual straight
MBR2060CT	1	1	None	Dual straight
*MBR3020CT	2	1	None	Dual straight
*MBR3035CT	2	1	None	Dual straight
MBR3035PT	1	1	None	Dual straight
*MBR3040CT	1	1	None	Dual straight
*MBR3045CT	2	1	None	Dual straight
MBR3045PT	1	1	None	Dual straight
*MBR3050CT	1	1	None	Dual straight
MBR3050PT	1	1	None	Dual straight
*MBR3060CT	1	1	None	Dual straight
MBR3060PT	1	1	None	Dual straight
*MBR3100	1	1	None	45-degree rotation
*MBR3150	1	1	None	45-degree rotation
*MBR3200	1	1	None	45-degree rotation
MBR4015CT	1	1	None	Dual straight
MBR4035PT	1	1	None	Dual straight
MBR4045PT	1	1	None	Dual straight
MBR4050PT	1	1	None	Dual straight
MBR4060PT	1	1	None	Dual straight
*MBR6030PT	1	1	None	Dual straight
*MBR6035PT	1	1	None	Dual straight
*MBR6040PT	1	1	None	Dual straight
*MBR6045PT	1	1	None	Dual straight
MBR6045WT	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MBR10100	1	1	None	45-degree rotation
*MBR10100CT	1	1	None	Dual straight
MBR10150	1	1	None	45-degree rotation
MBR10200	1	1	None	45-degree rotation
MBR20100CT	1	1	None	Dual straight
MBR20150CT	1	1	None	Dual straight
MBR20200CT	1	1	None	Dual straight
MBR30100CT	1	1	None	Dual straight
MBR30150CT	1	1	None	Dual straight
MBR30200CT	1	1	None	Dual straight
MBR40250	1	1	None	45-degree rotation
MBR40250T	1	1	None	None
MBRA2H100	1	1	None	45-degree rotation
MBRA130T	1	1	None	45-degree rotation
MBRA140T	1	1	None	45-degree rotation
MBRA160T	1	1	None	45-degree rotation
MBRA340T	1	1	None	45-degree rotation
MBRB30H60CT	2	1	None	Dual straight
MBRB41H100CT	2	1	None	Dual straight
MBRB60H100CT	1	1	None	Dual straight
MBRB735	1	1	None	45-degree rotation
MBRB745	1	1	None	45-degree rotation
MBRB750	1	1	None	45-degree rotation
MBRB760	1	1	None	45-degree rotation
MBRB1035	1	1	None	45-degree rotation
MBRB1045	2	1	None	45-degree rotation
MBRB1050	1	1	None	45-degree rotation
MBRB1060	1	1	None	45-degree rotation
MBRB1090	1	1	None	45-degree rotation
*MBRB1530CT	1	1	None	Dual straight
MBRB1535CT	1	1	None	Dual straight
*MBRB1540CT	1	1	None	Dual straight
MBRB1545CT	1	1	None	Dual straight
MBRB1550CT	1	1	None	Dual straight
MBRB1560CT	1	1	None	Dual straight
MBRB1635	1	1	None	45-degree rotation
MBRB1645	1	1	None	45-degree rotation
MBRB1650	1	1	None	45-degree rotation
MBRB1660	1	1	None	45-degree rotation
*MBRB2035CT	1	1	None	Dual straight
*MBRB2045CT	1	1	None	Dual straight
*MBRB2050CT	1	1	None	Dual straight
MBRB2060	1	1	None	45-degree rotation
*MBRB2060CT	1	1	None	Dual straight
MBRB2090CT	1	1	None	Dual straight
*MBRB2515L	1	1	None	45-degree rotation
MBRB2535CT	1	1	None	Dual straight
MBRB2545CT	1	1	None	Dual straight
*MBRB2560CT	1	1	None	Dual straight
*MBRB3030CT	1	1	None	Dual straight
MBRB4030G	1	1	None	None
MBRB10100	1	1	None	45-degree rotation
MBRB20100CT	1	1	None	Dual straight
MBRB20200CT	1	1	None	Dual straight
MBRB40250G	1	1	None	None
MBRD5H100	1	1	Free	45-degree rotation
MBRD320G	1	1	None	None
MBRD330G	1	1	None	None
MBRD340G	1	1	None	None
MBRD350G	1	1	None	None
MBRD360G	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MBRD620CT	1	1	None	Dual straight
MBRD630CT	1	1	None	Dual straight
MBRD640CT	1	1	None	Dual straight
MBRD650CT	1	1	None	Dual straight
MBRD660CT	1	1	None	Dual straight
MBRD835LG	1	1	None	None
MBRD1035CT	1	1	None	Dual straight
MBRD1045G	1	1	None	None
MBRD30H60CT	1	1	None	Dual straight
MBRF735	1	1	None	45-degree rotation
MBRF745	1	1	None	45-degree rotation
MBRF750	1	1	None	45-degree rotation
MBRF760	1	1	None	45-degree rotation
MBRF1035	1	1	None	45-degree rotation
MBRF1045	1	1	None	45-degree rotation
MBRF1050	1	1	None	45-degree rotation
MBRF1060	1	1	None	45-degree rotation
MBRF1090	1	1	None	45-degree rotation
MBRF1535CT	1	1	None	Dual straight
MBRF1545CT	1	1	None	Dual straight
MBRF1550CT	1	1	None	Dual straight
MBRF1560CT	1	1	None	Dual straight
MBRF1635	1	1	None	45-degree rotation
MBRF1645	1	1	None	45-degree rotation
MBRF1650	1	1	None	45-degree rotation
MBRF1660	1	1	None	45-degree rotation
*MBRF2035CT	1	1	None	Dual straight
*MBRF2045CT	1	1	None	Dual straight
*MBRF2050CT	1	1	None	Dual straight
*MBRF2060CT	1	1	None	Dual straight
*MBRF2080CT	1	1	None	Dual straight
MBRF2090CT	1	1	None	Dual straight
MBRF2535CT	1	1	None	Dual straight
MBRF2545CT	1	1	None	Dual straight
*MBRF2560CT	1	1	None	Dual straight
MBRF10100	1	1	None	45-degree rotation
MBRF10200CT	1	1	None	Dual straight
MBRF20100CT	1	1	None	Dual straight
*MBRF20150CT	1	1	None	Dual straight
*MBRF20200CT	1	1	None	Dual straight
MBRF40250T	1	1	None	None
MBRB140	1	1	None	45-degree rotation
MBRS2H100	1	1	None	45-degree rotation
MBRS120	1	1	None	45-degree rotation
MBRS130	1	1	None	45-degree rotation
MBRS140	1	1	None	45-degree rotation
MBRS190	1	1	None	45-degree rotation
MBRS230	1	1	None	45-degree rotation
MBRS240	1	1	None	45-degree rotation
MBRS260	1	1	None	45-degree rotation
MBRS320	1	1	None	45-degree rotation
MBRS330	1	1	None	45-degree rotation
MBRS340	1	1	None	45-degree rotation
MBRS360	2	1	None	45-degree rotation
MBRS410	1	1	None	45-degree rotation
MBRS540	1	1	None	45-degree rotation
MBRS1100	1	1	None	45-degree rotation
MBRS1540	1	1	None	45-degree rotation
MBRS2040	1	1	None	45-degree rotation
MBRS3100	1	1	None	45-degree rotation
MBRS3200	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MBRS3201	1	1	None	45-degree rotation
MCL101	3	1	None	45-degree rotation
MCL103	3	1	None	45-degree rotation
*MMBD101	1	1	Free	45-degree rotation
*MMBD301	1	1	Free	45-degree rotation
*MMBD352	1	1	None	Dual straight
*MMBD353	1	1	None	Dual straight
*MMBD354	1	1	None	Dual straight
*MMBD355	1	1	None	Dual straight
MMBD701	1	1	Free	45-degree rotation
MMBD1501	1	1	Free	45-degree rotation
MMBD1503	1	1	None	Dual straight
MMBD1504	1	1	None	Dual straight
MMBD1505	1	1	None	Dual straight
MSC010SDA070	2	1	None	45-degree rotation
MSC010SDA120	2	1	None	45-degree rotation
MSC010SDA170B	1	1	None	45-degree rotation
MSC015SDA120B	1	1	None	45-degree rotation
MSC030SDA070B	1	1	None	45-degree rotation
MSC030SDA070BCT	1	1	None	Dual straight
MSC030SDA070K	1	1	None	45-degree rotation
MSC030SDA070S	1	1	None	45-degree rotation
MSC030SDA120B	1	1	None	45-degree rotation
MSC030SDA120BCT	1	1	None	Dual straight
MSC030SDA120K	1	1	None	45-degree rotation
MSC030SDA120S	1	1	None	45-degree rotation
MSC030SDA170B	1	1	None	45-degree rotation
MSC050SDA070B	1	1	None	45-degree rotation
MSC050SDA070BCT	1	1	None	Dual straight
MSC050SDA070S	1	1	None	45-degree rotation
MSC050SDA120B	1	1	None	45-degree rotation
MSC050SDA120BCT	1	1	None	Dual straight
MSC050SDA120S	1	1	None	45-degree rotation
MSC050SDA170B	1	1	None	45-degree rotation
MSS1P3	1	1	None	45-degree rotation
MSS1P4	1	1	None	45-degree rotation
MSS1P5	1	1	None	45-degree rotation
MSS1P6	1	1	None	45-degree rotation
NSR0240V2	1	1	None	45-degree rotation
NSR0320MW	1	1	None	45-degree rotation
NSR0340V2	1	1	None	45-degree rotation
NTS260SF	1	1	None	45-degree rotation
NTSB20100CT	2	1	None	Dual straight
NTSJ20100CT	1	1	None	Dual straight
NTST20100CT	1	1	None	Dual straight
NXPSC04650	1	1	None	45-degree rotation
NXPSC08650	1	1	None	45-degree rotation
NXPSC10650	1	1	None	45-degree rotation
PDS3100	1	1	None	45-degree rotation
PMBD353	1	1	None	Dual straight
PMBD354	1	1	None	Dual straight
PMEG1030EH	1	1	None	45-degree rotation
PMEG1030EJ	1	1	None	45-degree rotation
PMEG2005AEA	1	1	None	45-degree rotation
PMEG2005AEV	1	1	None	None
PMEG2005EH	1	1	None	45-degree rotation
PMEG2005EJ	1	1	None	45-degree rotation
PMEG2005ET	1	1	Free	45-degree rotation
PMEG2010AEB	1	1	None	45-degree rotation
PMEG2010AEH	1	1	None	45-degree rotation
PMEG2010AET	1	1	Free	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
PMEG2010BEA	1	1	None	45-degree rotation
PMEG2010BEV	1	1	None	None
PMEG3005AEA	1	1	None	45-degree rotation
PMEG3005AEV	1	1	None	None
PMEG3005EB	1	1	None	45-degree rotation
PMEG3005EH	1	1	None	45-degree rotation
PMEG3005EJ	1	1	None	45-degree rotation
PMEG3005EL	1	1	None	45-degree rotation
PMEG3005ET	1	1	Free	45-degree rotation
PMEG3010BEA	1	1	None	45-degree rotation
PMEG3010BEV	1	1	None	None
PMEG3010CEH	1	1	None	45-degree rotation
PMEG3010CEJ	1	1	None	45-degree rotation
PMEG3010ER	1	1	None	45-degree rotation
PMEG3030EP	1	1	None	45-degree rotation
PMEG3050BEP	1	1	None	45-degree rotation
PMEG3050EP	1	1	None	45-degree rotation
PMEG4002EB	1	1	None	45-degree rotation
PMEG4002EJ	1	1	None	45-degree rotation
PMEG4005AEA	1	1	None	45-degree rotation
PMEG4005AEV	1	1	None	None
PMEG4005CT	1	1	None	Dual straight
PMEG4005EH	1	1	None	45-degree rotation
PMEG4005EJ	1	1	None	45-degree rotation
PMEG4005ET	1	1	Free	45-degree rotation
PMEG4010BEA	1	1	None	45-degree rotation
PMEG4010BEV	1	1	None	None
PMEG4010CEH	1	1	None	45-degree rotation
PMEG4010CEJ	1	1	None	45-degree rotation
PMEG4010EH	1	1	None	45-degree rotation
PMEG4010EJ	1	1	None	45-degree rotation
PMEG4010EP	1	1	None	45-degree rotation
PMEG4010ET	1	1	Free	45-degree rotation
PMEG4010ETP	1	1	None	45-degree rotation
PMEG4020EP	1	1	None	45-degree rotation
PMEG4020ER	1	1	None	45-degree rotation
PMEG4030EP	1	1	None	45-degree rotation
PMEG4030ER	1	1	None	45-degree rotation
PMEG4050EP	1	1	None	45-degree rotation
PMEG6002EB	1	1	None	45-degree rotation
PMEG6002EJ	1	1	None	45-degree rotation
PMEG6002TV	2	1 (2 for separated)	Free	45-degree for separated
PMEG6010CEH	1	1	None	45-degree rotation
PMEG6010CEJ	1	1	None	45-degree rotation
PMEG6010EP	1	1	None	45-degree rotation
PMEG6010ER	1	1	None	45-degree rotation
PMEG6010ETR	1	1	None	45-degree rotation
PMEG6020EP	1	1	None	45-degree rotation
PMEG6020ER	1	1	None	45-degree rotation
PMEG6030EP	1	1	None	45-degree rotation
PMEG10020ELRX	1	1	None	45-degree rotation
PPL1550	1	1	None	None
PPS560	1	1	None	None
PPS1030	1	1	None	None
PPS1040	1	1	None	None
PPS1045	1	1	None	None
PPS1050	1	1	None	None
PPS1060	1	1	None	None
PPS1530	1	1	None	None
PPS1540	1	1	None	None
PPS1545	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
PPS1550	1	1	None	None
PPS1560	1	1	None	None
PPS5100	1	1	None	None
PPS5150	1	1	None	None
*RB060L-40	1	1	None	45-degree rotation
*RB081L-20	1	1	None	45-degree rotation
*RB160L-40	1	1	None	45-degree rotation
*RB161L-40	1	1	None	45-degree rotation
*RB400D	1	1	Free	45-degree rotation
*RB411D	1	1	Free	45-degree rotation
*RB420D	1	1	Free	45-degree rotation
*RB421D	1	1	Free	45-degree rotation
*RB425D	1	1	None	Dual straight
*RB441Q	1	1	None	45-degree rotation
*RB450F	1	1	Free	45-degree rotation
*RB451F	1	1	Free	45-degree rotation
*RB500V-40	1	1	None	45-degree rotation
*RB501V-40	1	1	None	45-degree rotation
*RB520S-30	1	1	None	45-degree rotation
RB520S30	1	1	None	45-degree rotation
*RB521S-30	1	1	None	45-degree rotation
RB521S30	1	1	None	45-degree rotation
*RB705D	1	1	None	Dual straight
*RB706D-40	1	1	None	Dual straight
*RB706F-40	1	1	None	Dual straight
*RB715F	1	1	None	Dual straight
*RB717F	1	1	None	Dual straight
*RB721Q-40	1	1	None	45-degree rotation
RB751CS40	1	1	None	45-degree rotation
RB751S40	1	1	None	45-degree rotation
*RB751V-40	1	1	None	45-degree rotation
RB751V40	1	1	None	45-degree rotation
*S1ZAS4	2	1 (2 for separated)	None	45-degree for separated
S30D30C	1	1	None	Dual straight
S30D35C	1	1	None	Dual straight
S30D40C	1	1	None	Dual straight
S30D45C	1	1	None	Dual straight
S30D50C	1	1	None	Dual straight
S30D60C	1	1	None	Dual straight
S30D80C	1	1	None	Dual straight
S30D100C	1	1	None	Dual straight
*SB020	1	1	None	45-degree rotation
*SB030	1	1	None	45-degree rotation
*SB040	1	1	None	45-degree rotation
*SB050	1	1	None	45-degree rotation
*SB060	1	1	None	45-degree rotation
SB120	1	1	None	45-degree rotation
SB130	1	1	None	45-degree rotation
SB140	1	1	None	45-degree rotation
SB150	1	1	None	45-degree rotation
SB160	1	1	None	45-degree rotation
SB190	1	1	None	45-degree rotation
SB220	1	1	None	45-degree rotation
SB230	1	1	None	45-degree rotation
SB240	1	1	None	45-degree rotation
SB250	1	1	None	45-degree rotation
SB260	1	1	None	45-degree rotation
SB290	1	1	None	45-degree rotation
SB320	1	1	None	45-degree rotation
SB330	1	1	None	45-degree rotation
SB340	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SB350	1	1	None	45-degree rotation
SB360	1	1	None	45-degree rotation
SB370	1	1	None	45-degree rotation
SB380	1	1	None	45-degree rotation
SB390	1	1	None	45-degree rotation
SB520	1	1	None	45-degree rotation
SB530	1	1	None	45-degree rotation
SB540	1	1	None	45-degree rotation
SB550	1	1	None	45-degree rotation
SB560	1	1	None	45-degree rotation
SB570	1	1	None	45-degree rotation
SB580	1	1	None	45-degree rotation
SB590	1	1	None	45-degree rotation
SB1100	1	1	None	45-degree rotation
*SB1520	1	1	None	45-degree rotation
*SB1530	1	1	None	45-degree rotation
*SB1540	1	1	None	45-degree rotation
SB2100	1	1	None	45-degree rotation
SB3100	1	1	None	45-degree rotation
SB5100	1	1	None	45-degree rotation
SB10100L	2	1	None	None
SBCT1020	1	1	None	Dual straight
SBCT1030	1	1	None	Dual straight
SBCT1040	1	1	None	Dual straight
SBCT1045	1	1	None	Dual straight
SBCT1050	1	1	None	Dual straight
SBCT1060	1	1	None	Dual straight
SBCT1090	1	1	None	Dual straight
SBCT2020	1	1	None	Dual straight
SBCT2030	1	1	None	Dual straight
SBCT2040	1	1	None	Dual straight
SBCT2045	1	1	None	Dual straight
SBCT2050	1	1	None	Dual straight
SBCT2060	1	1	None	Dual straight
SBCT2090	1	1	None	Dual straight
SBCT3045	1	1	None	Dual straight
SBCT3060	1	1	None	Dual straight
SBCT10100	1	1	None	Dual straight
SBCT20100	1	1	None	Dual straight
SBCT30100	1	1	None	Dual straight
SBCT30150	1	1	None	Dual straight
SBCT30200	1	1	None	Dual straight
*SBG1030CT	1	1	None	Dual straight
*SBG1035CT	1	1	None	Dual straight
*SBG1040CT	1	1	None	Dual straight
*SBG1045CT	1	1	None	Dual straight
*SBG1630CT	1	1	None	Dual straight
*SBG1635CT	1	1	None	Dual straight
*SBG1640CT	1	1	None	Dual straight
*SBG1645CT	1	1	None	Dual straight
*SBG2030CT	1	1	None	Dual straight
*SBG2035CT	1	1	None	Dual straight
*SBG2040CT	1	1	None	Dual straight
*SBG2045CT	1	1	None	Dual straight
*SBG3030CT	1	1	None	Dual straight
*SBG3040CT	1	1	None	Dual straight
*SBG3045CT	1	1	None	Dual straight
SBJ1820	1	1	None	45-degree rotation
SBJ1830	1	1	None	45-degree rotation
SBJ1840	1	1	None	45-degree rotation
SBJ1845	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*SBL530	1	1	None	45-degree rotation
*SBL535	1	1	None	45-degree rotation
*SBL540	1	1	None	45-degree rotation
*SBL545	1	1	None	45-degree rotation
*SBL550	1	1	None	45-degree rotation
*SBL560	1	1	None	45-degree rotation
*SBL830	1	1	None	45-degree rotation
*SBL835	1	1	None	45-degree rotation
*SBL840	1	1	None	45-degree rotation
*SBL845	1	1	None	45-degree rotation
*SBL850	1	1	None	45-degree rotation
*SBL860	1	1	None	45-degree rotation
*SBL1030	1	1	None	45-degree rotation
*SBL1030CT	1	1	None	Dual straight
*SBL1035	1	1	None	45-degree rotation
*SBL1035CT	1	1	None	Dual straight
*SBL1040	1	1	None	45-degree rotation
*SBL1040CT	1	1	None	Dual straight
*SBL1045	1	1	None	45-degree rotation
*SBL1045CT	1	1	None	Dual straight
*SBL1050	1	1	None	45-degree rotation
*SBL1050CT	1	1	None	Dual straight
*SBL1060	1	1	None	45-degree rotation
*SBL1060CT	1	1	None	Dual straight
*SBL1630CT	1	1	None	Dual straight
*SBL1630PT	1	1	None	Dual straight
*SBL1635CT	1	1	None	Dual straight
*SBL1635PT	1	1	None	Dual straight
*SBL1640CT	1	1	None	Dual straight
*SBL1640PT	1	1	None	Dual straight
*SBL1645CT	1	1	None	Dual straight
*SBL1645PT	1	1	None	Dual straight
*SBL1650CT	1	1	None	Dual straight
*SBL1650PT	1	1	None	Dual straight
*SBL1660CT	1	1	None	Dual straight
*SBL1660PT	1	1	None	Dual straight
*SBL2030CT	1	1	None	Dual straight
SBL2030PT	1	1	None	Dual straight
*SBL2035CT	1	1	None	Dual straight
*SBL2035PT	1	1	None	Dual straight
*SBL2040CT	1	1	None	Dual straight
SBL2040PT	1	1	None	Dual straight
*SBL2045CT	1	1	None	Dual straight
*SBL2045PT	1	1	None	Dual straight
*SBL2050CT	1	1	None	Dual straight
*SBL2050PT	1	1	None	Dual straight
*SBL2060CT	1	1	None	Dual straight
*SBL2060PT	1	1	None	Dual straight
*SBL3030CT	1	1	None	Dual straight
*SBL3030PT	1	1	None	Dual straight
*SBL3035CT	1	1	None	Dual straight
*SBL3035PT	1	1	None	Dual straight
*SBL3040CT	1	1	None	Dual straight
*SBL3040PT	1	1	None	Dual straight
*SBL3045PT	1	1	None	Dual straight
*SBL3050PT	1	1	None	Dual straight
*SBL3060PT	1	1	None	Dual straight
*SBL4030PT	1	1	None	Dual straight
*SBL4035PT	1	1	None	Dual straight
*SBL4040PT	1	1	None	Dual straight
*SBL4045PT	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*SBL4050PT	1	1	None	Dual straight
*SBL4050PT	1	1	None	Dual straight
*SBL4060PT	1	1	None	Dual straight
*SBL6030PT	1	1	None	Dual straight
*SBL6040PT	1	1	None	Dual straight
*SBL6050PT	1	1	None	Dual straight
*SBL6060PT	1	1	None	Dual straight
*SBLB1030CT	1	1	None	Dual straight
*SBLB1040CT	1	1	None	Dual straight
*SBLF1030CT	1	1	None	Dual straight
*SBLF1040CT	1	1	None	Dual straight
SBR0560S1Q	1	1	None	45-degree rotation
SBRT15U100SP5	1	1	None	45-degree rotation
SBT1020	1	1	None	45-degree rotation
SBT1030	1	1	None	45-degree rotation
SBT1040	1	1	None	45-degree rotation
SBT1045	1	1	None	45-degree rotation
SBT1050	1	1	None	45-degree rotation
SBT1060	1	1	None	45-degree rotation
SBT1090	1	1	None	45-degree rotation
SBT1820	1	1	None	45-degree rotation
SBT1830	1	1	None	45-degree rotation
SBT1840	1	1	None	45-degree rotation
SBT1845	1	1	None	45-degree rotation
SBT1850	1	1	None	45-degree rotation
SBT1860	1	1	None	45-degree rotation
SBT10100	1	1	None	45-degree rotation
SBX2030	1	1	None	45-degree rotation
SBX2040	1	1	None	45-degree rotation
SBX2045	1	1	None	45-degree rotation
SBX2050	1	1	None	45-degree rotation
SBX3040	1	1	None	45-degree rotation
SCS106AG	1	1	None	45-degree rotation
SCS108AG	1	1	None	45-degree rotation
SCS110AG	1	1	None	45-degree rotation
SCS112AG	1	1	None	45-degree rotation
SCS205KG	1	1	None	45-degree rotation
SCS206AJ	1	1	Free	45-degree rotation
SCS206AM	1	1	None	45-degree rotation
SCS208AG	1	1	None	45-degree rotation
SCS208AJ	1	1	Free	45-degree rotation
SCS208AM	1	1	None	45-degree rotation
SCS210AG	1	1	None	45-degree rotation
SCS210AJ	1	1	Free	45-degree rotation
SCS210AM	1	1	None	45-degree rotation
SCS210KE2	1	1	None	Dual straight
SCS210KG	1	1	None	45-degree rotation
SCS212AG	1	1	None	45-degree rotation
SCS212AM	1	1	None	45-degree rotation
SCS215AE	1	1	None	45-degree rotation
SCS215AG	1	1	None	45-degree rotation
SCS215AJ	1	1	Free	45-degree rotation
SCS215AM	1	1	None	45-degree rotation
SCS215KG	1	1	None	45-degree rotation
SCS220AE	1	1	Free	45-degree rotation
SCS220AE2	1	1	None	Dual straight
SCS220AG	1	1	None	45-degree rotation
SCS220AM	1	1	None	45-degree rotation
SCS220KE2	1	1	None	Dual straight
SCS220KG	1	1	None	45-degree rotation
SCS230AE2	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SCS230KE2	1	1	None	Dual straight
SCS240AE2	1	1	None	Dual straight
SCS240KE2	1	1	None	Dual straight
SD101A	1	1	None	45-degree rotation
SD101AW	1	1	None	45-degree rotation
SD101AWS	1	1	None	45-degree rotation
SD101B	1	1	None	45-degree rotation
SD101BW	1	1	None	45-degree rotation
SD101BWS	1	1	None	45-degree rotation
SD101C	1	1	None	45-degree rotation
SD101CW	1	1	None	45-degree rotation
SD101CWS	1	1	None	45-degree rotation
SD103A	1	1	None	45-degree rotation
SD103AW	1	1	None	45-degree rotation
SD103AWS	1	1	None	45-degree rotation
SD103B	1	1	None	45-degree rotation
SD103BW	1	1	None	45-degree rotation
SD103BWS	1	1	None	45-degree rotation
SD103C	1	1	None	45-degree rotation
SD103CW	1	1	None	45-degree rotation
SD103CWS	1	1	None	45-degree rotation
*SD104AWS	1	1	None	45-degree rotation
*SD104BWS	1	1	None	45-degree rotation
*SD104CWS	1	1	None	45-degree rotation
*SD107WS	1	1	None	45-degree rotation
*SD241P	1	1	None	Dual straight
*SD830	1	1	None	45-degree rotation
*SD840	1	1	None	45-degree rotation
*SD860	1	1	None	45-degree rotation
SDM20U40	1	1	None	45-degree rotation
SDM40E20L	3	1	None	Dual straight
SDT20100CT	2	1	None	Dual straight
SGL1	7	1	None	45-degree rotation
SGL2	2	1	None	45-degree rotation
SGL34	7	1	None	45-degree rotation
SGL41	5	1	None	45-degree rotation
SK3H10SMB	1	1	None	45-degree rotation
SK3H15SMB	1	1	None	45-degree rotation
SK12	1	1	None	45-degree rotation
SK13	1	1	None	45-degree rotation
SK14	1	1	None	45-degree rotation
SK15	1	1	None	45-degree rotation
SK16	1	1	None	45-degree rotation
SK18	1	1	None	45-degree rotation
SK22	1	1	None	45-degree rotation
SK22A	1	1	None	45-degree rotation
SK23	1	1	None	45-degree rotation
SK23A	1	1	None	45-degree rotation
SK24	1	1	None	45-degree rotation
SK24A	1	1	None	45-degree rotation
SK25	1	1	None	45-degree rotation
SK25A	1	1	None	45-degree rotation
SK26	1	1	None	45-degree rotation
SK26A	1	1	None	45-degree rotation
SK28	1	1	None	45-degree rotation
SK29A	1	1	None	45-degree rotation
SK32	1	1	None	45-degree rotation
SK32SMA	1	1	None	45-degree rotation
SK32SMB	1	1	None	45-degree rotation
SK33	1	1	None	45-degree rotation
SK33SMA	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SK33SMB	1	1	None	45-degree rotation
SK34	1	1	None	45-degree rotation
SK34SMA	1	1	None	45-degree rotation
SK34SMB	1	1	None	45-degree rotation
SK35	1	1	None	45-degree rotation
SK35SMA	1	1	None	45-degree rotation
SK35SMB	1	1	None	45-degree rotation
SK36	1	1	None	45-degree rotation
SK36SMA	1	1	None	45-degree rotation
SK36SMB	1	1	None	45-degree rotation
SK38	1	1	None	45-degree rotation
SK38SMA	1	1	None	45-degree rotation
SK38SMB	1	1	None	45-degree rotation
SK52	1	1	None	45-degree rotation
SK53	1	1	None	45-degree rotation
SK54	1	1	None	45-degree rotation
SK54SMC	1	1	None	45-degree rotation
SK55	1	1	None	45-degree rotation
SK56SMC	1	1	None	45-degree rotation
SK58	1	1	None	45-degree rotation
SK82	1	1	None	45-degree rotation
SK83	1	1	None	45-degree rotation
SK84	1	1	None	45-degree rotation
SK85	1	1	None	45-degree rotation
SK86	1	1	None	45-degree rotation
SK88	1	1	None	45-degree rotation
SK110	1	1	None	45-degree rotation
SK115	1	1	None	45-degree rotation
SK210	1	1	None	45-degree rotation
SK210A	1	1	None	45-degree rotation
SK215A	1	1	None	45-degree rotation
SK310	1	1	None	45-degree rotation
SK310SMA	1	1	None	45-degree rotation
SK310SMB	1	1	None	45-degree rotation
SK315	1	1	None	45-degree rotation
SK315SMA	1	1	None	45-degree rotation
SK320SMB	1	1	None	45-degree rotation
SK420	1	1	None	45-degree rotation
SK510	1	1	None	45-degree rotation
SK515	1	1	None	45-degree rotation
SK810	1	1	None	45-degree rotation
SK815	1	1	None	45-degree rotation
SK1020D1	1	1	None	None
SK1020D2	1	1	None	45-degree rotation
SK1030D1	1	1	None	None
SK1030D2	1	1	None	45-degree rotation
SK1040D1	1	1	None	None
SK1040D2	1	1	None	45-degree rotation
SK1045D1	1	1	None	None
SK1045D2	1	1	None	45-degree rotation
SK1050D1	1	1	None	None
SK1050D2	1	1	None	45-degree rotation
SK1060D1	1	1	None	None
SK1060D2	1	1	None	45-degree rotation
SK1080D1	1	1	None	None
SK1080D2	1	1	None	45-degree rotation
SK1545D2	1	1	None	45-degree rotation
SK1820D2	1	1	None	45-degree rotation
SK1830D2	1	1	None	45-degree rotation
SK1840D2	1	1	None	45-degree rotation
SK1845D2	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SK2030CD2	1	1	None	Dual straight
SK2040CD2	1	1	None	Dual straight
SK2045CD2	1	1	None	Dual straight
SK2050CD2	1	1	None	Dual straight
SK2060CD2	1	1	None	Dual straight
SK2080CD2	1	1	None	Dual straight
SK2545YD2	1	1	None	None
SK3020CD2	1	1	None	Dual straight
SK3030CD2	1	1	None	Dual straight
SK3040CD2	1	1	None	Dual straight
SK3045CD2	1	1	None	Dual straight
SK3050CD2	1	1	None	Dual straight
SK3060CD2	1	1	None	Dual straight
SK3080CD2	1	1	None	Dual straight
SK4045CD2	1	1	None	Dual straight
SK10100D1	1	1	None	None
SK10100D2	1	1	None	45-degree rotation
SK20100CD2	1	1	None	Dual straight
SK30100CD2	1	1	None	Dual straight
SKL12	1	1	None	45-degree rotation
SKL13	1	1	None	45-degree rotation
SKL14	1	1	None	45-degree rotation
SKL15	1	1	None	45-degree rotation
SKL16	1	1	None	45-degree rotation
SKL18	1	1	None	45-degree rotation
SKL32	1	1	None	45-degree rotation
SKL33	1	1	None	45-degree rotation
SKL34	1	1	None	45-degree rotation
SKL35	1	1	None	45-degree rotation
SKL36	1	1	None	45-degree rotation
SKL38	1	1	None	45-degree rotation
SKL110	1	1	None	45-degree rotation
SKL310	1	1	None	45-degree rotation
SL02	1	1	None	45-degree rotation
SL03	1	1	None	45-degree rotation
SL04	1	1	None	45-degree rotation
*SL12	1	1	None	45-degree rotation
*SL13	1	1	None	45-degree rotation
SL22	1	1	None	45-degree rotation
SL23	1	1	None	45-degree rotation
SL32SMA	1	1	None	45-degree rotation
SL34SMA	1	1	None	45-degree rotation
SL42	1	1	None	45-degree rotation
SL43	1	1	None	45-degree rotation
SL44	1	1	None	45-degree rotation
SL52	1	1	None	45-degree rotation
SL54	1	1	None	45-degree rotation
SL82	1	1	None	45-degree rotation
SL84	1	1	None	45-degree rotation
*SM220	1	1	None	45-degree rotation
*SM230	1	1	None	45-degree rotation
*SM240	1	1	None	45-degree rotation
*SM250	1	1	None	45-degree rotation
*SM260	1	1	None	45-degree rotation
*SM320	1	1	None	45-degree rotation
*SM330	1	1	None	45-degree rotation
*SM340	1	1	None	45-degree rotation
*SM350	1	1	None	45-degree rotation
*SM360	1	1	None	45-degree rotation
SM5817	1	1	None	45-degree rotation
SM5818	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SM5819	1	1	None	45-degree rotation
SMD110PL	1	1	None	45-degree rotation
SMD1150PL	1	1	None	45-degree rotation
SMD1200PL	1	1	None	45-degree rotation
SMS120	1	1	None	45-degree rotation
SMS130	1	1	None	45-degree rotation
SMS140	1	1	None	45-degree rotation
SMS150	1	1	None	45-degree rotation
SMS160	1	1	None	45-degree rotation
SMS190	1	1	None	45-degree rotation
SMS220	1	1	None	45-degree rotation
SMS230	1	1	None	45-degree rotation
SMS240	1	1	None	45-degree rotation
SMS250	1	1	None	45-degree rotation
SMS260	1	1	None	45-degree rotation
SMS290	1	1	None	45-degree rotation
SMS320	1	1	None	45-degree rotation
SMS330	1	1	None	45-degree rotation
SMS340	1	1	None	45-degree rotation
SMS350	1	1	None	45-degree rotation
SMS360	1	1	None	45-degree rotation
SMS390	1	1	None	45-degree rotation
SMS540	1	1	None	45-degree rotation
SMS560	1	1	None	45-degree rotation
SMS1100	1	1	None	45-degree rotation
SMS2100	1	1	None	45-degree rotation
SMS3100	1	1	None	45-degree rotation
SR103	1	1	None	45-degree rotation
SR104	1	1	None	45-degree rotation
SR106	1	1	None	45-degree rotation
SR150	1	1	None	45-degree rotation
SR160	1	1	None	45-degree rotation
SR180	1	1	None	45-degree rotation
SR220	1	1	None	45-degree rotation
SR230	1	1	None	45-degree rotation
SR240	1	1	None	45-degree rotation
SR250	1	1	None	45-degree rotation
SR260	1	1	None	45-degree rotation
SR280	1	1	None	45-degree rotation
SR302	1	1	None	45-degree rotation
SR303	1	1	None	45-degree rotation
SR304	1	1	None	45-degree rotation
SR305	1	1	None	45-degree rotation
SR306	1	1	None	45-degree rotation
SR520	1	1	None	45-degree rotation
SR530	1	1	None	45-degree rotation
SR540	1	1	None	45-degree rotation
SR550	1	1	None	45-degree rotation
SR560	1	1	None	45-degree rotation
SR580	1	1	None	45-degree rotation
SR1100	1	1	None	45-degree rotation
SR2100	1	1	None	45-degree rotation
SR5100	1	1	None	45-degree rotation
SS2FH6	1	1	None	45-degree rotation
SS2P2	1	1	None	45-degree rotation
SS2P3	1	1	None	45-degree rotation
SS2P4	1	1	None	45-degree rotation
SS2PH9	1	1	None	45-degree rotation
SS2PH10	1	1	None	45-degree rotation
SS3P5	1	1	None	45-degree rotation
SS3P6	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SS5P5	1	1	None	None
SS5P6	1	1	None	None
SS10P5	1	1	None	None
SS10P6	1	1	None	None
SS12	2	1	None	45-degree rotation
SS13	1	1	None	45-degree rotation
SS14	2	1	None	45-degree rotation
SS15	1	1	None	45-degree rotation
SS16	2	1	None	45-degree rotation
SS18	2	1	None	45-degree rotation
SS22	3	1	None	45-degree rotation
SS23	1	1	None	45-degree rotation
SS24	4	1	None	45-degree rotation
SS25	1	1	None	45-degree rotation
SS26	4	1	None	45-degree rotation
SS28	3	1	None	45-degree rotation
SS29	1	1	None	45-degree rotation
SS32	3	1	None	45-degree rotation
SS33	1	1	None	45-degree rotation
SS34	3	1	None	45-degree rotation
SS35	1	1	None	45-degree rotation
SS36	3	1	None	45-degree rotation
SS38	3	1	None	45-degree rotation
SS39	1	1	None	45-degree rotation
SS52	3	1	None	45-degree rotation
SS53	1	1	None	45-degree rotation
SS54	3	1	None	45-degree rotation
SS55	1	1	None	45-degree rotation
SS56	3	1	None	45-degree rotation
SS58	3	1	None	45-degree rotation
SS59	1	1	None	45-degree rotation
SS110	2	1	None	45-degree rotation
SS112F	1	1	None	45-degree rotation
SS115F	1	1	None	45-degree rotation
SS120F	1	1	None	45-degree rotation
SS210	3	1	None	45-degree rotation
SS212	2	1	None	45-degree rotation
SS215	2	1	None	45-degree rotation
SS220	2	1	None	45-degree rotation
SS310	3	1	None	45-degree rotation
SS312	2	1	None	45-degree rotation
SS315	2	1	None	45-degree rotation
SS320	2	1	None	45-degree rotation
SS510	3	1	None	45-degree rotation
SS512	2	1	None	45-degree rotation
SS515	2	1	None	45-degree rotation
SS520	2	1	None	45-degree rotation
SSA23	1	1	None	45-degree rotation
SSA24	1	1	None	45-degree rotation
SSA33	1	1	None	45-degree rotation
SSA34	1	1	None	45-degree rotation
SSB43	1	1	None	45-degree rotation
SSB44	1	1	None	45-degree rotation
SSC53	1	1	None	45-degree rotation
SSC54	1	1	None	45-degree rotation
STPR1620CTW	1	1	None	Dual straight
STPS1H100A	2	1	None	45-degree rotation
STPS1H100U	1	1	None	45-degree rotation
STPS1L30	2	1	None	45-degree rotation
STLS1L40	2	1	None	45-degree rotation
STPS1L60	2	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STPS2H100	5	1	None	45-degree rotation
STPS2L30	3	1	None	45-degree rotation
STPS2L40	3	1	None	45-degree rotation
STPS2L60	3	1	None	45-degree rotation
STPS3L40	2	1	None	45-degree rotation
STPS3L60	4	1	None	45-degree rotation
STPS5H100B	1	1	Free	45-degree rotation
STPS5H100H	1	1	Free	45-degree rotation
STPS8H100CFP	1	1	None	Dual straight
STPS8H100CG	1	1	None	Dual straight
STPS8H100CT	1	1	None	Dual straight
STPS10L40C	2	1	None	Dual straight
STPS20H100C	4	1	None	Dual straight
STPS20L25C	2	1	None	Dual straight
STPS30M80C	4	1	None	Dual straight
STPS40L15C	2	1	None	Dual straight
STPS40L45C	2	1	None	Dual straight
STPS41L30C	3	1	None	Dual straight
STPS140	2	1	None	45-degree rotation
STPS160	2	1	None	45-degree rotation
STPS340B	1	1	Free	45-degree rotation
STPS340S	1	1	None	45-degree rotation
STPS340U	1	1	None	45-degree rotation
STPS340UF	1	1	None	45-degree rotation
STPS0540Z	1	1	None	45-degree rotation
STPS0560Z	1	1	None	45-degree rotation
STPS745D	1	1	None	45-degree rotation
STPS745FP	1	1	None	45-degree rotation
STPS745G	1	1	Free	45-degree rotation
STPS1045B	1	1	None	None
STPS1045D	1	1	None	45-degree rotation
STPS1045FP	1	1	None	45-degree rotation
STPS1150	3	1	None	45-degree rotation
STPS1545D	1	1	None	45-degree rotation
STPS1545FP	1	1	None	45-degree rotation
STPS1545G	1	1	Free	45-degree rotation
STPS1545R	1	1	None	None
STPS2045C	3	1	None	Dual straight
STPS2150	3	1	None	45-degree rotation
STPS3045C	3	1	None	Dual straight
STPS3150	3	1	None	45-degree rotation
STPS4045C	2	1	None	Dual straight
STPS10150C	3	1	None	Dual straight
STPS20150C	4	1	None	Dual straight
STPS20200C	4	1	None	Dual straight
STPS30100C	2	1	None	Dual straight
STPS80170CW	4	1	None	Dual straight
STPSC4H065B	1	1	Free	45-degree rotation
STPSC4H065D	1	1	None	45-degree rotation
STPSC6H065B	1	1	Free	45-degree rotation
STPSC6H065D	1	1	None	45-degree rotation
STPSC6H065G	1	1	Free	45-degree rotation
STPSC8H065B	1	1	Free	45-degree rotation
STPSC8H065CT	1	1	None	Dual straight
STPSC8H065D	1	1	None	45-degree rotation
STPSC8H065G	1	1	Free	45-degree rotation
STPSC10H12B	1	1	Free	45-degree rotation
STPSC10H12D	1	1	None	45-degree rotation
STPSC10H12G	1	1	Free	45-degree rotation
STPSC10H12WL	1	1	None	45-degree rotation
STPSC10H065B	1	1	Free	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STPSC10H065D	1	1	None	45-degree rotation
STPSC10H065G	1	1	Free	45-degree rotation
STPSC12H065C	1	1	None	Dual straight
STPSC16H065C	1	1	None	Dual straight
STPSC20H12B	1	1	Free	45-degree rotation
STPSC20H12D	1	1	None	45-degree rotation
STPSC20H12G	1	1	Free	45-degree rotation
STPSC20H065C	2	1	None	Dual straight
STPSC406B	1	1	Free	45-degree rotation
STPSC406D	1	1	None	45-degree rotation
STPSC606D	1	1	None	45-degree rotation
STPSC606G	1	1	Free	45-degree rotation
STPSC806D	1	1	None	45-degree rotation
STPSC806G	1	1	Free	45-degree rotation
STPSC1006D	1	1	None	45-degree rotation
STPSC1006G	1	1	Free	45-degree rotation
STPSC1206D	1	1	None	45-degree rotation
STPSC2006CW	1	1	None	Dual straight
*TMBAT49	1	1	None	45-degree rotation
*TMBYV10	2	1	None	45-degree rotation
*TMM6263	1	1	None	45-degree rotation
*TMMBAR19	1	1	None	45-degree rotation
*TMMBAT41	1	1	None	45-degree rotation
TMMBAT42	1	1	None	45-degree rotation
TMMBAT43	1	1	None	45-degree rotation
*TMMBAT45	1	1	None	45-degree rotation
TMMBAT46	1	1	None	45-degree rotation
TMMBAT47	1	1	None	45-degree rotation
TMMBAT48	1	1	None	45-degree rotation
UPS120Ee3	1	1	None	45-degree rotation
V10P10	1	1	None	None
V10P12	1	1	None	None
V15P45S	1	1	None	None
V30200C	1	1	None	Dual straight
VBT1045BP	1	1	None	None
VBT2045BP	1	1	None	None
VBT6045BP	1	1	None	None
VF30200C	1	1	None	Dual straight
VI30200C	1	1	None	Dual straight
VS-8TQ060	1	1	None	45-degree rotation
VS-8TQ080	1	1	None	45-degree rotation
VS-8TQ080S	1	1	Free	45-degree rotation
VS-8TQ100	1	1	None	45-degree rotation
VS-8TQ100S	1	1	Free	45-degree rotation
VS-10BQ015	1	1	None	45-degree rotation
VS-10BQ040	1	1	None	45-degree rotation
VS-10BQ060	1	1	None	45-degree rotation
VS-10BQ100	1	1	None	45-degree rotation
VS-10CTQ150	1	1	None	Dual straight
VS-10ETS08	1	1	None	45-degree rotation
VS-10ETS12	1	1	None	45-degree rotation
VS-10MQ060	1	1	None	45-degree rotation
VS-12CWQ03FN	1	1	None	Dual straight
VS-12CWQ06FN	1	1	None	Dual straight
VS-12CWQ10FN	1	1	None	Dual straight
VS-16CTQ060	2	1	None	Dual straight
VS-16CTQ080	2	1	None	Dual straight
VS-16CTQ100	2	1	None	Dual straight
VS-20CTQ150	2	1	None	Dual straight
VS-20TQ035	1	1	None	45-degree rotation
VS-20TQ040	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
VS-20TQ045	1	1	None	45-degree rotation
VS-30BQ060	1	1	None	45-degree rotation
VS-30BQ100	1	1	None	45-degree rotation
VS-30CPQ050	1	1	None	Dual straight
VS-30CPQ060	1	1	None	Dual straight
VS-30CPQ080	1	1	None	Dual straight
VS-30CPQ090	1	1	None	Dual straight
VS-30CPQ100	1	1	None	Dual straight
VS-30CPQ140	1	1	None	Dual straight
VS-30CPQ150	1	1	None	Dual straight
VS-30CQ035	2	1	None	Dual straight
VS-30CQ040	2	1	None	Dual straight
VS-30CQ045	2	1	None	Dual straight
VS-30CTQ050	1	1	None	Dual straight
VS-30CTQ060	1	1	None	Dual straight
VS-30WQ06FN	1	1	None	None
VS-40CPQ080	1	1	None	Dual straight
VS-40CPQ100	1	1	None	Dual straight
VS-42CQ030	2	1	None	Dual straight
VS-50WQ03FN	1	1	None	None
VS-50WQ04FN	1	1	None	None
VS-50WQ06FN	1	1	None	None
VS-C04ET07T	1	1	None	45-degree rotation
VS-C06ET07T	1	1	None	45-degree rotation
VS-C08ET07T	1	1	None	45-degree rotation
VS-C10ET07T	1	1	None	45-degree rotation
VS-C12ET07T	1	1	None	45-degree rotation
VS-C16CP07L	1	1	None	Dual straight
VS-C16ET07T	1	1	None	45-degree rotation
VS-C20CP07L	1	1	None	Dual straight
VS-C20ET07T	1	1	None	45-degree rotation
VS-C40CP07L	1	1	None	Dual straight
*VS-MBR3035CT	1	1	None	Dual straight
*VS-MBR3045CT	1	1	None	Dual straight
VS-MBRB1035	1	1	Free	45-degree rotation
VS-MBRB1045	1	1	Free	45-degree rotation
*VS-MBRB3035CT	1	1	None	Dual straight
*VS-MBRB3045CT	1	1	None	Dual straight
VSSC520S	1	1	None	45-degree rotation
*ZC2800E	1	1	Free	45-degree rotation
*ZC2811E	1	1	Free	45-degree rotation
*ZC5800E	1	1	Free	45-degree rotation
ZHCS350	1	1	None	45-degree rotation
ZHCS400	1	1	None	45-degree rotation
ZHCS506	1	1	Free	45-degree rotation
ZHCS1000	1	1	Free	45-degree rotation
ZHCS2000	1	1	None	None
ZLLS350	1	1	None	45-degree rotation
ZLLS500	1	1	Free	45-degree rotation
ZLLS1000	1	1	Free	45-degree rotation
ZLLS2000	1	1	None	None

* Denotes a symbol that was added to the most recent version of the library

2.20. Protection Diode Library

This library contains Transient Voltage Suppressor (TVS) diodes and ESD/Overvoltage protection diode arrays.

Filename: **Diode_TVS_AKL**	
Total symbols:	**3192**(+137)
Generic symbols:	**59**(+1)
Specific symbols:	**3133**(+136)

TVS diodes are Zener diodes with very high peak power dissipation, intended for overvoltage protection. Bidirectional TVS diodes clamp both negative and positive voltage (Like 2 Zener diodes connected back-to-back).

TVS diodes with standard 2-pad packages don't have pin numbers written on the symbols. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol. Parts with multiple pads connected to cathode or anode have multiple pins on the symbol.

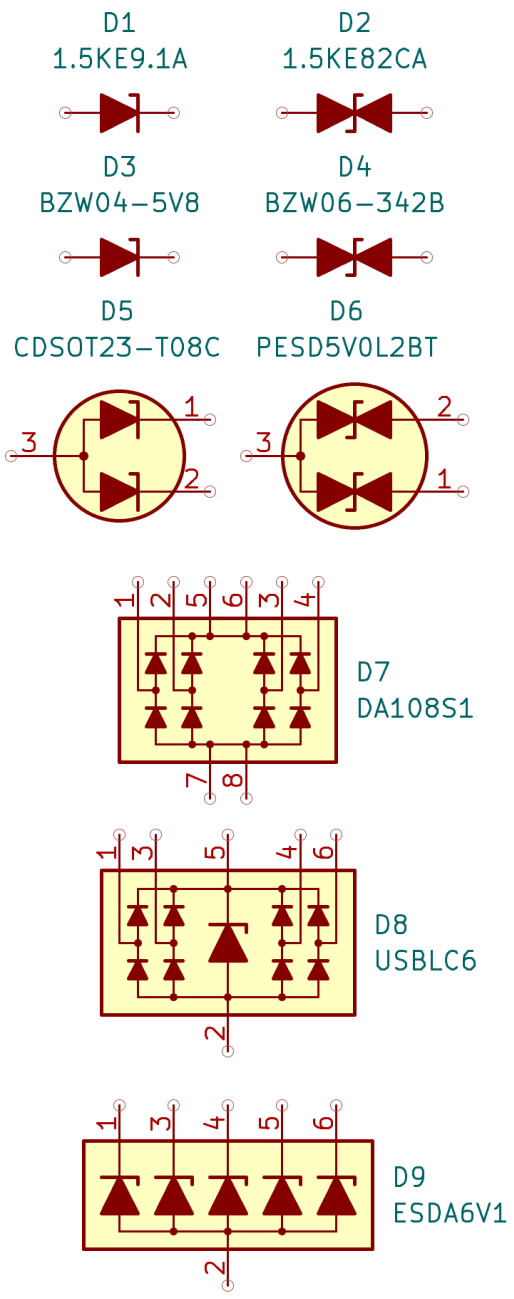
Isolated TVS diode arrays have 2 variants of their symbol. Standard symbol is a single-unit symbol with all diodes in one place. Disaggregated symbol ends in a lowercase 's' and is a multi-unit symbol.

Single 2-terminal diodes, dual common anode, common cathode and separated symbols of independent diode arrays have alternate symbols, see Section 2.1.5 for more details.

TVS diode arrays aways have the internal diagram incorporated into the symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each diode family has a separate specific symbol.

THT Schottky diode symbols use 'Zener' variants of THT diode footprints for unidirectional devices and 'TVS' variants for bidirectional devices by default.

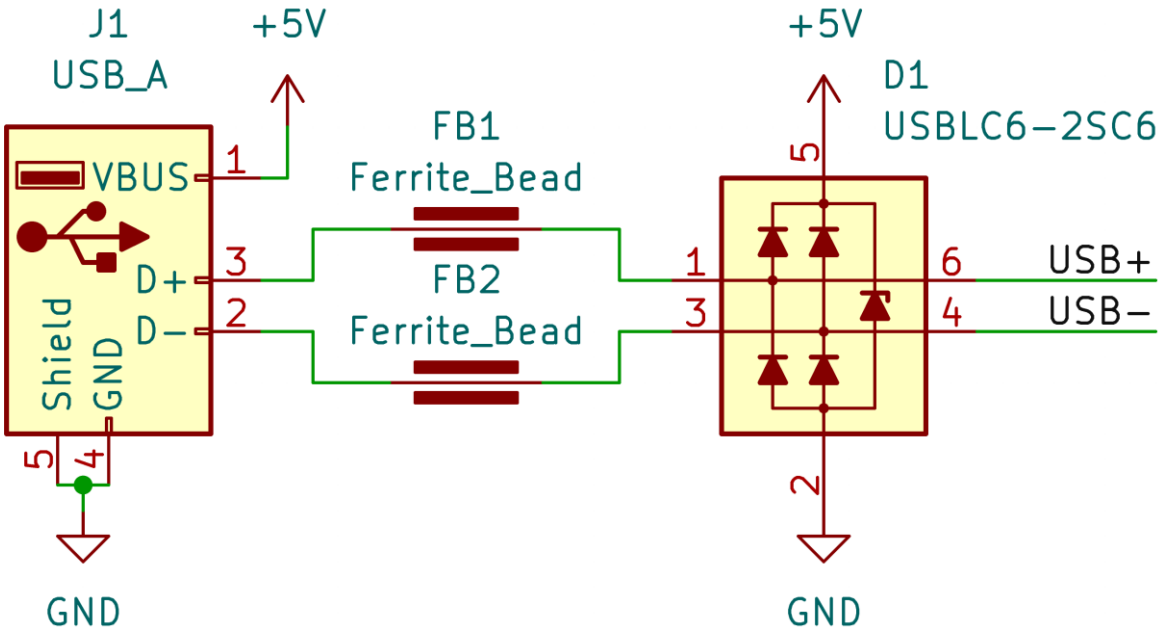


SMD Schottky diode symbols use standard variants of SMD diode footprints for unidirectional devices and 'TVS' variants for bidirectional devices by default.

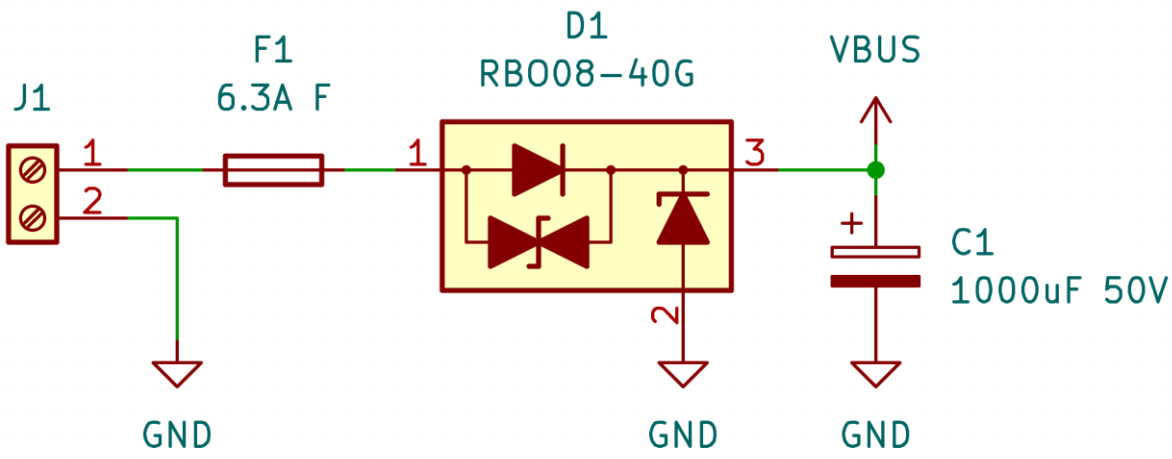
Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
USB Type A port ESD protection using USBLC6-2SC6 dedicated ESD protection array.



Example 2
Reverse power polarity and overvoltage protection using RBO08-40G protection array.

Table 2.17. List of all devices included in Diode_TVS_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
1.5KE (A and CA suffix)	104	1	None	45-degree rotation
1.5SMC (A and CA suffix)	18	1	None	45-degree rotation
1.5SMCJ (A and CA suff.)	90	1	None	45-degree rotation
1KSMB (A and CA suffix)	72	1	None	45-degree rotation
1N5908	1	1	None	45-degree rotation
1N6267A	1	1	None	45-degree rotation
1N6268A	1	1	None	45-degree rotation
1N6269A	1	1	None	45-degree rotation
1N6270A	1	1	None	45-degree rotation
1N6271A	1	1	None	45-degree rotation
1N6272A	1	1	None	45-degree rotation
1N6273A	1	1	None	45-degree rotation
1N6274A	1	1	None	45-degree rotation
1N6275A	1	1	None	45-degree rotation
1N6276A	1	1	None	45-degree rotation
1N6277A	1	1	None	45-degree rotation
1N6278A	1	1	None	45-degree rotation
1N6279A	1	1	None	45-degree rotation
1N6280A	1	1	None	45-degree rotation
1N6281A	1	1	None	45-degree rotation
1N6282A	1	1	None	45-degree rotation
1N6283A	1	1	None	45-degree rotation
1N6284A	1	1	None	45-degree rotation
1N6285A	1	1	None	45-degree rotation
1N6286A	1	1	None	45-degree rotation
1N6287A	1	1	None	45-degree rotation
1N6288A	1	1	None	45-degree rotation
1N6289A	1	1	None	45-degree rotation
1N6290A	1	1	None	45-degree rotation
1N6291A	1	1	None	45-degree rotation
1N6292A	1	1	None	45-degree rotation
1N6293A	1	1	None	45-degree rotation
1N6294A	1	1	None	45-degree rotation
1N6295A	1	1	None	45-degree rotation
1N6296A	1	1	None	45-degree rotation
1N6297A	1	1	None	45-degree rotation
1N6298A	1	1	None	45-degree rotation
1N6299A	1	1	None	45-degree rotation
1N6300A	1	1	None	45-degree rotation
1N6301A	1	1	None	45-degree rotation
1N6302A	1	1	None	45-degree rotation
1N6303A	1	1	None	45-degree rotation
3.0SMCJ (A and CA suff.)	92	1	None	45-degree rotation
5KP (A and CA suffix)	102	1	None	45-degree rotation
5KSMC (A and CA suffix)	16	1	None	45-degree rotation
15KP (A and CA suffix)	94	1	None	45-degree rotation
15KPA (A and CA suffix)	74	1	None	45-degree rotation
20KPA (A and CA suffix)	72	1	None	45-degree rotation
30KPA (A and CA suffix)	82	1	None	45-degree rotation
AOZ8001DI	1	1	Free	None
AOZ8002DIL	1	1	None	None
AOZ8102DI	1	1	Free	None
AOZ8105CI	1	1	None	None
AOZ8205DI	1	1	None	None
AOZ8211DI	5	1	None	45-degree rotation
AOZ8222DI-05	1	1	None	Dual straight
AOZ8224CI-05	1	1	None	None
AOZ8231ADI	6	1	None	45-degree rotation
AOZ8234DI-05	1	1	Free	None
AOZ8235DI-05	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AOZ8300CI-05	1	1	Free	None
AOZ8318DI	1	1	Free	None
AOZ8811DT-03	1	1	None	45-degree rotation
AOZ8831ADI-05	1	1	None	45-degree rotation
AOZ8831DI-05	1	1	None	45-degree rotation
AOZ8831D	3	1	None	45-degree rotation
AOZ8841DI-05	1	1	None	45-degree rotation
*BZW03	78	1	None	45-degree rotation
BZW04 (incl. B variant)	90	1	None	45-degree rotation
BZW06 (incl. B variant)	90	1	None	45-degree rotation
BZW50 (incl. B variant)	32	1	None	45-degree rotation
CDSOD323-T03	1	1	None	45-degree rotation
CDSOD323-T03C	1	1	None	45-degree rotation
CDSOD323-T05	1	1	None	45-degree rotation
CDSOD323-T05C	1	1	None	45-degree rotation
CDSOD323-T08	1	1	None	45-degree rotation
CDSOD323-T08C	1	1	None	45-degree rotation
CDSOD323-T12	1	1	None	45-degree rotation
CDSOD323-T12C	1	1	None	45-degree rotation
CDSOD323-T15	1	1	None	45-degree rotation
CDSOD323-T15C	1	1	None	45-degree rotation
CDSOD323-T18	1	1	None	45-degree rotation
CDSOD323-T18C	1	1	None	45-degree rotation
CDSOD323-T24	1	1	None	45-degree rotation
CDSOD323-T24C	1	1	None	45-degree rotation
CDSOT23-T03	1	1	None	45-degree rotation
CDSOT23-T03C	1	1	None	45-degree rotation
CDSOT23-T05	1	1	None	45-degree rotation
CDSOT23-T05C	1	1	None	45-degree rotation
CDSOT23-T08	1	1	None	45-degree rotation
CDSOT23-T08C	1	1	None	45-degree rotation
CDSOT23-T12	1	1	None	45-degree rotation
CDSOT23-T12C	1	1	None	45-degree rotation
CDSOT23-T15	1	1	None	45-degree rotation
CDSOT23-T15C	1	1	None	45-degree rotation
CDSOT23-T18	1	1	None	45-degree rotation
CDSOT23-T18C	1	1	None	45-degree rotation
CDSOT23-T24	1	1	None	45-degree rotation
CDSOT23-T24C	1	1	None	45-degree rotation
D3V3F4U6S	1	1	None	None
D5V0L1B2T-7	1	1	None	45-degree rotation
D5V0L2B3T	1	1	None	Dual straight
D1213A-02SR	1	1	None	None
DA108S1	1	1	None	None
DA112S1	1	1	None	None
DALC208	1	1	None	None
DF2B36FU	1	1	None	45-degree rotation
*DF2S12FU	1	1	None	45-degree rotation
DF2S16FU	1	1	None	45-degree rotation
DF5A3.6JE	1	1	None	None
DF5A5.6F	1	1	None	None
DF5A6.2CJE	1	1	None	None
DF5A6.8FU	1	1	None	None
DFLT	33	1	None	45-degree rotation
DI5315-02F	1	1	None	None
DLPT05	1	1	None	None
DSILC6-4P6	1	1	None	None
DSL70	1	1	None	None
DT1140-04PL	1	1	Free	None
DVIULC6-4SC6	1	1	None	None
ESD3B5V0WS	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
ESD3B12WS	1	1	None	45-degree rotation
ESD3B15WS	1	1	None	45-degree rotation
ESD3B24WS	1	1	None	45-degree rotation
ESD3V3CA	1	1	None	Dual straight
ESD3Z5V0	1	1	None	45-degree rotation
ESD3Z12	1	1	None	45-degree rotation
ESD5B5.0S	1	1	None	45-degree rotation
ESD5V0CA	1	1	None	Dual straight
ESD5Z2.5T	1	1	None	45-degree rotation
ESD5Z3.3T	1	1	None	45-degree rotation
ESD5Z3V3	1	1	None	45-degree rotation
ESD5Z5.0T	1	1	None	45-degree rotation
ESD5Z5V0	1	1	None	45-degree rotation
ESD5Z6.0T	1	1	None	45-degree rotation
ESD5Z6V0	1	1	None	45-degree rotation
ESD5Z7.0T	1	1	None	45-degree rotation
ESD5Z12	1	1	None	45-degree rotation
ESD5Z12T	1	1	None	45-degree rotation
ESD5Z24	1	1	None	45-degree rotation
ESD9B3.3	1	1	None	45-degree rotation
ESD9B5.0	1	1	None	45-degree rotation
ESD9BL24P	1	1	None	45-degree rotation
ESD9BL0521P	1	1	None	45-degree rotation
ESD9BL0522P	1	1	None	45-degree rotation
ESD9L3.3	1	1	None	45-degree rotation
ESD9L5.0	1	1	None	45-degree rotation
ESD9R3.3	1	1	None	45-degree rotation
ESD12VD9	1	1	None	45-degree rotation
ESD24CA	1	1	None	Dual straight
ESD24VS2U	1	1	None	Dual straight
ESD36CA	1	1	None	Dual straight
ESD0521Z	1	1	None	45-degree rotation
ESD0541Z	1	1	None	45-degree rotation
ESDA5V3L	1	1	None	Dual straight
ESDA5V3SC5	1	1	None	None
ESDA5V3SC6	1	1	None	None
ESDA6V1-5P6	1	1	None	None
ESDA6V1-5SC6	1	1	None	None
ESDA6V1-5W6	1	1	None	None
ESDA6V1L	1	1	None	Dual straight
ESDA6V1P6	1	1	None	None
ESDA6V1SC5	1	1	None	None
ESDA6V1SC6	1	1	None	None
ESDA6V1U1	1	1	None	None
ESDA6V1W5	1	1	None	None
ESDA12-1K	1	1	None	45-degree rotation
ESDA14V2BP6	1	1	None	None
ESDA14V2L	1	1	None	Dual straight
ESDA14V2SC5	1	1	None	None
ESDA14V2SC6	1	1	None	None
ESDA18-1K	1	1	None	45-degree rotation
ESDA19SC6	1	1	None	None
ESDA25-4BP6	1	1	None	None
ESDA25L	1	1	None	Dual straight
ESDA25SC6	1	1	None	None
ESDA25W	1	1	None	Dual straight
ESDA25W5	1	1	None	None
ESDALC6-2SC6	1	1	None	None
ESDALC6V1-5P6	1	1	None	None
ESDCAN02-2BWY	1	1	None	Dual straight
ESDCAN03-2BWY	1	1	None	Dual straight

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
ESDCAN05-2BWY	1	1	None	Dual straight
ESDCAN06-2BWY	1	1	None	Dual straight
ESDLIN1524BJ	1	1	None	45-degree rotation
GSOT03C	1	1	None	Dual straight
GSOT04C	1	1	None	Dual straight
GSOT05C	1	1	None	Dual straight
GSOT08C	1	1	None	Dual straight
GSOT12C	1	1	None	Dual straight
GSOT15C	1	1	None	Dual straight
GSOT24C	1	1	None	Dual straight
GSOT36C	1	1	None	Dual straight
IP4220CZ6	1	1	None	None
LC03-3.3	1	1	None	None
LC03-6	1	1	None	None
LDP24A	1	1	None	45-degree rotation
MMBZ5V6ALT1G	1	1	None	Dual straight
MMBZ6V2ALT1G	1	1	None	Dual straight
MMBZ6V8ALT1G	1	1	None	Dual straight
MMBZ9V1ALT1G	1	1	None	Dual straight
MMBZ12VALT1G	1	1	None	Dual straight
MMBZ15VALT1G	1	1	None	Dual straight
MMBZ16VALT1G	1	1	None	Dual straight
MMBZ18VALT1G	1	1	None	Dual straight
MMBZ20VALT1G	1	1	None	Dual straight
MMBZ27VALT1G	1	1	None	Dual straight
MMBZ33VALT1G	1	1	None	Dual straight
MMBZ47VALT1G	1	1	None	Dual straight
NUP2105L	1	1	None	Dual straight
NUP2201MR6	1	1	Free	None
NUP4114HMR	1	1	None	None
NUP4114UC	1	1	None	None
NUP4114UP	1	1	None	None
P4KE (A and CA suffix)	96	1	None	45-degree rotation
P4SMA (A and CA suffix)	84	1	None	45-degree rotation
P4SMAJ (A and CA suff.)	90	1	None	45-degree rotation
P6KE (A and CA suffix)	94	1	None	45-degree rotation
P6SMB (A and CA suffix)	100	1	None	45-degree rotation
P6SMBJ (A and CA suffix)	92	1	None	45-degree rotation
PESD1CAN	1	1	None	Dual straight
PESD1FLEX	1	1	None	Dual straight
PESD1LIN	1	1	None	Dual straight
PESD2CAN	1	1	None	Dual straight
PESD3V3L1BA	1	1	None	45-degree rotation
PESD3V3L2BT	1	1	None	Dual straight
PESD3V3L4UF	1	1	None	None
PESD3V3L4UG	1	1	None	None
PESD3V3L4UW	1	1	None	None
PESD3V3L5UF	1	1	None	None
PESD3V3L5UV	1	1	None	None
PESD3V3L5UY	1	1	None	None
PESD3V3S1UB	1	1	None	45-degree rotation
PESD3V3S2UT	1	1	None	Dual straight
PESD3V3S4UD	1	1	None	None
PESD5V0L1BA	1	1	None	45-degree rotation
PESD5V0L2BT	1	1	None	Dual straight
PESD5V0L4UF	1	1	None	None
PESD5V0L4UG	1	1	None	None
PESD5V0L4UW	1	1	None	None
PESD5V0L5UF	1	1	None	None
PESD5V0L5UV	1	1	None	None
PESD5V0L5UY	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
PESD5V0S1BA	1	1	None	45-degree rotation
PESD5V0S1BB	1	1	None	45-degree rotation
PESD5V0S1BL	1	1	None	45-degree rotation
PESD5V0S1UB	1	1	None	45-degree rotation
PESD5V0S4UD	1	1	None	None
PESD5V0U1UA	1	1	None	45-degree rotation
PESD5V0U1UB	1	1	None	45-degree rotation
PESD5V0U1UL	1	1	None	45-degree rotation
PESD5V2S2UT	1	1	None	Dual straight
PESD5Z	6	1	None	45-degree rotation
PESD12VL1BA	1	1	None	45-degree rotation
PESD12VL2BT	1	1	None	Dual straight
PESD12VS1UB	1	1	None	45-degree rotation
PESD12VS2UT	1	1	None	Dual straight
PESD12VS4UD	1	1	None	None
PESD15VL1BA	1	1	None	45-degree rotation
PESD15VL2BT	1	1	None	Dual straight
PESD15VS1UB	1	1	None	45-degree rotation
PESD15VS2UT	1	1	None	Dual straight
PESD15VS4UD	1	1	None	None
PESD24VL1BA	1	1	None	45-degree rotation
PESD24VL2BT	1	1	None	Dual straight
PESD24VS1UB	1	1	None	45-degree rotation
PESD24VS2UT	1	1	None	Dual straight
PESD24VS4UD	1	1	None	None
PESD36VS2UT	1	1	None	Dual straight
PKC-136	1	1	None	None
PRTR5V0U2X	1	1	None	None
PRTR5V0U4D	1	1	None	None
PTVSxxxP1UP	35	1	None	45-degree rotation
PTVSxxxP1UTR	35	1	None	45-degree rotation
RBO08-40G	1	1	None	None
RBO08-40T	1	1	None	None
RBO40-40G	1	1	None	None
RBO40-40T	1	1	None	None
RClamp0502A	1	1	None	None
RClamp0502B	1	1	None	Dual straight
RClamp0503F	1	1	None	None
RClamp0504F	1	1	None	None
RClamp0504S	1	1	None	None
RClamp1502B	1	1	None	Dual straight
SD05	1	1	None	45-degree rotation
SD05C	1	1	None	45-degree rotation
SD12	1	1	None	45-degree rotation
SD12C	1	1	None	45-degree rotation
SD24C	1	1	None	45-degree rotation
SDA2AK	1	1	None	45-degree rotation
SDA4AK	1	1	None	45-degree rotation
SDC36	1	1	None	Dual straight
SDMA05	2	1 (4 for separated)	None	45-degree for separated
SDMA05C	2	1 (4 for separated)	None	45-degree for separated
SDMA12	2	1 (4 for separated)	None	45-degree for separated
SDMA12C	2	1 (4 for separated)	None	45-degree for separated
SDMA15	2	1 (4 for separated)	None	45-degree for separated
SDMA15C	2	1 (4 for separated)	None	45-degree for separated
SDMA24	2	1 (4 for separated)	None	45-degree for separated
SDMA24C	2	1 (4 for separated)	None	45-degree for separated
SLVU2.8-4A1	2	1 (4 for separated)	None	45-degree for separated
SLVU2.8-8A1	2	1 (4 for separated)	None	45-degree for separated
SM2T3V3A	1	1	None	45-degree rotation
SM2T6V8A	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SM2T14A	1	1	None	45-degree rotation
SM2T18A	1	1	None	45-degree rotation
SM2T27A	1	1	None	45-degree rotation
SM05	1	1	None	Dual straight
SM6T (A and CA suffix)	40	1	None	45-degree rotation
SM12	1	1	None	Dual straight
SM15	1	1	None	Dual straight
SM15T (A and CA suffix)	38	1	None	45-degree rotation
SM24	1	1	None	Dual straight
SM36	1	1	None	Dual straight
SM712	1	1	None	Dual straight
SM5908	1	1	None	45-degree rotation
SMAJ (A and CA suffix)	108	1	None	45-degree rotation
SMBJ (A and CA suffix)	110	1	None	45-degree rotation
SMCJ (A and CA suffix)	108	1	None	45-degree rotation
SMDJ (A and CA suffix)	110	1	None	45-degree rotation
SMF (A and CA suffix)	106	1	None	45-degree rotation
SMF05CT	1	1	None	None
SMF12CT	1	1	None	None
SMF15CT	1	1	None	None
SMF24CT	1	1	None	None
SP03-6	1	1	None	None
SP0502BAHT	1	1	None	Dual straight
SP0502BAJT	1	1	None	Dual straight
SP0503BAHT	1	1	None	None
SP0504BAHT	1	1	None	None
SP0504BAJT	1	1	None	None
SP0505BAHT	1	1	None	None
SP0505BAJT	1	1	None	None
SP0506BAAT	1	1	None	None
SP1001-02JTG	1	1	None	Dual straight
SP1001-04JTG	1	1	None	None
SP1001-04XTG	1	1	None	None
SP1001-05JTG	1	1	None	None
SP1001-05VTG	1	1	None	None
SP1001-05XTG	1	1	None	None
SP1003-01ETG	1	1	None	45-degree rotation
SP1005-01WTG	1	1	None	45-degree rotation
SP3002-04HTG	1	1	None	None
SP3002-04JTG	1	1	None	None
SP3002-04UTG	1	1	None	None
SP4020-01FTG	1	1	None	45-degree rotation
SP4020-01FTG-C	1	1	None	45-degree rotation
SR3.3	1	1	None	None
SR05	1	1	None	None
SRV05-4	1	1	None	None
TGL34 (A and CA suffix)	74	1	None	45-degree rotation
TGL41 (A and CA suffix)	86	1	None	45-degree rotation
TPSMA6L (A suffix)	38	1	None	45-degree rotation
TPSMB (A and CA suffix)	95	1	None	45-degree rotation
TPSMC (A and CA suffix)	44	1	None	45-degree rotation
TPSMF4L (A suffix)	38	1	None	45-degree rotation
TPSMP (A suffix)	20	1	None	45-degree rotation
TVS3V3L4U	1	1	None	None
uClamp0501H	1	1	None	45-degree rotation
uClamp0501P	1	1	None	45-degree rotation
uClamp3301D	1	1	None	45-degree rotation
USB6B1	1	1	None	None
USBLC6-2P6	1	1	None	None
USBLC6-2SC6	1	1	None	None
USBLC6-4SC6	1	1	None	None

2.21. Zener Diode Library

This library contains Zener/Avalanche diodes and diode arrays.

Zener diodes maintain a relatively constant Cathode to Anode voltage for a wide range of reverse currents. They are often used as voltage references, voltage limiters and DC-level shifters.

All Zener diodes have DZ reference designator (as opposed to D for all other diodes).

Zener diodes with standard 2-pad packages don't have pin numbers written on the symbol. Cathode is pin 1, anode is pin 2. Parts with packages containing more than 2 pads always have the respective pin numbers printed on the symbol. Parts with multiple pads connected to cathode or anode have multiple pins on the symbol.

Single 2-terminal Zener diodes and dual common anode, common cathode and separated independent diode arrays have alternate symbols, see Section 2.1.5 for more details.

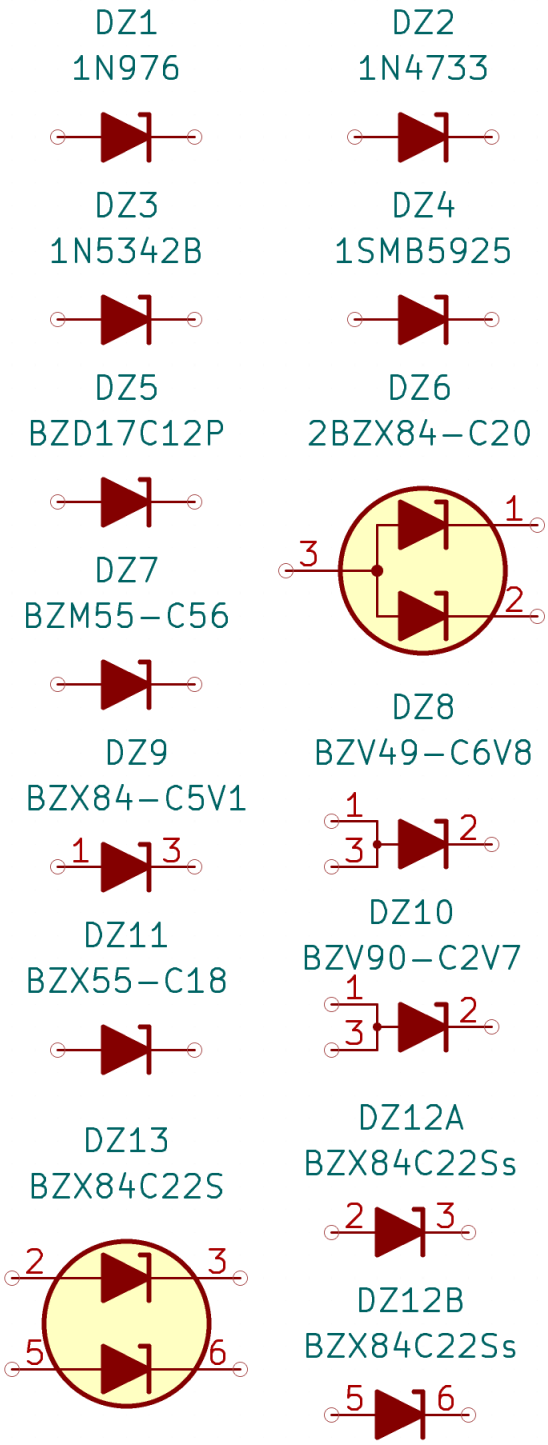
Dual isolated Zener diodes have 2 variants of their symbol. Standard symbol is a single-unit symbol with all diodes in one place. Disaggregated symbol ends in a lowercase 's' and is a multi-unit symbol

Each available orderable part number with different electrical characteristics, tolerance, pinout and package for each diode family has a separate specific symbol.

THT Zener diode symbols use 'Zener' variants of THT diode footprints by default.

SMD Zener diode symbols use standard variants of SMD diode footprints by default.

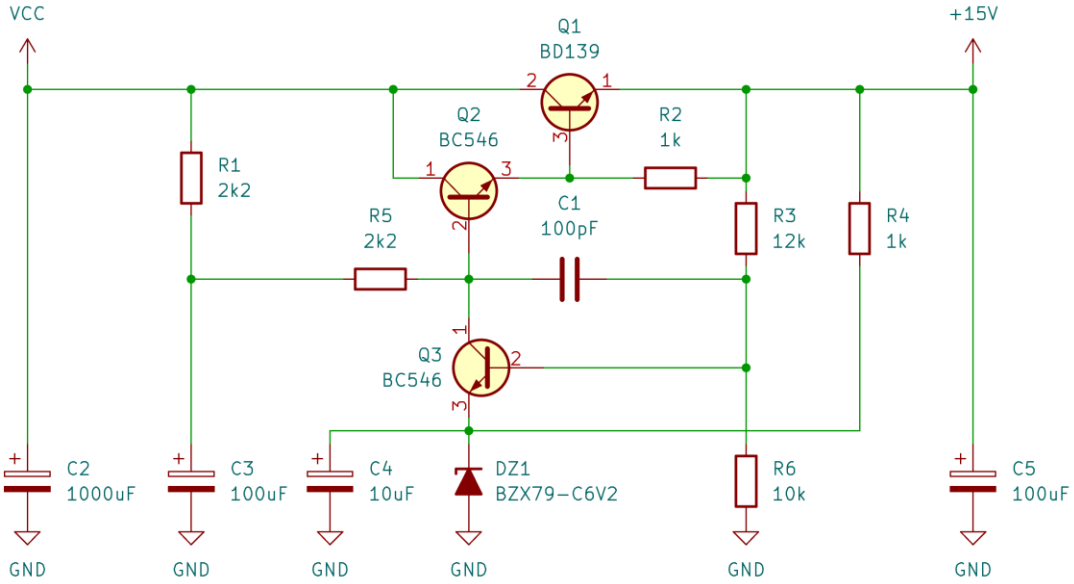
Filename: **Diode_Zener_AKL**	
Total symbols:	**3735**(+476)
Generic symbols:	**12**(+1)
Specific symbols:	**3723**(+475)



Schematic examples

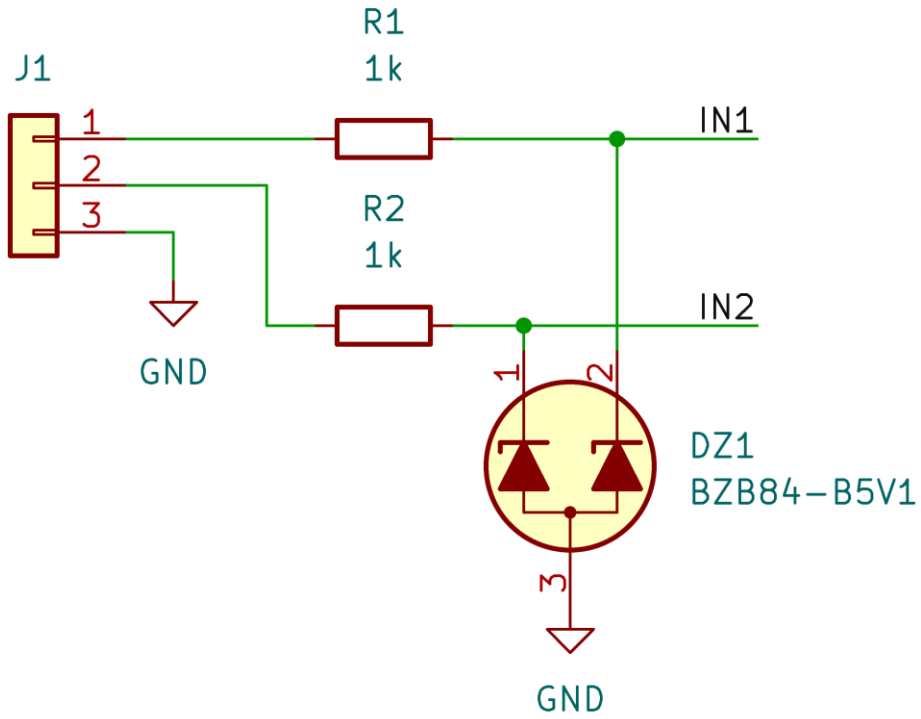
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



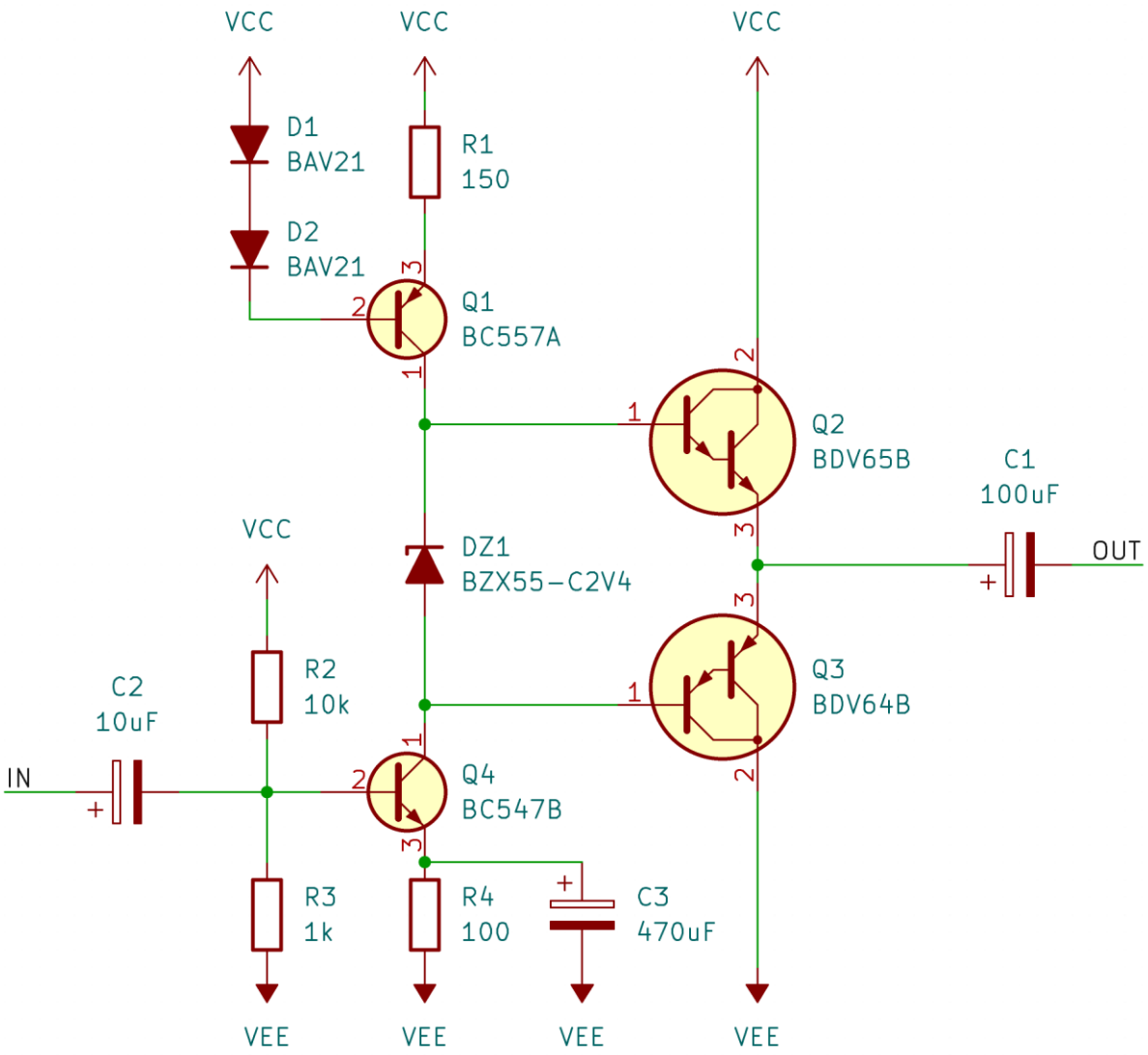
Example 1

Discrete 15V voltage regulator using BZX79-C6V2 Zener diode as a voltage reference.



Example 2

Voltage limiter circuit using BZB84-B5V1 dual Zener diode.



Example 3

Class AB power stage with BZX55-C2V4 used in the biasing circuit as a DC-level shifter.

Table 2.18. List of all devices included in Diode_Zener_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
1EZ	42	1	None	45-degree rotation
1N957	1	1	None	45-degree rotation
1N958	1	1	None	45-degree rotation
1N959	1	1	None	45-degree rotation
1N960	1	1	None	45-degree rotation
1N961	1	1	None	45-degree rotation
1N962	1	1	None	45-degree rotation
1N963	1	1	None	45-degree rotation
1N964	1	1	None	45-degree rotation
1N965	1	1	None	45-degree rotation
1N966	1	1	None	45-degree rotation
1N967	1	1	None	45-degree rotation
1N968	1	1	None	45-degree rotation
1N969	1	1	None	45-degree rotation
1N970	1	1	None	45-degree rotation
1N971	1	1	None	45-degree rotation
1N972	1	1	None	45-degree rotation
1N973	1	1	None	45-degree rotation
1N974	1	1	None	45-degree rotation
1N975	1	1	None	45-degree rotation
1N976	1	1	None	45-degree rotation
1N977	1	1	None	45-degree rotation
1N978	1	1	None	45-degree rotation
1N4728A	1	1	None	45-degree rotation
1N4729A	1	1	None	45-degree rotation
1N4730A	1	1	None	45-degree rotation
1N4731A	1	1	None	45-degree rotation
1N4732A	1	1	None	45-degree rotation
1N4733A	1	1	None	45-degree rotation
1N4734A	1	1	None	45-degree rotation
1N4735A	1	1	None	45-degree rotation
1N4736A	1	1	None	45-degree rotation
1N4737A	1	1	None	45-degree rotation
1N4738A	1	1	None	45-degree rotation
1N4739A	1	1	None	45-degree rotation
1N4740A	1	1	None	45-degree rotation
1N4741A	1	1	None	45-degree rotation
1N4742A	1	1	None	45-degree rotation
1N4743A	1	1	None	45-degree rotation
1N4744A	1	1	None	45-degree rotation
1N4745A	1	1	None	45-degree rotation
1N4746A	1	1	None	45-degree rotation
1N4747A	1	1	None	45-degree rotation
1N4748A	1	1	None	45-degree rotation
1N4749A	1	1	None	45-degree rotation
1N4750A	1	1	None	45-degree rotation
1N4751A	1	1	None	45-degree rotation
1N4752A	1	1	None	45-degree rotation
1N4753A	1	1	None	45-degree rotation
1N4754A	1	1	None	45-degree rotation
1N4755A	1	1	None	45-degree rotation
1N4756A	1	1	None	45-degree rotation
1N4757A	1	1	None	45-degree rotation
1N4758A	1	1	None	45-degree rotation
1N5223B	1	1	None	45-degree rotation
1N5224B	1	1	None	45-degree rotation
1N5225B	1	1	None	45-degree rotation
1N5226B	1	1	None	45-degree rotation
1N5227B	1	1	None	45-degree rotation
1N5228B	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
1N5229B	1	1	None	45-degree rotation
1N5230B	1	1	None	45-degree rotation
1N5231B	1	1	None	45-degree rotation
1N5232B	1	1	None	45-degree rotation
1N5233B	1	1	None	45-degree rotation
1N5234B	1	1	None	45-degree rotation
1N5235B	1	1	None	45-degree rotation
1N5236B	1	1	None	45-degree rotation
1N5237B	1	1	None	45-degree rotation
1N5238B	1	1	None	45-degree rotation
1N5239B	1	1	None	45-degree rotation
1N5240B	1	1	None	45-degree rotation
1N5241B	1	1	None	45-degree rotation
1N5242B	1	1	None	45-degree rotation
1N5243B	1	1	None	45-degree rotation
1N5244B	1	1	None	45-degree rotation
1N5245B	1	1	None	45-degree rotation
1N5246B	1	1	None	45-degree rotation
1N5247B	1	1	None	45-degree rotation
1N5248B	1	1	None	45-degree rotation
1N5249B	1	1	None	45-degree rotation
1N5250B	1	1	None	45-degree rotation
1N5251B	1	1	None	45-degree rotation
1N5252B	1	1	None	45-degree rotation
1N5253B	1	1	None	45-degree rotation
1N5254B	1	1	None	45-degree rotation
1N5255B	1	1	None	45-degree rotation
1N5256B	1	1	None	45-degree rotation
1N5257B	1	1	None	45-degree rotation
1N5258B	1	1	None	45-degree rotation
1N5259B	1	1	None	45-degree rotation
1N5260B	1	1	None	45-degree rotation
1N5261B	1	1	None	45-degree rotation
1N5262B	1	1	None	45-degree rotation
1N5263B	1	1	None	45-degree rotation
1N5264B	1	1	None	45-degree rotation
1N5265B	1	1	None	45-degree rotation
1N5266B	1	1	None	45-degree rotation
1N5267B	1	1	None	45-degree rotation
1N5268B	1	1	None	45-degree rotation
1N5269B	1	1	None	45-degree rotation
1N5270B	1	1	None	45-degree rotation
1N5271B	1	1	None	45-degree rotation
1N5272B	1	1	None	45-degree rotation
1N5273B	1	1	None	45-degree rotation
1N5333B	1	1	None	45-degree rotation
1N5334B	1	1	None	45-degree rotation
1N5335B	1	1	None	45-degree rotation
1N5336B	1	1	None	45-degree rotation
1N5337B	1	1	None	45-degree rotation
1N5338B	1	1	None	45-degree rotation
1N5339B	1	1	None	45-degree rotation
1N5340B	1	1	None	45-degree rotation
1N5341B	1	1	None	45-degree rotation
1N5342B	1	1	None	45-degree rotation
1N5343B	1	1	None	45-degree rotation
1N5344B	1	1	None	45-degree rotation
1N5345B	1	1	None	45-degree rotation
1N5346B	1	1	None	45-degree rotation
1N5347B	1	1	None	45-degree rotation
1N5348B	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
1N5349B	1	1	None	45-degree rotation
1N5350B	1	1	None	45-degree rotation
1N5351B	1	1	None	45-degree rotation
1N5352B	1	1	None	45-degree rotation
1N5353B	1	1	None	45-degree rotation
1N5354B	1	1	None	45-degree rotation
1N5355B	1	1	None	45-degree rotation
1N5356B	1	1	None	45-degree rotation
1N5357B	1	1	None	45-degree rotation
1N5358B	1	1	None	45-degree rotation
1N5359B	1	1	None	45-degree rotation
1N5360B	1	1	None	45-degree rotation
1N5361B	1	1	None	45-degree rotation
1N5362B	1	1	None	45-degree rotation
1N5363B	1	1	None	45-degree rotation
1N5364B	1	1	None	45-degree rotation
1N5365B	1	1	None	45-degree rotation
1N5366B	1	1	None	45-degree rotation
1N5367B	1	1	None	45-degree rotation
1N5368B	1	1	None	45-degree rotation
1N5369B	1	1	None	45-degree rotation
1N5370B	1	1	None	45-degree rotation
1N5371B	1	1	None	45-degree rotation
1N5372B	1	1	None	45-degree rotation
1N5373B	1	1	None	45-degree rotation
1N5374B	1	1	None	45-degree rotation
1N5375B	1	1	None	45-degree rotation
1N5376B	1	1	None	45-degree rotation
1N5377B	1	1	None	45-degree rotation
1N5378B	1	1	None	45-degree rotation
1N5379B	1	1	None	45-degree rotation
1N5380B	1	1	None	45-degree rotation
1N5381B	1	1	None	45-degree rotation
1N5382B	1	1	None	45-degree rotation
1N5383B	1	1	None	45-degree rotation
1N5384B	1	1	None	45-degree rotation
1N5385B	1	1	None	45-degree rotation
1N5386B	1	1	None	45-degree rotation
1N5387B	1	1	None	45-degree rotation
1N5388B	1	1	None	45-degree rotation
1N5913B	1	1	None	45-degree rotation
1N5917B	1	1	None	45-degree rotation
1N5919B	1	1	None	45-degree rotation
1N5920B	1	1	None	45-degree rotation
1N5921B	1	1	None	45-degree rotation
1N5923B	1	1	None	45-degree rotation
1N5924B	1	1	None	45-degree rotation
1N5925B	1	1	None	45-degree rotation
1N5926B	1	1	None	45-degree rotation
1N5927B	1	1	None	45-degree rotation
1N5929B	1	1	None	45-degree rotation
1N5930B	1	1	None	45-degree rotation
1N5931B	1	1	None	45-degree rotation
1N5932B	1	1	None	45-degree rotation
1N5933B	1	1	None	45-degree rotation
1N5934B	1	1	None	45-degree rotation
1N5935B	1	1	None	45-degree rotation
1N5936B	1	1	None	45-degree rotation
1N5937B	1	1	None	45-degree rotation
1N5938B	1	1	None	45-degree rotation
1N5939B	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
1N5940B	1	1	None	45-degree rotation
1N5941B	1	1	None	45-degree rotation
1N5942B	1	1	None	45-degree rotation
1N5943B	1	1	None	45-degree rotation
1N5944B	1	1	None	45-degree rotation
1N5946B	1	1	None	45-degree rotation
1N5947B	1	1	None	45-degree rotation
1N5948B	1	1	None	45-degree rotation
1N5950B	1	1	None	45-degree rotation
1N5951B	1	1	None	45-degree rotation
1N5952B	1	1	None	45-degree rotation
1N5953B	1	1	None	45-degree rotation
1N5954B	1	1	None	45-degree rotation
1N5955B	1	1	None	45-degree rotation
1N5956B	1	1	None	45-degree rotation
1SMA5913	1	1	None	45-degree rotation
1SMA5914	1	1	None	45-degree rotation
1SMA5915	1	1	None	45-degree rotation
1SMA5916	1	1	None	45-degree rotation
1SMA5917	1	1	None	45-degree rotation
1SMA5918	1	1	None	45-degree rotation
1SMA5919	1	1	None	45-degree rotation
1SMA5920	1	1	None	45-degree rotation
1SMA5921	1	1	None	45-degree rotation
1SMA5922	1	1	None	45-degree rotation
1SMA5923	1	1	None	45-degree rotation
1SMA5924	1	1	None	45-degree rotation
1SMA5925	1	1	None	45-degree rotation
1SMA5926	1	1	None	45-degree rotation
1SMA5927	1	1	None	45-degree rotation
1SMA5928	1	1	None	45-degree rotation
1SMA5929	1	1	None	45-degree rotation
1SMA5930	1	1	None	45-degree rotation
1SMA5931	1	1	None	45-degree rotation
1SMA5932	1	1	None	45-degree rotation
1SMA5933	1	1	None	45-degree rotation
1SMA5934	1	1	None	45-degree rotation
1SMA5935	1	1	None	45-degree rotation
1SMA5936	1	1	None	45-degree rotation
1SMA5937	1	1	None	45-degree rotation
1SMA5938	1	1	None	45-degree rotation
1SMA5939	1	1	None	45-degree rotation
1SMA5940	1	1	None	45-degree rotation
1SMA5941	1	1	None	45-degree rotation
1SMA5942	1	1	None	45-degree rotation
1SMA5943	1	1	None	45-degree rotation
1SMA5945	1	1	None	45-degree rotation
1SMB5913	1	1	None	45-degree rotation
1SMB5914	1	1	None	45-degree rotation
1SMB5915	1	1	None	45-degree rotation
1SMB5916	1	1	None	45-degree rotation
1SMB5917	1	1	None	45-degree rotation
1SMB5918	1	1	None	45-degree rotation
1SMB5919	1	1	None	45-degree rotation
1SMB5920	1	1	None	45-degree rotation
1SMB5921	1	1	None	45-degree rotation
1SMB5922	1	1	None	45-degree rotation
1SMB5923	1	1	None	45-degree rotation
1SMB5924	1	1	None	45-degree rotation
1SMB5925	1	1	None	45-degree rotation
1SMB5926	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
1SMB5927	1	1	None	45-degree rotation
1SMB5928	1	1	None	45-degree rotation
1SMB5929	1	1	None	45-degree rotation
1SMB5930	1	1	None	45-degree rotation
1SMB5931	1	1	None	45-degree rotation
1SMB5932	1	1	None	45-degree rotation
1SMB5933	1	1	None	45-degree rotation
1SMB5934	1	1	None	45-degree rotation
1SMB5935	1	1	None	45-degree rotation
1SMB5936	1	1	None	45-degree rotation
1SMB5937	1	1	None	45-degree rotation
1SMB5938	1	1	None	45-degree rotation
1SMB5939	1	1	None	45-degree rotation
1SMB5940	1	1	None	45-degree rotation
1SMB5941	1	1	None	45-degree rotation
1SMB5942	1	1	None	45-degree rotation
1SMB5943	1	1	None	45-degree rotation
1SMB5944	1	1	None	45-degree rotation
1SMB5945	1	1	None	45-degree rotation
1SMB5946	1	1	None	45-degree rotation
1SMB5947	1	1	None	45-degree rotation
1SMB5948	1	1	None	45-degree rotation
1SMB5949	1	1	None	45-degree rotation
1SMB5950	1	1	None	45-degree rotation
1SMB5951	1	1	None	45-degree rotation
1SMB5952	1	1	None	45-degree rotation
1SMB5953	1	1	None	45-degree rotation
1SMB5954	1	1	None	45-degree rotation
1SMB5955	1	1	None	45-degree rotation
1SMB5956	1	1	None	45-degree rotation
2BZX84-C	30	1	None	Dual straight
2EZ	44	1	None	45-degree rotation
3EZ	43	1	None	45-degree rotation
AZ23C	32	1	None	Dual straight
BZB84-B	37	1	None	Dual straight
BZB784-C	20	1	None	Dual straight
BZD17C	43	1	None	45-degree rotation
*BZD23-C	53	1	None	45-degree rotation
*BZD27C	43	1	None	45-degree rotation
BZG03-C	35	1	None	45-degree rotation
BZG04	35	1	None	45-degree rotation
BZG05C	37	1	None	45-degree rotation
BZM55-C	37	1	None	45-degree rotation
*BZM5221B	1	1	None	45-degree rotation
*BZM5222B	1	1	None	45-degree rotation
*BZM5223B	1	1	None	45-degree rotation
*BZM5224B	1	1	None	45-degree rotation
*BZM5225B	1	1	None	45-degree rotation
*BZM5226B	1	1	None	45-degree rotation
*BZM5227B	1	1	None	45-degree rotation
*BZM5228B	1	1	None	45-degree rotation
*BZM5229B	1	1	None	45-degree rotation
*BZM5230B	1	1	None	45-degree rotation
*BZM5231B	1	1	None	45-degree rotation
*BZM5232B	1	1	None	45-degree rotation
*BZM5233B	1	1	None	45-degree rotation
*BZM5234B	1	1	None	45-degree rotation
*BZM5235B	1	1	None	45-degree rotation
*BZM5236B	1	1	None	45-degree rotation
*BZM5237B	1	1	None	45-degree rotation
*BZM5238B	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
*BZM5239B	1	1	None	45-degree rotation
*BZM5240B	1	1	None	45-degree rotation
*BZM5241B	1	1	None	45-degree rotation
*BZM5242B	1	1	None	45-degree rotation
*BZM5243B	1	1	None	45-degree rotation
*BZM5244B	1	1	None	45-degree rotation
*BZM5245B	1	1	None	45-degree rotation
*BZM5246B	1	1	None	45-degree rotation
*BZM5247B	1	1	None	45-degree rotation
*BZM5248B	1	1	None	45-degree rotation
*BZM5249B	1	1	None	45-degree rotation
*BZM5250B	1	1	None	45-degree rotation
*BZM5251B	1	1	None	45-degree rotation
*BZM5252B	1	1	None	45-degree rotation
*BZM5253B	1	1	None	45-degree rotation
*BZM5254B	1	1	None	45-degree rotation
*BZM5255B	1	1	None	45-degree rotation
*BZM5256B	1	1	None	45-degree rotation
*BZM5257B	1	1	None	45-degree rotation
*BZM5258B	1	1	None	45-degree rotation
*BZM5259B	1	1	None	45-degree rotation
*BZM5260B	1	1	None	45-degree rotation
*BZM5261B	1	1	None	45-degree rotation
*BZM5262B	1	1	None	45-degree rotation
*BZM5263B	1	1	None	45-degree rotation
*BZM5264B	1	1	None	45-degree rotation
*BZM5265B	1	1	None	45-degree rotation
*BZM5266B	1	1	None	45-degree rotation
*BZM5267B	1	1	None	45-degree rotation
*BZP630-C	17	1	None	45-degree rotation
*BZP630-D	10	1	None	45-degree rotation
*BZP650-C	17	1	None	45-degree rotation
*BZP650-D	9	1	None	45-degree rotation
BZT03C	41	1	None	45-degree rotation
BZT52-C	34	1	None	45-degree rotation
BZT52CxxxS	31	1	None	45-degree rotation
BZT52CxxxT	26	1	None	45-degree rotation
BZT52H-C	37	1	None	45-degree rotation
BZT55-C	37	1	None	45-degree rotation
BZT585-B	30	1	None	45-degree rotation
*BZV48-C	44	1	None	45-degree rotation
BZV49-C	37	1	None	None
BZV55-C	37	1	None	45-degree rotation
BZV85-C	33	1	None	45-degree rotation
BZV90-C	37	1	None	None
*BZX55-B	37	1	None	45-degree rotation
BZX55-C	37	1	None	45-degree rotation
*BZX79-B	37	1	None	45-degree rotation
BZX79-C	37	1	None	45-degree rotation
BZX84-C	32	1	Free	45-degree rotation
BZX84CxxxS	60	1 (2 for separated)	Free	45-degree for separated
BZX84CxxxW	30	1	Free	45-degree rotation
BZX84J-C	37	1	None	45-degree rotation
*BZX85-B	39	1	None	45-degree rotation
BZX85-C	39	1	None	45-degree rotation
BZX384-C	37	1	None	45-degree rotation
BZX584-C	33	1	None	45-degree rotation
BZX585-C	37	1	None	45-degree rotation
BZX882-C	37	1	None	45-degree rotation
CDZ55C	39	1	None	45-degree rotation
CDZ55CxxxS	39	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
CDZ55CxxxT	39	1	None	45-degree rotation
*CMZ	15	1	None	45-degree rotation
*CMZB	17	1	None	45-degree rotation
*CRY	5	1	None	45-degree rotation
*CRZ	17	1	None	45-degree rotation
D3ZxxxBF	29	1	None	45-degree rotation
DDZxxx	23	1	None	45-degree rotation
DDZxxxCSF	30	1	None	45-degree rotation
DDZ9678	1	1	None	45-degree rotation
DDZ9681	1	1	None	45-degree rotation
DDZ9682	1	1	None	45-degree rotation
DDZ9683	1	1	None	45-degree rotation
DDZ9684	1	1	None	45-degree rotation
DDZ9685	1	1	None	45-degree rotation
DDZ9686	1	1	None	45-degree rotation
DDZ9687	1	1	None	45-degree rotation
DDZ9688	1	1	None	45-degree rotation
DDZ9689	1	1	None	45-degree rotation
DDZ9690	1	1	None	45-degree rotation
DDZ9691	1	1	None	45-degree rotation
DDZ9692	1	1	None	45-degree rotation
DDZ9693	1	1	None	45-degree rotation
DDZ9694	1	1	None	45-degree rotation
DDZ9696	1	1	None	45-degree rotation
DDZ9697	1	1	None	45-degree rotation
DDZ9698	1	1	None	45-degree rotation
DDZ9699	1	1	None	45-degree rotation
DDZ9700	1	1	None	45-degree rotation
DDZ9701	1	1	None	45-degree rotation
DDZ9702	1	1	None	45-degree rotation
DDZ9703	1	1	None	45-degree rotation
DDZ9704	1	1	None	45-degree rotation
DDZ9705	1	1	None	45-degree rotation
DDZ9706	1	1	None	45-degree rotation
DDZ9707	1	1	None	45-degree rotation
DDZ9708	1	1	None	45-degree rotation
DDZ9709	1	1	None	45-degree rotation
DDZ9711	1	1	None	45-degree rotation
DDZ9712	1	1	None	45-degree rotation
DDZ9713	1	1	None	45-degree rotation
DDZ9714	1	1	None	45-degree rotation
DDZ9715	1	1	None	45-degree rotation
DDZ9716	1	1	None	45-degree rotation
DDZ9717	1	1	None	45-degree rotation
DFLZ	22	1	None	45-degree rotation
DL4728	1	1	None	45-degree rotation
DL4729	1	1	None	45-degree rotation
DL4730	1	1	None	45-degree rotation
DL4731	1	1	None	45-degree rotation
DL4732	1	1	None	45-degree rotation
DL4733	1	1	None	45-degree rotation
DL4734	1	1	None	45-degree rotation
DL4735	1	1	None	45-degree rotation
DL4736	1	1	None	45-degree rotation
DL4737	1	1	None	45-degree rotation
DL4738	1	1	None	45-degree rotation
DL4739	1	1	None	45-degree rotation
DL4740	1	1	None	45-degree rotation
DL4741	1	1	None	45-degree rotation
DL4742	1	1	None	45-degree rotation
DL4743	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DL4744	1	1	None	45-degree rotation
DL4745	1	1	None	45-degree rotation
DL4746	1	1	None	45-degree rotation
DL4747	1	1	None	45-degree rotation
DL4748	1	1	None	45-degree rotation
DL4749	1	1	None	45-degree rotation
DL4750	1	1	None	45-degree rotation
DL4751	1	1	None	45-degree rotation
DL4752	1	1	None	45-degree rotation
DL4753	1	1	None	45-degree rotation
DL4754	1	1	None	45-degree rotation
DL4755	1	1	None	45-degree rotation
DL4756	1	1	None	45-degree rotation
DL4757	1	1	None	45-degree rotation
DL4758	1	1	None	45-degree rotation
DL4759	1	1	None	45-degree rotation
DL4760	1	1	None	45-degree rotation
DL4761	1	1	None	45-degree rotation
DL4762	1	1	None	45-degree rotation
DL4763	1	1	None	45-degree rotation
DL4764	1	1	None	45-degree rotation
DZ23-C	32	1	None	Dual straight
DZL1110	1	1	None	45-degree rotation
DZL1120	1	1	None	45-degree rotation
DZL1130	1	1	None	45-degree rotation
DZL1150	1	1	None	45-degree rotation
DZL1160	1	1	None	45-degree rotation
DZL1180	1	1	None	45-degree rotation
DZL1200	1	1	None	45-degree rotation
DZL1220	1	1	None	45-degree rotation
DZL1240	1	1	None	45-degree rotation
DZL1250	1	1	None	45-degree rotation
DZL1270	1	1	None	45-degree rotation
DZL1300	1	1	None	45-degree rotation
DZL1330	1	1	None	45-degree rotation
DZL4728	1	1	None	45-degree rotation
DZL4729	1	1	None	45-degree rotation
DZL4730	1	1	None	45-degree rotation
DZL4731	1	1	None	45-degree rotation
DZL4732	1	1	None	45-degree rotation
DZL4733	1	1	None	45-degree rotation
DZL4734	1	1	None	45-degree rotation
DZL4735	1	1	None	45-degree rotation
DZL4736	1	1	None	45-degree rotation
DZL4737	1	1	None	45-degree rotation
DZL4738	1	1	None	45-degree rotation
DZL4739	1	1	None	45-degree rotation
DZL4740	1	1	None	45-degree rotation
DZL4741	1	1	None	45-degree rotation
DZL4742	1	1	None	45-degree rotation
DZL4743	1	1	None	45-degree rotation
DZL4744	1	1	None	45-degree rotation
DZL4745	1	1	None	45-degree rotation
DZL4746	1	1	None	45-degree rotation
DZL4747	1	1	None	45-degree rotation
DZL4748	1	1	None	45-degree rotation
DZL4749	1	1	None	45-degree rotation
DZL4750	1	1	None	45-degree rotation
DZL4751	1	1	None	45-degree rotation
DZL4752	1	1	None	45-degree rotation
DZL4753	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DZL4754	1	1	None	45-degree rotation
DZL4755	1	1	None	45-degree rotation
DZL4756	1	1	None	45-degree rotation
DZL4757	1	1	None	45-degree rotation
DZL4758	1	1	None	45-degree rotation
DZL4759	1	1	None	45-degree rotation
DZL4760	1	1	None	45-degree rotation
DZL4761	1	1	None	45-degree rotation
DZL4762	1	1	None	45-degree rotation
DZL4763	1	1	None	45-degree rotation
DZL4764	1	1	None	45-degree rotation
*GLL4735	1	1	None	45-degree rotation
*GLL4736	1	1	None	45-degree rotation
*GLL4737	1	1	None	45-degree rotation
*GLL4738	1	1	None	45-degree rotation
*GLL4739	1	1	None	45-degree rotation
*GLL4740	1	1	None	45-degree rotation
*GLL4741	1	1	None	45-degree rotation
*GLL4742	1	1	None	45-degree rotation
*GLL4743	1	1	None	45-degree rotation
*GLL4744	1	1	None	45-degree rotation
*GLL4745	1	1	None	45-degree rotation
*GLL4746	1	1	None	45-degree rotation
*GLL4747	1	1	None	45-degree rotation
*GLL4748	1	1	None	45-degree rotation
*GLL4749	1	1	None	45-degree rotation
*GLL4750	1	1	None	45-degree rotation
*GLL4750	1	1	None	45-degree rotation
*GLL4751	1	1	None	45-degree rotation
*GLL4752	1	1	None	45-degree rotation
*GLL4753	1	1	None	45-degree rotation
*GLL4754	1	1	None	45-degree rotation
*GLL4755	1	1	None	45-degree rotation
*GLL4756	1	1	None	45-degree rotation
*GLL4757	1	1	None	45-degree rotation
*GLL4758	1	1	None	45-degree rotation
*GLL4759	1	1	None	45-degree rotation
*GLL4760	1	1	None	45-degree rotation
*GLL4761	1	1	None	45-degree rotation
*GLL4762	1	1	None	45-degree rotation
*GLL4763	1	1	None	45-degree rotation
*LL1.5	1	1	None	45-degree rotation
*LL2	1	1	None	45-degree rotation
*LL2.4	1	1	None	45-degree rotation
MM3Z	32	1	None	45-degree rotation
MM3ZxxxST	30	1	None	45-degree rotation
MM5Z	32	1	None	45-degree rotation
MMBZ5221	1	1	Free	45-degree rotation
MMBZ5221BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5222	1	1	Free	45-degree rotation
MMBZ5223	1	1	Free	45-degree rotation
MMBZ5223BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5225	1	1	Free	45-degree rotation
MMBZ5225BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5226	1	1	Free	45-degree rotation
MMBZ5226BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5227	1	1	Free	45-degree rotation
MMBZ5227BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5228	1	1	Free	45-degree rotation
MMBZ5228BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5229	1	1	Free	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MMBZ5229BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5230	1	1	Free	45-degree rotation
MMBZ5230BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5231	1	1	Free	45-degree rotation
MMBZ5231BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5232	1	1	Free	45-degree rotation
MMBZ5232BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5233	1	1	Free	45-degree rotation
MMBZ5233BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5234	1	1	Free	45-degree rotation
MMBZ5234BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5235	1	1	Free	45-degree rotation
MMBZ5235BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5236	1	1	Free	45-degree rotation
MMBZ5236BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5237	1	1	Free	45-degree rotation
MMBZ5237BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5238	1	1	Free	45-degree rotation
MMBZ5238BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5239	1	1	Free	45-degree rotation
MMBZ5239BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5240	1	1	Free	45-degree rotation
MMBZ5240BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5241	1	1	Free	45-degree rotation
MMBZ5241BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5242	1	1	Free	45-degree rotation
MMBZ5242BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5243	1	1	Free	45-degree rotation
MMBZ5243BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5245	1	1	Free	45-degree rotation
MMBZ5245BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5246	1	1	Free	45-degree rotation
MMBZ5246BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5248	1	1	Free	45-degree rotation
MMBZ5248BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5250	1	1	Free	45-degree rotation
MMBZ5250BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5251	1	1	Free	45-degree rotation
MMBZ5251BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5252	1	1	Free	45-degree rotation
MMBZ5252BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5254	1	1	Free	45-degree rotation
MMBZ5254BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5255	1	1	Free	45-degree rotation
MMBZ5255BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5256	1	1	Free	45-degree rotation
MMBZ5256BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5257	1	1	Free	45-degree rotation
MMBZ5257BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5258	1	1	Free	45-degree rotation
MMBZ5258BS	2	1 (2 for separated)	Free	45-degree for separated
MMBZ5259	1	1	Free	45-degree rotation
MMBZ5259BS	2	1 (2 for separated)	Free	45-degree for separated
MMSZ	34	1	None	45-degree rotation
MMSZ4678	1	1	None	45-degree rotation
MMSZ4679	1	1	None	45-degree rotation
MMSZ4680	1	1	None	45-degree rotation
MMSZ4681	1	1	None	45-degree rotation
MMSZ4682	1	1	None	45-degree rotation
MMSZ4683	1	1	None	45-degree rotation
MMSZ4684	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MMSZ4685	1	1	None	45-degree rotation
MMSZ4686	1	1	None	45-degree rotation
MMSZ4687	1	1	None	45-degree rotation
MMSZ4688	1	1	None	45-degree rotation
MMSZ4689	1	1	None	45-degree rotation
MMSZ4690	1	1	None	45-degree rotation
MMSZ4691	1	1	None	45-degree rotation
MMSZ4692	1	1	None	45-degree rotation
MMSZ4693	1	1	None	45-degree rotation
MMSZ4694	1	1	None	45-degree rotation
MMSZ4695	1	1	None	45-degree rotation
MMSZ4696	1	1	None	45-degree rotation
MMSZ4697	1	1	None	45-degree rotation
MMSZ4698	1	1	None	45-degree rotation
MMSZ4699	1	1	None	45-degree rotation
MMSZ4700	1	1	None	45-degree rotation
MMSZ4701	1	1	None	45-degree rotation
MMSZ4702	1	1	None	45-degree rotation
MMSZ4703	1	1	None	45-degree rotation
MMSZ4704	1	1	None	45-degree rotation
MMSZ4705	1	1	None	45-degree rotation
MMSZ4706	1	1	None	45-degree rotation
MMSZ4707	1	1	None	45-degree rotation
MMSZ4708	1	1	None	45-degree rotation
MMSZ4709	1	1	None	45-degree rotation
MMSZ4710	1	1	None	45-degree rotation
MMSZ4711	1	1	None	45-degree rotation
MMSZ4712	1	1	None	45-degree rotation
MMSZ4713	1	1	None	45-degree rotation
MMSZ4714	1	1	None	45-degree rotation
MMSZ4715	1	1	None	45-degree rotation
MMSZ4716	1	1	None	45-degree rotation
MMSZ4717	1	1	None	45-degree rotation
MMSZ5221	1	1	None	45-degree rotation
MMSZ5221BS	1	1	None	45-degree rotation
MMSZ5222	1	1	None	45-degree rotation
MMSZ5223	1	1	None	45-degree rotation
MMSZ5223BS	1	1	None	45-degree rotation
MMSZ5224	1	1	None	45-degree rotation
MMSZ5225	1	1	None	45-degree rotation
MMSZ5225BS	1	1	None	45-degree rotation
MMSZ5226	1	1	None	45-degree rotation
MMSZ5226BS	1	1	None	45-degree rotation
MMSZ5227	1	1	None	45-degree rotation
MMSZ5227BS	1	1	None	45-degree rotation
MMSZ5228	1	1	None	45-degree rotation
MMSZ5228BS	1	1	None	45-degree rotation
MMSZ5229	1	1	None	45-degree rotation
MMSZ5229BS	1	1	None	45-degree rotation
MMSZ5230	1	1	None	45-degree rotation
MMSZ5230BS	1	1	None	45-degree rotation
MMSZ5231	1	1	None	45-degree rotation
MMSZ5231BS	1	1	None	45-degree rotation
MMSZ5232	1	1	None	45-degree rotation
MMSZ5232BS	1	1	None	45-degree rotation
MMSZ5233	1	1	None	45-degree rotation
MMSZ5233BS	1	1	None	45-degree rotation
MMSZ5234	1	1	None	45-degree rotation
MMSZ5234BS	1	1	None	45-degree rotation
MMSZ5235	1	1	None	45-degree rotation
MMSZ5235BS	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MMSZ5236	1	1	None	45-degree rotation
MMSZ5236BS	1	1	None	45-degree rotation
MMSZ5237	1	1	None	45-degree rotation
MMSZ5237BS	1	1	None	45-degree rotation
MMSZ5238	1	1	None	45-degree rotation
MMSZ5238BS	1	1	None	45-degree rotation
MMSZ5239	1	1	None	45-degree rotation
MMSZ5239BS	1	1	None	45-degree rotation
MMSZ5240	1	1	None	45-degree rotation
MMSZ5240BS	1	1	None	45-degree rotation
MMSZ5241	1	1	None	45-degree rotation
MMSZ5241BS	1	1	None	45-degree rotation
MMSZ5242	1	1	None	45-degree rotation
MMSZ5242BS	1	1	None	45-degree rotation
MMSZ5243	1	1	None	45-degree rotation
MMSZ5243BS	1	1	None	45-degree rotation
MMSZ5244	1	1	None	45-degree rotation
MMSZ5245	1	1	None	45-degree rotation
MMSZ5245BS	1	1	None	45-degree rotation
MMSZ5246	1	1	None	45-degree rotation
MMSZ5246BS	1	1	None	45-degree rotation
MMSZ5247	1	1	None	45-degree rotation
MMSZ5248	1	1	None	45-degree rotation
MMSZ5248BS	1	1	None	45-degree rotation
MMSZ5249	1	1	None	45-degree rotation
MMSZ5250	1	1	None	45-degree rotation
MMSZ5250BS	1	1	None	45-degree rotation
MMSZ5251	1	1	None	45-degree rotation
MMSZ5251BS	1	1	None	45-degree rotation
MMSZ5252	1	1	None	45-degree rotation
MMSZ5252BS	1	1	None	45-degree rotation
MMSZ5253	1	1	None	45-degree rotation
MMSZ5254	1	1	None	45-degree rotation
MMSZ5254BS	1	1	None	45-degree rotation
MMSZ5255	1	1	None	45-degree rotation
MMSZ5255BS	1	1	None	45-degree rotation
MMSZ5256	1	1	None	45-degree rotation
MMSZ5256BS	1	1	None	45-degree rotation
MMSZ5257	1	1	None	45-degree rotation
MMSZ5257BS	1	1	None	45-degree rotation
MMSZ5258	1	1	None	45-degree rotation
MMSZ5258BS	1	1	None	45-degree rotation
MMSZ5259	1	1	None	45-degree rotation
MMSZ5259BS	1	1	None	45-degree rotation
MMSZ5260	1	1	None	45-degree rotation
MMSZ5261	1	1	None	45-degree rotation
MMSZ5262	1	1	None	45-degree rotation
MMSZ5263	1	1	None	45-degree rotation
MMSZ5264	1	1	None	45-degree rotation
MMSZ5265	1	1	None	45-degree rotation
MMSZ5266	1	1	None	45-degree rotation
MMSZ5267	1	1	None	45-degree rotation
MMSZ5268	1	1	None	45-degree rotation
MMSZ5269	1	1	None	45-degree rotation
MMSZ5270	1	1	None	45-degree rotation
MMSZ5272	1	1	None	45-degree rotation
NZH	25	1	None	45-degree rotation
PDZxxxB	30	1	None	45-degree rotation
PDZxxxBGW	29	1	None	45-degree rotation
PLVA650	1	1	Free	45-degree rotation
PLVA653	1	1	Free	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
PLVA656	1	1	Free	45-degree rotation
PLVA659	1	1	Free	45-degree rotation
PLVA662	1	1	Free	45-degree rotation
PLVA665	1	1	Free	45-degree rotation
PLVA668	1	1	Free	45-degree rotation
SMA2EZ	44	1	None	45-degree rotation
SMA3EZ	37	1	None	45-degree rotation
SMA4728	1	1	None	45-degree rotation
SMA4729	1	1	None	45-degree rotation
SMA4730	1	1	None	45-degree rotation
SMA4731	1	1	None	45-degree rotation
SMA4732	1	1	None	45-degree rotation
SMA4733	1	1	None	45-degree rotation
SMA4734	1	1	None	45-degree rotation
SMA4735	1	1	None	45-degree rotation
SMA4736	1	1	None	45-degree rotation
SMA4737	1	1	None	45-degree rotation
SMA4738	1	1	None	45-degree rotation
SMA4739	1	1	None	45-degree rotation
SMA4740	1	1	None	45-degree rotation
SMA4741	1	1	None	45-degree rotation
SMA4742	1	1	None	45-degree rotation
SMA4743	1	1	None	45-degree rotation
SMA4744	1	1	None	45-degree rotation
SMA4745	1	1	None	45-degree rotation
SMA4746	1	1	None	45-degree rotation
SMA4747	1	1	None	45-degree rotation
SMA4748	1	1	None	45-degree rotation
SMA4749	1	1	None	45-degree rotation
SMA4750	1	1	None	45-degree rotation
SMA4751	1	1	None	45-degree rotation
SMA4752	1	1	None	45-degree rotation
SMA4753	1	1	None	45-degree rotation
SMA4754	1	1	None	45-degree rotation
SMA4755	1	1	None	45-degree rotation
SMA4756	1	1	None	45-degree rotation
SMA4757	1	1	None	45-degree rotation
SMA4758	1	1	None	45-degree rotation
SMA4759	1	1	None	45-degree rotation
SMA4760	1	1	None	45-degree rotation
SMA4761	1	1	None	45-degree rotation
SMA4762	1	1	None	45-degree rotation
SMA4763	1	1	None	45-degree rotation
SMA4764	1	1	None	45-degree rotation
SMA5920	1	1	None	45-degree rotation
SMA5921	1	1	None	45-degree rotation
SMA5922	1	1	None	45-degree rotation
SMA5923	1	1	None	45-degree rotation
SMA5924	1	1	None	45-degree rotation
SMA5925	1	1	None	45-degree rotation
SMA5926	1	1	None	45-degree rotation
SMA5927	1	1	None	45-degree rotation
SMA5928	1	1	None	45-degree rotation
SMA5929	1	1	None	45-degree rotation
SMA5930	1	1	None	45-degree rotation
SMA5931	1	1	None	45-degree rotation
SMA5932	1	1	None	45-degree rotation
SMA5933	1	1	None	45-degree rotation
SMA5934	1	1	None	45-degree rotation
SMA5935	1	1	None	45-degree rotation
SMA5936	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SMA5937	1	1	None	45-degree rotation
SMA5938	1	1	None	45-degree rotation
SMA5939	1	1	None	45-degree rotation
SMA5940	1	1	None	45-degree rotation
SMA5941	1	1	None	45-degree rotation
SMA5942	1	1	None	45-degree rotation
SMA5943	1	1	None	45-degree rotation
SMA5944	1	1	None	45-degree rotation
SMA5945	1	1	None	45-degree rotation
SMA5946	1	1	None	45-degree rotation
SMA5947	1	1	None	45-degree rotation
SMA5948	1	1	None	45-degree rotation
SMA5949	1	1	None	45-degree rotation
SMA5950	1	1	None	45-degree rotation
SMA5951	1	1	None	45-degree rotation
SMA5952	1	1	None	45-degree rotation
SMA5953	1	1	None	45-degree rotation
SMA5954	1	1	None	45-degree rotation
SMA5955	1	1	None	45-degree rotation
SMA5956	1	1	None	45-degree rotation
SMAZ	21	1	None	45-degree rotation
SMB2EZ	44	1	None	45-degree rotation
SMB3EZ	37	1	None	45-degree rotation
SMB5341	1	1	None	45-degree rotation
SMB5342	1	1	None	45-degree rotation
SMB5343	1	1	None	45-degree rotation
SMB5344	1	1	None	45-degree rotation
SMB5345	1	1	None	45-degree rotation
SMB5346	1	1	None	45-degree rotation
SMB5347	1	1	None	45-degree rotation
SMB5348	1	1	None	45-degree rotation
SMB5349	1	1	None	45-degree rotation
SMB5350	1	1	None	45-degree rotation
SMB5352	1	1	None	45-degree rotation
SMB5353	1	1	None	45-degree rotation
SMB5355	1	1	None	45-degree rotation
SMB5357	1	1	None	45-degree rotation
SMB5358	1	1	None	45-degree rotation
SMB5359	1	1	None	45-degree rotation
SMB5361	1	1	None	45-degree rotation
SMB5363	1	1	None	45-degree rotation
SMB5364	1	1	None	45-degree rotation
SMB5365	1	1	None	45-degree rotation
SMB5366	1	1	None	45-degree rotation
SMB5367	1	1	None	45-degree rotation
SMB5368	1	1	None	45-degree rotation
SMB5369	1	1	None	45-degree rotation
SMB5370	1	1	None	45-degree rotation
SMB5372	1	1	None	45-degree rotation
SMB5373	1	1	None	45-degree rotation
SMB5374	1	1	None	45-degree rotation
SMB5375	1	1	None	45-degree rotation
SMB5377	1	1	None	45-degree rotation
SMB5378	1	1	None	45-degree rotation
SMB5379	1	1	None	45-degree rotation
SMB5380	1	1	None	45-degree rotation
SMB5381	1	1	None	45-degree rotation
SMB5383	1	1	None	45-degree rotation
SMB5384	1	1	None	45-degree rotation
SMB5386	1	1	None	45-degree rotation
SMB5388	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SMB5920	1	1	None	45-degree rotation
SMB5921	1	1	None	45-degree rotation
SMB5922	1	1	None	45-degree rotation
SMB5923	1	1	None	45-degree rotation
SMB5924	1	1	None	45-degree rotation
SMB5925	1	1	None	45-degree rotation
SMB5926	1	1	None	45-degree rotation
SMB5927	1	1	None	45-degree rotation
SMB5928	1	1	None	45-degree rotation
SMB5929	1	1	None	45-degree rotation
SMB5930	1	1	None	45-degree rotation
SMB5931	1	1	None	45-degree rotation
SMB5932	1	1	None	45-degree rotation
SMB5933	1	1	None	45-degree rotation
SMB5934	1	1	None	45-degree rotation
SMB5935	1	1	None	45-degree rotation
SMB5936	1	1	None	45-degree rotation
SMB5937	1	1	None	45-degree rotation
SMB5938	1	1	None	45-degree rotation
SMB5939	1	1	None	45-degree rotation
SMB5940	1	1	None	45-degree rotation
SMB5941	1	1	None	45-degree rotation
SMB5942	1	1	None	45-degree rotation
SMB5943	1	1	None	45-degree rotation
SMB5944	1	1	None	45-degree rotation
SMB5945	1	1	None	45-degree rotation
SMB5946	1	1	None	45-degree rotation
SMB5947	1	1	None	45-degree rotation
SMB5948	1	1	None	45-degree rotation
SMB5949	1	1	None	45-degree rotation
SMB5950	1	1	None	45-degree rotation
SMB5951	1	1	None	45-degree rotation
SMB5952	1	1	None	45-degree rotation
SMB5953	1	1	None	45-degree rotation
SMB5954	1	1	None	45-degree rotation
SMB5955	1	1	None	45-degree rotation
SMB5956	1	1	None	45-degree rotation
SMC5341	1	1	None	45-degree rotation
SMC5342	1	1	None	45-degree rotation
SMC5343	1	1	None	45-degree rotation
SMC5344	1	1	None	45-degree rotation
SMC5345	1	1	None	45-degree rotation
SMC5346	1	1	None	45-degree rotation
SMC5347	1	1	None	45-degree rotation
SMC5348	1	1	None	45-degree rotation
SMC5349	1	1	None	45-degree rotation
SMC5350	1	1	None	45-degree rotation
SMC5352	1	1	None	45-degree rotation
SMC5353	1	1	None	45-degree rotation
SMC5355	1	1	None	45-degree rotation
SMC5357	1	1	None	45-degree rotation
SMC5358	1	1	None	45-degree rotation
SMC5359	1	1	None	45-degree rotation
SMC5361	1	1	None	45-degree rotation
SMC5363	1	1	None	45-degree rotation
SMC5364	1	1	None	45-degree rotation
SMC5365	1	1	None	45-degree rotation
SMC5366	1	1	None	45-degree rotation
SMC5367	1	1	None	45-degree rotation
SMC5368	1	1	None	45-degree rotation
SMC5369	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SMC5370	1	1	None	45-degree rotation
SMC5372	1	1	None	45-degree rotation
SMC5373	1	1	None	45-degree rotation
SMC5374	1	1	None	45-degree rotation
SMC5375	1	1	None	45-degree rotation
SMC5377	1	1	None	45-degree rotation
SMC5378	1	1	None	45-degree rotation
SMC5379	1	1	None	45-degree rotation
SMC5380	1	1	None	45-degree rotation
SMC5381	1	1	None	45-degree rotation
SMC5383	1	1	None	45-degree rotation
SMC5384	1	1	None	45-degree rotation
SMC5386	1	1	None	45-degree rotation
SMC5388	1	1	None	45-degree rotation
SMZ	39	1	None	45-degree rotation
SZ3C	38	1	None	45-degree rotation
SZ1110	1	1	None	45-degree rotation
SZ1120	1	1	None	45-degree rotation
SZ1130	1	1	None	45-degree rotation
SZ1150	1	1	None	45-degree rotation
SZ1160	1	1	None	45-degree rotation
SZ1180	1	1	None	45-degree rotation
SZ1200	1	1	None	45-degree rotation
SZ1220	1	1	None	45-degree rotation
SZ1240	1	1	None	45-degree rotation
SZ1250	1	1	None	45-degree rotation
SZ1270	1	1	None	45-degree rotation
SZ1300	1	1	None	45-degree rotation
SZ1330	1	1	None	45-degree rotation
TDZxxxJ	27	1	None	45-degree rotation
TLZ	34	1	None	45-degree rotation
TZM-C	37	1	None	45-degree rotation
TZM5221	1	1	None	45-degree rotation
TZM5222	1	1	None	45-degree rotation
TZM5223	1	1	None	45-degree rotation
TZM5224	1	1	None	45-degree rotation
TZM5225	1	1	None	45-degree rotation
TZM5226	1	1	None	45-degree rotation
TZM5227	1	1	None	45-degree rotation
TZM5228	1	1	None	45-degree rotation
TZM5229	1	1	None	45-degree rotation
TZM5230	1	1	None	45-degree rotation
TZM5231	1	1	None	45-degree rotation
TZM5232	1	1	None	45-degree rotation
TZM5233	1	1	None	45-degree rotation
TZM5234	1	1	None	45-degree rotation
TZM5235	1	1	None	45-degree rotation
TZM5236	1	1	None	45-degree rotation
TZM5237	1	1	None	45-degree rotation
TZM5238	1	1	None	45-degree rotation
TZM5239	1	1	None	45-degree rotation
TZM5240	1	1	None	45-degree rotation
TZM5241	1	1	None	45-degree rotation
TZM5242	1	1	None	45-degree rotation
TZM5243	1	1	None	45-degree rotation
TZM5244	1	1	None	45-degree rotation
TZM5245	1	1	None	45-degree rotation
TZM5246	1	1	None	45-degree rotation
TZM5247	1	1	None	45-degree rotation
TZM5248	1	1	None	45-degree rotation
TZM5249	1	1	None	45-degree rotation

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TZM5250	1	1	None	45-degree rotation
TZM5251	1	1	None	45-degree rotation
TZM5252	1	1	None	45-degree rotation
TZM5253	1	1	None	45-degree rotation
TZM5254	1	1	None	45-degree rotation
TZM5255	1	1	None	45-degree rotation
TZM5256	1	1	None	45-degree rotation
TZM5257	1	1	None	45-degree rotation
TZM5258	1	1	None	45-degree rotation
TZM5259	1	1	None	45-degree rotation
TZM5260	1	1	None	45-degree rotation
TZM5261	1	1	None	45-degree rotation
TZM5262	1	1	None	45-degree rotation
TZM5263	1	1	None	45-degree rotation
TZM5264	1	1	None	45-degree rotation
TZM5265	1	1	None	45-degree rotation
TZM5266	1	1	None	45-degree rotation
TZM5267	1	1	None	45-degree rotation
UDZ	24	1	None	45-degree rotation
Z1SMA	31	1	None	45-degree rotation
Z2SMB	36	1	None	45-degree rotation
Z3SMC	36	1	None	45-degree rotation
ZMD	36	1	None	45-degree rotation
ZMM	32	1	None	45-degree rotation
ZMY	46	1	None	45-degree rotation
ZPD	36	1	None	45-degree rotation
ZPY	40	1	None	45-degree rotation
ZY	39	1	None	45-degree rotation

* Denotes a symbol that was added to the most recent version of the library

2.22. Light Emitting Diode Library (new)

This library contains LED and LED indicator symbols with pre-assigned footprints.

Some specific symbols have the footprint pre-assigned, but the user still needs to fill in the correct part number. This helps reduce time spent assigning footprints before transferring to PCB layout.

Single 2-terminal LEDs and dual common anode, common cathode and separated independent LEDs have alternate symbols, see Section 2.1.5 for more details.

Symbols have colored shapes indicating the emitted light's color, ensure that '*override individual item colors*' option in '*preferences*' -> '*colors*' is unchecked. If that's not the case, LED symbols will appear blank.

Standard LED symbol names mostly correspond to their size:
For through-hole LEDs symbol name corresponds to their shape and size.
For surface-mount LEDs symbol name corresponds to their footprint name.

LED symbol library grabs footprints from:

- LED_SMD_AKL,
- LED_THT_AKL.

Table 2.19. which contains the list of all devices in this library is organized in a slightly different way than other tables in this document. Table has a list of available LED colors in each category. Multi-color devices such as RGB diodes do not have a separate 'RGB color' and are indicated with multiple color boxes, in this example: Blue, Green and Red.

Filename: **LED_AKL**	
Total symbols:	**1275**
Generic symbols:	**248**
Specific symbols:	**1027**

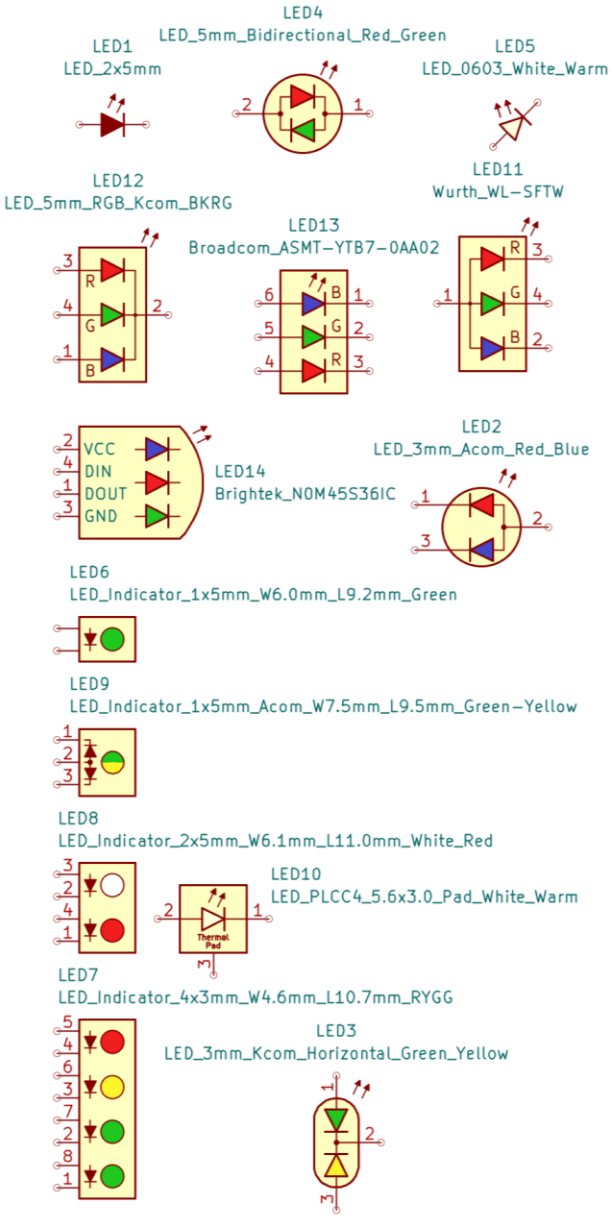


Table 2.19. List of all devices included in LED_AKL

Device/Diode Type	No. of symbols	No. of units	Available Colors	Alternate body style
N0M45S36IC	1	1		None
N0M50S15IC	1	1		None
ASMB-KTFO_0A306	1	1		None
ASMB-MTB0-0A3A2	1	1		None
ASMT-YTB7-0AA02	1	1		None
CLP6C	1	1		None
QLS6A	1	1		None
EASV3015RGBA0	1	1		None
IN-PI554FCH	1	1		None
APFA3010	1	1		None
1.8mm THT standard	10	1		45-degree rotation
1.8mm THT horizontal	7	1		45-degree rotation
1.8mm SMD standard	9	1		45-degree rotation
1.8mm SMD reverse	9	1		45-degree rotation
2mm THT standard	6	1		45-degree rotation
2x5mm THT standard	9	1		45-degree rotation
2x5mm THT A-com	7	1		Dual straight
2x5mm THT A-com H	7	1		Dual straight
2x5mm THT Bi-dir	7	1		None
2x5mm THT Bi-dir H	7	1		None
2x5mm THT Horizontal	9	1		45-degree rotation
2x5mm THT K-com	7	1		Dual straight
2x5mm THT K-com H	7	1		Dual straight
3mm THT standard	13	1		45-degree rotation
3mm THT A-com	21	1		Dual straight
3mm THT A-com H	21	1		Dual straight
3mm THT Bi-dir	21	1		None
3mm THT Bi-dir H	21	1		None
3mm THT horizontal	13	1		45-degree rotation
3mm THT K-com	21	1		Dual straight
3mm THT K-com H	21	1		Dual straight
5mm THT standard	13	1		45-degree rotation
5mm THT A-com	21	1		Dual straight
5mm THT A-com H	21	1		Dual straight
5mm THT Bi-dir	21	1		None
5mm THT Bi-dir H	21	1		None
5mm THT horizontal	13	1		45-degree rotation
5mm THT K-com	21	1		Dual straight
5mm THT K-com H	21	1		Dual straight
5mm THT RGB	5	1		None
5x5mm THT standard	9	1		45-degree rotation
5x5mm THT A-com	7	1		Dual straight
5x5mm THT A-com H	7	1		Dual straight
5x5mm THT Bi-dir	7	1		None
5x5mm THT Bi-dir H	7	1		None
5x5mm THT Horizontal	9	1		45-degree rotation
5x5mm THT K-com	7	1		Dual straight
5x5mm THT K-com H	7	1		Dual straight
8mm THT standard	9	1		45-degree rotation
8mm THT A-com	7	1		Dual straight
8mm THT Bi-dir	7	1		None
8mm THT K-com	7	1		Dual straight
10mm THT standard	9	1		45-degree rotation
10mm THT A-com	7	1		Dual straight
10mm THT Bi-dir	7	1		None
10mm THT K-com	7	1		Dual straight
20mm THT standard	9	1		45-degree rotation
0201 SMD	11	1		45-degree rotation
0402 SMD	11	1		45-degree rotation
0603 SMD	11	1		45-degree rotation

Device/Diode Type	No. of symbols	No. of units	Available Colors	Alternate body style
0805 SMD	11	1		45-degree rotation
1206 SMD	11	1		45-degree rotation
1210 SMD	9	1		45-degree rotation
1x1.8mm Indicator	2	1		None
1x3mm A-com Indic.	21	1		None
1x3mm K-com Indic.	21	1		None
1x3mm Indicator	9	1		None
1x5mm A-com Indic.	21	1		None
1x5mm K-com Indic.	21	1		None
1x5mm Indicator	9	1		None
2x3mm A-com Indic.	10	1		None
2x3mm K-com Indic.	10	1		None
2x3mm Indicator	52	1		None
2x5mm Indicator	26	1		None
3x3mm Indicator	28	1		None
4x3mm Indicator	5	1		None
MiniPLCC 2.3x1.5mm	11	1		45-degree rotation
PLCC2 2.2x1.6mm	4	1		45-degree rotation
PLCC2 3.0x1.4mm	11	1		45-degree rotation
PLCC2 3.4x3.0mm	11	1		45-degree rotation
PLCC2 3.5x2.8mm	11	1		45-degree rotation
PLCC2 3.5x3.5mm	8	1		45-degree rotation
PLCC2 5.7x3.0mm	4	1		None
PLCC4 5.6x3.0mm	4	1		None
PLCC6 3.0x2.8mm RGB	1	1		None
PLCC6 5.0x5.0mm	11	1		None
SMD 1W/3W	11	1		45-degree rotation
SuperFlux Standard	11	1		45-degree rotation
SuperFlux Reverse	11	1		45-degree rotation
SuperFlux RGB	1	1		None
SuperFlux Dual	2	1 (2 for sep)		None
LTST-C19HE1WT	1	1		None
LTST-S326	1	1		Dual straight
SML-LX303SIUPGUSB	1	1		None
SML-LX404SIUPGUSB	1	1		None
Lumileds L1T2	1	1		45-degree rotation
MP-3030-1100	3	1		45-degree rotation
Osram LA-P47F	2	1		45-degree rotation
Osram LB-P4SG	2	1		45-degree rotation
Osram LG-P47K	2	1		45-degree rotation
Osram LO-P47F	2	1		45-degree rotation
Osram LO-P47K	2	1		45-degree rotation
Osram LO-P476	2	1		45-degree rotation
Osram LR-P47F	2	1		45-degree rotation
Osram LS-P47F	2	1		45-degree rotation
Osram LS-P47K	2	1		45-degree rotation
Osram LT-PWSG	2	1		45-degree rotation
Osram LY-P47F	2	1		45-degree rotation
Osram LY-P47K	2	1		45-degree rotation
Schürter SRL series	18	1		None
Schürter PBL series	3	1		None
VCCLite 5381 series	10	1		None
WS2812	1	1		None
WS2812B	1	1		None
WS2812D-F5	1	1		None
Würth WL-SFTW	1	1		None

2.23. Optocoupler Library

This library contains transistor-output optocouplers.

Optocouplers consist of an emitter and a detector. Emitter is typically an infrared LED, while the detector can be a phototransistor, photodarlington or a photodiode coupled to a transistor.

Dual and quad optocoupler symbols have 2 variants. Standard symbol contains all optocoupler channels. Disaggregated symbol is a multi-unit symbol with one channel per unit.

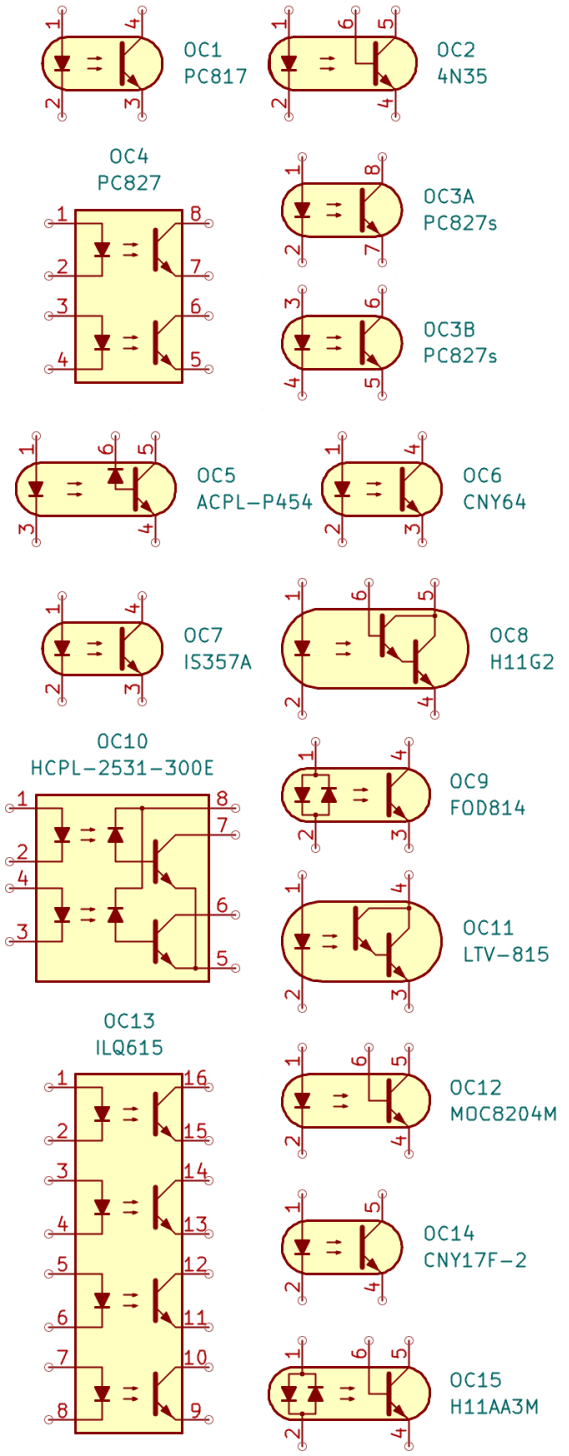
All optocouplers have their internal diagram incorporated into the schematic.

All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and current transfer ratio (CTR) have separate specific symbols.

THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

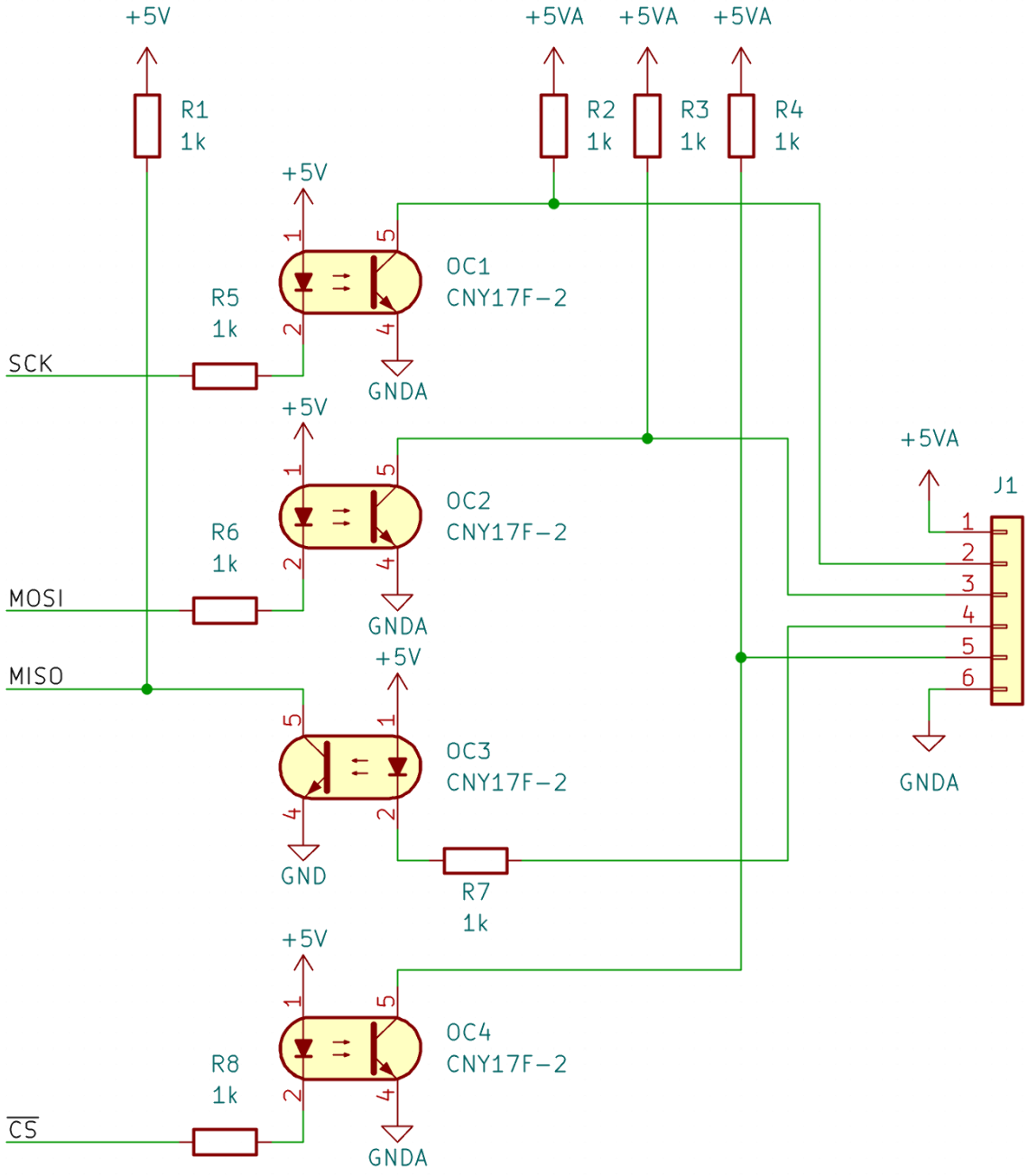
Filename: **Optocoupler_AKL**	
Total symbols:	**1431**(+3)
Generic symbols:	**57**(+3)
Specific symbols:	**1374**



Schematic examples

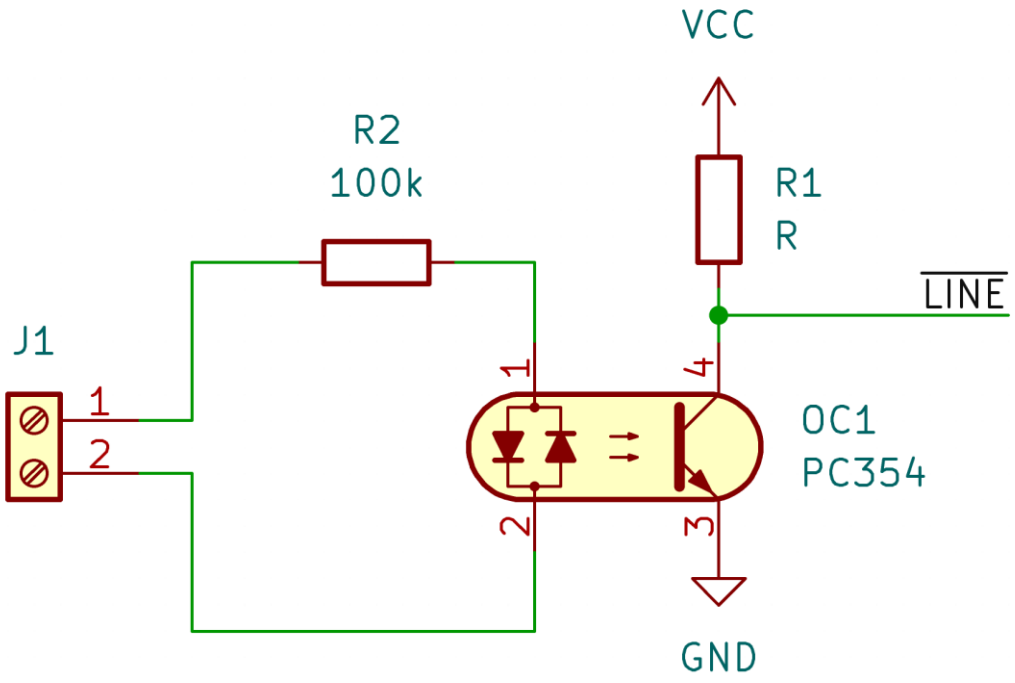
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.

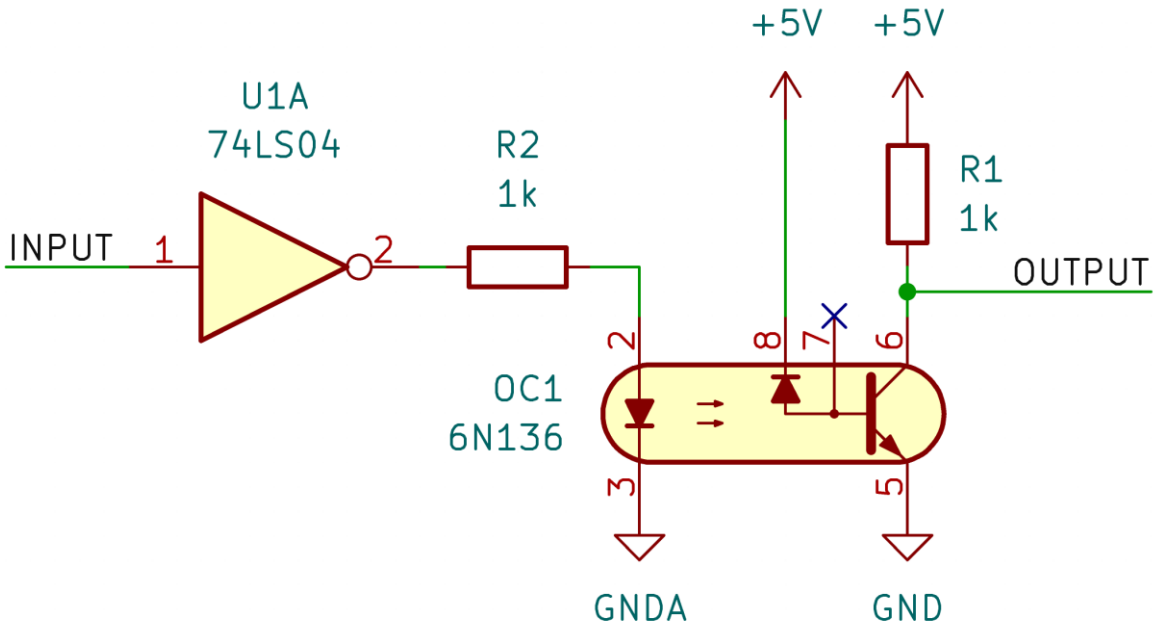


Example 1

Optically isolated SPI digital interface using four CNY17F optocouplers.



Example 2
Isolated AC line voltage detection based on PC354 bidirectional-input optocoupler.



Example 3
Digital line isolator based on 6N136 fast optocoupler.

Table 2.20. List of all devices included in Optocoupler_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
4N25	4	1	Free	None
4N26	4	1	Free	None
4N27	4	1	Free	None
4N28	4	1	Free	None
4N29	3	1	Free	None
4N30	3	1	Free	None
4N32	4	1	Free	None
4N33	4	1	Free	None
4N35	12	1	Free	None
4N36	7	1	Free	None
4N37	9	1	Free	None
4N38	5	1	Free	None
6N135	7	1	Free	None
6N136	11	1	Free	None
6N138	4	1	Free	None
6N139	10	1	Free	None
ACPL-054L	1	1	None	None
ACPL-214	1	1	None	None
ACPL-217	1	1	None	None
ACPL-224	2	1 (2 for separated)	None	None
ACPL-227	2	1 (2 for separated)	None	None
ACPL-244	2	1 (4 for separated)	None	None
ACPL-247	2	1 (4 for separated)	None	None
ACPL-827	6	1 (2 for separated)	None	None
ACPL-847	6	1 (4 for separated)	None	None
ACPL-K54L	1	1	None	None
ACPL-M49T	1	1	None	None
ACPL-M50L	1	1	None	None
ACPL-P454	1	1	Free	None
ACPL-W50L	1	1	Free	None
ACPL-W454	1	1	Free	None
CNY17	29	1	Free	None
CNY17F	43	1	Free	None
CNY64	7	1	None	None
CNY65	7	1	None	None
CNY66	2	1	None	None
CNY74-2	2	1 (2 for separated)	None	None
CNY74-4	2	1 (4 for separated)	None	None
CNY75	8	1	Free	None
CNY171	3	1	Free	None
CNY172	3	1	Free	None
CNY173	3	1	Free	None
CNY174	3	1	Free	None
CPC1001	1	1	None	None
CPC1301	2	1	None	None
CPC1303	2	1	None	None
CQY80	2	1	Free	None
FOD814	5	1	None	None
FOD817	14	1	None	None
FOD852	2	1	None	None
FOD714300W	1	1	None	None
FOD817300W	1	1	None	None
FOD852300W	1	1	None	None
FODM121	4	1	None	None
FODM124	1	1	None	None
FODM452	1	1	None	None
FODM453	1	1	None	None
FODM2701	1	1	None	None
FODM2705	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
FODM8801	4	1	None	None
H11A1	4	1	Free	None
H11A2	1	1	Free	None
H11A3	1	1	Free	None
H11A4	1	1	Free	None
H11A5	1	1	Free	None
H11AA1	8	1	Free	None
H11AA2	3	1	Free	None
H11AA3	3	1	Free	None
H11AA4	3	1	Free	None
H11B1	3	1	Free	None
H11D1	6	1	Free	None
H11D2	2	1	Free	None
H11D3	5	1	Free	None
H11D4	1	1	Free	None
H11F1	3	1	Free	None
H11F2	3	1	Free	None
H11F3	3	1	Free	None
H11G1	3	1	Free	None
H11G2	3	1	Free	None
H11G3	3	1	Free	None
HCPL-050L	1	1	Free	None
HCPL-053L	1	1	None	None
HCPL-070	2	1	Free	None
HCPL-073	2	1	None	None
HCPL-181	1	1	None	None
HCPL-250	2	1	Free	None
HCPL-253	2	1	None	None
HCPL-270	2	1	Free	None
HCPL-273	2	1	None	None
HCPL-0452	1	1	Free	None
HCPL-0453	1	1	Free	None
HCPL-0454	1	1	Free	None
HCPL-0500	1	1	Free	None
HCPL-0501	1	1	Free	None
HCPL-0530	1	1	None	None
HCPL-0531	1	1	None	None
HCPL-0700	1	1	Free	None
HCPL-0701	1	1	Free	None
HCPL-0730	1	1	None	None
HCPL-0731	1	1	None	None
HCPL-814	2	1	None	None
HCPL-817	2	1	None	None
HCPL-2502	2	1	Free	None
HCPL-2530	2	1	None	None
HCPL-2531	2	1	None	None
HCPL-2730	2	1	None	None
HCPL-2731	2	1	None	None
HCPL-4502	2	1	Free	None
HCPL-4503	2	1	Free	None
HCPL-4504	2	1	Free	None
HCPL-4701	2	1	Free	None
HCPL-4731	2	1	None	None
HCPL-J454	2	1	Free	None
HCPL-M452	1	1	None	None
HCPL-M453	1	1	None	None
HCPL0452	1	1	Free	None
HCPL0453	1	1	Free	None
HCPL0500	1	1	Free	None
HCPL0501	1	1	Free	None
HCPL0530	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
HCPL0531	1	1	None	None
HCPL0534	1	1	None	None
HCPL0700	1	1	Free	None
HCPL0701	1	1	Free	None
HCPL0730	1	1	None	None
HCPL0731	1	1	None	None
HCPL2530	4	1	None	None
HCPL2531	4	1	None	None
HCPL4503	4	1	Free	None
HMHA281	1	1	None	None
HMHA2801	4	1	None	None
HNCW135	2	1	Free	None
HNCW136	2	1	Free	None
HNCW138	2	1	Free	None
HNCW139	2	1	Free	None
HNCW4502	2	1	Free	None
HNCW4503	2	1	Free	None
HNCW4504	2	1	Free	None
IL30	1	1	Free	None
IL74	2	1	Free	None
IL205AT	1	1	Free	None
IL206AT	1	1	Free	None
IL207AT	1	1	Free	None
IL208AT	1	1	Free	None
IL215AT	1	1	Free	None
IL216AT	1	1	Free	None
IL217AT	1	1	Free	None
IL250	3	1	Free	None
IL251	2	1	Free	None
IL252	3	1	Free	None
ILD1	6	1 (2 for separated)	None	None
ILD2	8	1 (2 for separated)	None	None
ILD5	4	1 (2 for separated)	None	None
ILD55	6	1 (2 for separated)	None	None
ILD74	8	1 (2 for separated)	None	None
ILD205T	2	1 (2 for separated)	None	None
ILD206T	2	1 (2 for separated)	None	None
ILD207T	2	1 (2 for separated)	None	None
ILD211T	2	1 (2 for separated)	None	None
ILD213T	2	1 (2 for separated)	None	None
ILD217T	2	1 (2 for separated)	None	None
ILD223T	2	1 (2 for separated)	None	None
ILD250	4	1 (2 for separated)	None	None
ILD251	8	1 (2 for separated)	None	None
ILD252	4	1 (2 for separated)	None	None
ILD615	22	1 (2 for separated)	None	None
ILD620	10	1 (2 for separated)	None	None
ILD621	12	1 (2 for separated)	None	None
ILQ1	8	1 (4 for separated)	None	None
ILQ2	8	1 (4 for separated)	None	None
ILQ5	4	1 (4 for separated)	None	None
ILQ30	4	1 (4 for separated)	None	None
ILQ31	2	1 (4 for separated)	None	None
ILQ55	6	1 (4 for separated)	None	None
ILQ74	4	1 (4 for separated)	None	None
ILQ615	22	1 (4 for separated)	None	None
ILQ620	10	1 (4 for separated)	None	None
ILQ621	16	1 (4 for separated)	None	None
IS126	1	1	None	None
IS127	1	1	None	None
IS181	7	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IS355	1	1	None	None
IS357	5	1	None	None
IS660	3	1	Free	None
IS661	3	1	Free	None
IS662	3	1	Free	None
K814P	1	1	None	None
K815P	1	1	None	None
K824P	2	1 (2 for separated)	None	None
K825P	2	1 (2 for separated)	None	None
K827PH	2	1 (2 for separated)	None	None
K844P	2	1 (4 for separated)	None	None
K845P	2	1 (4 for separated)	None	None
K847PH	2	1 (4 for separated)	None	None
LDA100	2	1	Free	None
LDA101	2	1	Free	None
LDA102	2	1	Free	None
LDA110	2	1	Free	None
LDA111	2	1	Free	None
LDA200	4	1 (2 for separated)	None	None
LDA201	4	1 (2 for separated)	None	None
LDA202	4	1 (2 for separated)	None	None
LDA203	4	1 (2 for separated)	None	None
LDA210	4	1 (2 for separated)	None	None
LDA211	4	1 (2 for separated)	None	None
LDA212	4	1 (2 for separated)	None	None
LDA213	4	1 (2 for separated)	None	None
LTV-217	1	1	None	None
LTV-227	2	1 (2 for separated)	None	None
LTV-247	2	1 (4 for separated)	None	None
LTV-352T	1	1	None	None
LTV-354T	1	1	None	None
LTV-355T	1	1	None	None
LTV-356T	5	1	None	None
LTV-357T	5	1	None	None
LTV-358T	4	1	None	None
LTV-814	3	1	None	None
LTV-815	3	1	None	None
LTV-816	3	1	None	None
LTV-817	3	1	None	None
LTV-824	6	1 (2 for separated)	None	None
LTV-825	6	1 (2 for separated)	None	None
LTV-827	6	1 (2 for separated)	None	None
LTV-844	6	1 (4 for separated)	None	None
LTV-845	6	1 (4 for separated)	None	None
LTV-847	6	1 (4 for separated)	None	None
MCT2	6	1	Free	None
MCT6	8	1 (2 for separated)	None	None
MCT61	4	1 (2 for separated)	None	None
MCT62	4	1 (2 for separated)	None	None
MCT210	3	1	Free	None
MCT271	3	1	Free	None
MCT5211	3	1	Free	None
MCT9001	4	1 (2 for separated)	None	None
MOC205M	1	1	Free	None
MOC206M	1	1	Free	None
MOC207M	1	1	Free	None
MOC208M	1	1	Free	None
MOC211M	1	1	Free	None
MOC212M	1	1	Free	None
MOC213M	1	1	Free	None
MOC216M	1	1	Free	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MOC217M	1	1	Free	None
MOC223M	1	1	Free	None
MOC8021	3	1	Free	None
MOC8050	3	1	Free	None
MOC8100	3	1	Free	None
MOC8106	3	1	Free	None
MOC8204	3	1	Free	None
MOCD207M	2	1 (2 for separated)	None	None
MOCD208M	2	1 (2 for separated)	None	None
MOCD211M	2	1 (2 for separated)	None	None
MOCD213M	2	1 (2 for separated)	None	None
MOCD217M	2	1 (2 for separated)	None	None
MOCD223M	2	1 (2 for separated)	None	None
PC3H4	1	1	None	None
PC3H7	1	1	None	None
PC3H71	1	1	None	None
PC123	4	1	None	None
PC354	1	1	None	None
PC355	1	1	None	None
PC357	1	1	None	None
PC367	1	1	None	None
PC451	1	1	None	None
PC457	1	1	None	None
PC817	5	1	None	None
PC827	2	1 (2 for separated)	None	None
PC847	2	1 (4 for separated)	None	None
PS817	2	1	None	None
PS2501-1	1	1	None	None
PS2501-4	2	1 (4 for separated)	None	None
PS2501L-1	1	1	None	None
PS2501L-4	2	1 (4 for separated)	None	None
PS2502-1	1	1	None	None
PS2502-4	2	1 (4 for separated)	None	None
PS2502L-1	1	1	None	None
PS2502L-4	2	1 (4 for separated)	None	None
PS2503-1	1	1	None	None
PS2503L-1	1	1	None	None
PS2505-1	1	1	None	None
PS2505-4	2	1 (4 for separated)	None	None
PS2505-1	1	1	None	None
PS2505-4	2	1 (4 for separated)	None	None
PS2506-1	1	1	None	None
PS2506L-1	1	1	None	None
PS2533-1	1	1	None	None
PS2533L-1	1	1	None	None
PS2561	12	1	None	None
PS2565	4	1	None	None
PS2701	1	1	None	None
PS2702	1	1	None	None
PS2703	1	1	None	None
PS2705A	1	1	None	None
PS2706	1	1	None	None
PS2801-1	1	1	None	None
PS2801-4	2	1 (4 for separated)	None	None
PS2805-1	1	1	None	None
PS2805-4	2	1 (4 for separated)	None	None
PS2806-1	1	1	None	None
PS2811-1	1	1	None	None
PS2811-4	2	1 (4 for separated)	None	None
PS2832-1	1	1	None	None
PS2833-1	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
PS2911	1	1	None	None
PS8101	1	1	None	None
PS8501	4	1	Free	None
SFH600	12	1	Free	None
SFH601	17	1	Free	None
SFH608	13	1	Free	None
SFH610A	10	1	None	None
SFH615A	16	1	None	None
SFH617A	12	1	None	None
SFH618A	6	1	None	None
SFH619A	3	1	None	None
SFH620A	8	1	None	None
SFH628A	4	1	None	None
SFH636	4	1	Free	None
SFH640	5	1	Free	None
SFH690	5	1	None	None
SFH691AT	1	1	None	None
SFH1690	4	1	None	None
SFH6106	7	1	None	None
SFH6135	3	1	Free	None
SFH6136	4	1	Free	None
SFH6156	5	1	None	None
SFH6186	5	1	None	None
SFH6206	4	1	None	None
SFH6286	4	1	None	None
SFH6315	1	1	Free	None
SFH6316	1	1	Free	None
SFH6318	1	1	Free	None
SFH6319	1	1	Free	None
SFH6343	1	1	Free	None
SFH6345	4	1	Free	None
SFH6916	2	1 (4 for separated)	None	None
TCDT1100	2	1	Free	None
TCDT1101	2	1	Free	None
TCDT1102	2	1	Free	None
TCDT1103	2	1	Free	None
TCED1100	2	1	None	None
TCET1100	2	1	None	None
TCET1101	2	1	None	None
TCET1102	2	1	None	None
TCET1103	2	1	None	None
TCET1104	2	1	None	None
TCET1105	2	1	None	None
TCET1106	2	1	None	None
TCET1107	2	1	None	None
TCET1108	2	1	None	None
TCET1109	2	1	None	None
TCET1200	2	1	None	None
TCET1201	2	1	None	None
TCET1202	2	1	None	None
TCET1203	2	1	None	None
TCET1204	2	1	None	None
TCET1600	2	1	None	None
TCLD1000	1	1	None	None
TCLT1000	1	1	None	None
TCLT1002	1	1	None	None
TCLT1003	1	1	None	None
TCLT1004	1	1	None	None
TCLT1005	1	1	None	None
TCLT1006	1	1	None	None
TCLT1007	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TCLT1008	1	1	None	None
TCLT1009	1	1	None	None
TCLT1100	1	1	None	None
TCLT1102	1	1	None	None
TCLT1103	1	1	None	None
TCLT1104	1	1	None	None
TCLT1105	1	1	None	None
TCLT1106	1	1	None	None
TCLT1107	1	1	None	None
TCLT1108	1	1	None	None
TCLT1109	1	1	None	None
TCLT1600	1	1	None	None
TCMT1100	1	1	None	None
TCMT1101	1	1	None	None
TCMT1102	1	1	None	None
TCMT1103	1	1	None	None
TCMT1104	1	1	None	None
TCMT1105	1	1	None	None
TCMT1106	1	1	None	None
TCMT1107	1	1	None	None
TCMT1108	1	1	None	None
TCMT1109	1	1	None	None
TCMT1600	1	1	None	None
TCMT4100	2	1 (4 for separated)	None	None
TCMT4106	2	1 (4 for separated)	None	None
TCMT4600	2	1 (4 for separated)	None	None
TCMT4606	2	1 (4 for separated)	None	None
TIL111	3	1	Free	None
TIL113	3	1	Free	None
TIL117	3	1	Free	None
TLP109	1	1	None	None
TLP112	1	1	None	None
TLP124	1	1	None	None
TLP181	1	1	None	None
TLP182	1	1	None	None
TLP183	1	1	None	None
TLP184	1	1	None	None
TLP185	1	1	None	None
TLP187	1	1	None	None
TLP188	1	1	None	None
TLP290	1	1	None	None
TLP291	1	1	None	None
TLP291-4	2	1 (4 for separated)	None	None
TLP292	1	1	None	None
TLP293	1	1	None	None
TLP293-4	2	1 (4 for separated)	None	None
TLP383	1	1	None	None
TLP385	1	1	None	None
TLP620	1	1	None	None
TLP620-2	2	1 (2 for separated)	None	None
TLP620-4	2	1 (4 for separated)	None	None
TLP624	1	1	None	None
TLP624-2	2	1 (2 for separated)	None	None
TLP624-4	2	1 (4 for separated)	None	None
TLP626	1	1	None	None
TLP626-2	2	1 (2 for separated)	None	None
TLP626-4	2	1 (4 for separated)	None	None
TLP719F	1	1	Free	None
TLP759	2	1	Free	None
TLP785	4	1	None	None
TLP2303	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TLP2309	1	1	None	None
TLP2530	1	1	None	None
TLP2531	1	1	None	None
TLP2703	1	1	Free	None
VO205AT	1	1	Free	None
VO206AT	1	1	Free	None
VO207AT	1	1	Free	None
VO208AT	1	1	Free	None
VO610A	8	1	None	None
VO615A	40	1	None	None
VO617A	13	1	None	None
VO618A	5	1	None	None
VOD205T	2	1 (2 for separated)	None	None
VOD206T	2	1 (2 for separated)	None	None
VOD207T	2	1 (2 for separated)	None	None
VOD211T	2	1 (2 for separated)	None	None
VOD213T	2	1 (2 for separated)	None	None
VOD217T	2	1 (2 for separated)	None	None
VOL617A	5	1	None	None
VOL628A	4	1	None	None
VOM452	1	1	None	None
VOM453	1	1	None	None
VOM617A	8	1	None	None
VOM618A	8	1	None	None
VOS615A	5	1	None	None
VOS617A	7	1	None	None

2.24. Isolated FET gate driver library

This library contains optically isolated MOSFET and IGBT gate drivers.

Gate drivers are used to ensure fast switching of a MOSFET or an IGBT by providing high peak output current to charge the gate capacitance. Isolated gate drivers can drive MOSFETs while isolating the control circuits from the power circuits.

Dual isolated gate driver symbols have 2 variants. Standard symbol contains all driver channels. Disaggregated symbol is a multi-unit symbol with one channel per unit.

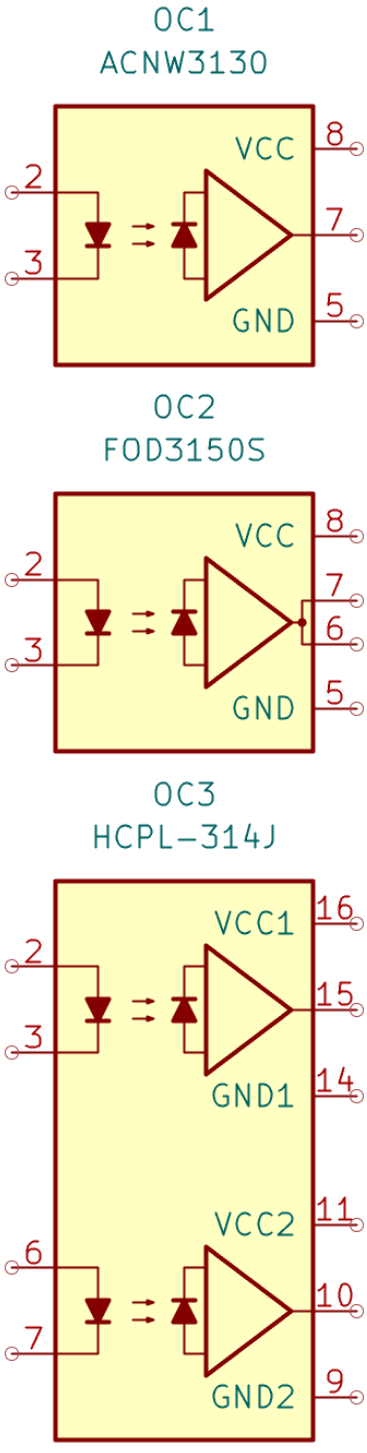
Gate driver is indicated by a triangle (to help distinguish it from logic-output optocouplers that have an AND-gate shape).

All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and electrical characteristics have separate specific symbols.

THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

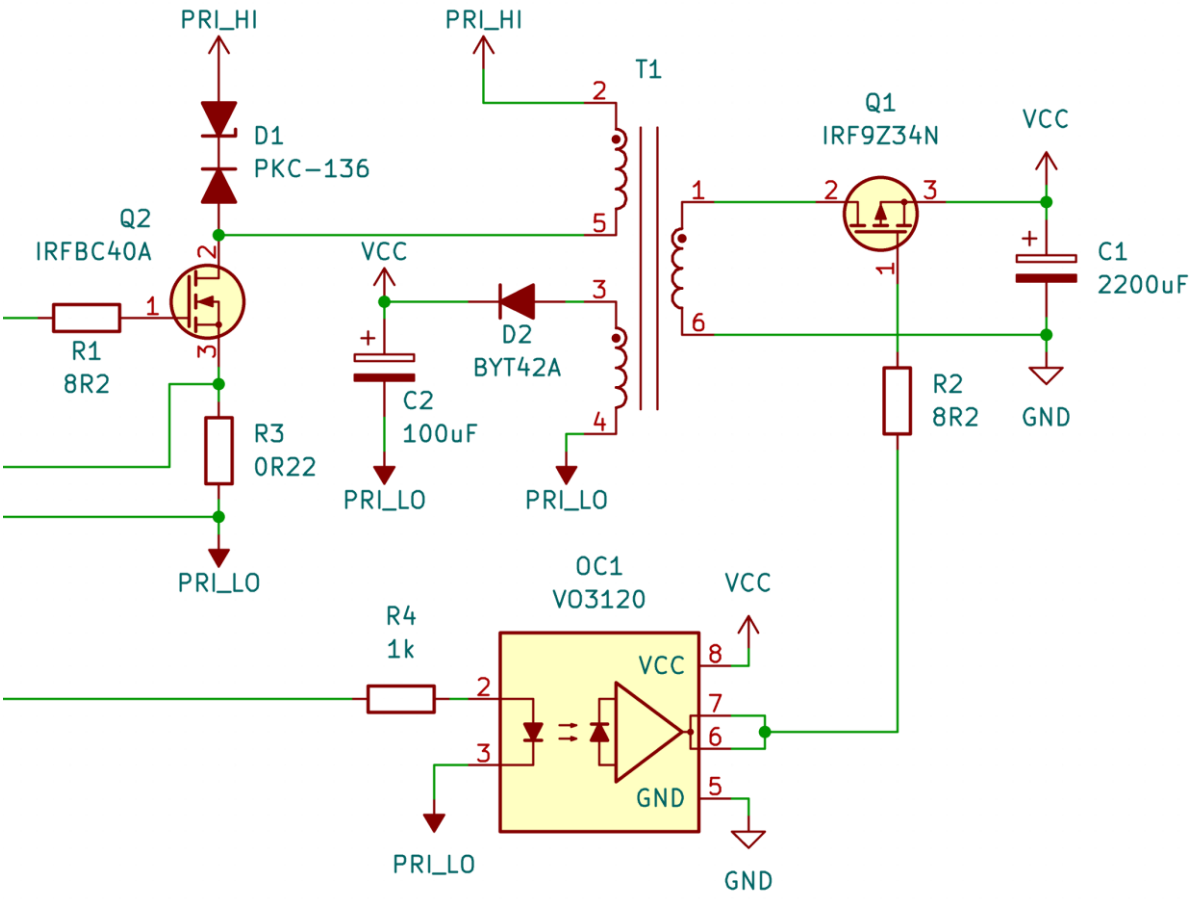
Filename: **Optocoupler_Gate_Driver_AKL**	
Total symbols:	**94**(+1)
Generic symbols:	**8**(+1)
Specific symbols:	**86**



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
Switching power supply with synchronous rectifier driven from the primary side via VO3120 isolated MOSFET gate driver.

Table 2.21. List of all devices included in Optocoupler_Gate_Driver_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
ACNW3130	2	1	Free	None
ACNW3190	2	1	Free	None
ACPL-312T	2	1	Free	None
ACPL-3130	2	1	Free	None
ACPL-H312	1	1	Free	None
ACPL-J313	2	1	Free	None
ACPL-K312	1	1	Free	None
ACPL-P302	1	1	Free	None
ACPL-P314	1	1	Free	None
ACPL-P340	1	1	Free	None
ACPL-P343	1	1	Free	None
ACPL-T350	2	1	Free	None
ACPL-W302	1	1	Free	None
ACPL-W340	1	1	Free	None
ACPL-W343	1	1	Free	None
FOD3120	4	1	Free	None
FOD3150	4	1	Free	None
FOD3180	3	1	Free	None
FOD3182	4	1	Free	None
HCPL-0302	1	1	Free	None
HCPL-0314	1	1	Free	None
HCPL-314J	2	1 (2 for separated)	Free	None
HCPL-315J	2	1 (2 for separated)	Free	None
HCPL-3020	2	1	Free	None
HCPL-3120	2	1	Free	None
HCPL-3140	2	1	Free	None
HCPL-3150	2	1	Free	None
HCPL-3180	2	1	Free	None
HCPL-J312	2	1	Free	None
HCPL-J314	2	1	Free	None
HCNW3120	2	1	Free	None
IX3120G	2	1	Free	None
TLP152	1	1	Free	None
TLP250H	2	1	Free	None
TLP251	1	1	Free	None
TLP350	2	1	Free	None
TLP351	3	1	Free	None
TLP352	2	1	Free	None
TLP358	2	1	Free	None
TLP700AF	1	1	Free	None
TLP7001	2	1	Free	None
TLP2451A	1	1	Free	None
TLP5701	2	1	Free	None
TLP5722	1	1	Free	None
VO3120	2	1	Free	None
VO3150A	2	1	Free	None
VOL3120	1	1	Free	None

2.25. Logic-Output Optocoupler Library

This library contains logic-output optocouplers.

Detectors of logic-output optocouplers contain a standard photosensitive device (photodiode, phototransistor) that drives either an open-collector or push-pull output logic gate. Logic optocouplers are typically faster than standard optocouplers for transmitting digital signals, but are slower than dedicated digital isolators.

Dual logic optocoupler symbols have 2 variants. Standard symbol contains all optocoupler channels. Disaggregated symbol is a multi-unit symbol with one channel per unit.

Inverting optocouplers have a circle at the output, open-collector optocouplers have a ◇ symbol near the output.

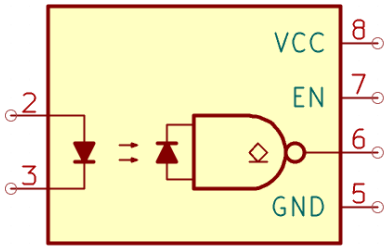
All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and electrical characteristics have separate specific symbols.

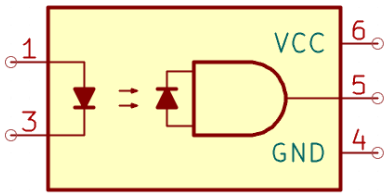
THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

Filename: **Optocoupler_Logic_AKL**	
Total symbols:	**303**(+7)
Generic symbols:	**26**(+4)
Specific symbols:	**277**(+3)

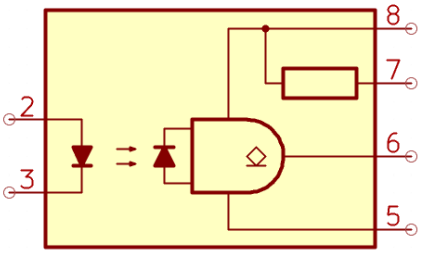
OC1
6N137



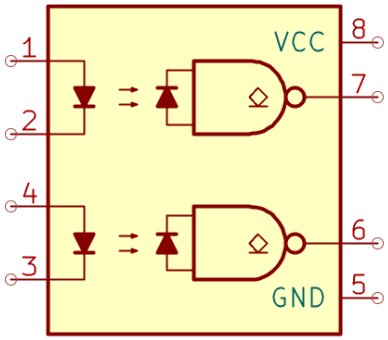
OC2
TLP2310



OC3
HNCW4506-300



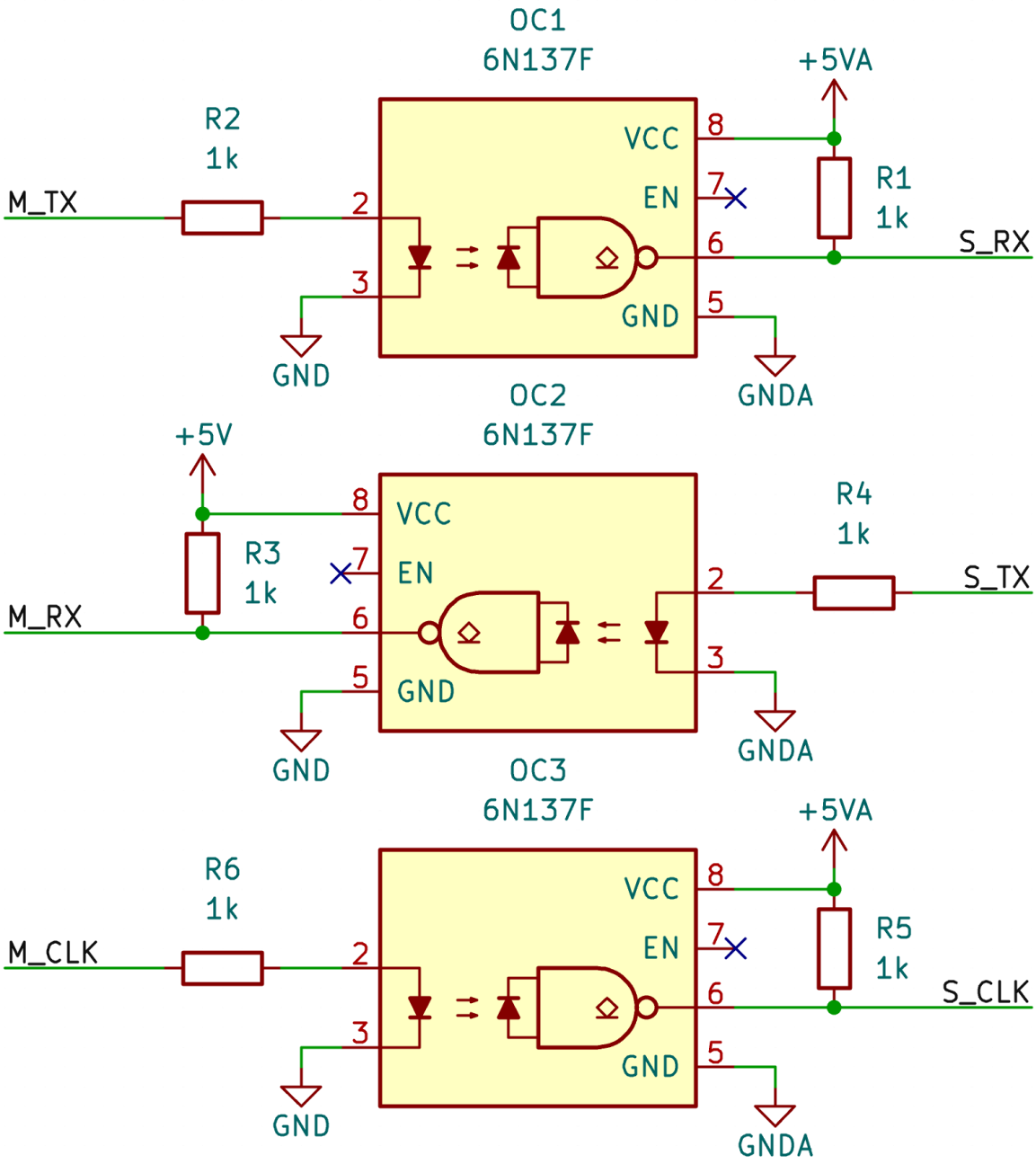
OC4
VO2630-X007T



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

High-speed USART optically isolated interface using three 6N137F logic-output optocouplers.

Table 2.22. List of all devices included in Optocoupler_Gate_Driver_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
6N137	10	1	Free	None
ACPL-021L	1	1	Free	None
ACPL-024L	2	1 (3 for separated)	None	None
ACPL-064L	2	1 (3 for separated)	None	None
ACPL-071L	1	1	Free	None
ACPL-074L	2	1 (3 for separated)	None	None
ACPL-K24L	2	1 (3 for separated)	None	None
ACPL-K63L	2	1 (3 for separated)	None	None
ACPL-K64L	2	1 (3 for separated)	None	None
ACPL-M21L	1	1	Free	None
ACPL-M60L	1	1	Free	None
ACPL-M61	2	1	Free	None
ACPL-P611	1	1	Free	None
ACPL-W21L	1	1	Free	None
ACPL-W60L	1	1	Free	None
ACPL-W61	2	1	Free	None
APS1241S	1	1	None	None
APS1551S	1	1	None	None
APS2241S	1	1	None	None
FOD060L	1	1	Free	None
FOD260	4	1	Free	None
FOD8163	2	1	Free	None
FOD8173	2	1	Free	None
FOD8480	2	1	Free	None
FOD8482	2	1	Free	None
FODM611	1	1	None	None
FODM8061	1	1	None	None
FODM8071	1	1	None	None
H11L1	5	1	Free	None
H11L2	5	1	Free	None
H11L3	5	1	Free	None
H11L4	2	1	Free	None
H11L5	2	1	Free	None
H11N1	3	1	Free	None
H11N2	3	1	Free	None
HCNW137	2	1	Free	None
HCNW2201	2	1	Free	None
HCNW2211	2	1	Free	None
HCNW2601	2	1	Free	None
HCNW2611	2	1	Free	None
HCNW4506	2	1	Free	None
HCPL-060L	1	1	Free	None
HCPL-061	2	1	Free	None
HCPL-063	6	1 (3 for separated)	None	None
HCPL-0201	1	1	Free	None
HCPL-0211	1	1	Free	None
HCPL-260L	2	1	Free	None
HCPL-261	4	1	Free	None
HCPL-263	12	1 (3 for separated)	None	None
HCPL-0300	1	1	Free	None
HCPL-0466	1	1	Free	None
HCPL-0600	1	1	Free	None
HCPL-0601	1	1	Free	None
HCPL-0611	1	1	Free	None
HCPL-0630	2	1 (3 for separated)	None	None
HCPL-0631	2	1 (3 for separated)	None	None
HCPL-0661	2	1 (3 for separated)	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
HCPL-2201	2	1	Free	None
HCPL-2202	2	1	Free	None
HCPL-2211	2	1	Free	None
HCPL-2212	2	1	Free	None
HCPL-2231	4	1 (3 for separated)	None	None
HCPL-2232	4	1 (3 for separated)	None	None
HCPL-2300	2	1	Free	None
HCPL-2601	2	1	Free	None
HCPL-2611	2	1	Free	None
HCPL-2630	4	1 (3 for separated)	None	None
HCPL-2631	4	1 (3 for separated)	None	None
HCPL-4506	2	1	Free	None
HCPL-4661	4	1 (3 for separated)	None	None
HCPL-J456	2	1	Free	None
HCPL-M600	1	1	None	None
HCPL-M601	1	1	None	None
HCPL-M611	1	1	None	None
HCPL062N	2	1 (3 for separated)	None	None
HCPL0600	1	1	Free	None
HCPL0601	1	1	Free	None
HCPL0611	1	1	Free	None
HCPL0637	2	1 (3 for separated)	None	None
HCPL0638	2	1 (3 for separated)	None	None
HCPL0639	2	1 (3 for separated)	None	None
HCPL2601	3	1	Free	None
HCPL2611	3	1	Free	None
HCPL2630	6	1 (3 for separated)	None	None
HCPL2631	6	1 (3 for separated)	None	None
PC400	1	1	None	None
TLP104	1	1	None	None
TLP108	1	1	None	None
TLP116	2	1	None	None
TLP118	1	1	None	None
TLP754F	1	1	Free	None
TLP2168	2	1 (3 for separated)	None	None
TLP2310	1	1	None	None
TLP2345	1	1	None	None
TLP2348	1	1	None	None
TLP2355	1	1	None	None
TLP2361	1	1	None	None
TLP2362	1	1	None	None
TLP2366	1	1	None	None
TLP2367	1	1	None	None
TLP2368	1	1	None	None
TLP2466	1	1	Free	None
TLP2662	4	1 (3 for separated)	None	None
TLP2704	2	1	None	None
TLP2710	1	1	None	None
TLP2745	1	1	None	None
TLP2758	1	1	None	None
TLP2761	2	1	None	None
TLP2766F	1	1	None	None
TLP2767	1	1	None	None
TLP2768A	2	1	None	None
TLP2955F	1	1	Free	None
TLP2958	1	1	Free	None
TLP2962	1	1	Free	None
VO0600T	1	1	Free	None
VO0601T	1	1	Free	None
VO0611T	1	1	Free	None
VO0630T	2	1 (3 for separated)	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
VO0631T	2	1 (3 for separated)	None	None
VO0661T	2	1 (3 for separated)	None	None
VO2601	4	1	Free	None
VO2611	5	1	Free	None
VO2630	6	1 (3 for separated)	None	None
VO2631	8	1 (3 for separated)	None	None
VO2661	6	1 (3 for separated)	None	None
VOH1016A	3	1	Free	None

2.26. Miscellaneous Optocoupler Library

This library contains opto-isolation devices that don't otherwise fit into other optocoupler libraries.

Photovoltaic optocouplers have a string of photodiodes working in photovoltaic mode that outputs a small (~5V) DC voltage when energized.

Linear optocouplers contain 2 matched photodiode detectors, one meant to provide feedback to the input circuit and the other as a standard output. Isolated amplifiers can be constructed using linear optocouplers.

Optocouplers with integrated error amplifiers contain a TL431-class adjustable error amplifier and can minimize component count for switching power supplies.

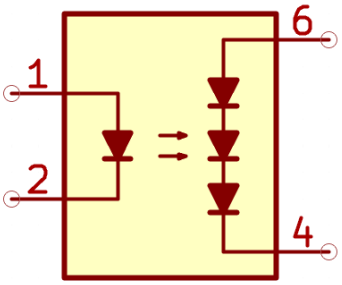
All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and electrical characteristics have separate specific symbols.

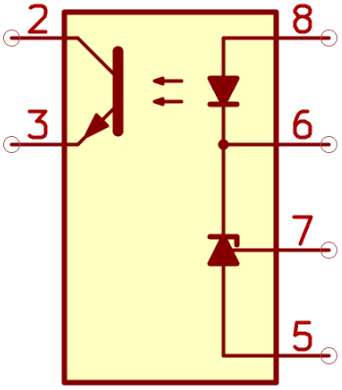
THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

Filename: **Optocoupler_Misc_AKL**	
Total symbols:	**115**(+1)
Generic symbols:	**16**(+1)
Specific symbols:	**99**

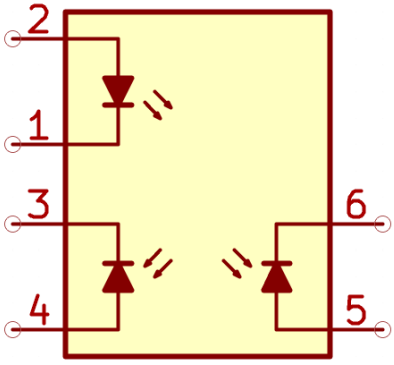
OC1
APV1122



OC2
FOD2741AT



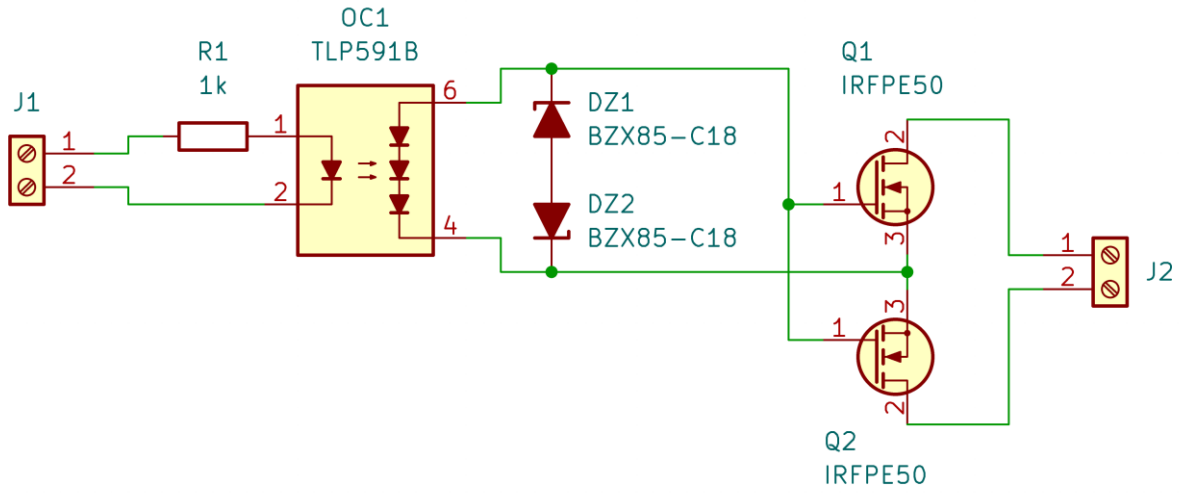
OC3
IL300



Schematic examples

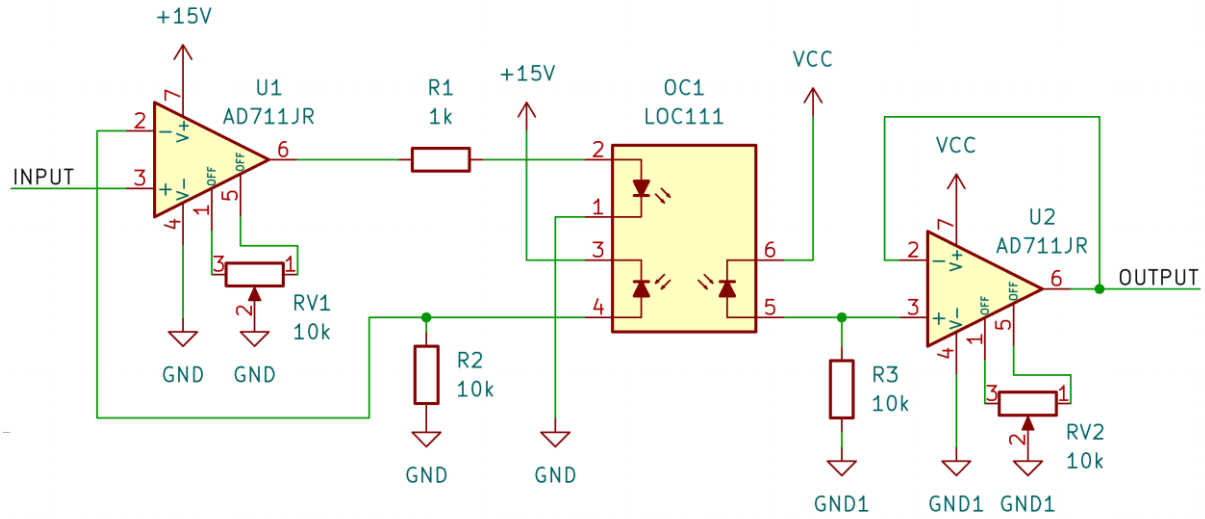
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



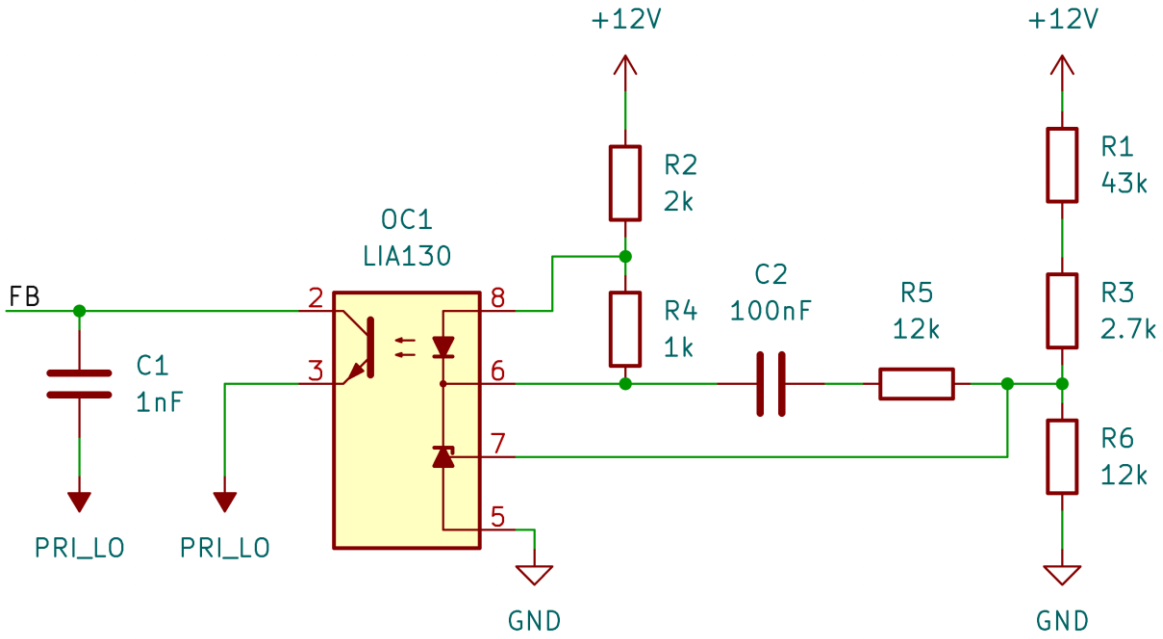
Example 1

Solid-State MOSFET Relay using TLP591B photovoltaic optocoupler.



Example 2

Isolation amplifier based on the LOC111 linear optocoupler.



Example 3

Switching power supply feedback loop using LIA isolated error amplifier to replace a standard optocoupler and a TL431 programmable reference.

Table 2.23. List of all devices included in Optocoupler_Misc_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
APV1121S	1	1	None	None
APV1122	1	1	Free	None
APV2121S	1	1	None	None
FOD2711A	3	1	Free	None
FOD2712A	1	1	Free	None
FOD2741	9	1	Free	None
FOD2742	3	1	Free	None
FOD2743	9	1	Free	None
HCNR200	2	1	Free	None
HCNR201	2	1	Free	None
IL300	20	1	Free	None
LIA120S	1	1	Free	None
LIA130	2	1	Free	None
LOC110	3	1	Free	None
LOC111	3	1	Free	None
LOC112	3	1	Free	None
LOC117	3	1	Free	None
LOC210	2	1 (2 for separated)	Free	None
LOC211	2	1 (2 for separated)	Free	None
PVI1050N	4	1 (2 for separated)	None	None
PVI5013R	4	1 (2 for separated)	None	None
PVI5033R	4	1 (2 for separated)	None	None
PVI5050N	2	1	Free	None
PVI5080N	2	1	Free	None
TLP190B	1	1	None	None
TLP191B	1	1	None	None
TLP590B	1	1	Free	None
TLP591B	1	1	Free	None
TLP748JF	1	1	Free	None
TLP3906	1	1	None	None
TLP3914	1	1	None	None
VO1263A	4	1 (2 for separated)	None	None
VOM1271	1	1	None	None

2.27. Phototriac-Output Optocoupler Library

This library contains phototriac-output optocouplers.

Phototriac-output optocouplers are used to trigger traics in AC switching circuits.

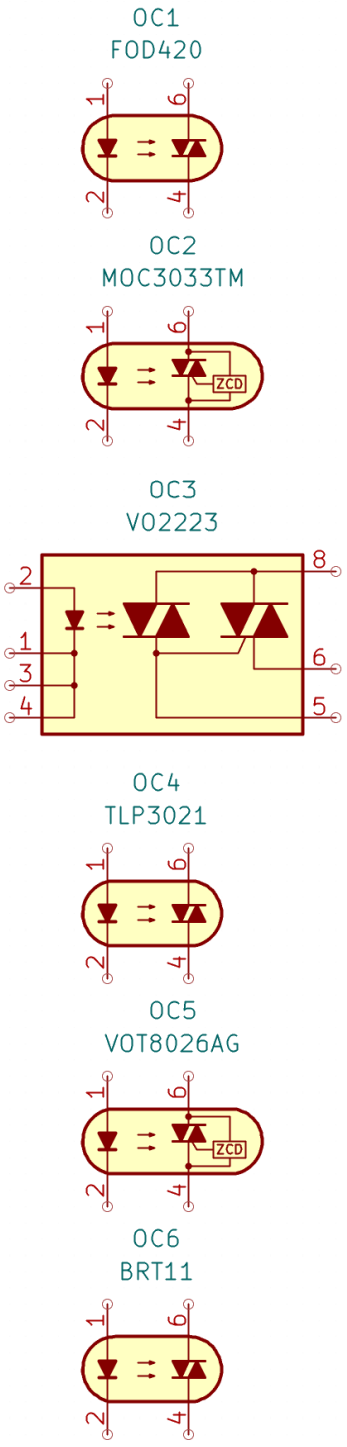
Some phototriac-output optocouplers have an integrated zero crossing detection circuit (ZCD) that waits for the voltage across it to reach zero, before switching the output. This reduces losses during switching and limits abrupt voltage changes. All symbols with ZCD circuit built in have it clearly indicated.

All opto-isolation devices have OC as their reference designator.

All available orderable part numbers for each device with different package, isolation voltage and electrical characteristics have separate specific symbols.

THT optocouplers in DIP packages use 'LongPads' footprint variants by default.

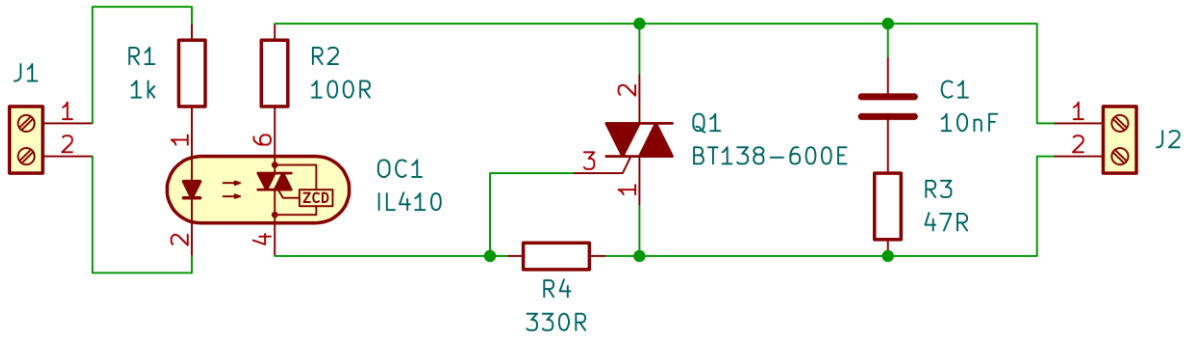
Filename: **Optocoupler_Triac_AKL**	
Total symbols:	**293**
Generic symbols:	**5**
Specific symbols:	**288**



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
Triac AC switch using IL410 phototriac-output optocoupler with zero-crossing detection.

Table 2.24. List of all devices included in Optocoupler_Triac_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BRT11	3	1	3 – free, 5 - DNC	None
BRT12	9	1	3 – free, 5 - DNC	None
BRT13	6	1	3 – free, 5 - DNC	None
BRT21	4	1	3 – free, 5 - DNC	None
BRT22	8	1	3 – free, 5 - DNC	None
BRT23	10	1	3 – free, 5 - DNC	None
FOD410	2	1	3 – free, 5 - DNC	None
FOD420	2	1	3 – free, 5 - DNC	None
FOD4108	2	1	3 – free, 5 - DNC	None
FOD4116	2	1	3 – free, 5 - DNC	None
FOD4118	2	1	3 – free, 5 - DNC	None
FOD4208	2	1	3 – free, 5 - DNC	None
FOD4216	2	1	3 – free, 5 - DNC	None
FOD4218	2	1	3 – free, 5 - DNC	None
FODM3011	1	1	None	None
FODM3012	1	1	None	None
FODM3022	1	1	None	None
FODM3023	1	1	None	None
FODM3052	1	1	None	None
FODM3053	1	1	None	None
FODM3062	1	1	None	None
FODM3063	1	1	None	None
FODM3082	1	1	None	None
FODM3083	1	1	None	None
IL410	4	1	3 – free, 5 - DNC	None
IL420	4	1	3 – free, 5 - DNC	None
IL4108	4	1	3 – free, 5 - DNC	None
IL4116	4	1	3 – free, 5 - DNC	None
IL4117	2	1	3 – free, 5 - DNC	None
IL4118	4	1	3 – free, 5 - DNC	None
IL4208	3	1	3 – free, 5 - DNC	None
IL4216	4	1	3 – free, 5 - DNC	None
IL4217	3	1	3 – free, 5 - DNC	None
IL4218	2	1	3 – free, 5 - DNC	None
K3010P	3	1	3 – free, 5 - DNC	None
K3011P	2	1	3 – free, 5 - DNC	None
K3012P	3	1	3 – free, 5 - DNC	None
K3020P	2	1	3 – free, 5 - DNC	None
K3021P	2	1	3 – free, 5 - DNC	None
K3022P	2	1	3 – free, 5 - DNC	None
K3023P	2	1	3 – free, 5 - DNC	None
K3036P	2	1	3 – free, 5 - DNC	None
MOC3010	3	1	3 – free, 5 - DNC	None
MOC3011	3	1	3 – free, 5 - DNC	None
MOC3012	3	1	3 – free, 5 - DNC	None
MOC3020	3	1	3 – free, 5 - DNC	None
MOC3021	3	1	3 – free, 5 - DNC	None
MOC3022	3	1	3 – free, 5 - DNC	None
MOC3023	3	1	3 – free, 5 - DNC	None
MOC3031	3	1	3 – free, 5 - DNC	None
MOC3032	3	1	3 – free, 5 - DNC	None
MOC3033	3	1	3 – free, 5 - DNC	None
MOC3041	3	1	3 – free, 5 - DNC	None
MOC3042	3	1	3 – free, 5 - DNC	None
MOC3043	3	1	3 – free, 5 - DNC	None
MOC3051	3	1	3 – free, 5 - DNC	None
MOC3052	3	1	3 – free, 5 - DNC	None
MOC3053	3	1	3 – free, 5 - DNC	None
MOC3061	3	1	3 – free, 5 - DNC	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MOC3062	3	1	3 – free, 5 - DNC	None
MOC3063	3	1	3 – free, 5 - DNC	None
MOC3071	3	1	3 – free, 5 - DNC	None
MOC3072	3	1	3 – free, 5 - DNC	None
MOC3073	3	1	3 – free, 5 - DNC	None
MOC3081	3	1	3 – free, 5 - DNC	None
MOC3082	3	1	3 – free, 5 - DNC	None
MOC3083	3	1	3 – free, 5 - DNC	None
MOC3162	3	1	3 – free, 5 - DNC	None
MOC3163	3	1	3 – free, 5 - DNC	None
TLP265J	1	1	None	None
TLP266J	1	1	None	None
TLP267J	1	1	None	None
TJP268J	1	1	None	None
TLP3021	1	1	Free	None
TLP3022	1	1	Free	None
TLP3023	1	1	Free	None
TLP3041	1	1	Free	None
TLP3042	1	1	Free	None
TLP3043	1	1	Free	None
TLP3051F	1	1	Free	None
TLP3052F	1	1	Free	None
TLP3061	2	1	Free	None
TLP3062	2	1	Free	None
TLP3063	2	1	Free	None
TLP3064	1	1	Free	None
TLP3083	2	1	Free	None
VO2223	1	1	None	None
VO3020	3	1	3 – free, 5 - DNC	None
VO3021	3	1	3 – free, 5 - DNC	None
VO3022	3	1	3 – free, 5 - DNC	None
VO3023	3	1	3 – free, 5 - DNC	None
VO3052	4	1	3 – free, 5 - DNC	None
VO3053	4	1	3 – free, 5 - DNC	None
VO3062	3	1	3 – free, 5 - DNC	None
VO3063	4	1	3 – free, 5 - DNC	None
VO4154	10	1	3 – free, 5 - DNC	None
VO4156	10	1	3 – free, 5 - DNC	None
VOT8024A	4	1	None	None
VOT8025A	3	1	3 – free, 5 - DNC	None
VOT8026A	3	1	3 – free, 5 - DNC	None
VOT8121A	4	1	None	None
VOT8123A	3	1	3 – free, 5 - DNC	None
VOT8125A	3	1	Free	None

2.28. Resistor Library (European Symbol)

This library contains resistor and shunt resistor symbols with pre-assigned footprints.

Specific resistor symbols have the footprint pre-assigned, but the user still needs to fill in the correct value. This helps reduce time spent assigning footprints before transferring to PCB layout.

Resistor symbol names mostly correspond to their respective resistor footprint names.

Independent resistor network symbols are available in two variants. Standard symbols have all resistors in a single place and are single-unit symbols. Disaggregated symbols are multi-unit symbols allowing the user to place different resistors from the same pack on different parts of the schematic.

Resistors, and separated resistor network symbols have alternate 45-degree rotated symbols, see Section 2.1.5 for more details.

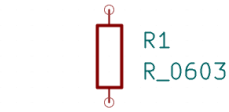
Resistor symbol library grabs footprints from

- Resistor_SMD_AKL,
- Resistor_THT_AKL,
- Package_DIP_AKL
  (for DIP resistor networks)

Single resistors have R as their reference designator, while resistor networks have RN as their reference designator.

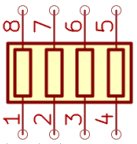
Resistor_AKL symbol library is functionally equivalent to Resistor_US_AKL with the only difference being the graphical shape of the resistor symbol and linked footprint libraries. You can omit installation of this library if you want to use resistor library with US symbols instead. Linked footprint libraries are also inter-changeable, see Section 3.1.7 for more details.

Filename: **Resistor_AKL**	
Total symbols:	**191**
Generic symbols:	**27**
Specific symbols:	**164**



Footprint:
Resistor_SMD_AKL:R_0603_1608Metric

Footprint:
Resistor_SMD_AKL:R_MiniMELF_MMA-0204

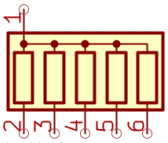


Footprint:
Resistor_SMD_AKL:R_Array_Concave_4x0603

R_4x0603_Sep_Concave

Footprint:
Resistor_SMD_AKL:R_Array_Concave_4x0603

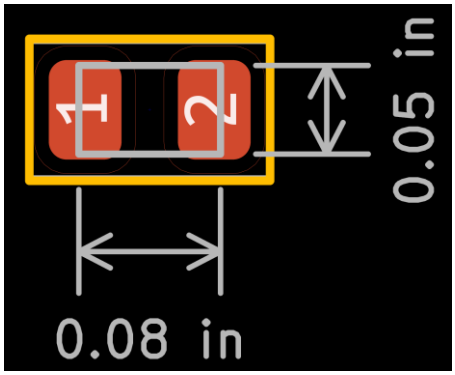
Footprint:
Resistor_SMD_AKL:R_Shunt_Ohmite_LVK24



Footprint:
Resistor_THT_AKL:R_Array_SIP6_BigPads

SMD Chip Resistors

Symbol count: 17



An 0805 SMD chip resistor footprint with the relevant dimensions indicated.

Symbol naming convention:
R_<size code>

Where size code is 4-digit imperial units.

Name examples:
R_0603
R_2512

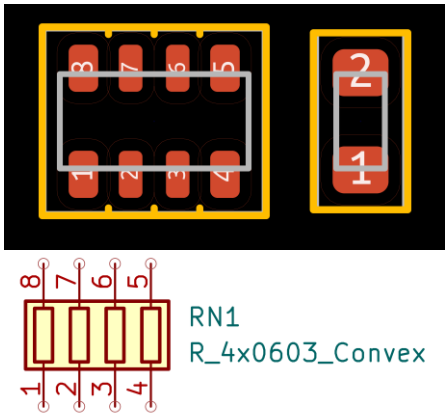
Corresponding footprints:
Resistor_SMD_AKL:R_<imperial Size code>_<metric size code>**Metric**

Keywords:
R res resistor eu smd <size code>

Search examples:
Searching '**R 0603**' will yield 0603 chip resistor symbol as a result.

SMD Isolated Resistor Networks

Symbol count: 28



4x0603 Resistor Network Footprint along a single 0603 resistor (TOP) and a corresponding Resistor network symbol.

Symbol naming convention:
R_<no. of resistors>**x**<size>_<pad shape>
For standard symbols,
R_<no. of resistors>**x**<size>**_Sep**_<pad shape>
For multi-unit symbols.

Where pad shape is either convex or concave.

Name examples:
R_2x0606_Convex
R_4x0402_Sep_Concave

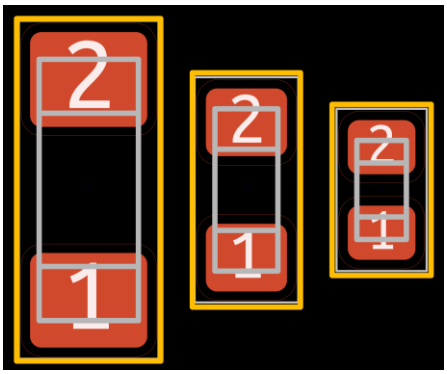
Corresponding footprints:
Resistor_SMD_AKL:R_Array_<pad shape>_<no. of resistors>**x**<size>

Keywords:
R smd network parallel isolated eu x<no. of resistors> <size>

Search examples:
Searching '**resistor network 0603**' will yield all 0603 sized SMD resistor networks as results.
Searching '**res 4x1206**' will yield 1206 sized resistor networks with 4 resistors as results.

MELF Resistors

Symbol count: 3



Left to right: MELF, MiniMELF, MicroMELF resistor footprints.

Symbol naming convention:
R_<prefix>**MELF**

Name examples:
R_MELF
R_MiniMELF
R_MicroMELF

Corresponding footprints:
Resistor_SMD_AKL:R_<prefix> **MELF_-**<DIN size code>

Keywords:
R res resistor eu smd <prefix> melf

Search examples:
Searching '**R mini melf**' will yield MiniMELF resistor symbol as a result.

THT Axial DIN Resistors

Symbol count: 24

DIN0204 THT resistor footprint with 10.16mm pin pitch as indicated.

Symbol naming convention:
R_DIN<size code>**_P**<pin pitch>**mm**

Where size code is the DIN size (0207, 0309 etc.).

Name examples:
R_DIN0414_P5.08mm
R_DIN0207_P10.16mm

Corresponding footprints:
Resistor_THT_AKL:R_Axial_DIN<code>**_L**<len.>**mm_ D**<dia.>**mm_ P**<pitch>**mm_**<orient.>

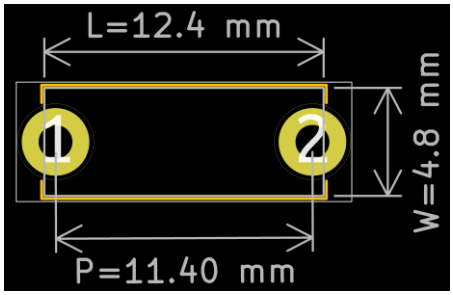
Keywords:
R res resistor eu tht <pin pitch> <size code>

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**resistor 0207**' will yield all DIN0207 sized resistor symbols as results.
Searching '**res 12.70**' will yield all resistors with 12.70mm pin pitch as results.

THT Metal Element Resistors

Symbol count: 3



Bare metal element resistor footprint with relevant dimensions indicated.

Symbol naming convention:
R_Metal_Element_L<length>**_W**<width>**_P**<pin pitch>

Name examples:
R_Metal_Element_L12.4mm_W4.8mm_P11.40mm
R_Metal_Element_L16.3mm_W4.8mm_P15.30mm

Corresponding footprints:
Resistor_THT_AKL:R_Bare_Metal_Element_L<length>**_W**<width>**_P**<pin pitch>

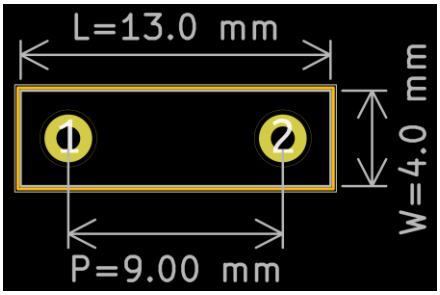
Keywords:
R res resistor eu tht power metal element <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**resistor metal 15.30**' will yield all bare metal resistor symbols with pin pitch equal to 15.30mm as results.
Searching '**res metal 16.3x4.8**' will yield metal element resistors with 16.3mm length and 4.8mm width as results.

THT Box Resistors

Symbol count: 4



Box Resistor Footprint with all relevant dimensions indicated.

Symbol naming convention:
R_Box_L<length>**_W**<width>**_P**<pin pitch>

Name examples:
R_Box_L8.4mm_W2.5mm_P5.08mm
R_Box_L14.0mm_W5.0mm_P9.00mm

Corresponding footprints:
Resistor_THT_AKL:R_Box_L<length>**_W**<width>**_P**<pin pitch>

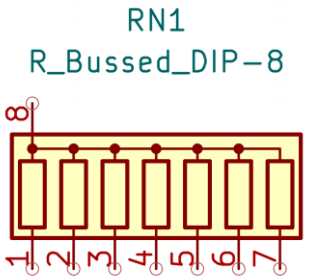
Keywords:
R res resistor eu tht box <pin pitch> <length>x<width>

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**R box 9.00**' will yield all box resistors with 9mm pin pitch as results.
Searching '**R box 14.0x5.0**' will yield box resistors with 14mm length and 5mm width.

DIP Bussed Resistor Networks

Symbol count: 5



DIP-8 bussed resistor network symbol.

Symbol naming convention:
R_Bussed_DIP-<pin count>

Name examples:
R_Bussed_DIP-8
R_Bussed_DIP-20

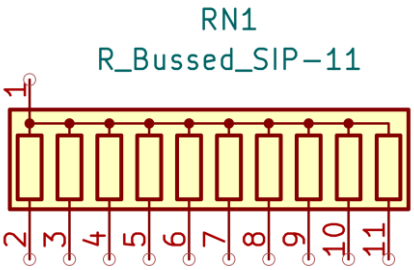
Corresponding footprints:
Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:
R network bussed star eu x<resistor count> DIP-<pin count>

Search examples:
Searching '**R bussed x15**' will yield all bussed resistor networks with 15 resistors as results.
Searching '**R bussed DIP-14**' will yield DIP-14 bussed resistor network symbol as a result..

SIP Bussed Resistor Networks

Symbol count: 11



SIP-11 bussed resistor network symbol

Symbol naming convention:
R_Bussed_SIP-<pin count>

Name examples:
R_Bussed_SIP-4
R_Bussed_SIP-13

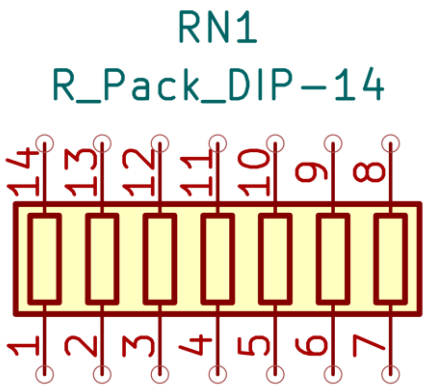
Corresponding footprints:
Resistor_THT_AKL:R_Array_SIP<pin count>**_BigPads**

Keywords:
R network bussed star x<resistor count> eu sip <pin count>

Search examples:
Searching '**R bussed x5**' will yield all bussed resistor networks with 5 resistors as results.
Searching '**R bussed sip**' will yield all SIP bussed resistor network symbols.

DIP Isolated Resistor Networks

Symbol count: 10



DIP-14 isolated resistor network symbol.

Symbol naming convention:
R_Pack_DIP-<pin count>
For standard symbols,
R_Pack_DIP-<pin count>**_Sep**
For multi-unit symbols.

Name examples:
R_Pack_DIP-8
R_Pack_DIP-16_Sep

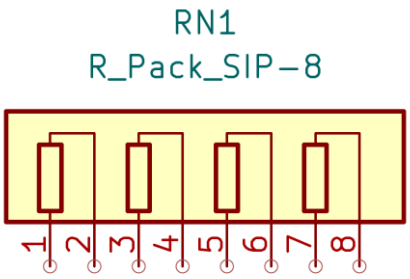
Corresponding footprints:
Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:
R network parallel isolated eu x<resistor count> dip <pin count>

Search examples:
Searching '**R isolated x4**' will yield all isolated resistor networks with 4 resistors as results.
Searching '**R isolated dip**' will yield all DIP isolated resistor network symbols.

SIP Isolated Resistor Networks

Symbol count: 12



SIP-8 isolated resistor network symbol

Symbol naming convention:
R_Pack_SIP-<pin count>
For standard symbols,
R_Pack_SIP-<pin count>**_Sep**
For multi-unit symbols.

Name examples:
R_Pack_SIP-6
R_Pack_SIP-12_Sep

Corresponding footprints:
Resistor_THT_AKL:R_Array_SIP<pin count>**_BigPads**

Keywords:
R network parallel isolated eu x<resistor count> sip <pin count>

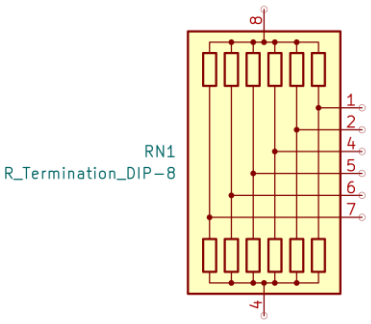
Search examples:
Searching '**R isolated x3**' will yield all isolated resistor networks with 3 resistors as results.
Searching '**R isolated sip**' will yield all SIP isolated resistor network symbols.

DIP Termination Resistor Networks

Symbol count: **5**

Symbol naming convention:
R_Termination_DIP-<pin count>

Name examples:
R_Termination_DIP-14
R_Termination_DIP-18



DIP-8 termination resistor network symbol.

Corresponding footprints:
Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:
R dividers terminator termination eu x<line count> dip <pin count>

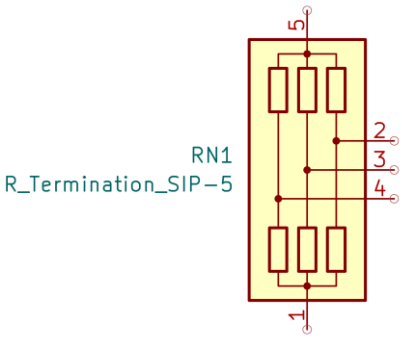
Search examples:
Searching '**R termination x6**' will yield all termination resistor networks with 6 double-terminated lines.
Searching '**R termination dip**' will yield all DIP termination resistor network symbols.

SIP Termination Resistor Networks

Symbol count: **11**

Symbol naming convention:
R_Termination_SIP-<pin count>

Name examples:
R_Termination_SIP-6
R_Termination_SIP-14



SIP-5 termination resistor network symbol

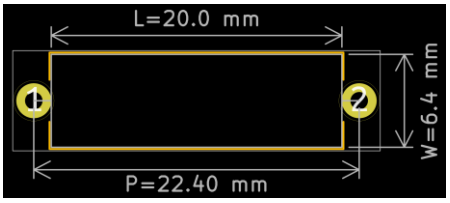
Corresponding footprints:
Resistor_THT_AKL:R_Array_SIP<pin count>**_BigPads**

Keywords:
R dividers terminator termination eu x<line count> sip <pin count>

Search examples:
Searching '**R termination x5**' will yield all termination resistor networks with 5 double-terminated lines as results.
Searching '**R termination sip**' will yield all SIP termination resistor network symbols.

THT Axial Power Resistors

Symbol count: 13



Power resistor footprint with relevant dimensions indicated.

Symbol naming convention:
R_Power_L<length>_**W**<width>_**P**<pin pitch>

Name examples:
R_Power_L38.0mm_W6.4mm_P40.64mm
R_Power_L75.0mm_W9.0mm_P81.28mm

Corresponding footprints:
Resistor_THT_AKL:R_Axial_Power_L<length>_**W**<width>_**P**<pin pitch>_<orientation (optional)>

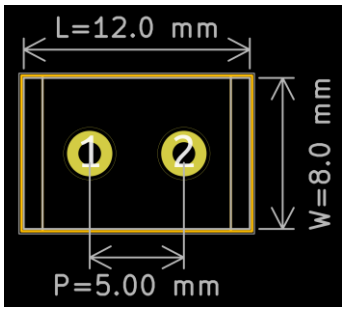
Keywords:
R res resistor eu tht power <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**resistor power 25.40**' will yield all power resistor symbols with pin pitch equal to 25.40mm as results.
Searching '**res power 60.0x14.0**' will yield power resistors with 60mm length and 14mm width as results.

THT Radial Power Resistors

Symbol count: 6



Radial power resistor Footprint with all relevant dimensions indicated.

Symbol naming convention:
R_Power_Radial_L<length>_**W**<width>_**P**<pin pitch>

Name examples:
R_Power_Radial_L35.3mm_W9.5mm_P25.40mm
R_Power_Radial_L7.0mm_W8.0mm_Px2.40mm_Py2.30mm

Corresponding footprints:
Resistor_THT_AKL:R_Radial_Power_L<length>_**W**<width>_**P**<pin pitch>

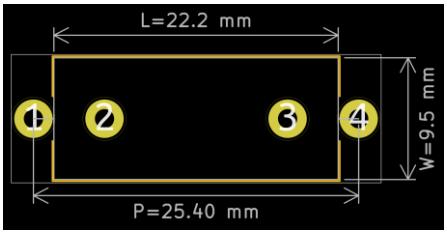
Keywords:
R res resistor eu tht power <pin pitch> <length>x<width>

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**R power 5.00**' will yield all power resistors with 5mm pin pitch as results.
Searching '**R power 13.0x9.0**' will yield power resistors with 13mm length and 9mm width.

Axial Power Shunt Resistors

Symbol count: 5



Shunt power resistor footprint with relevant dimensions indicated.

Symbol naming convention:
R_Power_Shunt_L<length>_**W**<width>_**P**<pin pitch>

Name examples:
R_Power_Shunt_L22.2mm_W8.0mm_P25.40mm
R_Power_Shunt_L47.6mm_W9.5mm_P50.80mm

Corresponding footprints:
Resistor_THT_AKL:R_Axial_Shunt_L<length>_**W**<width>_**Ps**<sense pin pitch>_**P**<pin pitch>

Keywords:
R res shunt resistor eu tht power <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**resistor shunt 38.10**' will yield all shunt resistor symbols with pin pitch equal to 38.10mm as results.
Searching '**res shunt 35.3x9.5**' will yield shunt resistors with 35.3mm length and 9.5mm width as results.

Non-standard resistor symbols

Symbol count: 7

Some resistor, shunt resistor or resistor network families have a non-standard footprint. A separate specific symbol is provided for each device family.

Symbol naming convention:
<manufacturer>_<device family name>

Existing non-standard resistor symbol list:

Ohmite_LVK12
Ohmite_LVK20
Ohmite_LVK24
Ohmite_LVK25
Vishay_WSK2512
Vishay_WSKW0612
Vishay_WSR2_WSR3

2.29. Resistor Library (US Symbol)

This library contains resistor and shunt resistor symbols with pre-assigned footprints.

Specific resistor symbols have the footprint pre-assigned, but the user still needs to fill in the correct value. This helps reduce time spent assigning footprints before transferring to PCB layout.

Resistor symbol names mostly correspond to their respective resistor footprint names.

Independent resistor network symbols are available in two variants. Standard symbols have all resistors in a single place and are single-unit symbols. Disaggregated symbols are multi-unit symbols allowing the user to place different resistors from the same pack on different parts of the schematic.

Resistors, and separated resistor network symbols have alternate 45-degree rotated symbols, see Section 2.1.5 for more details.

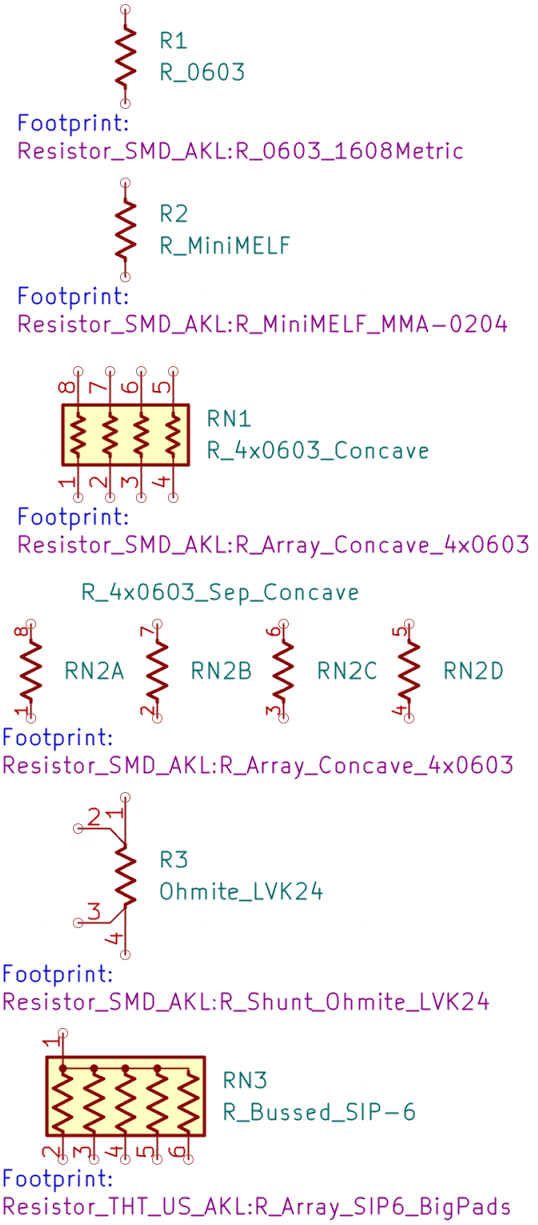
Resistor symbol library grabs footprints from

- Resistor_SMD_AKL,
- Resistor_THT_US_AKL,
- Package_DIP_AKL
  (for DIP resistor networks)

Single resistors have R as their reference designator, while resistor networks have RN as their reference designator.

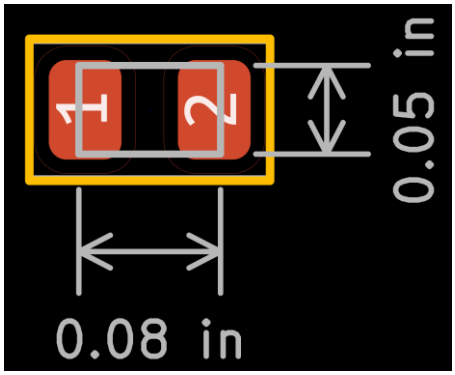
Resistor_US_AKL symbol library is functionally equivalent to Resistor_AKL with the only difference being the graphical shape of the resistor symbol and linked footprint libraries. You can omit installation of this library if you want to use resistor library with european symbols instead. Linked footprint libraries are also inter-changeable, see Section 3.1.7 for more details.

Filename: **Resistor_US_AKL**	
Total symbols:	**191**
Generic symbols:	**27**
Specific symbols:	**164**



SMD Chip Resistors

Symbol count: 17



An 0805 SMD chip resistor footprint with the relevant dimensions indicated.

Symbol naming convention:
R_<size code>

Where size code is 4-digit imperial units.

Name examples:
R_0603
R_2512

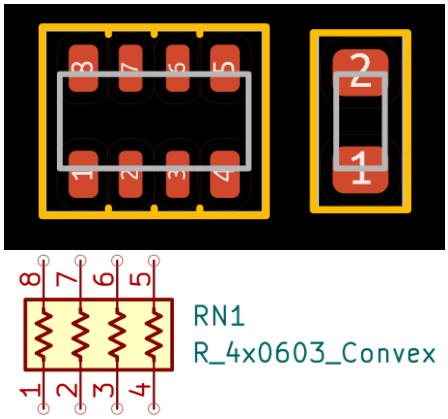
Corresponding footprints:
Resistor_SMD_AKL:R_<imperial Size code>_<metric size code>**Metric**

Keywords:
R res resistor us smd <size code>

Search examples:
Searching '**R 0603**' will yield 0603 chip resistor symbol as a result.

SMD Isolated Resistor Networks

Symbol count: 28



4x0603 Resistor Network Footprint along a single 0603 resistor (TOP) and a corresponding Resistor network symbol.

Symbol naming convention:
R_<no. of resistors>**x**<size>_<pad shape>
For standard symbols,
R_<no. of resistors>**x**<size>**_Sep**_<pad shape>
For multi-unit symbols.

Where pad shape is either convex or concave.

Name examples:
R_2x0606_Convex
R_4x0402_Sep_Concave

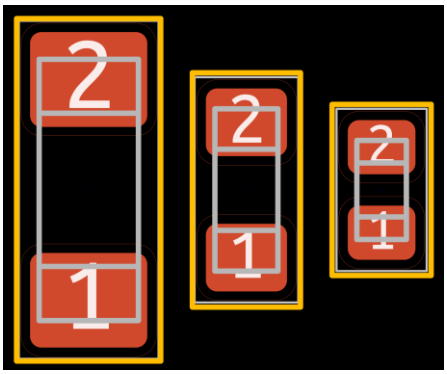
Corresponding footprints:
Resistor_SMD_AKL:R_Array_<pad shape>_<no. of resistors>**x**<size>

Keywords:
R smd network parallel isolated us x<no. of resistors> <size>

Search examples:
Searching '**resistor network 0603**' will yield all 0603 sized SMD resistor networks as results.
Searching '**res 4x1206**' will yield 1206 sized resistor networks with 4 resistors as results.

MELF Resistors

Symbol count: 3



Left to right: MELF, MiniMELF, MicroMELF resistor footprints.

Symbol naming convention:
R_<prefix>**MELF**

Name examples:
R_MELF
R_MiniMELF
R_MicroMELF

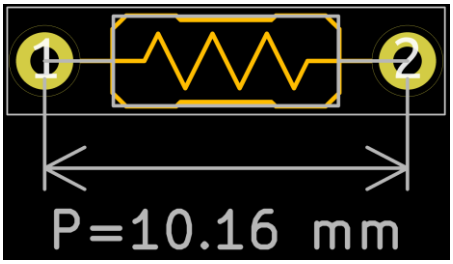
Corresponding footprints:
Resistor_SMD_AKL:R_<prefix> **MELF_-**<DIN size code>

Keywords:
R res resistor us smd <prefix> melf

Search examples:
Searching '**R mini melf**' will yield MiniMELF resistor symbol as a result.

THT Axial DIN Resistors

Symbol count: 24



DIN0204 THT resistor footprint with 10.16mm pin pitch as indicated.

Symbol naming convention:
R_DIN<size code>**_P**<pin pitch>**mm**

Where size code is the DIN size (0207, 0309 etc.).

Name examples:
R_DIN0414_P5.08mm
R_DIN0207_P10.16mm

Corresponding footprints:
Resistor_THT_US_AKL:R_Axial_DIN<code>**_L**<len.>**mm_ D**<dia.>**mm_ P**<pitch>**mm_**<orient.>

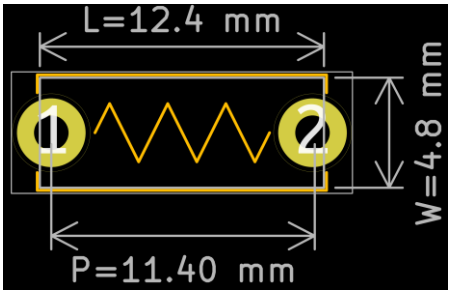
Keywords:
R res resistor us tht <pin pitch> <size code>

Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**resistor 0207**' will yield all DIN0207 sized resistor symbols as results.
Searching '**res 12.70**' will yield all resistors with 12.70mm pin pitch as results.

THT Metal Element Resistors

Symbol count: 3



Bare metal element resistor footprint with relevant dimensions indicated.

Symbol naming convention:
R_Metal_Element_L<length>_**W**<width>_**P**<pin pitch>

Name examples:
R_Metal_Element_L12.4mm_W4.8mm_P11.40mm
R_Metal_Element_L16.3mm_W4.8mm_P15.30mm

Corresponding footprints:
Resistor_THT_US_AKL:R_Bare_Metal_Element_L<length>_**W**<width>_**P**<pin pitch>

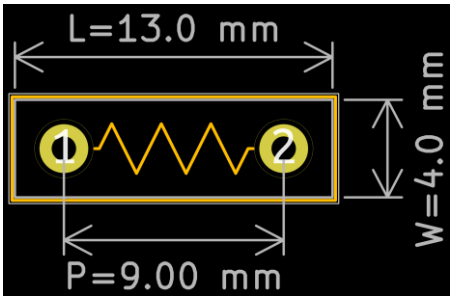
Keywords:
R res resistor us tht power metal element <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**resistor metal 15.30**' will yield all bare metal resistor symbols with pin pitch equal to 15.30mm as results.
Searching '**res metal 16.3x4.8**' will yield metal element resistors with 16.3mm length and 4.8mm width as results.

THT Box Resistors

Symbol count: 4



Box Resistor Footprint with all relevant dimensions indicated.

Symbol naming convention:
R_Box_L<length>_**W**<width>_**P**<pin pitch>

Name examples:
R_Box_L8.4mm_W2.5mm_P5.08mm
R_Box_L14.0mm_W5.0mm_P9.00mm

Corresponding footprints:
Resistor_THT_US_AKL:R_Box_L<length>_**W**<width>_**P**<pin pitch>

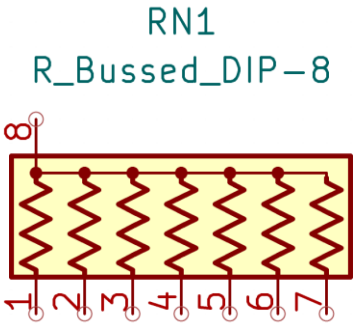
Keywords:
R res resistor us tht box <pin pitch> <length>x<width>

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**R box 9.00**' will yield all box resistors with 9mm pin pitch as results.
Searching '**R box 14.0x5.0**' will yield box resistors with 14mm length and 5mm width.

DIP Bussed Resistor Networks

Symbol count: 5



DIP-8 bussed resistor network symbol.

Symbol naming convention:
R_Bussed_DIP-<pin count>

Name examples:
R_Bussed_DIP-8
R_Bussed_DIP-20

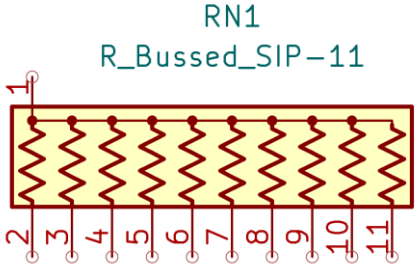
Corresponding footprints:
Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:
R network bussed star us x<resistor count> DIP-<pin count>

Search examples:
Searching '**R bussed x15**' will yield all bussed resistor networks with 15 resistors as results.
Searching '**R bussed DIP-14**' will yield DIP-14 bussed resistor network symbol as a result..

SIP Bussed Resistor Networks

Symbol count: 11



SIP-11 bussed resistor network symbol

Symbol naming convention:
R_Bussed_SIP-<pin count>

Name examples:
R_Bussed_SIP-4
R_Bussed_SIP-13

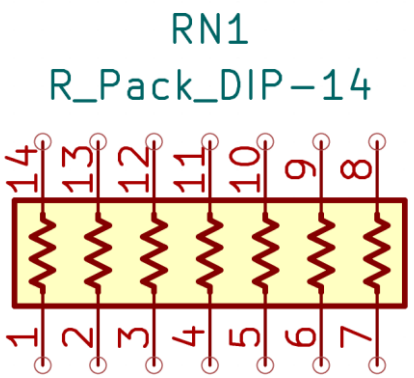
Corresponding footprints:
Resistor_THT_US_AKL:R_Array_SIP<pin count>**_BigPads**

Keywords:
R network bussed star x<resistor count> us sip <pin count>

Search examples:
Searching '**R bussed x5**' will yield all bussed resistor networks with 5 resistors as results.
Searching '**R bussed sip**' will yield all SIP bussed resistor network symbols.

DIP Isolated Resistor Networks

Symbol count: **10**



DIP-14 isolated resistor network symbol.

Symbol naming convention:
R_Pack_DIP-<pin count>
For standard symbols,
R_Pack_DIP-<pin count>**_Sep**
For multi-unit symbols.

Name examples:
R_Pack_DIP-8
R_Pack_DIP-16_Sep

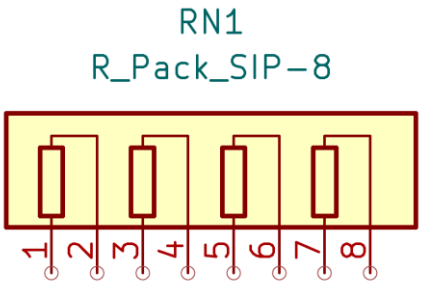
Corresponding footprints:
Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:
R network parallel isolated us x<resistor count> dip <pin count>

Search examples:
Searching '**R isolated x4**' will yield all isolated resistor networks with 4 resistors as results.
Searching '**R isolated dip**' will yield all DIP isolated resistor network symbols.

SIP Isolated Resistor Networks

Symbol count: **12**



SIP-8 isolated resistor network symbol

Symbol naming convention:
R_Pack_SIP-<pin count>
For standard symbols,
R_Pack_SIP-<pin count>**_Sep**
For multi-unit symbols.

Name examples:
R_Pack_SIP-6
R_Pack_SIP-12_Sep

Corresponding footprints:
Resistor_THT_US_AKL:R_Array_SIP<pin count>**_BigPads**

Keywords:
R network parallel isolated us x<resistor count> sip <pin count>

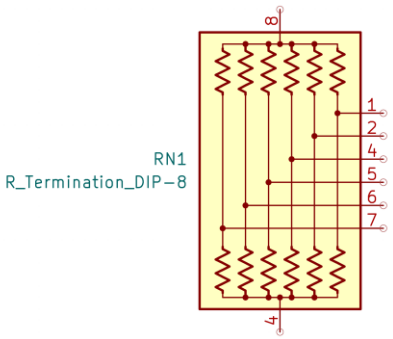
Search examples:
Searching '**R isolated x3**' will yield all isolated resistor networks with 3 resistors as results.
Searching '**R isolated sip**' will yield all SIP isolated resistor network symbols.

DIP Termination Resistor Networks

Symbol count: **5**

Symbol naming convention:
R_Termination_DIP-<pin count>

Name examples:
R_Termination_DIP-14
R_Termination_DIP-18



DIP-8 termination resistor network symbol.

Corresponding footprints:
Package_DIP_AKL:DIP-<pin count>**W7.62mm_LongPads**

Keywords:
R dividers terminator termination us x<line count> dip <pin count>

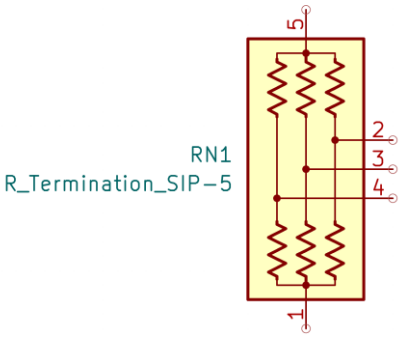
Search examples:
Searching '**R termination x6**' will yield all termination resistor networks with 6 double-terminated lines.
Searching '**R termination dip**' will yield all DIP termination resistor network symbols.

SIP Termination Resistor Networks

Symbol count: **11**

Symbol naming convention:
R_Termination_SIP-<pin count>

Name examples:
R_Termination_SIP-6
R_Termination_SIP-14



SIP-5 termination resistor network symbol

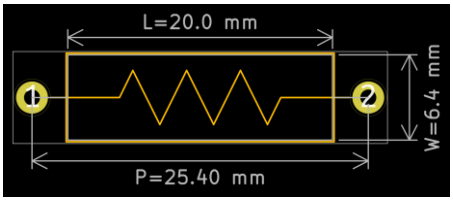
Corresponding footprints:
Resistor_THT_US_AKL:R_Array_SIP<pin count>**_BigPads**

Keywords:
R dividers terminator termination us x<line count> sip <pin count>

Search examples:
Searching '**R termination x5**' will yield all termination resistor networks with 5 double-terminated lines as results.
Searching '**R termination sip**' will yield all SIP termination resistor network symbols.

THT Axial Power Resistors

Symbol count: 13



Power resistor footprint with relevant dimensions indicated.

Symbol naming convention:
R_Power_L<length>_**W**<width>_**P**<pin pitch>

Name examples:
R_Power_L38.0mm_W6.4mm_P40.64mm
R_Power_L75.0mm_W9.0mm_P81.28mm

Corresponding footprints:
Resistor_THT_US_AKL:R_Axial_Power_L<length>_**W**<width>_**P**<pin pitch>_<orientation (opt.)>

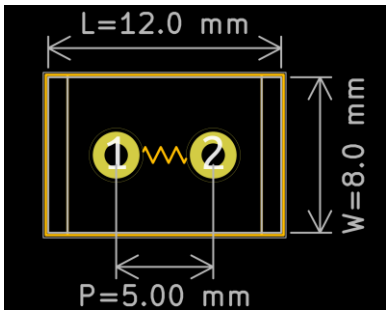
Keywords:
R res resistor us tht power <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**resistor power 25.40**' will yield all power resistor symbols with pin pitch equal to 25.40mm as results.
Searching '**res power 60.0x14.0**' will yield power resistors with 60mm length and 14mm width as results.

THT Radial Power Resistors

Symbol count: 6



Radial power resistor Footprint with all relevant dimensions indicated.

Symbol naming convention:
R_Power_Radial_L<length>_**W**<width>_**P**<pin pitch>

Name examples:
R_Power_Radial_L35.3mm_W9.5mm_P25.40mm
R_Power_Radial_L7.0mm_W8.0mm_Px2.40mm_Py2.30mm

Corresponding footprints:
Resistor_THT_US_AKL:R_Radial_Power_L<length>_**W**<width>_**P**<pin pitch>

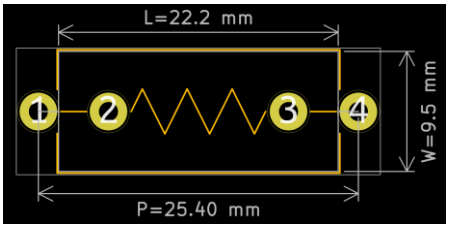
Keywords:
R res resistor us tht power <pin pitch> <length>x<width>

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**R power 5.00**' will yield all power resistors with 5mm pin pitch as results.
Searching '**R power 13.0x9.0**' will yield power resistors with 13mm length and 9mm width.

Axial Power Shunt Resistors

Symbol count: 5



Shunt power resistor footprint with relevant dimensions indicated.

Symbol naming convention:
R_Power_Shunt_L<length>_**W**<width>_**P**<pin pitch>

Name examples:
R_Power_Shunt_L22.2mm_W8.0mm_P25.40mm
R_Power_Shunt_L47.6mm_W9.5mm_P50.80mm

Corresponding footprints:
Resistor_THT_US_AKL:R_Axial_Shunt_L<length>_**W**<width>_**Ps**<sense pin pitch>_**P**<pin pitch>

Keywords:
R res shunt resistor us tht power <pitch> <length>x<width>mm

Length and width values always have one decimal point (14.0, 2.5 etc.).
Pin pitch values always have two decimal points (15.24 10.00 3.50 etc.).

Search examples:
Searching '**resistor shunt 38.10**' will yield all shunt resistor symbols with pin pitch equal to 38.10mm as results.
Searching '**res shunt 35.3x9.5**' will yield shunt resistors with 35.3mm length and 9.5mm width as results.

Non-standard resistor symbols

Symbol count: 7

Some resistor, shunt resistor or resistor network families have a non-standard footprint. A separate specific symbol is provided for each device family.

Symbol naming convention:
<manufacturer>_<device family name>

Existing non-standard resistor symbol list:

Ohmite_LVK12
Ohmite_LVK20
Ohmite_LVK24
Ohmite_LVK25
Vishay_WSK2512
Vishay_WSKW0612
Vishay_WSR2_WSR3

2.30. Thyristor Library

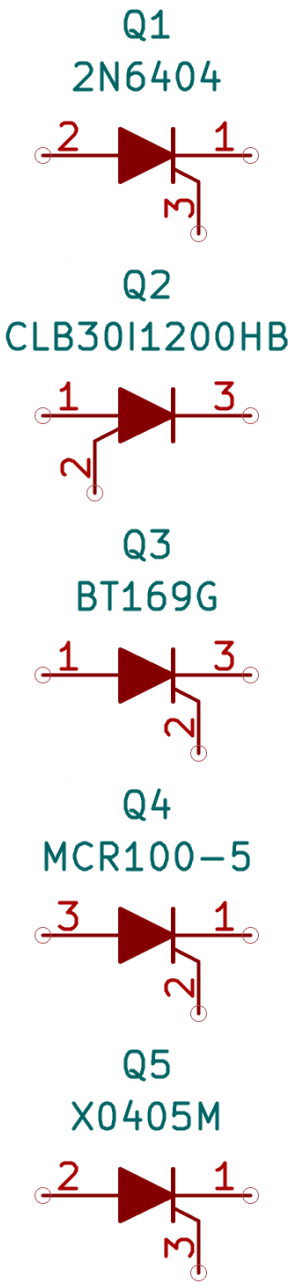
This library contains Silicon Controlled Rectifiers (SCRs) also known as thyristors.

Anode-gated thyristors have the gate terminal visibly connected to the anode instead of cathode.

All thyristors have Q as their reference designator.

All available orderable part numbers for each device with different package and electrical characteristics have separate specific symbols.

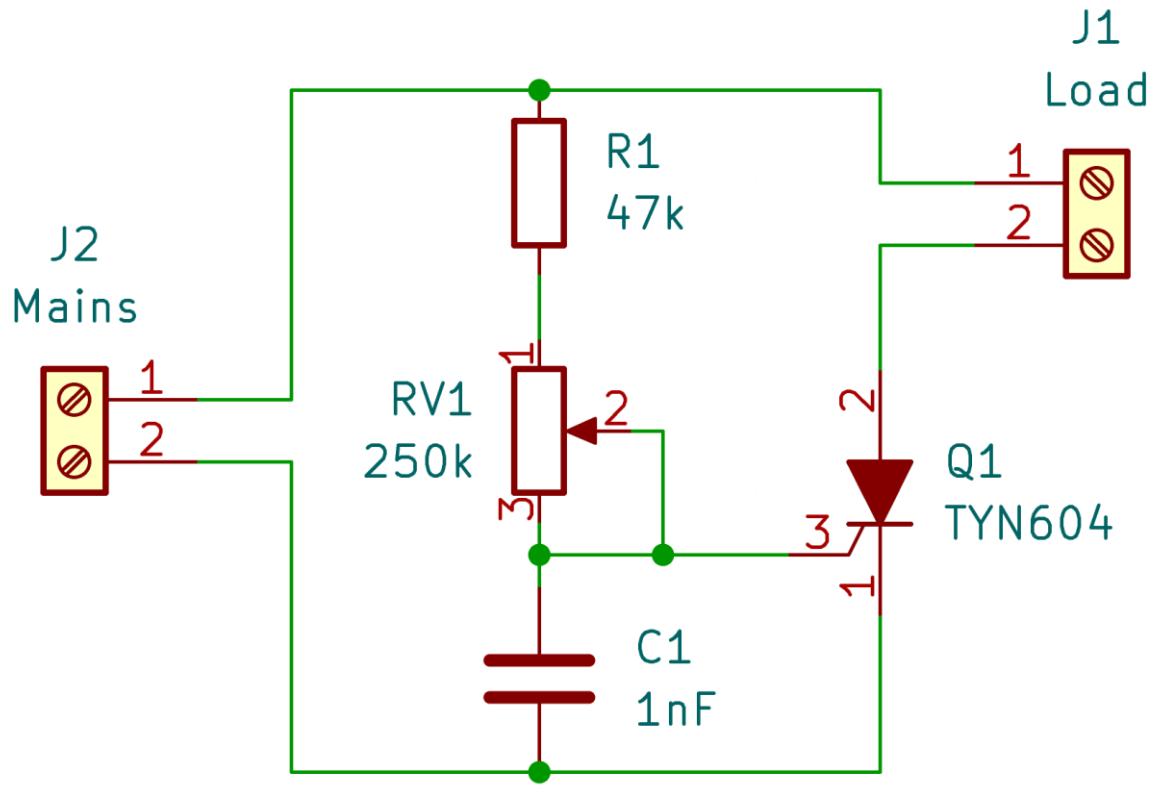
Filename: **Thyristor_AKL**	
Total symbols:	**251**
Generic symbols:	**4**
Specific symbols:	**247**



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
AC power control circuit based on TYN604 thyristor.

Table 2.25. List of all devices included in Thyristor_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2N6400	1	1	None	None
2N6401	1	1	None	None
2N6402	1	1	None	None
2N6403	1	1	None	None
2N6404	1	1	None	None
2N6405	1	1	None	None
2N6504	1	1	None	None
2N6505	1	1	None	None
2N6507	1	1	None	None
2N6508	1	1	None	None
2N6509	1	1	None	None
2N6565	1	1	None	None
BT145	3	1	None	None
BT148W	1	1	None	None
BT149	2	1	None	None
BT150	1	1	None	None
BT151	14	1	None	None
BT152	9	1	None	None
BT155	2	1	None	None
BT168GW	1	1	None	None
BT169	3	1	None	None
BT258	5	1	None	None
BTW68	4	1	None	None
BTW69	3	1	None	None
C106	4	1	None	None
CLA5E1200PZ	1	1	None	None
CLA15E1200NPZ	1	1	None	None
CLA30E1200	3	1	None	None
CLA40E1200	2	1	None	None
CLA50E1200	2	1	None	None
CLB30I1200	2	1	None	None
CLE30E1200PB	1	1	None	None
CLE40E1200HB	1	1	None	None
CLF20E1200PB	1	1	None	None
CMA20E1600PB	1	1	None	None
CMA30E1600	3	1	None	None
CMA50E1600	3	1	None	None
CMA80E1600HB	1	1	None	None
CME30E1600PZ	1	1	None	None
CS19-08ho1	2	1	None	None
CS19-12ho1	2	1	None	None
CS20-12io1	1	1	None	None
CS20-16io1	1	1	None	None
CS20-25moT1	1	1	None	None
CS22-08io1M	1	1	None	None
CS22-12io1M	1	1	None	None
CS30-12io1	1	1	None	None
CS45-08io1	1	1	None	None
CS45-12io1	1	1	None	None
CS45-16io1	1	1	None	None
CS60-16io1	1	1	None	None
EC103D1W	1	1	None	None
MCR08	3	1	None	None
MCR12	3	1	None	None
MCR16NG	1	1	None	None
MCR25	3	1	None	None
MCR69	2	1	None	None
MCR100	6	1	None	None
MCR106	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MCR310	2	1	None	None
MCR703A	1	1	None	None
MCR706A	1	1	None	None
MCR708A	2	1	None	None
NYC0102BLT1G	1	1	None	None
P0102	8	1	None	None
P0109	2	1	None	None
P0130AA	1	1	None	None
S4020L	1	1	None	None
S4025	3	1	None	None
S4055	3	1	None	None
S4065K	1	1	None	None
S6020L	1	1	None	None
S6025	3	1	None	None
S6055	3	1	None	None
S6065K	1	1	None	None
S8020L	1	1	None	None
S8025	3	1	None	None
S8055	3	1	None	None
S8065K	1	1	None	None
SK255KD	1	1	None	None
SKD20L	1	1	None	None
SKD25	3	1	None	None
SKD55	3	1	None	None
SKD65K	1	1	None	None
TN22-1500	2	1	None	None
TN1205T-600B	1	1	None	None
TN1215	6	1	None	None
TN1625	2	1	None	None
TN2540	2	1	None	None
TS805-600B	1	1	None	None
TS815-600	2	1	None	None
TS820-600	4	1	None	None
TS1220-600	3	1	None	None
TXN625	1	1	None	None
TYN204	1	1	None	None
TYN404	1	1	None	None
TYN410	1	1	None	None
TYN412	1	1	None	None
TYN604	1	1	None	None
TYN608	1	1	None	None
TYN610	1	1	None	None
TYN612	4	1	None	None
TYN616	1	1	None	None
TYN625	1	1	None	None
TYN640	1	1	None	None
TYN804	1	1	None	None
TYN810	1	1	None	None
TYN812	2	1	None	None
TYN816	1	1	None	None
TYN825	1	1	None	None
TYN840	1	1	None	None
TYN1004	1	1	None	None
TYN1012	2	1	None	None
TYN1225	1	1	None	None
VS-12TTS08	1	1	None	None
VS-16TTS	3	1	None	None
VS-25TTS	6	1	None	None
VS-30TPS	3	1	None	None
VS-40TPS	5	1	None	None
X0402	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
X0405	2	1	None	None

2.31. Bipolar Transistor Library

This library contains Bipolar Junction Transistors (BJTs) and transistor arrays.

PNP transistors by default have emitter on the top of the symbol and collector at the bottom (as opposed to NPN transistors).

Dual NPN or PNP matched transistors have total of 4 symbol variants: 3 standard variants with different spacing between transistors (no suffix, -1 and -2 suffixes) and a disaggregated multi-unit variant (lowercase s) to ensure maximum schematic flexibility when designing differential amplifiers and other analog circuits from discrete transistors.

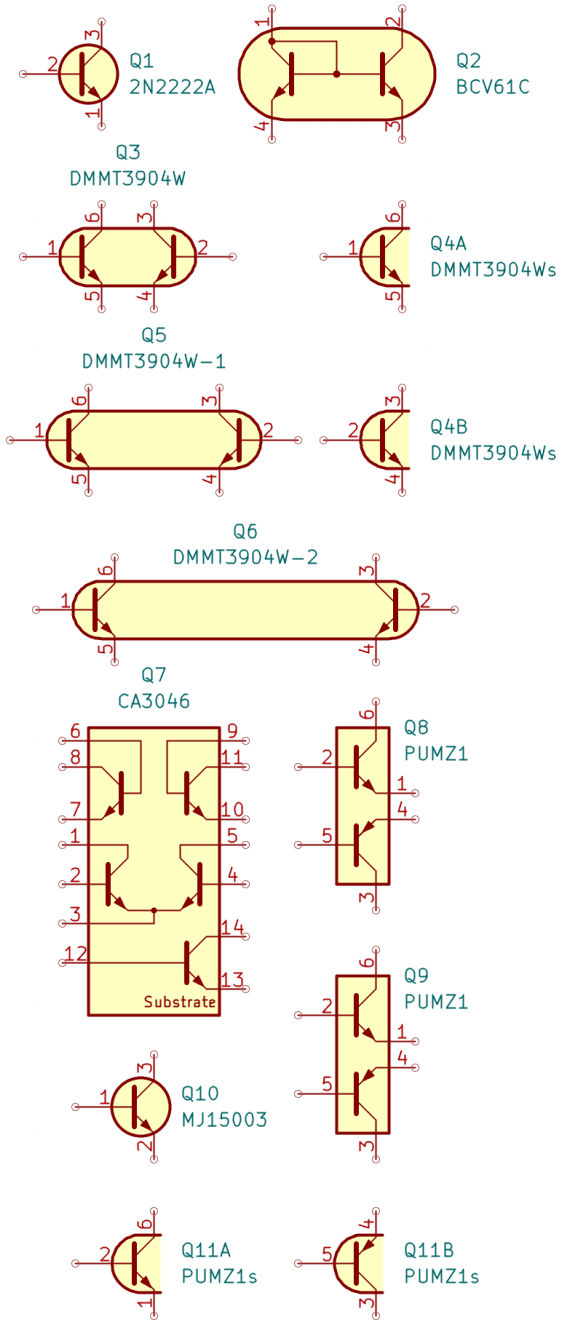
Dual NPN or PNP standard transistors have only 2 symbol variants: standard and disaggregated multi-unit symbol with 's' suffix.

Complementary transistor arrays (NPN + PNP) have 3 symbol variants: One with emitters of both transistors close together (no suffix), one with collectors of both transistors close together (-H suffix) and a multi-unit disaggregated symbol (lowercase s suffix).

Transistor arrays containing more than two transistors might have one or two symbol variants depending on the internal configuration.

Each available orderable part number with different electrical characteristics, current gain grade (not all devices), configuration, pinout and package for each transistor type has a separate specific symbol.

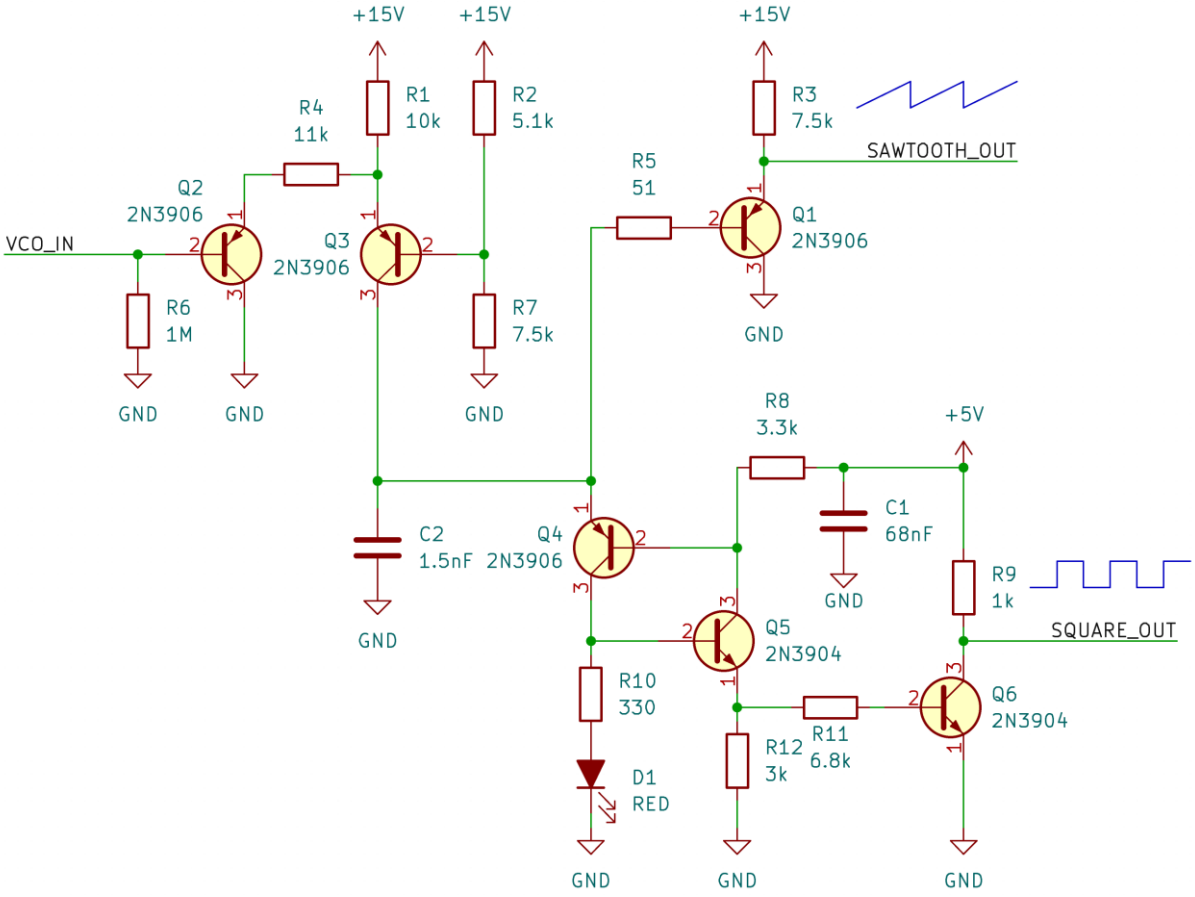
Filename: **Transistor_BJT_AKL**	
Total symbols:	**1365**(+1)
Generic symbols:	**85**
Specific symbols:	**1280**(+1)



Schematic examples

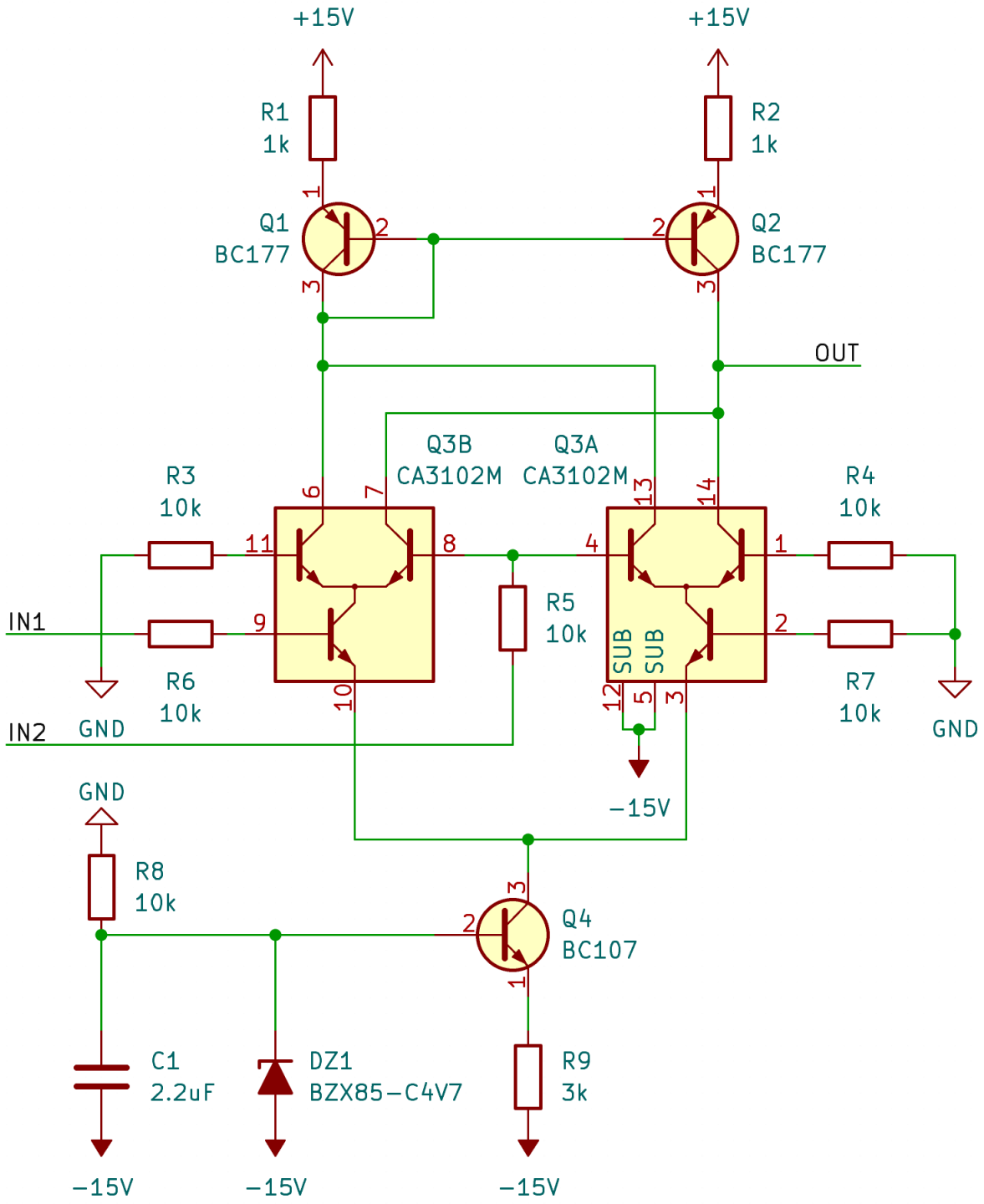
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



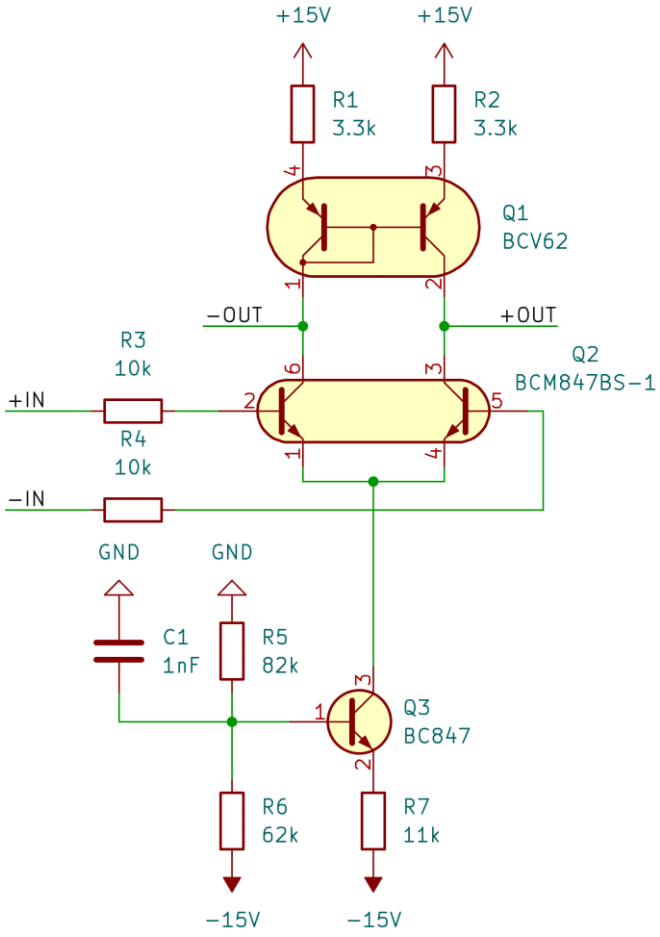
Example 1

Voltage controlled relaxation oscillator built using 2N3904 and 2N3906 transistors with square and sawtooth wave outputs.



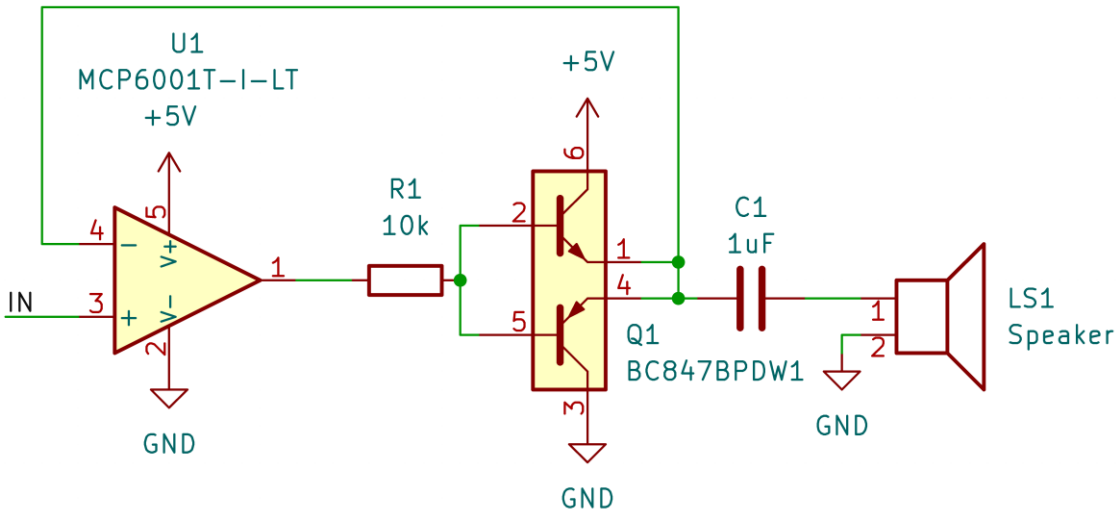
Example 2

Gilbert cell 4-quadrant analog multiplier using CA3102M transistor array, BC177 PNP transistors and a BC107 transistor.



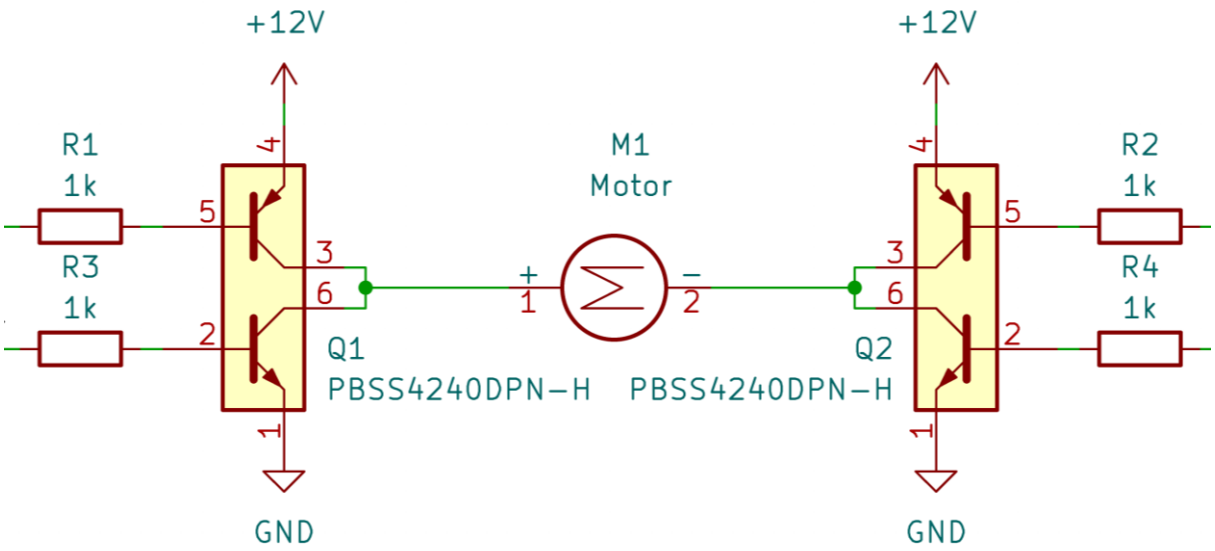
Example 3

Differential amplifier using BCM847BS dual matched NPN transistor ('-1' symbol variant), BCV62 PNP current mirror and a BC847 single NPN transistor



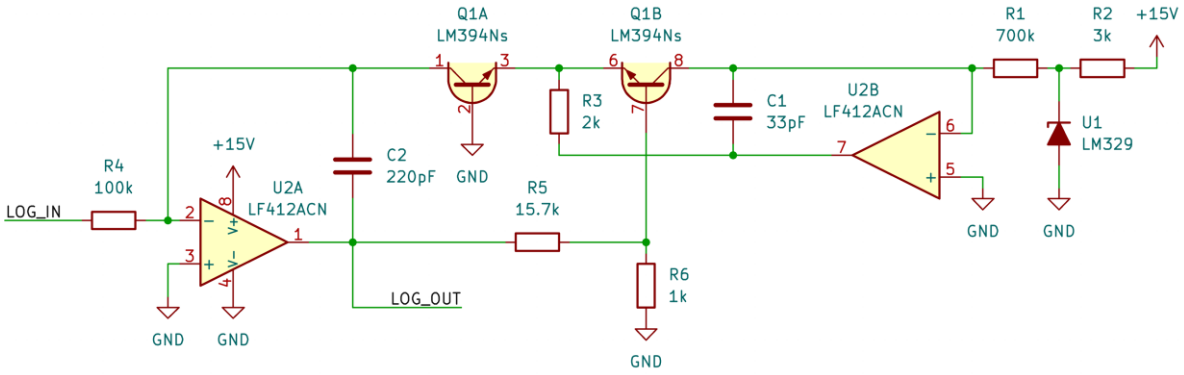
Example 4

Class-AB power amplifier driving a small buzzed/speaker using BC847BPDW1 complementary dual transistor with a standard symbol variant.



Example 5

Miniature DC motor H-Bridge driver using two PBSS4240DPN dual complementary transistors with '-H' symbol variant.



Example 6

Logarithmic amplifier based on LM394 matched transistor pair ('s' symbol variant).

Table 2.26. List of all devices included in Transistor_BJT_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2DA1971	1	1	None	None
2DD1664	4	1	None	None
2DD1766	4	1	None	None
2DD2098	1	1	None	None
2DD2652	1	1	None	None
2DD2679	1	1	None	None
2N696	1	1	None	None
2N697	1	1	None	None
2N1613	1	1	None	None
2N1711	1	1	None	None
2N1893	1	1	None	None
2N2102	1	1	None	None
2N2219	2	1	None	None
2N2222	3	1	None	None
2N2369	1	1	None	None
2N2484	1	1	None	None
2N2904	2	1	None	None
2N2905	2	1	None	None
2N2906	2	1	None	None
2N2907	3	1	None	None
2N3019	2	1	None	None
2N3053	2	1	None	None
2N3054	2	1	None	None
2N3055	2	1	None	None
2N3439	1	1	None	None
2N3440	1	1	None	None
2N3441	1	1	None	None
2N3442	1	1	None	None
2N3502	1	1	None	None
2N3503	1	1	None	None
2N3504	1	1	None	None
2N3505	1	1	None	None
2N3546	1	1	None	None
2N3570	1	1	None	None
2N3700	1	1	None	None
2N3702	1	1	None	None
2N3771	1	1	None	None
2N3772	1	1	None	None
2N3773	1	1	None	None
2N3866	2	1	None	None
2N3904	1	1	None	None
2N3906	1	1	None	None
2N4030	1	1	None	None
2N4031	1	1	None	None
2N4032	1	1	None	None
2N4033	1	1	None	None
2N4036	1	1	None	None
2N4037	1	1	None	None
2N4234	1	1	None	None
2N4235	1	1	None	None
2N4236	1	1	None	None
2N4237	1	1	None	None
2N4238	1	1	None	None
2N4239	1	1	None	None
2N4401	1	1	None	None
2N4403	1	1	None	None
2N4904	1	1	None	None
2N4905	1	1	None	None
2N4906	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2N4913	1	1	None	None
2N4914	1	1	None	None
2N4915	1	1	None	None
2N4918	1	1	None	None
2N4919	1	1	None	None
2N4920	1	1	None	None
2N4921	1	1	None	None
2N4922	1	1	None	None
2N4923	1	1	None	None
2N5038	1	1	None	None
2N5087	1	1	None	None
2N5172	1	1	None	None
2N5190	1	1	None	None
2N5191	1	1	None	None
2N5192	1	1	None	None
2N5194	1	1	None	None
2N5195	1	1	None	None
2N5320	1	1	None	None
2N5321	1	1	None	None
2N5322	1	1	None	None
2N5323	1	1	None	None
2N5336	1	1	None	None
2N5337	1	1	None	None
2N5338	1	1	None	None
2N5339	1	1	None	None
2N5400	1	1	None	None
2N5401	1	1	None	None
2N5415	1	1	None	None
2N5416	1	1	None	None
2N5550	1	1	None	None
2N5551	1	1	None	None
2N5679	1	1	None	None
2N5680	1	1	None	None
2N5681	1	1	None	None
2N5682	1	1	None	None
2N5685	1	1	None	None
2N5686	1	1	None	None
2N5883	1	1	None	None
2N5884	1	1	None	None
2N5885	1	1	None	None
2N5886	1	1	None	None
2N6076	1	1	None	None
2N6107	1	1	None	None
2N6109	1	1	None	None
2N6111	1	1	None	None
2N6263	1	1	None	None
2N6264	1	1	None	None
2N6288	1	1	None	None
2N6292	1	1	None	None
2N6430	1	1	None	None
2N6431	1	1	None	None
2N6432	1	1	None	None
2N6433	1	1	None	None
2N6487	1	1	None	None
2N6488	1	1	None	None
2N6490	1	1	None	None
2N6491	1	1	None	None
2N6515	1	1	None	None
2N6517	1	1	None	None
2N6520	1	1	None	None
2N6547	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2N6609	1	1	None	None
2SA683	1	1	None	None
2SA684	1	1	None	None
2SA719	1	1	None	None
2SA720	1	1	None	None
2SA733	1	1	None	None
2SA928	1	1	None	None
2SA950	1	1	None	None
2SA952	1	1	None	None
2SA966	1	1	None	None
2SA1012	1	1	None	None
2SA1015	1	1	None	None
2SA1018	1	1	None	None
2SA1020	1	1	None	None
2SA1145	1	1	None	None
2SA1162	1	1	None	None
2SA1268	1	1	None	None
2SA1270	1	1	None	None
2SA1273	1	1	None	None
2SA1275	1	1	None	None
2SA1312	1	1	None	None
2SA1313	1	1	None	None
2SA1362	1	1	None	None
2SA1491	1	1	None	None
2SA1535	2	1	None	None
2SA1586	1	1	None	None
2SA1587	1	1	None	None
2SA1657	1	1	None	None
2SA1667	1	1	None	None
2SA1668	1	1	None	None
2SA1694	1	1	None	None
2SA1774	1	1	None	None
2SA1943	1	1	None	None
2SA2018	1	1	None	None
2SA2030	1	1	None	None
2SA2119	1	1	None	None
2SAR523	3	1	None	None
2SAR544	1	1	None	None
2SB536	1	1	None	None
2SB544	1	1	None	None
2SB562	1	1	None	None
2SB647	2	1	None	None
2SB738	1	1	None	None
2SB739	1	1	None	None
2SB857	1	1	None	None
2SB858	1	1	None	None
2SB861	1	1	None	None
2SB1015	1	1	None	None
2SB1184	1	1	None	None
2SB1299	1	1	None	None
2SC388	1	1	None	None
2SC945	1	1	None	None
2SC1317	1	1	None	None
2SC1318	1	1	None	None
2SC1383	1	1	None	None
2SC1384	1	1	None	None
2SC1473	2	1	None	None
2SC1573	3	1	None	None
2SC1815	1	1	None	None
2SC1959	1	1	None	None
2SC2001	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2SC2068	1	1	None	None
2SC2073	1	1	None	None
2SC2120	1	1	None	None
2SC2236	1	1	None	None
2SC2310	1	1	None	None
2SC2562	1	1	None	None
2SC2570	1	1	None	None
2SC2655	1	1	None	None
2SC2705	1	1	None	None
2SC2713	1	1	None	None
2SC2714	1	1	None	None
2SC2898	1	1	None	None
2SC2925	1	1	None	None
2SC3198	1	1	None	None
2SC3199	1	1	None	None
2SC3202	1	1	None	None
2SC3203	1	1	None	None
2SC3205	1	1	None	None
2SC3206	1	1	None	None
2SC3228	1	1	None	None
2SC3320	1	1	None	None
2SC3325	1	1	None	None
2SC3326	1	1	None	None
2SC3503	1	1	None	None
2SC3675	1	1	None	None
2SC3851	2	1	None	None
2SC3855	1	1	None	None
2SC3944	2	1	None	None
2SC4116	1	1	None	None
2SC4117	1	1	None	None
2SC4131	1	1	None	None
2SC4213	1	1	None	None
2SC4368	1	1	None	None
2SC4381	1	1	None	None
2SC4382	1	1	None	None
2SC4467	1	1	None	None
2SC4495	1	1	None	None
2SC4572	1	1	None	None
2SC4726	1	1	None	None
2SC4769	1	1	None	None
2SC5024	1	1	None	None
2SC5144	1	1	None	None
2SC5200	1	1	None	None
2SCR544	1	1	None	None
2SD381	1	1	None	None
2SD400	1	1	None	None
2SD468	1	1	None	None
2SD471	1	1	None	None
2SD667	1	1	None	None
2SD787	1	1	None	None
2SD788	1	1	None	None
2SD882	1	1	None	None
2SD965	1	1	None	None
2SD1047	1	1	None	None
2SD1133	1	1	None	None
2SD1134	1	1	None	None
2SD1138	1	1	None	None
2SD1207	1	1	None	None
2SD1273	2	1	None	None
2SD1406	1	1	None	None
2SD2012	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2SD5072	1	1	None	None
300P14	1	5	None	None
300S14	1	5	None	None
320P14	1	5	None	None
320S14	1	5	None	None
340P14	1	5	None	None
340S14	1	5	None	None
BC107	3	1	None	None
BC108	4	1	None	None
BC109	3	1	None	None
BC140	4	1	None	None
BC141	4	1	None	None
BC160	4	1	None	None
BC161	4	1	None	None
BC167	1	1	None	None
BC168	1	1	None	None
BC169	1	1	None	None
BC171	3	1	None	None
BC172	4	1	None	None
BC174	3	1	None	None
BC177	4	1	None	None
BC178	4	1	None	None
BC179	4	1	None	None
BC182	2	1	None	None
BC183	1	1	None	None
BC184	1	1	None	None
BC211	1	1	None	None
BC212	1	1	None	None
BC213	1	1	None	None
BC214	1	1	None	None
BC237	1	1	None	None
BC238	1	1	None	None
BC239	1	1	None	None
BC257	1	1	None	None
BC258	1	1	None	None
BC259	1	1	None	None
BC300	1	1	None	None
BC301	1	1	None	None
BC302	1	1	None	None
BC303	1	1	None	None
BC304	1	1	None	None
BC307	1	1	None	None
BC308	1	1	None	None
BC309	1	1	None	None
BC313	1	1	None	None
BC317	1	1	None	None
BC318	1	1	None	None
BC319	1	1	None	None
BC320	1	1	None	None
BC321	1	1	None	None
BC322	1	1	None	None
BC327	1	1	None	None
BC328	1	1	None	None
BC337	1	1	None	None
BC338	1	1	None	None
BC393	1	1	None	None
BC394	1	1	None	None
BC440	1	1	None	None
BC441	1	1	None	None
BC460	1	1	None	None
BC461	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BC546	4	1	None	None
BC547	4	1	None	None
BC548	4	1	None	None
BC549	4	1	None	None
BC550	4	1	None	None
BC556	4	1	None	None
BC557	4	1	None	None
BC558	4	1	None	None
BC559	4	1	None	None
BC560	4	1	None	None
BC635	1	1	None	None
BC636	1	1	None	None
BC637	1	1	None	None
BC638	1	1	None	None
BC639	1	1	None	None
BC640	1	1	None	None
BC807	4	1	None	None
BC807W	4	1	None	None
BC807U	2	1 (2 for separated)	None	None
BC817	4	1	None	None
BC817W	4	1	None	None
BC817DFN	3	1 (2 for separated)	None	None
BC817DS	2	1 (2 for separated)	None	None
BC817K	1	1	None	None
BC817U	2	1 (2 for separated)	None	None
BC817UPN	3	1 (2 for separated)	None	None
BC818	1	1	None	None
BC818K	1	1	None	None
BC846	3	1	None	None
BC846T	3	1	None	None
BC846W	3	1	None	None
BC846BPDW1	3	1 (2 for separated)	None	None
BC846BS	2	1 (2 for separated)	None	None
BC846PN	3	1 (2 for separated)	None	None
BC846S	2	1 (2 for separated)	None	None
BC846U	2	1 (2 for separated)	None	None
BC846UPN	3	1 (2 for separated)	None	None
BC847	4	1	None	None
BC847M	4	1	None	None
BC847T	4	1	None	None
BC847W	4	1	None	None
BC847BPDW1	3	1 (2 for separated)	None	None
BC847BPN	3	1 (2 for separated)	None	None
BC847BS	2	1 (2 for separated)	None	None
BC847BV	2	1 (2 for separated)	None	None
BC847BVN	3	1 (2 for separated)	None	None
BC847PN	3	1 (2 for separated)	None	None
BC847S	2	1 (2 for separated)	None	None
BC848	4	1	None	None
BC848W	4	1	None	None
BC848CPDW1	3	1 (2 for separated)	None	None
BC849	3	1	None	None
BC849W	3	1	None	None
BC850	3	1	None	None
BC850W	3	1	None	None
BC856	4	1	None	None
BC856W	4	1	None	None
BC856BDW1T	2	1 (2 for separated)	None	None
BC856BS	2	1 (2 for separated)	None	None
BC856S	2	1 (2 for separated)	None	None
BC856U	2	1 (2 for separated)	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BC857	4	1	None	None
BC857T	4	1	None	None
BC857W	4	1	None	None
BC857BDW1T	2	1 (2 for separated)	None	None
BC857BS	2	1 (2 for separated)	None	None
BC857S	2	1 (2 for separated)	None	None
BC858	4	1	None	None
BC858W	4	1	None	None
BC858CDW1T	2	1 (2 for separated)	None	None
BC859	4	1	None	None
BC859W	4	1	None	None
BC860	4	1	None	None
BC860W	4	1	None	None
BC868	1	1	None	None
BC869	1	1	None	None
BC33716	1	1	None	None
BC33725	1	1	None	None
BC33740	1	1	None	None
BC33825	1	1	None	None
BC63916	1	1	None	None
BCM846S	4	1 (2 for separated)	None	None
BCM847BS	4	1 (2 for separated)	None	None
BCM847BV	4	1 (2 for separated)	None	None
BCM847DS	4	1 (2 for separated)	None	None
BCM856S	4	1 (2 for separated)	None	None
BCM857BS	4	1 (2 for separated)	None	None
BCM857BV	4	1 (2 for separated)	None	None
BCM857DS	4	1 (2 for separated)	None	None
BCP51	3	1	None	None
BCP52	3	1	None	None
BCP53	3	1	None	None
BCP54	3	1	None	None
BCP55	3	1	None	None
BCP56	3	1	None	None
BCP68	1	1	None	None
BCP69	1	1	None	None
BCV61	4	1	None	None
BCV62	4	1	None	None
BCV65	1	1	None	None
BCV71	1	1	None	None
BCV72	1	1	None	None
BCW29	1	1	None	None
BCW30	1	1	None	None
BCW31	1	1	None	None
BCW32	1	1	None	None
BCW33	1	1	None	None
BCW60	4	1	None	None
BCW61	1	1	None	None
BCW66	1	1	None	None
BCW67	1	1	None	None
BCW68	1	1	None	None
BCW71	1	1	None	None
BCW72	1	1	None	None
BCW89	1	1	None	None
BCX17	1	1	None	None
BCX18	1	1	None	None
BCX19	1	1	None	None
BCX41	1	1	None	None
BCX42	1	1	None	None
BCX51	3	1	None	None
BCX52	3	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BCX53	3	1	None	None
BCX54	3	1	None	None
BCX55	3	1	None	None
BCX56	3	1	None	None
BCX70	1	1	None	None
BCX71	1	1	None	None
BD135	4	1	None	None
BD136	3	1	None	None
BD137	3	1	None	None
BD138	3	1	None	None
BD139	4	1	None	None
BD140	3	1	None	None
BD179	1	1	None	None
BD201	1	1	None	None
BD202	1	1	None	None
BD203	1	1	None	None
BD204	1	1	None	None
BD235	1	1	None	None
BD236	1	1	None	None
BD237	1	1	None	None
BD238	1	1	None	None
BD239C	1	1	None	None
BD241A	1	1	None	None
BD241C	1	1	None	None
BD242	4	1	None	None
BD243	2	1	None	None
BD244	2	1	None	None
BD255	1	1	None	None
BD354	1	1	None	None
BD355	1	1	None	None
BD433	1	1	None	None
BD434	1	1	None	None
BD435	1	1	None	None
BD436	1	1	None	None
BD437	1	1	None	None
BD438	1	1	None	None
BD439	1	1	None	None
BD440	1	1	None	None
BD441	1	1	None	None
BD442	1	1	None	None
BD787	1	1	None	None
BD788	1	1	None	None
BD909	1	1	None	None
BD910	1	1	None	None
BD911	1	1	None	None
BD912	1	1	None	None
BDP948	1	1	None	None
BDP950	1	1	None	None
BDP954	1	1	None	None
BDW42	1	1	None	None
BDW46	1	1	None	None
BDW47	1	1	None	None
BDY55	1	1	None	None
BDY73	1	1	None	None
BF182	1	1	None	None
BF183	1	1	None	None
BF199	1	1	None	None
BF214	1	1	None	None
BF215	1	1	None	None
BF240	1	1	None	None
BF241	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BF257	1	1	None	None
BF258	1	1	None	None
BF259	1	1	None	None
BF370	1	1	None	None
BF420	1	1	None	None
BF421	1	1	None	None
BF422	1	1	None	None
BF423	1	1	None	None
BF469	1	1	None	None
BF470	1	1	None	None
BF471	1	1	None	None
BF472	1	1	None	None
BF479	1	1	None	None
BF494	1	1	None	None
BF495	1	1	None	None
BF506	1	1	None	None
BF820	1	1	None	None
BF821	1	1	None	None
BF822	1	1	None	None
BF823	1	1	None	None
BF840	1	1	None	None
BF888	1	1	None	None
BF959	1	1	None	None
BF979	1	1	None	None
BFN24	1	1	None	None
BFN26	1	1	None	None
BFN27	1	1	None	None
BFP193	1	1	None	None
BFP193W	1	1	None	None
BFP196W	1	1	None	None
BFP405	1	1	None	None
BFP420	1	1	None	None
BFP450	1	1	None	None
BFP520	1	1	None	None
BFP540	1	1	None	None
BFP640	1	1	None	None
BFP650	1	1	None	None
BFP760	1	1	None	None
BFQ19S	1	1	None	None
BFQ51	1	1	None	None
BFQ131	1	1	None	None
BFQ162	1	1	None	None
BFQ262	1	1	None	None
BFQ262A	1	1	None	None
BFR90A	1	1	None	None
BFR91A	1	1	None	None
BFR92P	1	1	None	None
BFR93AW	1	1	None	None
BFR93P	1	1	None	None
BFR106	1	1	None	None
BFR181	1	1	None	None
BFR181W	1	1	None	None
BFR193	1	1	None	None
BFR193W	1	1	None	None
BFS17P	1	1	None	None
BFS17W	1	1	None	None
BFS20	1	1	None	None
BFT25	1	1	None	None
BFU520A	1	1	None	None
BFU520X	1	1	None	None
BFU590G	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BFW92A	1	1	None	None
BFX85	1	1	None	None
BFY50	1	1	None	None
BFY51	1	1	None	None
BSP31	1	1	None	None
BSP32	1	1	None	None
BSP33	1	1	None	None
BSP41	1	1	None	None
BSP43	1	1	None	None
BSR13	1	1	None	None
BSR14	1	1	None	None
BSR15	1	1	None	None
BSR16	1	1	None	None
BSR17A	1	1	None	None
BSR19	1	1	None	None
BSR19A	1	1	None	None
BSR33	1	1	None	None
BSR43	1	1	None	None
BSS63	1	1	None	None
BSS64	1	1	None	None
BST39	1	1	None	None
BSV52	1	1	None	None
BSX59	1	1	None	None
BSX61	1	1	None	None
BU126	1	1	None	None
BU204	1	1	None	None
BU205	1	1	None	None
BU207	1	1	None	None
BU208	2	1	None	None
BU326	2	1	None	None
BU406	1	1	None	None
BU407	1	1	None	None
BU408	1	1	None	None
BU508A	1	1	None	None
BU508AW	1	1	None	None
BU1508AX	1	1	None	None
BUL38D	1	1	None	None
BUL39D	1	1	None	None
BUL45D2G	1	1	None	None
BUL49D	1	1	None	None
BUL49DFP	1	1	None	None
BUL216	1	1	None	None
BUL381D	1	1	None	None
BUL742C	1	1	None	None
BUL742CFP	1	1	None	None
BULB49D-1	1	1	None	None
BULB49DT4	1	1	None	None
BULB742C-1	1	1	None	None
BULB742CT4	1	1	None	None
BULD118D-1	1	1	None	None
BUTW92	1	1	None	None
BUV21	1	1	None	None
BUV48A	1	1	None	None
BUW52	1	1	None	None
BUX48	2	1	None	None
BUX80	1	1	None	None
BUX85G	1	1	None	None
CA3046	2	1 (4 for separated)	None	None
CA3046M	2	1 (4 for separated)	None	None
CA3102M	1	2	None	None
D44H8	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
D44H11	1	1	None	None
D44VH10	1	1	None	None
D45H8	1	1	None	None
D45H11	1	1	None	None
D45VH10	1	1	None	None
D4203D	1	1	None	None
DMC50201	1	1	None	None
DMMT3904W	4	1 (2 for separated)	None	None
DMMT5401	2	1 (2 for separated)	None	None
DMMT5551	4	1 (2 for separated)	None	None
DMMT5551S	4	1 (2 for separated)	None	None
DSS5540X	1	1	None	None
DXTA92	1	1	None	None
DZT2907A	1	1	None	None
DZTA42	1	1	None	None
FCX458	1	1	None	None
FCX491	1	1	None	None
FCX690B	1	1	None	None
FCX790A	1	1	None	None
FJL6920	1	1	None	None
FJP13007	1	1	None	None
FJP13009	1	1	None	None
FMMT458	1	1	None	None
FMMT491A	1	1	None	None
FMMT493A	1	1	None	None
FMMT551	1	1	None	None
FMMT558	1	1	None	None
FMMT560	1	1	None	None
FMMT591A	1	1	None	None
FMMT539	1	1	None	None
FMMT617	1	1	None	None
FMMT619	1	1	None	None
FMMT620	1	1	None	None
FMMT625	1	1	None	None
FMMT717	1	1	None	None
FMMT718	1	1	None	None
FMMT720	1	1	None	None
FMMTA42	1	1	None	None
FMMTA92	1	1	None	None
FZT489	1	1	None	None
FZT651	1	1	None	None
FZT653	1	1	None	None
FZT657	1	1	None	None
FZT717	1	1	None	None
FZT751	1	1	None	None
FZT790	1	1	None	None
FZT851	1	1	None	None
FZT855	1	1	None	None
FZT955	1	1	None	None
FZT956	1	1	None	None
HD1750FX	1	1	None	None
HFA3046	2	1 (4 for separated)	None	None
HFA3096	1	1 (6 for separated)	None	None
HFA3127BZ	1	1 (6 for separated)	None	None
HFA3127RZ	1	1 (6 for separated)	None	None
HFA3128BZ	1	1 (6 for separated)	None	None
HFA3128RZ	1	1 (5 for separated)	None	None
HN1A01FU	2	1 (2 for separated)	None	None
HN1B04FE	3	1 (3 for separated)	None	None
HN1B04FU	3	1 (3 for separated)	None	None
KN2907	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
KSA539	1	1	None	None
KSA931	1	1	None	None
KSA1013	1	1	None	None
KSB772	1	1	None	None
KSB1151	1	1	None	None
KSC815	1	1	None	None
KSC2073	1	1	None	None
KSC2331	1	1	None	None
KSC2383	1	1	None	None
KSC3503	1	1	None	None
KSC5030F	1	1	None	None
KSC5042F	1	1	None	None
KSD882	1	1	None	None
KSD1691	1	1	None	None
KSP92	1	1	None	None
KSP93	1	1	None	None
KSP94	1	1	None	None
KSP2222A	1	1	None	None
KTC9013	1	1	None	None
LM194H	4	1 (2 for separated)	None	None
LM394H	4	1 (2 for separated)	None	None
LM394N	4	1 (2 for separated)	Free	None
LM3046M	2	1 (4 for separated)	None	None
LM3046N	2	1 (4 for separated)	None	None
LM3086N	2	1 (4 for separated)	None	None
MAT01	4	1 (2 for separated)	None	None
MAT12	4	1 (2 for separated)	None	None
MAT14	1	1 (5 for separated)	None	None
MBT3904DW1	4	1 (2 for separated)	None	None
MBT3904DW2	4	1 (2 for separated)	None	None
MBT3906DW1	2	1 (2 for separated)	None	None
MBT3946DW1	3	1 (2 for separated)	None	None
MCH3105	1	1	None	None
MCH3205	1	1	None	None
MJ2955	1	1	None	None
MJ4502	1	1	None	None
MJ15003	1	1	None	None
MJ15004	1	1	None	None
MJ15015	1	1	None	None
MJ15016	1	1	None	None
MJ15022	1	1	None	None
MJ15023	1	1	None	None
MJ15024	1	1	None	None
MJ15025	1	1	None	None
MJ21193	1	1	None	None
MJ21194	1	1	None	None
MJD31	1	1	None	None
MJD31C	1	1	None	None
MJD32	1	1	None	None
MJD32C	1	1	None	None
MJD41C	1	1	None	None
MJD42C	1	1	None	None
MJD44H11	1	1	None	None
MJD45H11	1	1	None	None
MJD47	1	1	None	None
MJD50	1	1	None	None
MJD340	1	1	None	None
MJD350	1	1	None	None
MJE170	1	1	None	None
MJE171	1	1	None	None
MJE172	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MJE180	1	1	None	None
MJE181	1	1	None	None
MJE182	1	1	None	None
MJE243	1	1	None	None
MJE253	1	1	None	None
MJE340	1	1	None	None
MJE350	1	1	None	None
MJE2955T	1	1	None	None
MJE3055T	1	1	None	None
MJE5850	1	1	None	None
MJE5851	1	1	None	None
MJE5852	1	1	None	None
MJE13001	1	1	None	None
MJE13002	1	1	None	None
MJE13007	1	1	None	None
MJE15028	1	1	None	None
MJE15029	1	1	None	None
MJE15030	1	1	None	None
MJE15031	1	1	None	None
MJE15032	1	1	None	None
MJE15033	1	1	None	None
MJE15034	1	1	None	None
MJE15035	1	1	None	None
MJE18004	1	1	None	None
MJE18008	1	1	None	None
MJF44H11	1	1	None	None
MJF45H11	1	1	None	None
MJF15030	1	1	None	None
MJF15031	1	1	None	None
MJF18004	1	1	None	None
MJF18008	1	1	None	None
MJL1302A	1	1	None	None
MJL3281A	1	1	None	None
MJL4281A	1	1	None	None
MJL4302A	1	1	None	None
MJL21193	1	1	None	None
MJL21194	1	1	None	None
MJW18020	1	1	None	None
MJW21193	1	1	None	None
MJW21194	1	1	None	None
MJW21195	1	1	None	None
MJW21196	1	1	None	None
MMBT2222	1	1	None	None
MMBT2222A	1	1	None	None
MMBT2222AW	1	1	None	None
MMBT2369	1	1	None	None
MMBT2369A	1	1	None	None
MMBT2484	1	1	None	None
MMBT2907	1	1	None	None
MMBT2907A	1	1	None	None
MMBT3904	1	1	None	None
MMBT3906	1	1	None	None
MMBT4124	1	1	None	None
MMBT4401	1	1	None	None
MMBT4403	1	1	None	None
MMBT5401	1	1	None	None
MMBT5551	1	1	None	None
MMBTA05	1	1	None	None
MMBTA06	1	1	None	None
MMBTA42	1	1	None	None
MMBTA44	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MMBTA56	1	1	None	None
MMBTA92	1	1	None	None
MMBTA94	1	1	None	None
MMDT2227	3	1 (2 for separated)	None	None
MMJT9435	1	1	None	None
MMSS8050	1	1	None	None
MMSS8550	1	1	None	None
MMST3904	1	1	None	None
MMST5401	1	1	None	None
MMST5551	1	1	None	None
MPS2222	1	1	None	None
MPS2222A	1	1	None	None
MPSA06	1	1	None	None
MPSA18	1	1	None	None
MPSA42	1	1	None	None
MPSA44	1	1	None	None
MPSA56	1	1	None	None
MPSA92	1	1	None	None
NJW0281	1	1	None	None
NJW0302	1	1	None	None
NJW21193	1	1	None	None
NJW21194	1	1	None	None
NSS30101	1	1	None	None
NZT560	1	1	None	None
NZT560A	1	1	None	None
PBHV8215Z	1	1	None	None
PBHV9050T	1	1	None	None
PBHV9050Z	1	1	None	None
PBHV9115T	1	1	None	None
PBSS304NX	1	1	None	None
PBSS304PX	1	1	None	None
PBSS4120T	1	1	None	None
PBSS4160DPN	3	1 (2 for separated)	None	None
PBSS4240DPN	3	1 (2 for separated)	None	None
PBSS4350Z	1	1	None	None
PBSS5240T	1	1	None	None
PBSS8110T	1	1	None	None
PH2369	1	1	None	None
PMBT2222	1	1	None	None
PMBT2222A	1	1	None	None
PMBT2369	1	1	None	None
PMBT2907	1	1	None	None
PMBT2907A	1	1	None	None
PMBT3904	1	1	None	None
PMBT3906	1	1	None	None
PMBTA42	1	1	None	None
PMBTA44	1	1	None	None
PMBTA56	1	1	None	None
PN2222A	1	1	None	None
PN2484	1	1	None	None
PN2907	1	1	None	None
PN2907A	1	1	None	None
PUMZ1	3	1 (2 for separated)	None	None
PIMZ2	3	1 (2 for separated)	None	None
PXT2222A	1	1	None	None
PZT2222A	1	1	None	None
PZT2907A	1	1	None	None
PZT3904	1	1	None	None
PZT3906	1	1	None	None
PZTA42	1	1	None	None
PZTA92	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SBMTA06UPN	3	1 (2 for separated)	None	None
SS8050	1	1	None	None
SS8550	1	1	None	None
SS9012	1	1	None	None
SS9013	1	1	None	None
SS9014	1	1	None	None
SS9015	1	1	None	None
SS9018	1	1	None	None
ST2310FX	1	1	None	None
ST13007	1	1	None	None
ST13009	1	1	None	None
STD830CP40	2	1	None	None
STN83003	1	1	None	None
STN93003	1	1	None	None
TBC847	1	1	None	None
TIP29	1	1	None	None
TIP29A	1	1	None	None
TIP29B	1	1	None	None
TIP29C	1	1	None	None
TIP30	1	1	None	None
TIP30A	1	1	None	None
TIP30B	1	1	None	None
TIP30C	1	1	None	None
TIP31	1	1	None	None
TIP31A	1	1	None	None
TIP31B	1	1	None	None
TIP31C	1	1	None	None
TIP32	1	1	None	None
TIP32A	1	1	None	None
TIP32B	1	1	None	None
TIP32C	1	1	None	None
TIP33A	1	1	None	None
TIP33C	1	1	None	None
TIP35C	1	1	None	None
TIP36C	1	1	None	None
TIP41	1	1	None	None
TIP41A	1	1	None	None
TIP41B	1	1	None	None
TIP41C	1	1	None	None
TIP42	1	1	None	None
TIP42A	1	1	None	None
TIP42B	1	1	None	None
TIP42C	1	1	None	None
TIP47	1	1	None	None
TIP48	1	1	None	None
TIP49	1	1	None	None
TIP50	1	1	None	None
TIP2955	1	1	None	None
TIP3055	1	1	None	None
TMBT3904	1	1	None	None
TTA0002	1	1	None	None
TTA006B	1	1	None	None
TTC0002	1	1	None	None
TTC011B	1	1	None	None
ZTX450	1	1	None	None
ZTX451	1	1	None	None
ZTX453	1	1	None	None
ZTX510	1	1	None	None
ZTX550	1	1	None	None
ZTX551	1	1	None	None
ZTX651	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
ZTX652	1	1	None	None
ZTX653	1	1	None	None
ZTX749	1	1	None	None
ZTX752	1	1	None	None
ZTX753	1	1	None	None
ZTX851	1	1	None	None
ZTX853	1	1	None	None
ZXTN2010G	1	1	None	None
ZXTN2011G	1	1	None	None
ZXTN2011Z	1	1	None	None
ZXTN2031F	1	1	None	None
ZXTN4004K	1	1	None	None
ZXTN25020DFH	1	1	None	None
ZXTN25050DFH	1	1	None	None
ZXTN25100DFH	1	1	None	None
ZXTP2012G	1	1	None	None
ZXTP2012Z	1	1	None	None
ZXTP5401G	1	1	None	None
ZXTP25020CFH	1	1	None	None

2.32. Darlington Transistor Library

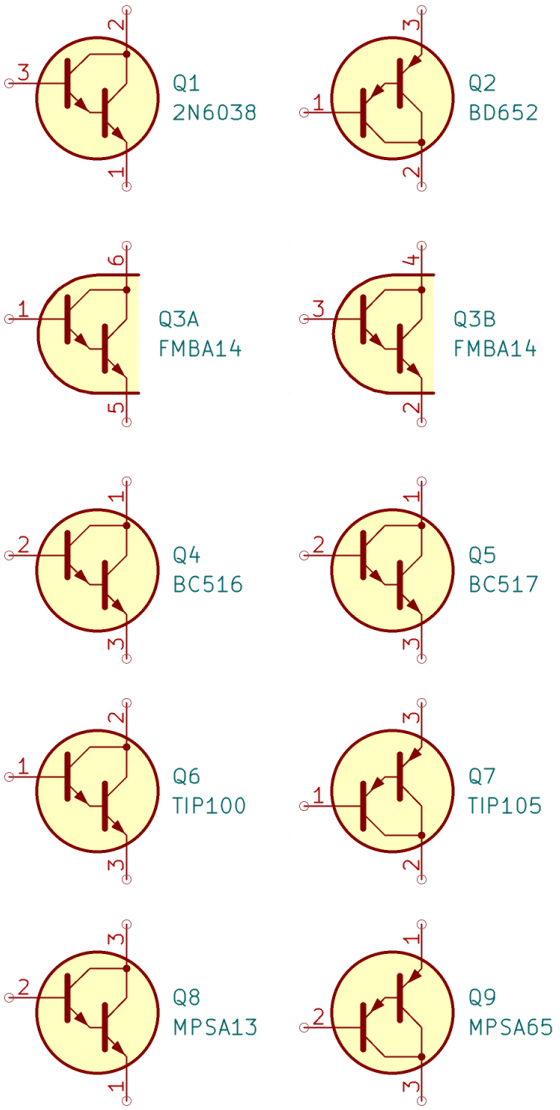
This library contains Bipolar transistors in Darlington configuration.

PNP Darlington transistors by default have emitter on the top of the symbol and collector at the bottom (as opposed to NPN transistors).

Dual Darlington transistors are available only as a disaggregated symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each transistor type has a separate specific symbol.

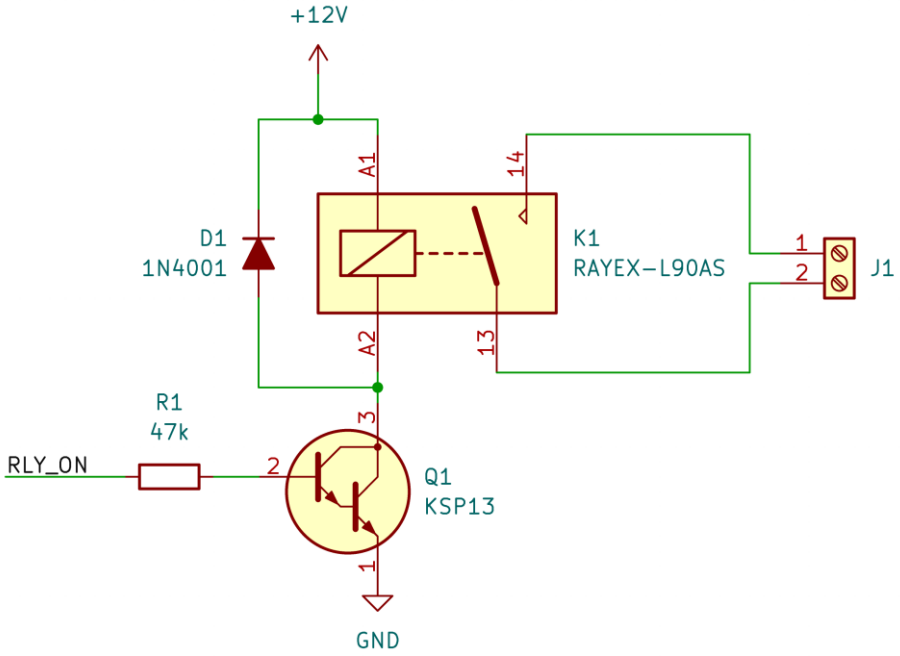
Filename: **Transistor_BJT_Darlington_AKL**	
Total symbols:	**216**
Generic symbols:	**16**
Specific symbols:	**200**



Schematic examples

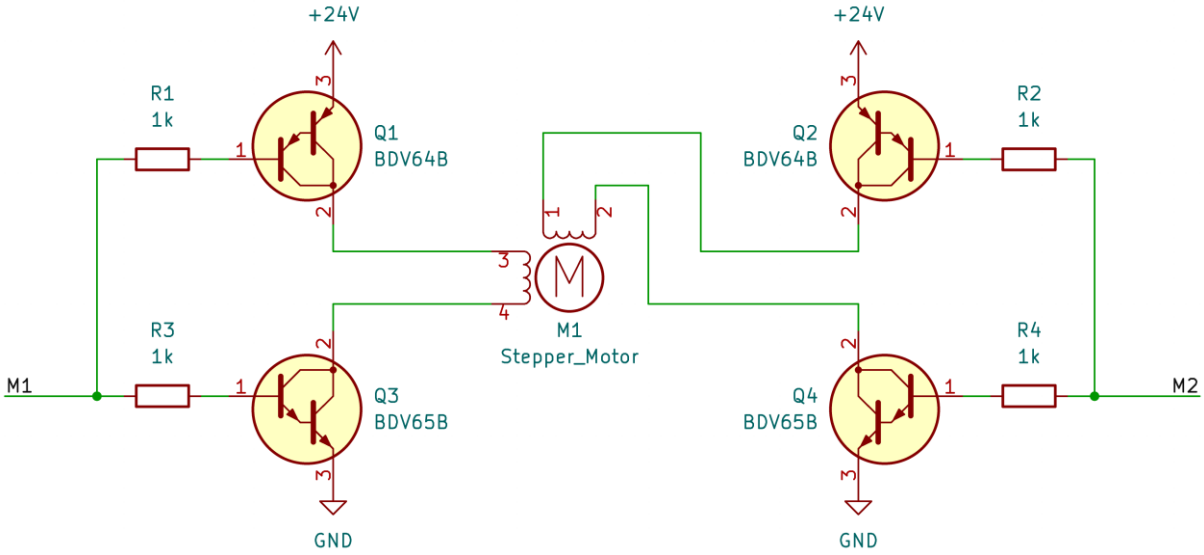
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1

Relay driver using KSP13 Darlington transistor.



Example 2

Stepper motor driver based on BDV64B and BDV65B bipolar Darlington transistors.

Table 2.27. List of all devices included in Transistor_BJT_Darlington_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2N6034	1	1	None	None
2N6035	1	1	None	None
2N6036	1	1	None	None
2N6038	1	1	None	None
2N6039	1	1	None	None
2N6040	1	1	None	None
2N6042	1	1	None	None
2N6043	1	1	None	None
2N6045	1	1	None	None
2N6058	1	1	None	None
2N6059	1	1	None	None
2N6284	1	1	None	None
2N6286	1	1	None	None
2N6287	1	1	None	None
2N6387	1	1	None	None
2N6388	1	1	None	None
2N6667	1	1	None	None
2N6668	1	1	None	None
2SB1257	1	1	None	None
2SB1383	1	1	None	None
2SB1647	1	1	None	None
2SD1413	1	1	None	None
2SD2014	1	1	None	None
2SD2083	1	1	None	None
2SD2560	1	1	None	None
BC516	1	1	None	None
BC517	1	1	None	None
BCV26	1	1	None	None
BCV27	1	1	None	None
BCV28	1	1	None	None
BCV29	1	1	None	None
BCV46	1	1	None	None
BCV47	1	1	None	None
BCV48	1	1	None	None
BCV49	1	1	None	None
BD645	1	1	None	None
BD646	1	1	None	None
BD647	1	1	None	None
BD648	1	1	None	None
BD649	1	1	None	None
BD650	1	1	None	None
BD651	1	1	None	None
BD652	1	1	None	None
BD675	1	1	None	None
BD676	1	1	None	None
BD677	1	1	None	None
BD678	1	1	None	None
BD679	1	1	None	None
BD680	1	1	None	None
BD681	1	1	None	None
BD682	1	1	None	None
BDV64B	1	1	None	None
BDV65B	1	1	None	None
BDV66B	1	1	None	None
BDV67B	1	1	None	None
BDW42	1	1	None	None
BDW46	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BDW47	1	1	None	None
BDW93C	1	1	None	None
BDW93CFP	1	1	None	None
BDW94B	1	1	None	None
BDW94C	1	1	None	None
BDW94CFP	1	1	None	None
BDX33B	1	1	None	None
BDX33C	1	1	None	None
BDX34B	1	1	None	None
BDX34C	1	1	None	None
BDX53B	1	1	None	None
BDX53C	1	1	None	None
BDX54B	1	1	None	None
BDX54C	1	1	None	None
BSP50	1	1	None	None
BSP51	1	1	None	None
BSP52	1	1	None	None
BSP60	1	1	None	None
BSP61	1	1	None	None
BSP62	1	1	None	None
BST50	1	1	None	None
BST51	1	1	None	None
BST52	1	1	None	None
BST60	1	1	None	None
BST61	1	1	None	None
BST62	1	1	None	None
BU806	1	1	None	None
BU807	1	1	None	None
BU931	1	1	None	None
BU931P	1	1	None	None
BU931T	1	1	None	None
BUB323Z	1	1	None	None
BUX87	1	1	None	None
FJB102	1	1	None	None
FMBA14	1	2	None	None
FMMT634	1	1	None	None
FZT705	1	1	None	None
KSD560	1	1	None	None
KSD800	1	1	None	None
KSD801	1	1	None	None
KSD802	1	1	None	None
KSD803	1	1	None	None
KSD1692	1	1	None	None
KSH122	1	1	None	None
KSH122I	1	1	None	None
KSP13	1	1	None	None
KSP14	1	1	None	None
MJ2500	1	1	None	None
MJ2501	1	1	None	None
MJ3000	1	1	None	None
MJ3001	1	1	None	None
MJ11012	1	1	None	None
MJ11015	1	1	None	None
MJ11016	1	1	None	None
MJ11021	1	1	None	None
MJ11022	1	1	None	None
MJ11028	1	1	None	None
MJ11029	1	1	None	None
MJ11030	1	1	None	None
MJ11032	1	1	None	None
MJ11033	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MJD44E3	1	1	None	None
MJD112	1	1	None	None
MJD117	1	1	None	None
MJD200	1	1	None	None
MJD210	1	1	None	None
MJE270	1	1	None	None
MJE271	1	1	None	None
MJE700	1	1	None	None
MJE702	1	1	None	None
MJE703	1	1	None	None
MJE800	1	1	None	None
MJE802	1	1	None	None
MJE803	1	1	None	None
MJE5740	1	1	None	None
MJE5742	1	1	None	None
MJF122	1	1	None	None
MJF127	1	1	None	None
MJF6388	1	1	None	None
MJF6668	1	1	None	None
MJH6284	1	1	None	None
MJH6287	1	1	None	None
MJH11017	1	1	None	None
MJH11018	1	1	None	None
MJH11019	1	1	None	None
MJH11020	1	1	None	None
MJH11021	1	1	None	None
MJH11022	1	1	None	None
MMBT6427	1	1	None	None
MMBTA13	1	1	None	None
MMBTA14	1	1	None	None
MMBTA28	1	1	None	None
MMBTA64	1	1	None	None
MMBTA65	1	1	None	None
MPSA13	1	1	None	None
MPSA14	1	1	None	None
MPSA29	1	1	None	None
MPSA64	1	1	None	None
MPSA65	1	1	None	None
PMBTA13	1	1	None	None
PMBTA14	1	1	None	None
PMBTA64	1	1	None	None
PZTA14	1	1	None	None
PZTA28	1	1	None	None
PZTA29	1	1	None	None
PZTA64	1	1	None	None
PZTA65	1	1	None	None
SGSD100	1	1	None	None
SGSD200	1	1	None	None
TIP100	1	1	None	None
TIP101	1	1	None	None
TIP102	1	1	None	None
TIP105	1	1	None	None
TIP106	1	1	None	None
TIP107	1	1	None	None
TIP110	1	1	None	None
TIP111	1	1	None	None
TIP112	1	1	None	None
TIP115	1	1	None	None
TIP116	1	1	None	None
TIP117	1	1	None	None
TIP120	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TIP121	1	1	None	None
TIP122	1	1	None	None
TIP125	1	1	None	None
TIP126	1	1	None	None
TIP127	1	1	None	None
TIP140	1	1	None	None
TIP140F	1	1	None	None
TIP141	1	1	None	None
TIP142	1	1	None	None
TIP142F	1	1	None	None
TIP142T	1	1	None	None
TIP145	1	1	None	None
TIP145F	1	1	None	None
TIP146	1	1	None	None
TIP146F	1	1	None	None
TIP147	1	1	None	None
TIP147F	1	1	None	None
TIP147T	1	1	None	None
ZTX604	1	1	None	None
ZTX605	1	1	None	None

2.33. Pre-Biased Transistor Library

This library contains bipolar transistors with integrated resistor bias networks (BRT – Bias Resistor Transistor), also known as Digital Transistors.

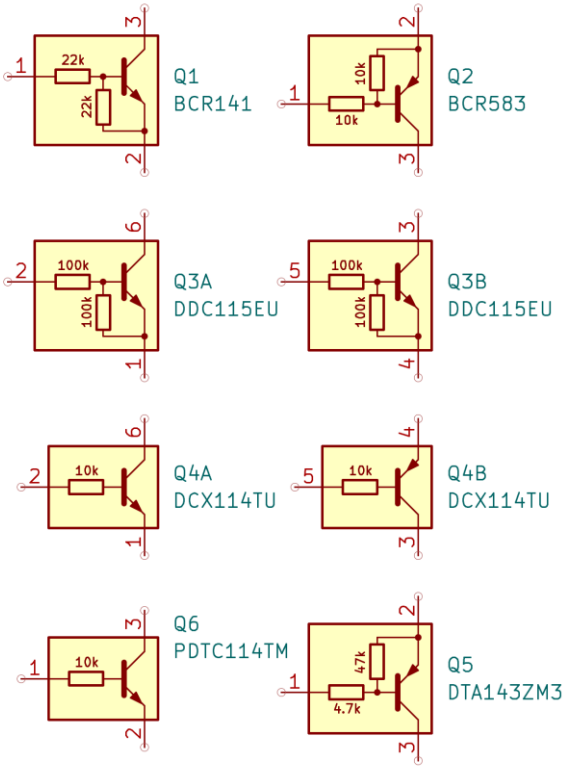
Pre-biased transistor symbols have the internal resistor bias network included in the symbol, with resistor values indicated.

PNP digital transistors by default have emitter on the top of the symbol and collector at the bottom (as opposed to NPN transistors).

Dual digital transistors have only 1 symbol variant – disaggregated multi-unit symbol.

Each available orderable part number with different electrical characteristics, bias configuration, pinout and package for each transistor type has a separate specific symbol.

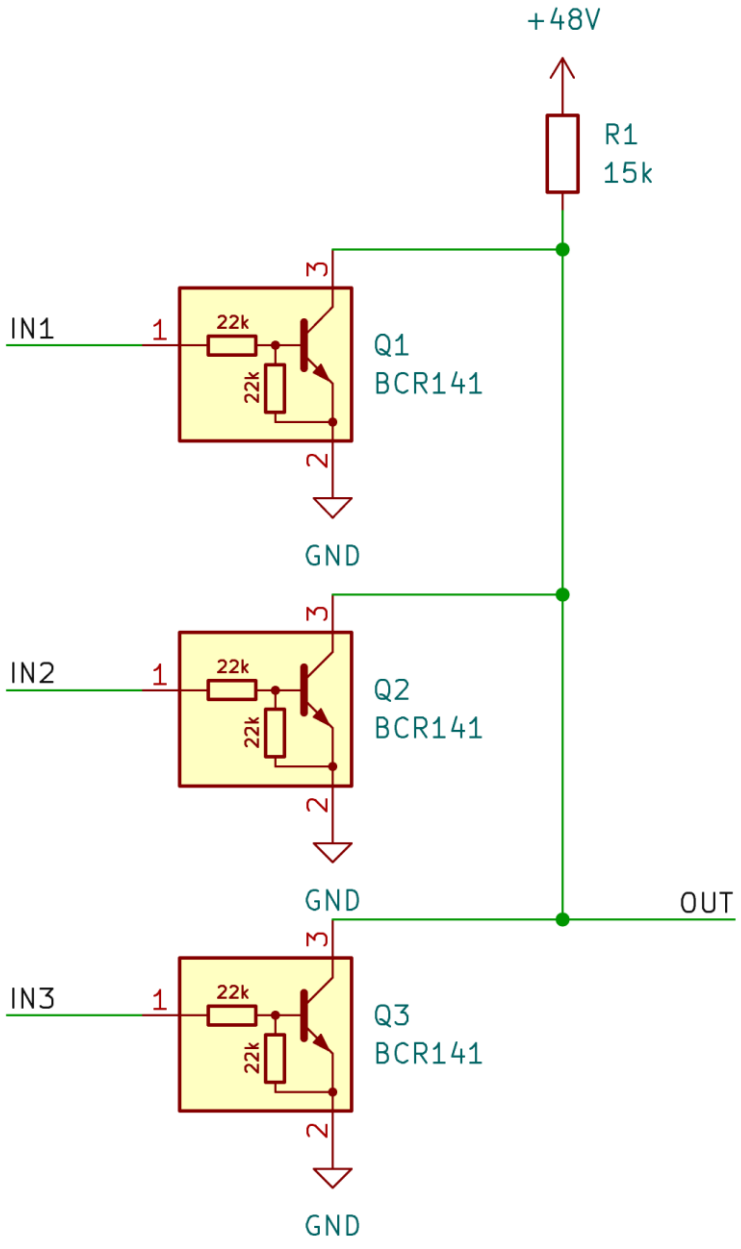
Filename: **Transistor_BJT_Pre-Biased_AKL**	
Total symbols:	**539**
Generic symbols:	**7**
Specific symbols:	**532**



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
Triple-input NOR gate and voltage level translator based on three BCR141 bias resistor transistors.

Table 2.28. List of all devices included in Transistor_BJT_Pre-Biased_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
ADTC144EUAQ	1	1	None	US-style resistors
BCR08PN	1	2	None	US-style resistors
BCR10PN	1	2	None	US-style resistors
BCR22PN	1	2	None	US-style resistors
BCR35PN	1	2	None	US-style resistors
BCR108	1	1	None	US-style resistors
BCR108S	1	2	None	US-style resistors
BCR108W	1	1	None	US-style resistors
BCR116	1	1	None	US-style resistors
BCR116S	1	2	None	US-style resistors
BCR116W	1	1	None	US-style resistors
BCR129	1	1	None	US-style resistors
BCR129S	1	2	None	US-style resistors
BCR129W	1	1	None	US-style resistors
BCR133	1	1	None	US-style resistors
BCR133S	1	2	None	US-style resistors
BCR133W	1	1	None	US-style resistors
BCR135	1	1	None	US-style resistors
BCR135S	1	2	None	US-style resistors
BCR135W	1	1	None	US-style resistors
BCR141	1	1	None	US-style resistors
BCR141S	1	2	None	US-style resistors
BCR141W	1	1	None	US-style resistors
BCR148	1	1	None	US-style resistors
BCR148S	1	2	None	US-style resistors
BCR148W	1	1	None	US-style resistors
BCR158	2	1	None	US-style resistors
BCR162	1	1	None	US-style resistors
BCR166	2	1	None	US-style resistors
BCR183	1	1	None	US-style resistors
BCR183S	1	2	None	US-style resistors
BCR183U	1	2	None	US-style resistors
BCR183W	1	1	None	US-style resistors
BCR185	1	1	None	US-style resistors
BCR185S	1	2	None	US-style resistors
BCR185W	1	1	None	US-style resistors
BCR191	2	1	None	US-style resistors
BCR192	2	1	None	US-style resistors
BCR196	2	1	None	US-style resistors
BCR198	1	1	None	US-style resistors
BCR198S	1	2	None	US-style resistors
BCR198W	1	1	None	US-style resistors
BCR503	1	1	None	US-style resistors
BCR505	1	1	None	US-style resistors
BCR521	1	1	None	US-style resistors
BCR523	1	1	None	US-style resistors
BCR523U	1	2	None	US-style resistors
BCR533	1	1	None	US-style resistors
BCR553	1	1	None	US-style resistors
BCR555	1	1	None	US-style resistors
BCR562	1	1	None	US-style resistors
BCR583	1	1	None	US-style resistors
DCX114	3	2	None	US-style resistors
DCX115	1	2	None	US-style resistors
DCX123	1	2	None	US-style resistors
DCX124	1	2	None	US-style resistors
DCX143	3	2	None	US-style resistors

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DCX144	1	2	None	US-style resistors
DDC113	1	2	None	US-style resistors
DDC114	3	2	None	US-style resistors
DDC115	1	2	None	US-style resistors
DDC123	1	2	None	US-style resistors
DDC124	1	2	None	US-style resistors
DDC143	2	2	None	US-style resistors
DDC144	1	2	None	US-style resistors
DDTA114	1	1	None	US-style resistors
DDTA115	1	1	None	US-style resistors
DDTA123	1	1	None	US-style resistors
DDTA124	1	1	None	US-style resistors
DDTA143	1	1	None	US-style resistors
DDTA144	1	1	None	US-style resistors
DDTC113	1	1	None	US-style resistors
DDTC114	2	1	None	US-style resistors
DDTC115	2	1	None	US-style resistors
DDTC123	2	1	None	US-style resistors
DDTC124	2	1	None	US-style resistors
DDTC125	1	1	None	US-style resistors
DDTC143	2	1	None	US-style resistors
DDTC144	2	1	None	US-style resistors
DTA114	6	1	None	US-style resistors
DTA115	2	1	None	US-style resistors
DTA123	4	1	None	US-style resistors
DTA124	4	1	None	US-style resistors
DTA143	6	1	None	US-style resistors
DTA144	2	1	None	US-style resistors
DTC114	8	1	None	US-style resistors
DTC123	4	1	None	US-style resistors
DTC124	4	1	None	US-style resistors
DTC143	6	1	None	US-style resistors
DTC144	4	1	None	US-style resistors
MBTRA101SS	1	1	None	US-style resistors
MBTRA102SS	1	1	None	US-style resistors
MBTRA103SS	1	1	None	US-style resistors
MBTRA104SS	1	1	None	US-style resistors
MBTRA105SS	1	1	None	US-style resistors
MBTRA106SS	1	1	None	US-style resistors
MBTRA221SS	1	1	None	US-style resistors
MBTRA222SS	1	1	None	US-style resistors
MBTRA223SS	1	1	None	US-style resistors
MBTRA224SS	1	1	None	US-style resistors
MBTRA225SS	1	1	None	US-style resistors
MBTRA226SS	1	1	None	US-style resistors
MBTRC101SS	1	1	None	US-style resistors
MBTRC102SS	1	1	None	US-style resistors
MBTRC103SS	1	1	None	US-style resistors
MBTRC104SS	1	1	None	US-style resistors
MBTRC105SS	1	1	None	US-style resistors
MBTRC106SS	1	1	None	US-style resistors
MBTRC110SS	1	1	None	US-style resistors
MBTRC111SS	1	1	None	US-style resistors
MBTRC112SS	1	1	None	US-style resistors
MBTRC113SS	1	1	None	US-style resistors
MBTRC114SS	1	1	None	US-style resistors
MBTRC116SS	1	1	None	US-style resistors
MBTRC117SS	1	1	None	US-style resistors
MBTRC118SS	1	1	None	US-style resistors
MBTRC119SS	1	1	None	US-style resistors
MBTRC129SS	1	1	None	US-style resistors

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MBTRC121SS	1	1	None	US-style resistors
MMDT5110W	1	1	None	US-style resistors
MMDT5111W	1	1	None	US-style resistors
MMDT5112W	1	1	None	US-style resistors
MMDT5113W	1	1	None	US-style resistors
MMDT5114W	1	1	None	US-style resistors
MMDT5115W	1	1	None	US-style resistors
MMUN2111L	1	1	None	US-style resistors
MMUN2112L	1	1	None	US-style resistors
MMUN2114L	1	1	None	US-style resistors
MMUN2115L	1	1	None	US-style resistors
MMUN2116L	1	1	None	US-style resistors
MMUN2131L	1	1	None	US-style resistors
MMUN2132L	1	1	None	US-style resistors
MMUN2133L	1	1	None	US-style resistors
MMUN2134L	1	1	None	US-style resistors
MMUN2136L	1	1	None	US-style resistors
MMUN2137L	1	1	None	US-style resistors
MMUN2138L	1	1	None	US-style resistors
MMUN2211L	1	1	None	US-style resistors
MMUN2212L	1	1	None	US-style resistors
MMUN2213L	1	1	None	US-style resistors
MMUN2214L	1	1	None	US-style resistors
MMUN2215L	1	1	None	US-style resistors
MMUN2216L	1	1	None	US-style resistors
MMUN2231L	1	1	None	US-style resistors
MMUN2232L	1	1	None	US-style resistors
MMUN2233L	1	1	None	US-style resistors
MMUN2234L	1	1	None	US-style resistors
MMUN2235L	1	1	None	US-style resistors
MMUN2237L	1	1	None	US-style resistors
MUN2111	1	1	None	US-style resistors
MUN2112	1	1	None	US-style resistors
MUN2114	1	1	None	US-style resistors
MUN2115	1	1	None	US-style resistors
MUN2116	1	1	None	US-style resistors
MUN2131	1	1	None	US-style resistors
MUN2132	1	1	None	US-style resistors
MUN2133	1	1	None	US-style resistors
MUN2134	1	1	None	US-style resistors
MUN2136	1	1	None	US-style resistors
MUN2137	1	1	None	US-style resistors
MUN2138	1	1	None	US-style resistors
MUN2211	1	1	None	US-style resistors
MUN2212	1	1	None	US-style resistors
MUN2213	1	1	None	US-style resistors
MUN2214	1	1	None	US-style resistors
MUN2215	1	1	None	US-style resistors
MUN2216	1	1	None	US-style resistors
MUN2231	1	1	None	US-style resistors
MUN2232	1	1	None	US-style resistors
MUN2233	1	1	None	US-style resistors
MUN2234	1	1	None	US-style resistors
MUN2235	1	1	None	US-style resistors
MUN2237	1	1	None	US-style resistors
MMUN5111	1	1	None	US-style resistors
MMUN5112	1	1	None	US-style resistors
MMUN5114	1	1	None	US-style resistors
MMUN5115	1	1	None	US-style resistors
MMUN5116	1	1	None	US-style resistors
MMUN5131	1	1	None	US-style resistors

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MMUN5132	1	1	None	US-style resistors
MMUN5133	1	1	None	US-style resistors
MMUN5134	1	1	None	US-style resistors
MMUN5136	1	1	None	US-style resistors
MMUN5137	1	1	None	US-style resistors
MMUN5138	1	1	None	US-style resistors
MMUN5211	1	1	None	US-style resistors
MMUN5212	1	1	None	US-style resistors
MMUN5213	1	1	None	US-style resistors
MMUN5214	1	1	None	US-style resistors
MMUN5215	1	1	None	US-style resistors
MMUN5216	1	1	None	US-style resistors
MMUN5231	1	1	None	US-style resistors
MMUN5232	1	1	None	US-style resistors
MMUN5233	1	1	None	US-style resistors
MMUN5234	1	1	None	US-style resistors
MMUN5235	1	1	None	US-style resistors
MMUN5237	1	1	None	US-style resistors
MUN5111DW1	1	2	None	US-style resistors
MUN5112DW1	1	2	None	US-style resistors
MUN5113DW1	1	2	None	US-style resistors
MUN5114DW1	1	2	None	US-style resistors
MUN5115DW1	1	2	None	US-style resistors
MUN5131DW1	1	2	None	US-style resistors
MUN5133DW1	1	2	None	US-style resistors
MUN5135DW1	1	2	None	US-style resistors
MUN5232DW1	1	2	None	US-style resistors
MUN5235DW1	1	2	None	US-style resistors
MUN5311DW1	1	2	None	US-style resistors
MUN5312DW1	1	2	None	US-style resistors
MUN5313DW1	1	2	None	US-style resistors
MUN5314DW1	1	2	None	US-style resistors
MUN5335DW1	1	2	None	US-style resistors
NSBA114EDP6	1	2	None	US-style resistors
NSBA114EDXV6	1	2	None	US-style resistors
NSBA114EF3	1	1	None	US-style resistors
NSBA114TDP6	1	2	None	US-style resistors
NSBA114TDXV6	1	2	None	US-style resistors
NSBA114TF3	1	1	None	US-style resistors
NSBA114YDP6	1	2	None	US-style resistors
NSBA114YDXV6	1	2	None	US-style resistors
NSBA114YF3	1	1	None	US-style resistors
NSBA115EF3	1	1	None	US-style resistors
NSBA123EDXV6	1	2	None	US-style resistors
NSBA123EF3	1	1	None	US-style resistors
NSBA123JDP6	1	2	None	US-style resistors
NSBA123JDXV6	1	2	None	US-style resistors
NSBA123TF3	1	1	None	US-style resistors
NSBA124EDP6	1	2	None	US-style resistors
NSBA124EDXV6	1	2	None	US-style resistors
NSBA124EF3	1	1	None	US-style resistors
NSBA124XF3	1	1	None	US-style resistors
NSBA143EF3	1	1	None	US-style resistors
NSBA143TF3	1	1	None	US-style resistors
NSBA143ZDP6	1	2	None	US-style resistors
NSBA143ZDXV6	1	2	None	US-style resistors
NSBA143ZF3	1	1	None	US-style resistors
NSBA144EDP6	1	2	None	US-style resistors
NSBA144EDXV6	1	2	None	US-style resistors
NSBA144WF3	1	1	None	US-style resistors
NSBC114EF3	1	1	None	US-style resistors

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
NSBC114EPDP6	1	2	None	US-style resistors
NSBC114EPDXV6	1	2	None	US-style resistors
NSBC114TF3	1	1	None	US-style resistors
NSBC114YF3	1	1	None	US-style resistors
NSBC114YPDP6	1	1	None	US-style resistors
NSBC114YPDXV6	1	1	None	US-style resistors
NSBC123EF3	1	1	None	US-style resistors
NSBC123JDP6	1	2	None	US-style resistors
NSBC123JDXV6	1	2	None	US-style resistors
NSBC123JPDP6	1	2	None	US-style resistors
NSBC123JPDXV6	1	2	None	US-style resistors
NSBC124EF3	1	1	None	US-style resistors
NSBC124EPDP6	1	2	None	US-style resistors
NSBC124EPDXV6	1	2	None	US-style resistors
NSBC124XF3	1	1	None	US-style resistors
NSBC143EDP6	1	2	None	US-style resistors
NSBC143EDXV6	1	2	None	US-style resistors
NSBC143TF3	1	1	None	US-style resistors
NSBC143ZF3	1	1	None	US-style resistors
NSBC144EF3	1	1	None	US-style resistors
NSBC144EPDP6	1	2	None	US-style resistors
NSBC144EPDXV6	1	2	None	US-style resistors
NSBC144WF3	1	1	None	US-style resistors
PDTA114	4	1	None	US-style resistors
PDTA123	10	1	None	US-style resistors
PDTA124	4	1	None	US-style resistors
PDTA143	8	1	None	US-style resistors
PDTC114	14	1	None	US-style resistors
PDTC115	6	1	None	US-style resistors
PDTC123	16	1	None	US-style resistors
PDTC124	4	1	None	US-style resistors
PDTC143	12	1	None	US-style resistors
PDTC144	4	1	None	US-style resistors
PDTD123	3	1	None	US-style resistors
PEMB1	1	2	None	US-style resistors
PEMB2	1	2	None	US-style resistors
PEMB3	1	2	None	US-style resistors
PEMB4	1	2	None	US-style resistors
PEMB9	1	2	None	US-style resistors
PEMB10	1	2	None	US-style resistors
PEMB11	1	2	None	US-style resistors
PEMB13	1	2	None	US-style resistors
PEMB15	1	2	None	US-style resistors
PEMB16	1	2	None	US-style resistors
PEMB20	1	2	None	US-style resistors
PEMB24	1	2	None	US-style resistors
PEMB30	1	2	None	US-style resistors
PEMD2	1	2	None	US-style resistors
PEMD3	1	2	None	US-style resistors
PEMD4	1	2	None	US-style resistors
PEMD6	1	2	None	US-style resistors
PEMD9	1	2	None	US-style resistors
PEMD10	1	2	None	US-style resistors
PEMD12	1	2	None	US-style resistors
PEMD13	1	2	None	US-style resistors
PEMD14	1	2	None	US-style resistors
PEMD15	1	2	None	US-style resistors
PEMD16	1	2	None	US-style resistors
PEMD17	1	2	None	US-style resistors
PEMD18	1	2	None	US-style resistors
PEMD20	1	2	None	US-style resistors

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
PEMD24	1	2	None	US-style resistors
PEMD30	1	2	None	US-style resistors
PEMD48	1	2	None	US-style resistors
PEMH1	1	2	None	US-style resistors
PEMH2	1	2	None	US-style resistors
PEMH4	1	2	None	US-style resistors
PEMH7	1	2	None	US-style resistors
PEMH9	1	2	None	US-style resistors
PEMH10	1	2	None	US-style resistors
PEMH11	1	2	None	US-style resistors
PEMH13	1	2	None	US-style resistors
PEMH14	1	2	None	US-style resistors
PEMH15	1	2	None	US-style resistors
PEMH16	1	2	None	US-style resistors
PEMH17	1	2	None	US-style resistors
PEMH18	1	2	None	US-style resistors
PEMH19	1	2	None	US-style resistors
PEMH20	1	2	None	US-style resistors
PEMH24	1	2	None	US-style resistors
PIMD2	1	2	None	US-style resistors
PIMD3	1	2	None	US-style resistors
PUMB1	1	2	None	US-style resistors
PUMB2	1	2	None	US-style resistors
PUMB3	1	2	None	US-style resistors
PUMB4	1	2	None	US-style resistors
PUMB9	1	2	None	US-style resistors
PUMB10	1	2	None	US-style resistors
PUMB11	1	2	None	US-style resistors
PUMB13	1	2	None	US-style resistors
PUMB15	1	2	None	US-style resistors
PUMB16	1	2	None	US-style resistors
PUMB20	1	2	None	US-style resistors
PUMB24	1	2	None	US-style resistors
PUMB30	1	2	None	US-style resistors
PUMD2	1	2	None	US-style resistors
PUMD3	1	2	None	US-style resistors
PUMD4	1	2	None	US-style resistors
PUMD6	1	2	None	US-style resistors
PUMD9	1	2	None	US-style resistors
PUMD10	1	2	None	US-style resistors
PUMD12	1	2	None	US-style resistors
PUMD13	1	2	None	US-style resistors
PUMD14	1	2	None	US-style resistors
PUMD15	1	2	None	US-style resistors
PUMD16	1	2	None	US-style resistors
PUMD17	1	2	None	US-style resistors
PUMD18	1	2	None	US-style resistors
PUMD20	1	2	None	US-style resistors
PUMD24	1	2	None	US-style resistors
PUMD30	1	2	None	US-style resistors
PUMD48	1	2	None	US-style resistors
PUMH1	1	2	None	US-style resistors
PUMH2	1	2	None	US-style resistors
PUMH4	1	2	None	US-style resistors
PUMH7	1	2	None	US-style resistors
PUMH9	1	2	None	US-style resistors
PUMH10	1	2	None	US-style resistors
PUMH11	1	2	None	US-style resistors
PUMH13	1	2	None	US-style resistors
PUMH14	1	2	None	US-style resistors
PUMH15	1	2	None	US-style resistors

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
PUMH16	1	2	None	US-style resistors
PUMH17	1	2	None	US-style resistors
PUMH18	1	2	None	US-style resistors
PUMH19	1	2	None	US-style resistors
PUMH20	1	2	None	US-style resistors
PUMH24	1	2	None	US-style resistors
RN1401	1	1	None	US-style resistors
RN1402	1	1	None	US-style resistors
RN1403	1	1	None	US-style resistors
RN1404	1	1	None	US-style resistors
RN1405	1	1	None	US-style resistors
RN1406	1	1	None	US-style resistors
RN1410	1	1	None	US-style resistors
RN1411	1	1	None	US-style resistors
RN1421	1	1	None	US-style resistors
RN1422	1	1	None	US-style resistors
RN1423	1	1	None	US-style resistors
RN1424	1	1	None	US-style resistors
RN1425	1	1	None	US-style resistors
RN1426	1	1	None	US-style resistors
RN1427	1	1	None	US-style resistors
RN1601	1	2	None	US-style resistors
RN1602	1	2	None	US-style resistors
RN1603	1	2	None	US-style resistors
RN1604	1	2	None	US-style resistors
RN1605	1	2	None	US-style resistors
RN1606	1	2	None	US-style resistors
RN2410	1	1	None	US-style resistors
RN2411	1	1	None	US-style resistors
TDTA114E	1	1	None	US-style resistors
TDTA123J	1	1	None	US-style resistors
TDTA143E	1	1	None	US-style resistors
TDTA144E	1	1	None	US-style resistors
TDTC114	2	1	None	US-style resistors
TDTC123J	1	1	None	US-style resistors
TDTC124E	1	1	None	US-style resistors
TDTC143E	1	1	None	US-style resistors
TDTC144E	1	1	None	US-style resistors

2.34. IGBT Transistor Library

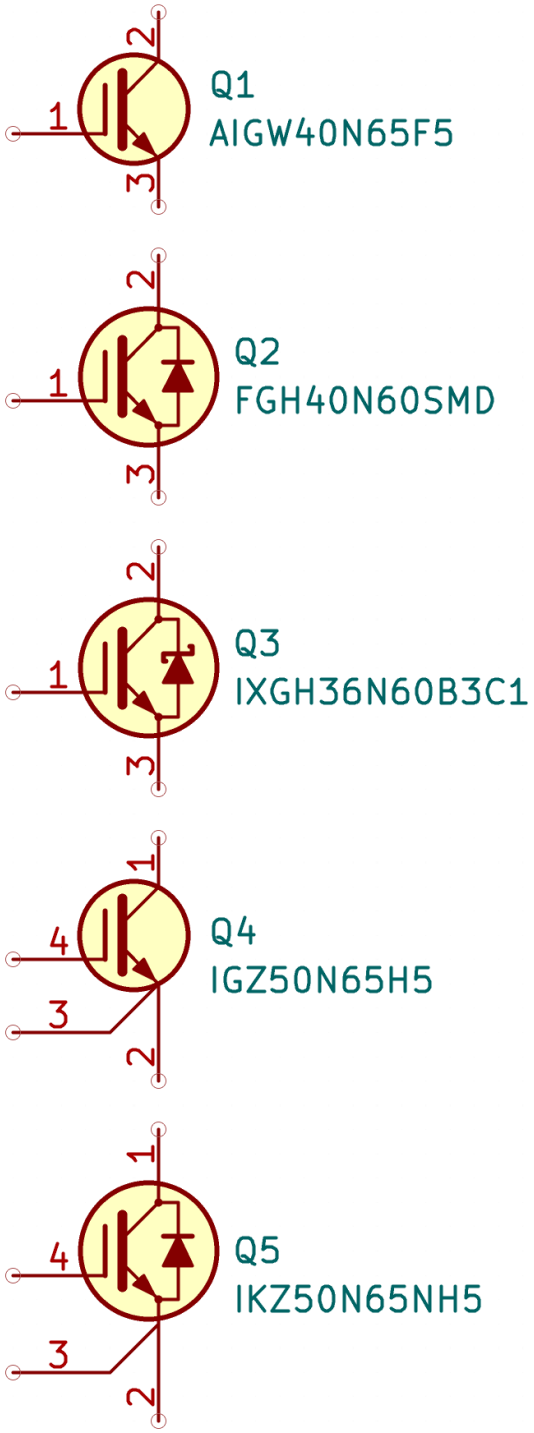
This library contains Insulated Gate Bipolar Transistors (IGBTs). These devices combine the robustness and low loss for high voltage switching of a BJT and ease of use of a MOSFET.

Transistors with internal Emitter to Collector diode or SiC Schottky diode have it clearly indicated on the symbol.

IGBTs with kelvin connection (with 2 emitter pins – one meant to be a reference for gate voltage) have the sense pin aligned with the gate pin.

Each available orderable part number with different electrical characteristics, pinout and package for each transistor type has a separate specific symbol.

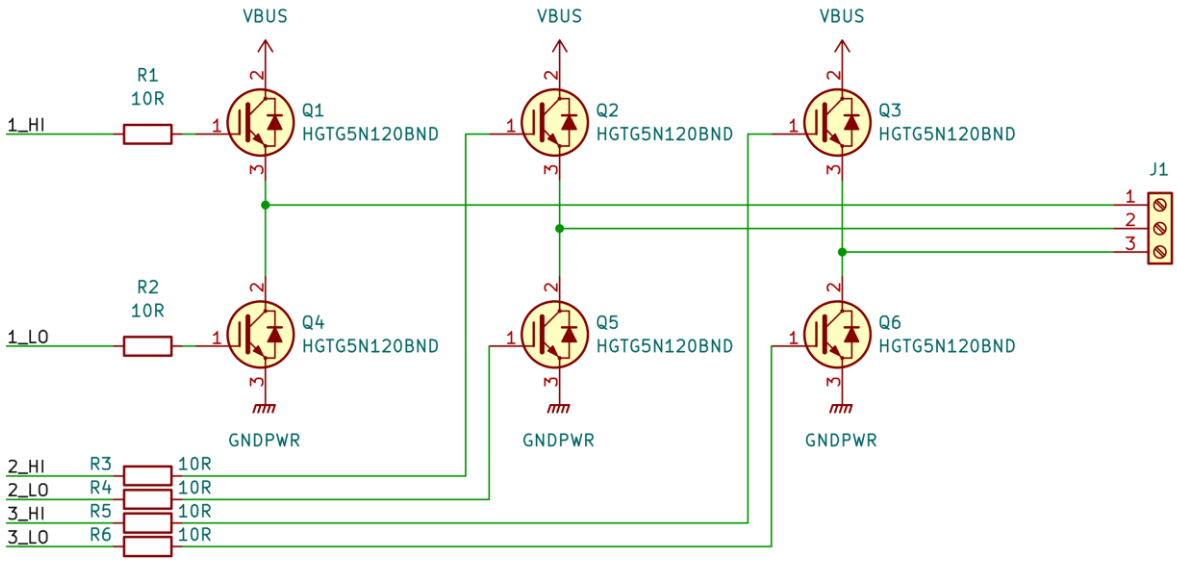
Filename: **Transistor_IGBT_AKL**	
Total symbols:	**655**
Generic symbols:	**5**
Specific symbols:	**650**



Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
Motor driver based on 6 HGTG5N120BND IGBT Transistors.

Table 2.29. List of all devices included in Transistor_IGBT_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AFGB40T65SQDN	1	1	None	None
AIGW40N65F5	1	1	None	None
AIGW40N65H5	1	1	None	None
AIGW50N65F5	1	1	None	None
AIGW50N65H5	1	1	None	None
AIHD04N60R	1	1	None	None
AIHD04N60RF	1	1	None	None
AIHD06N60R	1	1	None	None
AIHG10N60R	1	1	None	None
AIHD10N60RF	1	1	None	None
AIHD15N60R	1	1	None	None
AIHD15N60RF	1	1	None	None
AIKB20N60CT	1	1	None	None
AIKP20N60CT	1	1	None	None
AIKQ100N60CT	1	1	None	None
AIKQ120N60CT	1	1	None	None
AIKW20N60CT	1	1	None	None
AIKW30N60CT	1	1	None	None
AIKW40N65DF5	1	1	None	None
AIKW40N65DH5	1	1	None	None
AIKW50N60CT	1	1	None	None
AIKW50N65DF5	1	1	None	None
AIKW50N65DH5	1	1	None	None
AIKW75N60CT	1	1	None	None
AOB5B65M1	1	1	None	None
AOB10B65M1	1	1	None	None
AOB15B65M1	1	1	None	None
AOB20B65M1	1	1	None	None
AOD5B60D	1	1	None	None
AOD5B65M1	1	1	None	None
AOD5B65N1	1	1	None	None
AOD6M60M1	1	1	None	None
AOD7B65M3	1	1	None	None
AOK20B60D1	1	1	None	None
AOK20B65M1	1	1	None	None
AOK20B65M2	1	1	None	None
AOK20B120D1	1	1	None	None
AOK20B120E1	1	1	None	None
AOK20B120E2	1	1	None	None
AOK20B135D1	1	1	None	None
AOK20B135E1	1	1	None	None
AOK30B60D1	1	1	None	None
AOK30B65M2	1	1	None	None
AOK30B120D2	1	1	None	None
AOK30B135W1	1	1	None	None
AOK40B60D1	1	1	None	None
AOK40B65H1	1	1	None	None
AOK40B65H2AL	1	1	None	None
AOK40B65M3	1	1	None	None
AOK40B120H1	1	1	None	None
AOK40B120H1	1	1	None	None
AOK50B60D1	1	1	None	None
AOK50B65H1	1	1	None	None
AOK50B65M2	1	1	None	None
AOK60B60D1	1	1	None	None
AOK60B65H1	1	1	None	None
AOK60B65H2AL	1	1	None	None
AOK60B65M3	1	1	None	None
AOK75B60D1	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AOK75B65H1	1	1	None	None
AOKS40B65H2AL	1	1	None	None
AOT5B60D	1	1	None	None
AOT5B65M1	1	1	None	None
AOT10B60D	1	1	None	None
AOT10B65M1	1	1	None	None
AOT10B65M2	1	1	None	None
AOT15B60D	1	1	None	None
AOT15B65M1	1	1	None	None
AOT15B65M3	1	1	None	None
AOT20B65M1	1	1	None	None
AOTF5B60D	1	1	None	None
AOTF5B65M1	1	1	None	None
AOTF10B60D	1	1	None	None
AOTF10B60D2	1	1	None	None
AOTF10B65M1	1	1	None	None
AOTF10B65M2	1	1	None	None
AOTF15B60D	1	1	None	None
AOTF15B60D2	1	1	None	None
AOTF15B65M1	1	1	None	None
AOTF15B65M2	1	1	None	None
AOTF15B65M3	1	1	None	None
AOTF20B65M1	1	1	None	None
AOTF20B65M2	1	1	None	None
AUIRG4PH50S	1	1	None	None
AUIRGB4062D1	1	1	None	None
AUIRGF65G40D0	1	1	None	None
AUIRGP35B60PD	1	1	None	None
AUIRGP65G40D0	1	1	None	None
AUIRGP4062D	2	1	None	None
AUIRGP4063D	2	1	None	None
AUIRGP4066D1	2	1	None	None
AUIRGR4045D	1	1	None	None
AUIRGS4062D1	1	1	None	None
AUIRGSL4062D1	1	1	None	None
AUIRGU4045D	1	1	None	None
DGTD65T15H2TF	1	1	None	None
DGTD65T60S2PT	1	1	None	None
DGTD120T25S1PT	1	1	None	None
FGA25N120ANTD	1	1	None	None
FGA30S120P	1	1	None	None
FGA60N65SMD	1	1	None	None
FGH20N60SFD	1	1	None	None
FGH30S130P	1	1	None	None
FGH40N60SFD	1	1	None	None
FGH40N60SMD	1	1	None	None
FGH40N60UFD	1	1	None	None
FGH40N65UFD	1	1	None	None
FGH40T120SMD	1	1	None	None
FGH50N65SQD	1	1	None	None
FGH60N60SMD	1	1	None	None
FGL40N120AND	1	1	None	None
GT15J341	1	1	None	None
GT20J341	1	1	None	None
GT30J121	1	1	None	None
GT50JR21	1	1	None	None
GT50JR22	1	1	None	None
HGT1S10N120BN	1	1	None	None
HGT1S12N60A4D	1	1	None	None
HGT1S12N60C3D	1	1	None	None
HGTG5N120BND	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
HGTG10N120BN	2	1	None	None
HGTG11N120CN	1	1	None	None
HGTG12N60A4D	1	1	None	None
HGTG12N60C3D	1	1	None	None
HGTG20N60A4	2	1	None	None
HGTG20N60B3D	1	1	None	None
HGTG30N60A4D	1	1	None	None
HGTG30N60B3D	1	1	None	None
HGTG40N60A4	1	1	None	None
HGTP5N120BND	1	1	None	None
HGTP10N120BN	1	1	None	None
HGTP12N60A4D	1	1	None	None
HGTP12N60C3D	1	1	None	None
IGA03N120H2	1	1	None	None
IGB01N120H2	1	1	None	None
IGB03N120H2	1	1	None	None
IGB10N60T	1	1	None	None
IGB15N60T	1	1	None	None
IGB15N65S5	1	1	None	None
IGB20N60H3	1	1	None	None
IGB20N65S5	1	1	None	None
IGB30N60H3	1	1	None	None
IGB30N60T	1	1	None	None
IGB50N60T	1	1	None	None
IGB50N65H5	1	1	None	None
IGB50N65S5	1	1	None	None
IGP06N60T	1	1	None	None
IGP10N60T	1	1	None	None
IGP15N60T	1	1	None	None
IGP20N60H3	1	1	None	None
IGP20N65F5	1	1	None	None
IGP20N65H5	1	1	None	None
IGP30N60H3	1	1	None	None
IGP30N65F5	1	1	None	None
IGP30N65H5	1	1	None	None
IGP40N65F5	1	1	None	None
IGU04N60T	1	1	None	None
IGW08T120	1	1	None	None
IGW15N120H3	1	1	None	None
IGW15T120	1	1	None	None
IGW20N60H3	1	1	None	None
IGW25N120H3	1	1	None	None
IGW25T120	1	1	None	None
IGW30N60H3	1	1	None	None
IGW30N60T	1	1	None	None
IGW30N60TP	1	1	None	None
IGW40N60H3	1	1	None	None
IGW40N60TP	1	1	None	None
IGW40N65F5	1	1	None	None
IGW40N65H5A	1	1	None	None
IGW40N120H3	1	1	None	None
IGW40T120	1	1	None	None
IGW50N60H3	1	1	None	None
IGW50N60T	1	1	None	None
IGW50N60TP	1	1	None	None
IGW50N65F5	1	1	None	None
IGW60N60H3	1	1	None	None
IGW60T120	1	1	None	None
IGW75N60H3	1	1	None	None
IGW75N60T	1	1	None	None
IGW75N65H5	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IGW100N60H3	1	1	None	None
IGZ50N65H5	1	1	None	None
IGZ75N65H5	1	1	None	None
IGZ100N65H5	1	1	None	None
IHW15N120E1	1	1	None	None
IHW15N120R3	1	1	None	None
IHW20N65R5	1	1	None	None
IHW20N120R5	1	1	None	None
IHW20N135R5	1	1	None	None
IHW30N65R5	1	1	None	None
IHW30N110R3	1	1	None	None
IHW30N120R5	1	1	None	None
IHW30N135R5	1	1	None	None
IHW30N160R5	1	1	None	None
IHW40N60RF	1	1	None	None
IHW40N65R5	1	1	None	None
IHW40N120R5	1	1	None	None
IHW50N65R5	1	1	None	None
IKA08N65ET6	1	1	None	None
IKA08N65F5	1	1	None	None
IKA10N60T	1	1	None	None
IKA10N65ET6	1	1	None	None
IKA15N60T	1	1	None	None
IKA15N65ET6	1	1	None	None
IKA15N65F5	1	1	None	None
IKB06N60T	1	1	None	None
IKB10N60T	1	1	None	None
IKB15N60T	1	1	None	None
IKB15N65EH5	1	1	None	None
IKB20N60H3	1	1	None	None
IKB20N60T	1	1	None	None
IKB20N65EH5	1	1	None	None
IKB30N65EH5	1	1	None	None
IKB30N65ES5	1	1	None	None
IKB40N65EF5	1	1	None	None
IKB40N65EH5	1	1	None	None
IKB40N65ES5	1	1	None	None
IKD03N60RF	1	1	None	None
IKD04N60R	1	1	None	None
IKD04N60RF	1	1	None	None
IKD06N60R	1	1	None	None
IKD06N60RF	1	1	None	None
IKD10N60R	1	1	None	None
IKD10N60RF	1	1	None	None
IKD15N60R	1	1	None	None
IKD15N60RF	1	1	None	None
IKP04N60T	1	1	None	None
IKP06N60T	1	1	None	None
IKP08N65F5	1	1	None	None
IKP08N65H5	1	1	None	None
IKP10N60T	1	1	None	None
IKP15N60T	1	1	None	None
IKP15N65F5	1	1	None	None
IKP15N65H5	1	1	None	None
IKP20N60H3	1	1	None	None
IKP20N60T	1	1	None	None
IKP20N65F5	1	1	None	None
IKP20N65H5	1	1	None	None
IKP30N65F5	1	1	None	None
IKP30N65H5	1	1	None	None
IKP40N65F5	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IKP40N65F5	1	1	None	None
IKP40N65H5	1	1	None	None
IKW15N120BH6	1	1	None	None
IKW15N120H3	1	1	None	None
IKW15T120	1	1	None	None
IKW20N60H3	1	1	None	None
IKW20N60T	1	1	None	None
IKW25N120H3	1	1	None	None
IKW25N120T2	1	1	None	None
IKW25T120	1	1	None	None
IKW30N60DTP	1	1	None	None
IKW30N60H3	1	1	None	None
IKW30N60T	1	1	None	None
IKW30N65EL5	1	1	None	None
IKW30N65ES5	1	1	None	None
IKW30N65H5	1	1	None	None
IKW30N65WR5	1	1	None	None
IKW40N60DTP	1	1	None	None
IKW40N60H3	1	1	None	None
IKW40N65ES5	1	1	None	None
IKW40N65F5	1	1	None	None
IKW40N65H5	1	1	None	None
IKW40N65WR5	1	1	None	None
IKW40N120CS6	1	1	None	None
IKW40N120H3	1	1	None	None
IKW40N120T2	1	1	None	None
IKW40T120	1	1	None	None
IKW50N60DTP	1	1	None	None
IKW50N60H3	1	1	None	None
IKW50N60T	1	1	None	None
IKW50N65EH5	1	1	None	None
IKW50N65ES5	1	1	None	None
IKW50N65F5	1	1	None	None
IKW50N65H5	1	1	None	None
IKW50N65WR5	1	1	None	None
IKW60N60H3	1	1	None	None
IKW75N60H3	1	1	None	None
IKW75N60T	1	1	None	None
IKW75N65EH5	1	1	None	None
IKW75N65ES5	1	1	None	None
IKZ50N65EH5	1	1	None	None
IKZ50N65ES5	1	1	None	None
IKZ50N65NH5	1	1	None	None
IKZ75N65EH5	1	1	None	None
IKZ75N65EL5	1	1	None	None
IKZ75N65ES5	1	1	None	None
IKZ75N65NH5	1	1	None	None
IRG4BC15UD-L	1	1	None	None
IRG4BC15UD-S	1	1	None	None
IRG4BC40KP	1	1	None	None
IRG4BC40U	1	1	None	None
IRG4BC40WL	1	1	None	None
IRG4BC40WS	1	1	None	None
IRG4IBC10UD	1	1	None	None
IRG4IBC30W	1	1	None	None
IRG4PC30F	1	1	None	None
IRG4PC30U	1	1	None	None
IRG4PC30UD	1	1	None	None
IRG4PC60F	1	1	None	None
IRG4PH20K	1	1	None	None
IRG4PH20KD	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRG4PH30K	1	1	None	None
IRG4PH40K	1	1	None	None
IRG4PH40U	1	1	None	None
IRG4RC10KD	1	1	None	None
IRG4RC10UD	1	1	None	None
IRG7PH35UD	1	1	None	None
IRG7PH37K10D	1	1	None	None
IRG7PH42U	1	1	None	None
IRG7PH44K10D	1	1	None	None
IRG7PH46U	1	1	None	None
IRG8P15N120KD	1	1	None	None
IRG8P25N120KD	1	1	None	None
IRG8P60N120KD	1	1	None	None
IRGB6B60KD	1	1	None	None
IRGB10B60KD	1	1	None	None
IRGB30B60K	1	1	None	None
IRGB4056D	1	1	None	None
IRGB4062D	1	1	None	None
IRGB4607D	1	1	None	None
IRGB4620D	1	1	None	None
IRGIB7B60KD	1	1	None	None
IRGIB10B60KD1P	1	1	None	None
IRGIB15B60KD1P	1	1	None	None
IRGP30B60KD	1	1	None	None
IRGP35B60PD	1	1	None	None
IRGP4062D	1	1	None	None
IRGP4063	1	1	None	None
IRGP4066D	1	1	None	None
IRGP4068D	1	1	None	None
IRGP4069D	1	1	None	None
IRGP4263D	1	1	None	None
IRGP4620D	1	1	None	None
IRGP4640D	1	1	None	None
IRGP4650D	1	1	None	None
IRGP4660D	1	1	None	None
IRGP4670D	1	1	None	None
IRGS6B60KD	1	1	None	None
IRGS10B60KD	1	1	None	None
IRGS30B60K	1	1	None	None
IRGS4062D	1	1	None	None
IRGS4607D	1	1	None	None
IRGS4620D	1	1	None	None
IRGSL6B60KD	1	1	None	None
IRGSL10B60KD	1	1	None	None
IRGSL30B60K	1	1	None	None
IRGSL4062D	1	1	None	None
ITF48IF1200HR	1	1	None	None
IXA12IF1200HB	1	1	None	None
IXA20I1200PB	1	1	None	None
IXA33IF1200HB	1	1	None	None
IXA45IF1200HB	1	1	None	None
IXBA16N170AHV	1	1	None	None
IXBH2N250	1	1	None	None
IXBH5N160G	1	1	None	None
IXBH6N170	1	1	None	None
IXBH9N160G	1	1	None	None
IXBH10N170	1	1	None	None
IXBH12N300	1	1	None	None
IXBH16N170	1	1	None	None
IXBH16N170A	1	1	None	None
IXBH24N170	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXBH40N160	1	1	None	None
IXBH42N170	1	1	None	None
IXBH42N170A	1	1	None	None
IXBK55N300	1	1	None	None
IXBK64N250	1	1	None	None
IXBK75N170	1	1	None	None
IXBP5N160G	1	1	None	None
IXBT2N250	1	1	None	None
IXBT6N170	1	1	None	None
IXBT10N170	1	1	None	None
IXBT12N300	1	1	None	None
IXBT16N170	1	1	None	None
IXBT16N170A	1	1	None	None
IXBT16N170AHV	1	1	None	None
IXBT24N170	1	1	None	None
IXBT42N170	1	1	None	None
IXBT42N170A	1	1	None	None
IXBT42N300HV	1	1	None	None
IXDA20N120AS	1	1	None	None
IXDH20N120	1	1	None	None
IXDH20N120D1	1	1	None	None
IXDH30N120	1	1	None	None
IXDH30N120D1	1	1	None	None
IXDP20N60BD1	1	1	None	None
IXFA4IF1200TC	1	1	None	None
IXFA12IF1200PB	1	1	None	None
IXFA12IF1200TC	1	1	None	None
IXGA12N120A3	1	1	None	None
IXGA20N120B3	1	1	None	None
IXGA24N120C3	1	1	None	None
IXGA30N60C3C1	1	1	None	None
IXGA30N120B3	1	1	None	None
IXGA36N60A3	1	1	None	None
IXGA48N60A3	1	1	None	None
IXGA48N60C3	1	1	None	None
IXGH2N250	1	1	None	None
IXGH6N170	1	1	None	None
IXGH6N170A	1	1	None	None
IXGH10N170	1	1	None	None
IXGH10N170A	1	1	None	None
IXGH12N120A3	1	1	None	None
IXGH16N170	1	1	None	None
IXGH16N170A	1	1	None	None
IXGH16N170AH1	1	1	None	None
IXGH20N120A3	1	1	None	None
IXGH24N120C3	1	1	None	None
IXGH24N120C3H	1	1	None	None
IXGH24N170	1	1	None	None
IXGH24N170A	1	1	None	None
IXGH25N160	1	1	None	None
IXGH25N250	1	1	None	None
IXGH28N60B3D1	1	1	None	None
IXGH30N60C3C1	1	1	None	None
IXGH30N120B3	1	1	None	None
IXGH30N120B3D	1	1	None	None
IXGH30N120C3H	1	1	None	None
IXGH32N120A3	1	1	None	None
IXGH32N170	1	1	None	None
IXGH32N170A	1	1	None	None
IXGH36N60A3	1	1	None	None
IXGH36N60B3	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXGH36N60B3C1	1	1	None	None
IXGH40N120A2	1	1	None	None
IXGH40N120B2D	1	1	None	None
IXGH40N120C3	1	1	None	None
IXGH40N120C3D	1	1	None	None
IXGH48N60A3	1	1	None	None
IXGH48N60A3D1	1	1	None	None
IXGH48N60B3C1	1	1	None	None
IXGH48N60C3	1	1	None	None
IXGH48N60C3D1	1	1	None	None
IXGH50N90B2	1	1	None	None
IXGH50N120C3	1	1	None	None
IXGH60N60C3D1	1	1	None	None
IXGH72N60A3	1	1	None	None
IXGH72N60B3	1	1	None	None
IXGH72N60C3	1	1	None	None
IXGH120N30B3	1	1	None	None
IXGI48N60C3	1	1	None	None
IXGK50N120C3H1	1	1	None	None
IXGK55N120A3H1	1	1	None	None
IXGK72N60B3H1	1	1	None	None
IXGK75N250	1	1	None	None
IXGK82N120A3	1	1	None	None
IXGK82N120B3	1	1	None	None
IXGK100N170	1	1	None	None
IXGK120N120A3	1	1	None	None
IXGK120N120B3	1	1	None	None
IXGK320N60B3	1	1	None	None
IXGK400N30A3	1	1	None	None
IXGP12N120A3	1	1	None	None
IXGP20N120A3	1	1	None	None
IXGP20N120B3	1	1	None	None
IXGP24N120C3	1	1	None	None
IXGP30N60C3C1	1	1	None	None
IXGP30N120B3	1	1	None	None
IXGP36N60A3	1	1	None	None
IXGP48N60A3	1	1	None	None
IXGP48N60C3	1	1	None	None
IXGT2N250	1	1	None	None
IXGT6N170	1	1	None	None
IXGT6N170A	1	1	None	None
IXGT6N170AHV	1	1	None	None
IXGT10N170	1	1	None	None
IXGT10N170A	1	1	None	None
IXGT16N170	1	1	None	None
IXGT16N170A	1	1	None	None
IXGT16N170AH1	1	1	None	None
IXGT24N170	1	1	None	None
IXGT24N170A	1	1	None	None
IXGT25N160	1	1	None	None
IXGT25N250	1	1	None	None
IXGT30N120B3D1	1	1	None	None
IXGT32N120A3	1	1	None	None
IXGT32N170	1	1	None	None
IXGT32N170A	1	1	None	None
IXGT40N120A2	1	1	None	None
IXGT40N120B2D1	1	1	None	None
IXGT60N60C3D1	1	1	None	None
IXGT72N60A3	1	1	None	None
IXGT72N60B3	1	1	None	None
IXXA50N60B3	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXXH30N60B3	1	1	None	None
IXXH30N60B3D1	1	1	None	None
IXXH30N60C3D1	1	1	None	None
IXXH30N65B4	1	1	None	None
IXXH30N65B4D1	1	1	None	None
IXXH30N65B4H1	1	1	None	None
IXXH40N65C4D1	1	1	None	None
IXXH50N60B3	1	1	None	None
IXXH50N60B3D1	1	1	None	None
IXXH50N60C3	1	1	None	None
IXXH50N60C3D1	1	1	None	None
IXXH60N65B4	1	1	None	None
IXXH60N65B4H1	1	1	None	None
IXXH60N65C4	1	1	None	None
IXXH75N60B3D1	1	1	None	None
IXXH75N60C3	1	1	None	None
IXXH75N60C3D1	1	1	None	None
IXXH80N65B4	1	1	None	None
IXXH80N65B4D1	1	1	None	None
IXXH80N65B4H1	1	1	None	None
IXXH100N60B3	1	1	None	None
IXXH100N60C3	1	1	None	None
IXXH110N65C4	1	1	None	None
IXXH140N65B4	1	1	None	None
IXXH140N65C4	1	1	None	None
IXXH150N60C3	1	1	None	None
IXXK100N60B3H1	1	1	None	None
IXXK110N65B4H1	1	1	None	None
IXXK160N65B4	1	1	None	None
IXXK200N60B3	1	1	None	None
IXXK200N60C3	1	1	None	None
IXXK200N65B4	1	1	None	None
IXXK300N60B3	1	1	None	None
IXXK300N60C3	1	1	None	None
IXXP12N65B4D1	1	1	None	None
IXXP50N60B3	1	1	None	None
IXXQ30N60B3M	1	1	None	None
IXYA8N90C3D1	1	1	None	None
IXYA8N250CHV	1	1	None	None
IXYA15N65C3D1	1	1	None	None
IXYA20N65B3	1	1	None	None
IXYA20N65C3	1	1	None	None
IXYA20N65C3D1	1	1	None	None
IXYA50N65C3	1	1	None	None
IXYH10N170C	1	1	None	None
IXYH10N170CV1	1	1	None	None
IXYH16N170C	1	1	None	None
IXYH16N170CV1	1	1	None	None
IXYH20N65B3	1	1	None	None
IXYH20N65C3	1	1	None	None
IXYH20N120C3	1	1	None	None
IXYH20N120C3D1	1	1	None	None
IXYH24N90C3	1	1	None	None
IXYH24N90C3D1	1	1	None	None
IXYH24N170C	1	1	None	None
IXYH24N170CV1	1	1	None	None
IXYH30N65C3	1	1	None	None
IXYH30N65C3H1	1	1	None	None
IXYH30N120C3	1	1	None	None
IXYH30N120C3D1	1	1	None	None
IXYH30N170C	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXYH40N65B3	1	1	None	None
IXYH40N65B3	1	1	None	None
IXYH40N65B3D1	1	1	None	None
IXYH40N65C3	1	1	None	None
IXYH40N65C3D1	1	1	None	None
IXYH40N65C3H1	1	1	None	None
IXYH40N90C3	1	1	None	None
IXYH40N90C3D1	1	1	None	None
IXYH40N120B3	1	1	None	None
IXYH40N120B3D1	1	1	None	None
IXYH40N120C3	1	1	None	None
IXYH40N120C3D1	1	1	None	None
IXYH50N65C3	1	1	None	None
IXYH50N65C3D1	1	1	None	None
IXYH50N65C3H1	1	1	None	None
IXYH50N120C3	1	1	None	None
IXYH50N120C3D	1	1	None	None
IXYH60N90C3	1	1	None	None
IXYH75N65C3	1	1	None	None
IXYH75N65C3H1	1	1	None	None
IXYH80N90C3	1	1	None	None
IXYH82N120C3	1	1	None	None
IXYH85N120A4	1	1	None	None
IXYH100N65A3	1	1	None	None
IXYH100N65C3	1	1	None	None
IXYK100N65B3D1	1	1	None	None
IXYK100N120C3	1	1	None	None
IXYK120N120C3	1	1	None	None
IXYK140N90C3	1	1	None	None
IXYK200N65B3	1	1	None	None
IXYP8N90C3	1	1	None	None
IXYP8N90C3D1	1	1	None	None
IXYP10N65C3	1	1	None	None
IXYP10N65C3D1	1	1	None	None
IXYP10N65C3DM	1	1	None	None
IXYP15N65C3	1	1	None	None
IXYP15N65C3D1	1	1	None	None
IXYP15N65C3DM	1	1	None	None
IXYP20N65B3	1	1	None	None
IXYP20N65B3D1	1	1	None	None
IXYP20N65C3D1	1	1	None	None
IXYP20N65C3DM	1	1	None	None
IXYP20N120C3	1	1	None	None
IXYP30N65C3	1	1	None	None
IXYP30N120C3	1	1	None	None
IXYP50N65C3	1	1	None	None
IXYQ40N65B3D1	1	1	None	None
IXYQ40N65C3D1	1	1	None	None
IXYT20N120C3D1	1	1	None	None
IXYT25N250CHV	1	1	None	None
IXYT30N65C3H1	1	1	None	None
IXYT30N450HV	1	1	None	None
IXYT80N90C3	1	1	None	None
IXYY8N90C3	1	1	None	None
NGTB25N120FL2	1	1	None	None
SGB02N120	1	1	None	None
SGL50N60RUFD	1	1	None	None
SGL160N60UFD	1	1	None	None
SGP07N120	1	1	None	None
SGP23N60UF	1	1	None	None
SGP23N60UFD	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SKW25N120	1	1	None	None
STGB7H60DF	1	1	None	None
STGB10NC60KD	1	1	None	None
STGB14NC60KD	1	1	None	None
STGB30V60DF	1	1	None	None
STGD10NC60KD	1	1	None	None
STGF7H60DF	1	1	None	None
STGF10NC60KD	1	1	None	None
STGF14NC60KD	1	1	None	None
STGP7H60DF	1	1	None	None
STGP10NC60KD	1	1	None	None
STGP14NC60KD	1	1	None	None
STGP30V60DF	1	1	None	None
STGW20IH125DF	1	1	None	None
STGW20NC60VD	1	1	None	None
STGW28IH125DF	1	1	None	None
STGW30NC60KD	1	1	None	None
STGW30NC60WD	1	1	None	None
STGW30NC120H	1	1	None	None
STGW30V60DF	1	1	None	None
STGW35NB60SD	1	1	None	None
STGW39NC60VD	1	1	None	None
STGW60H65DFB	1	1	None	None
STGW60V60DF	1	1	None	None
STGWA30H65DFB	1	1	None	None
STGWA60H65DFB	1	1	None	None
STGWA60V60DF	1	1	None	None
STGWT20IH125D	1	1	None	None
STGWT28IH125D	1	1	None	None
STGWT30V60DF	1	1	None	None
STGWT60H65DFB	1	1	None	None
STGWT60V60DF	1	1	None	None

2.35. JFET Transistor Library

This library contains Junction Field Effect Transistors (JFETs) and matched JFET pairs.

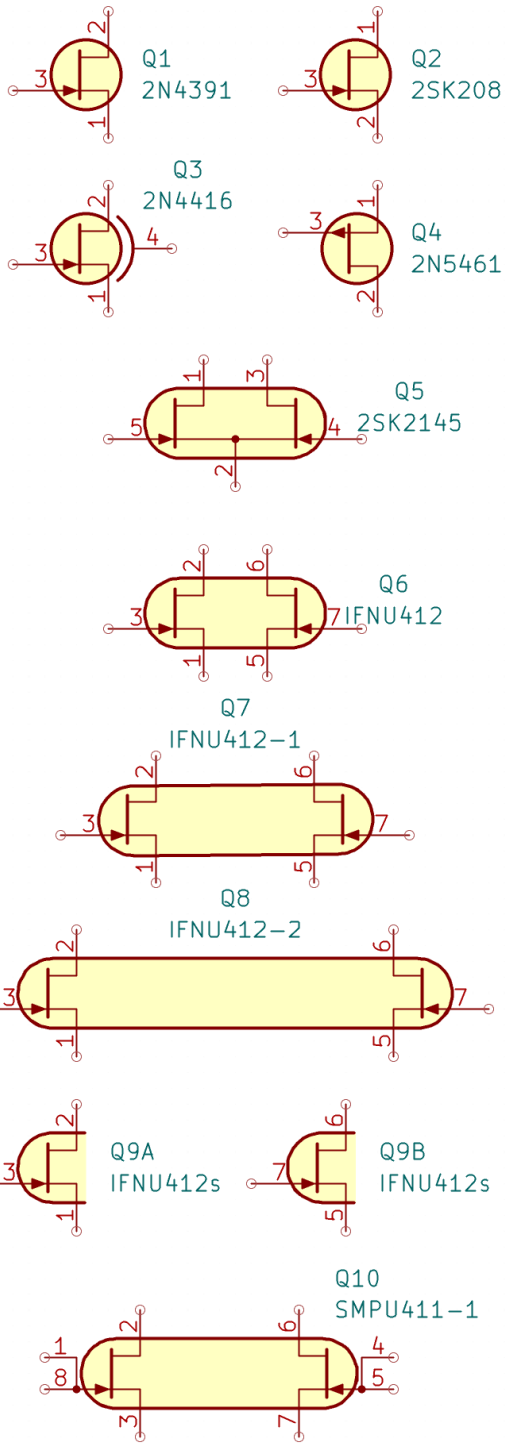
JFET symbols have the gate pin moved closer to the source terminal. Most JFETs are symmetrical and drain – source orientation is not critical, but indicating source terminal might be useful in some scenarios.

Dual matched JFETs (isolated) have four symbol variants: 3 standard variants with different spacing between transistors (no suffix, -1 and -2 suffixes) and a disaggregated multi-unit variant (lowercase s) to ensure maximum schematic flexibility when designing differential amplifiers and other analog circuits from discrete transistors.

P-Channel JFET transistors have source terminal on the top side by default.

Each available orderable part number with different electrical characteristics, pinout and package for each transistor type has a separate specific symbol.

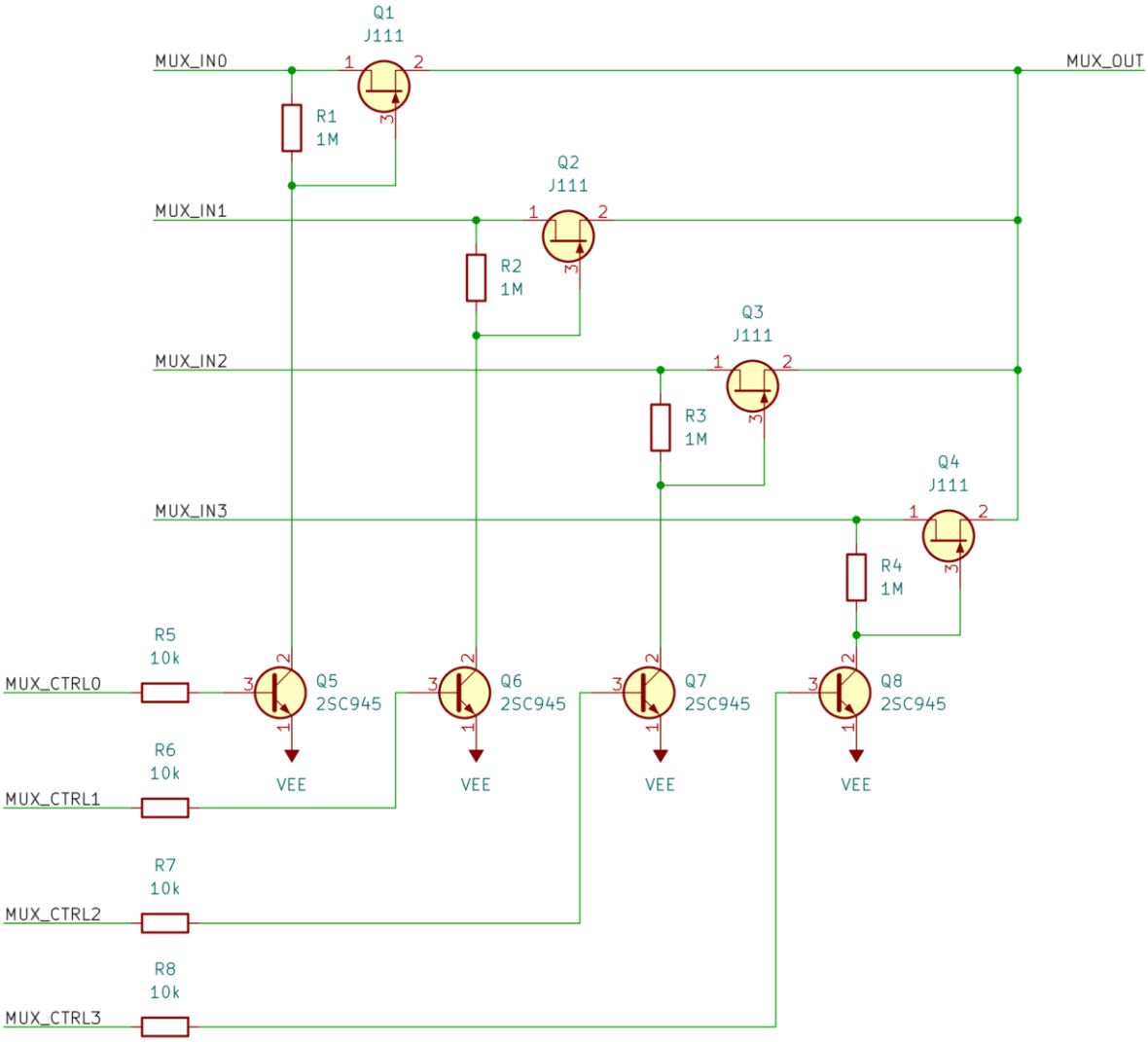
Filename: **Transistor_JFET_AKL**	
Total symbols:	**136**
Generic symbols:	**23**
Specific symbols:	**113**



Schematic examples

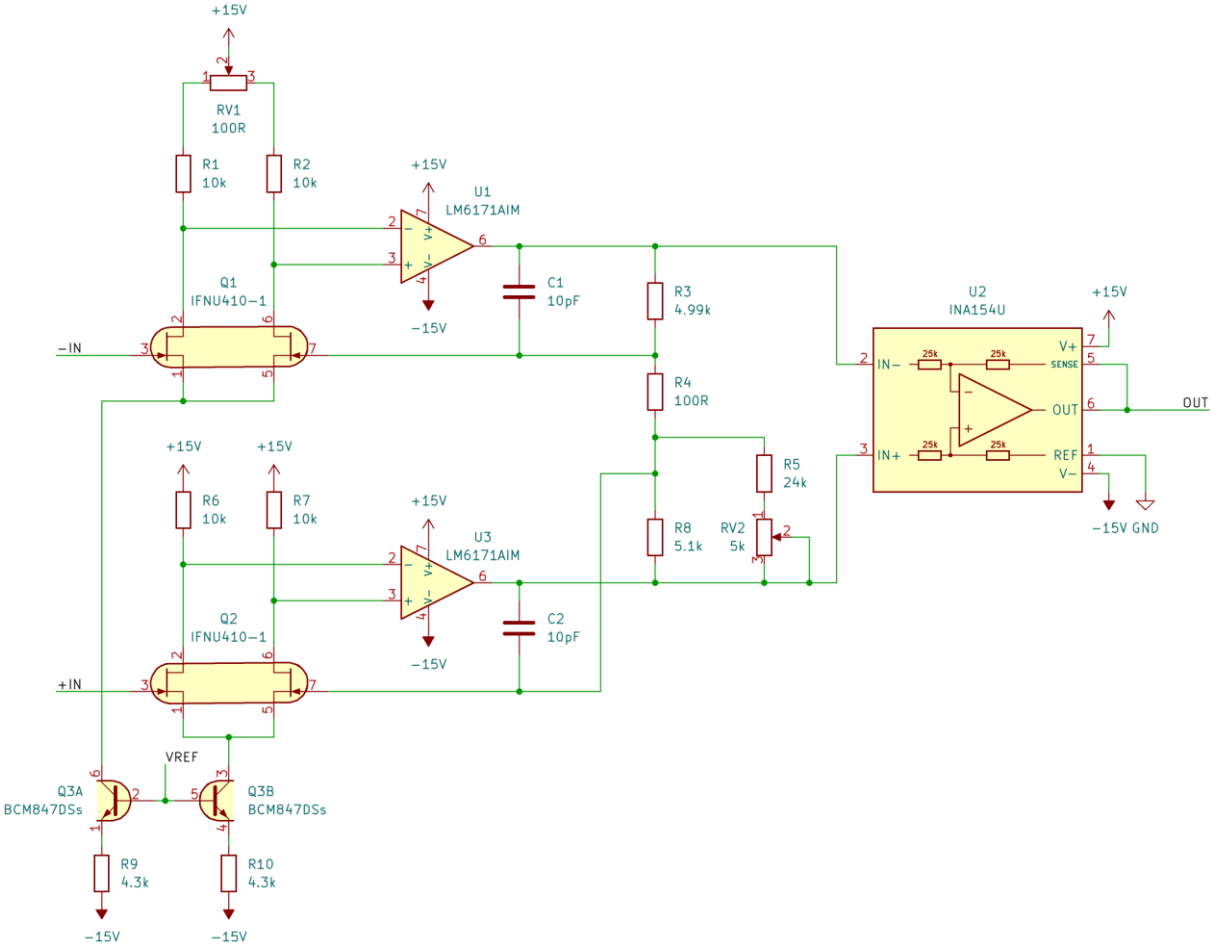
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



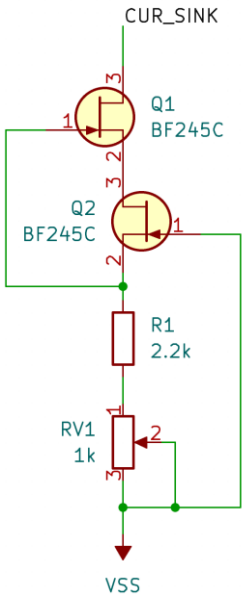
Example 1

4-Input analog multiplexer using four J111 N-Channel JFETs.



Example 2

Instrumentation amplifier with discrete JFET input stage based on two IFNU410 dual matched JFETs.



Example 3

Adjustable Cascode current sink using two BF245 JFETs.

Table 2.30. List of all devices included in Transistor_JFET_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2N2608	1	1	None	None
2N2609	1	1	None	None
2N4391	1	1	None	None
2N4392	1	1	None	None
2N4393	1	1	None	None
2N4416	2	1	None	None
2N4857	2	1	None	None
2N5452	4	1 (2 for separated)	None	None
2N5453	4	1 (2 for separated)	None	None
2N5454	4	1 (2 for separated)	None	None
2N5460	1	1	None	None
2N5461	1	1	None	None
2N5462	1	1	None	None
2N5484	1	1	None	None
2N5485	1	1	None	None
2N5486	1	1	None	None
2SK30	1	1	None	None
2SK208	1	1	None	None
2SK209	1	1	None	None
2SK879	1	1	None	None
2SK932	1	1	None	None
2SK2145	1	1	None	None
2SK2394	1	1	None	None
2SK3320	1	1	None	None
BF244	2	1	None	None
BF245	4	1	None	None
BSR58	1	1	None	None
BSV78	1	1	None	None
BSV79	1	1	None	None
BSV80	1	1	None	None
IFNU410	4	1 (2 for separated)	None	None
IFNU411	4	1 (2 for separated)	None	None
IFNU412	4	1 (2 for separated)	None	None
J109	1	1	None	None
J111	1	1	None	None
J112	1	1	None	None
J113	1	1	None	None
J175	1	1	None	None
J176	1	1	None	None
J201	1	1	None	None
J202	1	1	None	None
J204	1	1	None	None
MMBF4117	1	1	None	None
MMBF4118	1	1	None	None
MMBF4119	1	1	None	None
MMBF4391	1	1	None	None
MMBF4392	1	1	None	None
MMBF4393	1	1	None	None
MMBF4416A	1	1	None	None
MMBF5484	1	1	None	None
MMBF5485	1	1	None	None
MMBF5486	1	1	None	None
MMBFJ108	1	1	None	None
MMBFJ111	1	1	None	None
MMBFJ112	1	1	None	None
MMBFJ113	1	1	None	None
MMBFJ175	1	1	None	None
MMBFJ176	1	1	None	None
MMBFJ177	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MMBFJ201	1	1	None	None
MMBFJ202	1	1	None	None
MMBFJ270	1	1	None	None
MMBFJ309	1	1	None	None
MMBFJ310	1	1	None	None
NSVJ5908DSG5	1	1	None	None
NSVJ6904DSB6	1	1	Free	None
PN2608	1	1	None	None
PN2609	1	1	None	None
PN4391	1	1	None	None
PN4392	1	1	None	None
PN4393	1	1	None	None
SMP2608	1	1	None	None
SMP2609	1	1	None	None
SMPU410	4	1 (2 for separated)	None	None
SMPU411	4	1 (2 for separated)	None	None
SMPU412	4	1 (2 for separated)	None	None
SST201	1	1	None	None
SST202	1	1	None	None
SST204	1	1	None	None
SST4416	1	1	None	None

2.36. MOSFET Transistor Library

This library contains Metal Oxide Semiconductor Field Effect Transistors and MOSFET arrays.

MOSFET symbols do not have the internal body diode indicated. The source terminal is additionally indicated by closer positioning of the gate pin.

Depletion-mode MOSFET symbols have a continuous channel line.

P-Channel MOSFETs start with source on the top of the symbol (as opposed to N-Channel MOSFETs where the source is on the bottom).

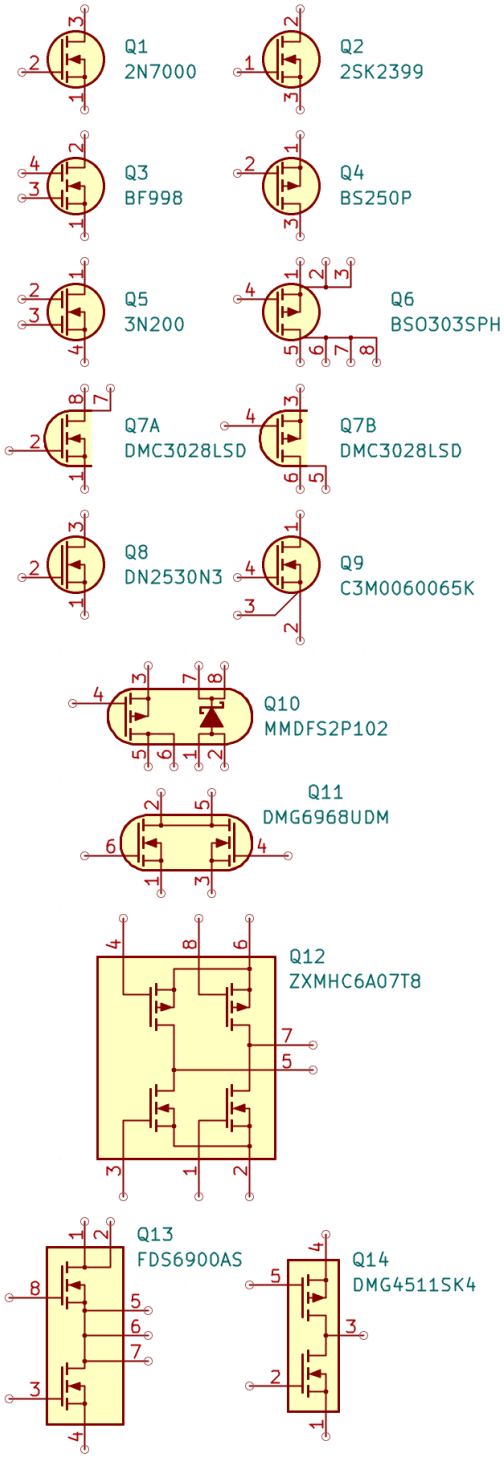
Devices with multiple connections for drain, source or gate have multiple pins corresponding to each respective footprint pad.

MOSFETs with kelvin connection (with 2 source pins, one meant to be a reference for gate voltage) have the sense pin aligned with the gate pin.

MOSFET arrays have either a multi-unit symbol (if transistors are isolated) or a single symbol with internal connections between transistors indicated.

Each available orderable part number with different electrical characteristics, pinout and package for each transistor type has a separate specific symbol.

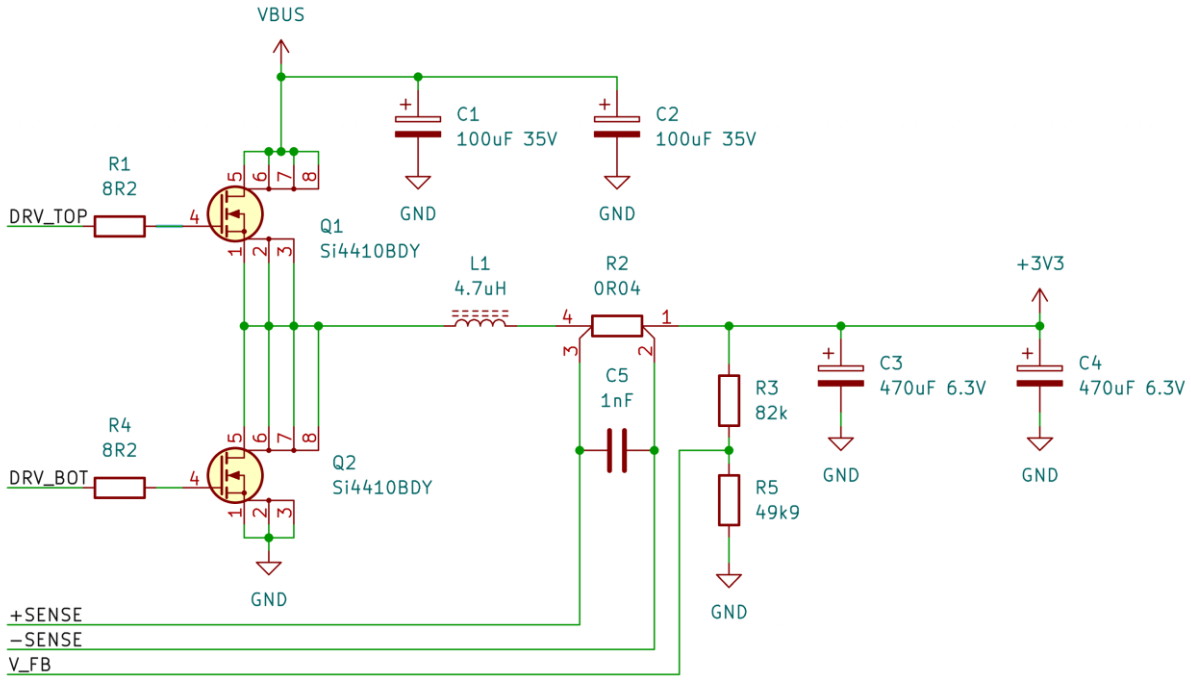
Filename: **Transistor_MOSFET_AKL**	
Total symbols:	**6149**
Generic symbols:	**69**
Specific symbols:	**6080**



Schematic examples

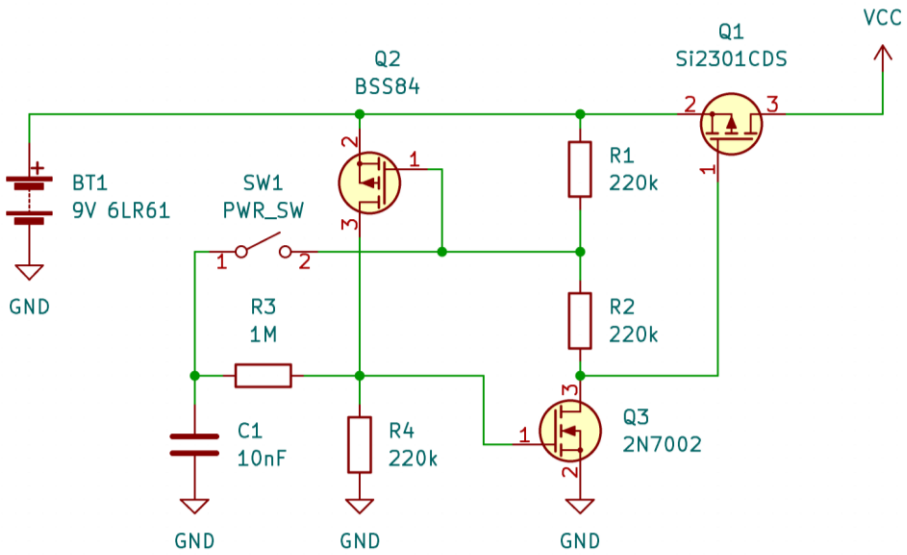
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



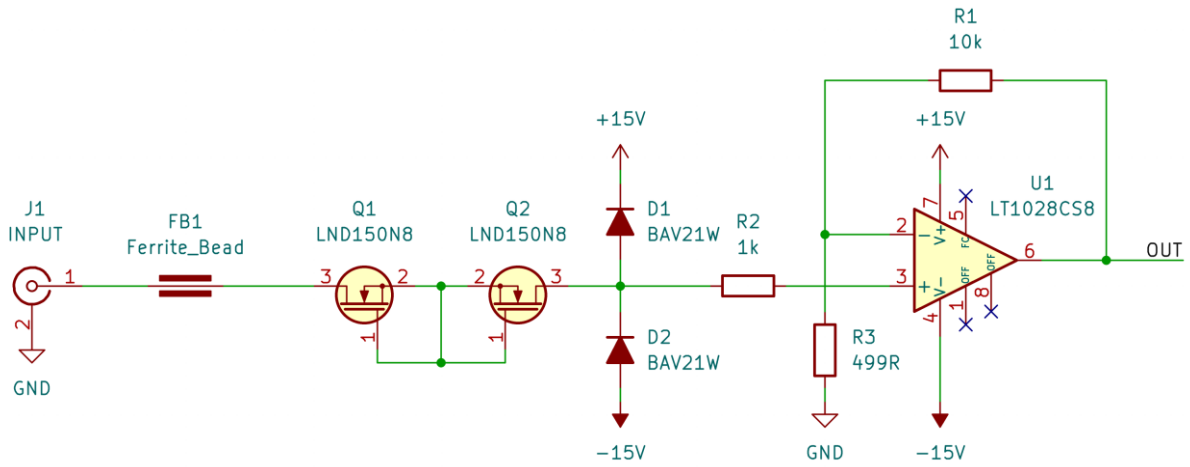
Example 1

Synchronous step-down DC/DC converter power stage using a Si4410BDY dual N-Channel power MOSFET.



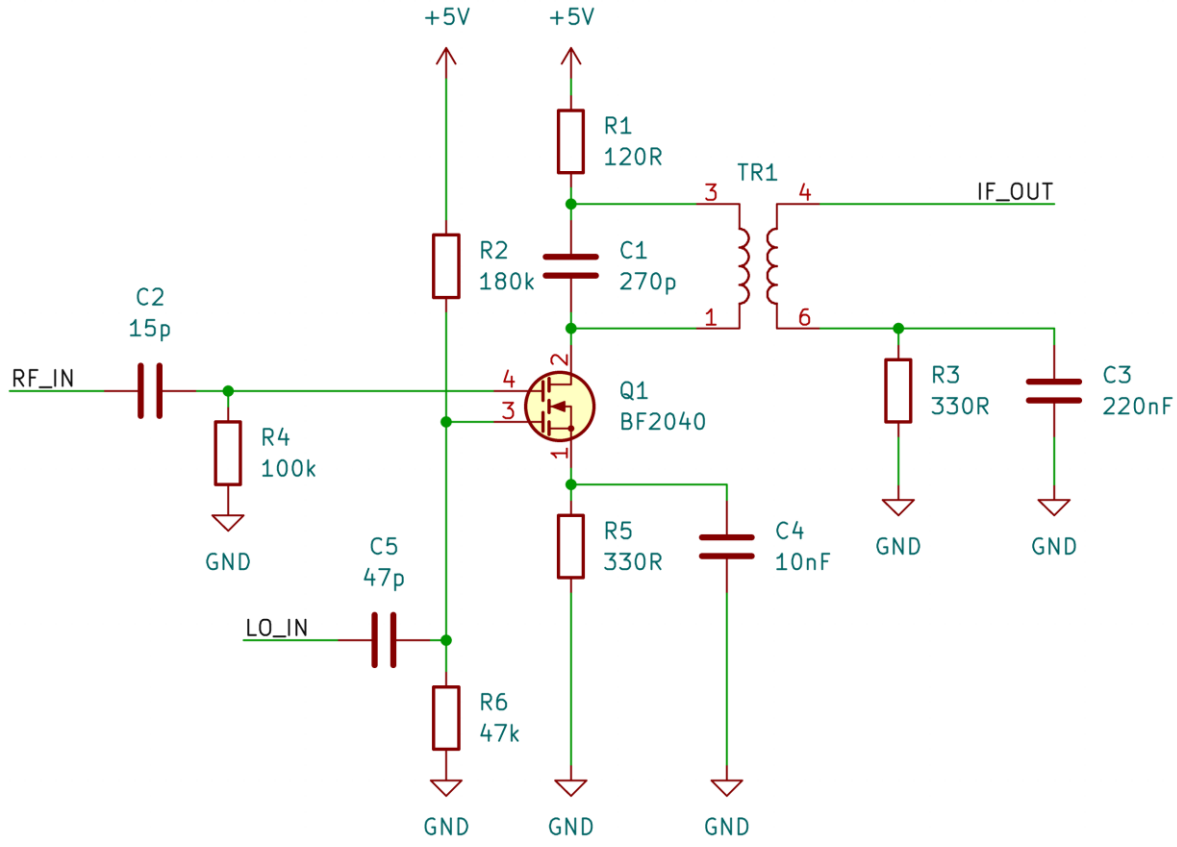
Example 2

Latching battery power switch using BSS84 P-Channel MOSFET, 2N7002 N-Channel MOSFET and Si2301CDS P-Channel power MOSFET.



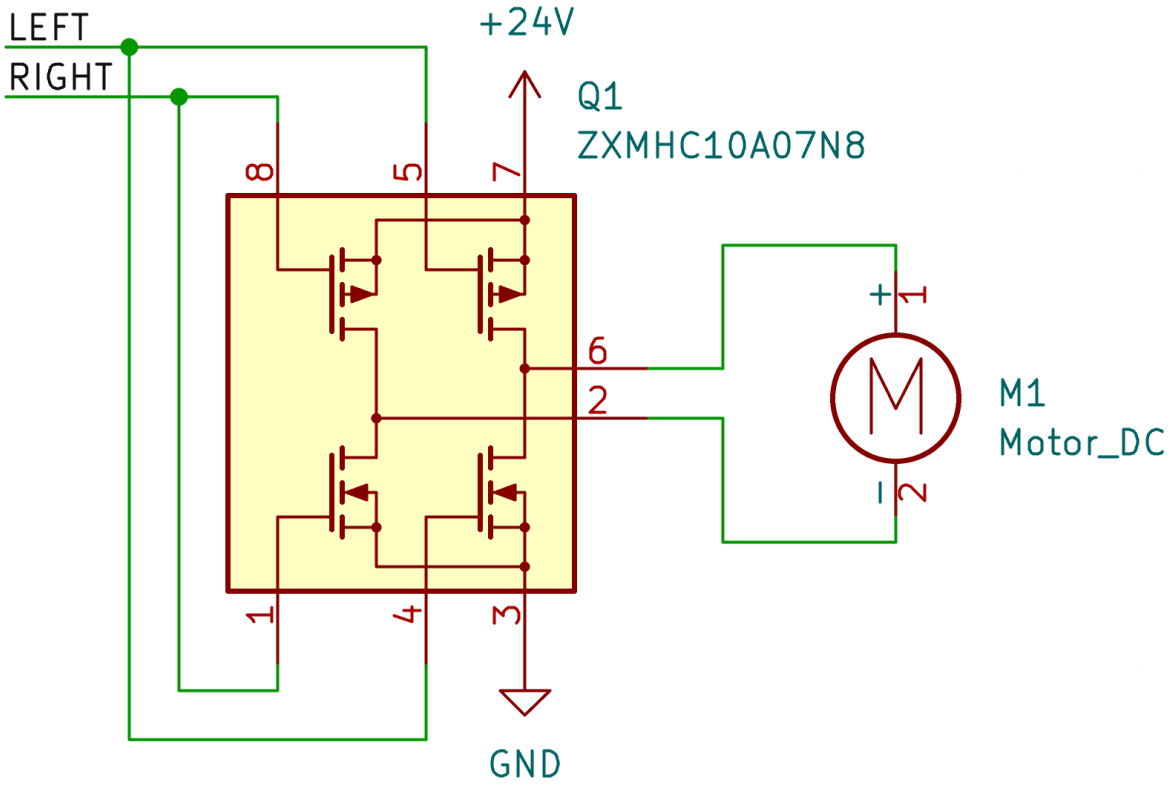
Example 3

Input overvoltage protection circuit using two LND150 depletion-mode MOSFETs to limit input current to roughly 2 milliamps.



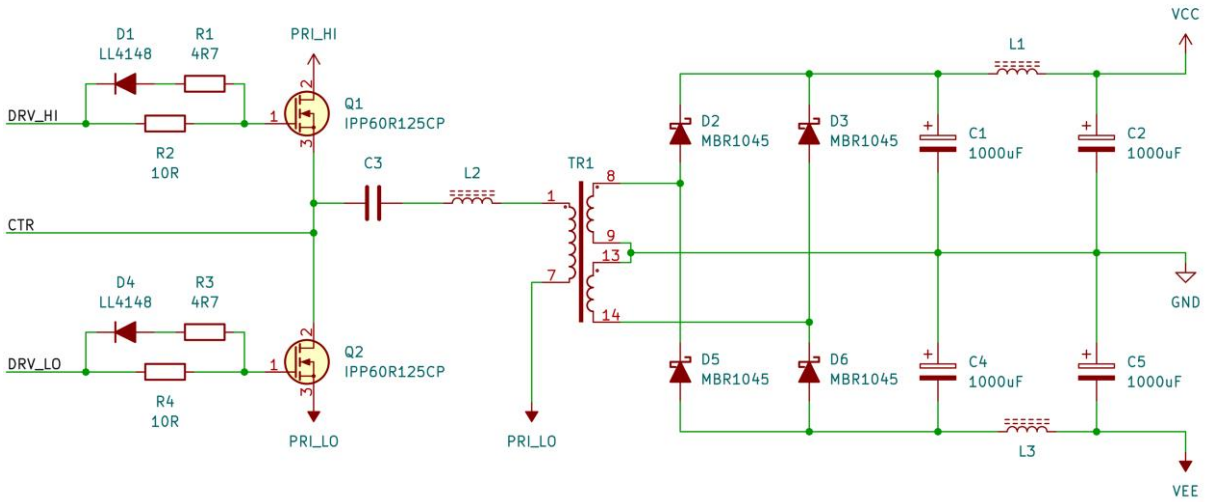
Example 4

RF mixer based on BF2040 dual-gate MOSFET (Tetrode).



Example 5

H-Bridge motor control circuit using dedicated ZXMHC10A07N8 MOSFET array.



Example 6

LLC switching power supply power stage using two IPP60R125CP high voltage power MOSFETs.

Table 2.31. List of all devices included in Transistor_JFET_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2N6660	1	1	None	None
2N6661	1	1	None	None
2N6790	1	1	None	None
2N7000	1	1	None	None
2N7002	1	1	None	None
2N7002AQ	1	1	None	None
2N7002BK	1	1	None	None
2N7002BKS	1	2	None	None
2N7002BKV	1	2	None	None
2N7002BKW	1	1	None	None
2N7002CK	1	1	None	None
2N7002DW	1	2	None	None
2N7002E	1	1	None	None
2N7002H	1	1	None	None
2N7002K	1	1	None	None
2N7002KW	1	1	None	None
2N7002L	1	1	None	None
2N7002P	1	1	None	None
2N7002PS	1	2	None	None
2N7002T	1	1	None	None
2N7002V	1	2	None	None
2N7002W	1	1	None	None
2N7008	1	1	None	None
2SJ168	1	1	None	None
2SJ494	1	1	None	None
2SJ668	1	1	None	None
2SK357	1	1	None	None
2SK552	1	1	None	None
2SK553	1	1	None	None
2SK1006	1	1	None	None
2SK1062	1	1	None	None
2SK1118	1	1	None	None
2SK1317	1	1	None	None
2SK1357	1	1	None	None
2SK1365	1	1	None	None
2SK2231	1	1	None	None
2SK2367	1	1	None	None
2SK2368	1	1	None	None
2SK2399	1	1	None	None
2SK2538	1	1	None	None
2SK2615	1	1	None	None
2SK2645	1	1	None	None
2SK2698	1	1	None	None
2SK2749	1	1	None	None
2SK2962	1	1	None	None
2SK3018	1	1	None	None
2SK3475	1	1	None	None
2SK3564	1	1	None	None
2SK3565	1	1	None	None
2SK3566	1	1	None	None
2SK3567	1	1	None	None
2SK3799	1	1	None	None
2SK3918	2	1	None	None
2SK3919	2	1	None	None
2SK4013	1	1	None	None
3N200	1	1	None	None
20N50L	2	1	None	None
AO3160	2	1	None	None
AO3400A	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AO3401A	1	1	None	None
AO3042	1	1	None	None
AO3404A	1	1	None	None
AO3406	1	1	None	None
AO3407A	1	1	None	None
AO3414	1	1	None	None
AO3415A	1	1	None	None
AO3416	1	1	None	None
AO3418	1	1	None	None
AO3420	1	1	None	None
AO3422	1	1	None	None
AO3434A	1	1	None	None
AO4262E	1	1	None	None
AO4264E	1	1	None	None
AO4266E	1	1	None	None
AO4268	1	1	None	None
AO4286	1	1	None	None
AO4290A	1	1	None	None
AO4292E	1	1	None	None
AO4294A	1	1	None	None
AO4296	1	1	None	None
AO4306	1	1	None	None
AO4354	1	1	None	None
AO4402	2	1	None	None
AO4403	1	1	None	None
AO4404B	1	1	None	None
AO4405E	1	1	None	None
AO4406A	1	1	None	None
AO4407A	1	1	None	None
AO4411	1	1	None	None
AO4419	1	1	None	None
AO4421	1	1	None	None
AO4425	1	1	None	None
AO4430	1	1	None	None
AO4441	1	1	None	None
AO4443	1	1	None	None
AO4404B	1	1	None	None
AO4405E	1	1	None	None
AO4406A	1	1	None	None
AO4407A	1	1	None	None
AO4411	1	1	None	None
AO4419	1	1	None	None
AO4421	1	1	None	None
AO4425	1	1	None	None
AO4430	1	1	None	None
AO4441	1	1	None	None
AO4443	1	1	None	None
AO4447	1	1	None	None
AO4449	1	1	None	None
AO4453	1	1	None	None
AO4459	1	1	None	None
AO4466	1	1	None	None
AO4468	1	1	None	None
AO4476A	1	1	None	None
AO4480	1	1	None	None
AO4482	1	1	None	None
AO4484	1	1	None	None
AO4485	1	1	None	None
AO4486	1	1	None	None
AO4492	1	1	None	None
AO4496	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AO4498	1	1	None	None
AO4566	1	1	None	None
AO4576	1	1	None	None
AO4611	1	2	None	None
AO4612	1	2	None	None
AO4614B	1	2	None	None
AO4616	1	2	None	None
AO4620	1	2	None	None
AO4627	1	2	None	None
AO4629	1	2	None	None
AO4752	1	1	None	None
AO4801A	1	2	None	None
AO4803A	1	2	None	None
AO4805	1	2	None	None
AO4806	1	2	None	None
AO4807	1	2	None	None
AO4813	1	2	None	None
AO4822A	1	2	None	None
AO4828	1	2	None	None
AO4832	1	2	None	None
AO4838	1	2	None	None
AO4840	1	2	None	None
AO4842	1	2	None	None
AO4854	1	2	None	None
AO4862	1	2	None	None
AO4862E	1	2	None	None
AO4882	1	2	None	None
AO4884	1	2	None	None
AO4892	1	2	None	None
AO6400	1	1	None	None
AO6401A	1	1	None	None
AO6402A	1	1	None	None
AO6404	1	1	None	None
AO6405	1	1	None	None
AO6409	2	1	None	None
AO6415	1	1	None	None
AO6420	1	1	None	None
AO6424	2	1	None	None
AO6601	1	2	None	None
AO6602	2	2	None	None
AO6604	1	2	None	None
AO6608	1	2	None	None
AO6800	1	2	None	None
AO6802	1	2	None	None
AO6804A	1	1	None	None
AO6808	1	1	None	None
AO7400	1	1	None	None
AO7401	1	1	None	None
AO7405	1	1	None	None
AO7407	1	1	None	None
AO7408	1	1	None	None
AO7411	1	1	None	None
AO7415	1	1	None	None
AO7417	1	1	None	None
AO7800	1	2	None	None
AO8801A	1	2	None	None
AO8804	1	1	None	None
AO8810	1	1	None	None
AO8814	1	1	None	None
AO8820	1	1	None	None
AO8822	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AO9926C	1	2	None	None
AOB10N60	1	1	None	None
AOB10T60PL	1	1	None	None
AOB11S65	1	1	None	None
AOB12N50	1	1	None	None
AOB12N65L	1	1	None	None
AOB14N50	1	1	None	None
AOB20S60L	1	1	None	None
AOB25S65	1	1	None	None
AOB27S60L	1	1	None	None
AOB42S60L	1	1	None	None
AOB190A60CL	1	1	None	None
AOB190A60L	1	1	None	None
AOB240L	1	1	None	None
AOB254L	1	1	None	None
AOB256L	1	1	None	None
AOB260L	1	1	None	None
AOB262L	1	1	None	None
AOB264L	1	1	None	None
AOB270L	1	1	None	None
AOB270AL	1	1	None	None
AOB280L	1	1	None	None
AOB282L	1	1	None	None
AOB284L	1	1	None	None
AOB286L	1	1	None	None
AOB290L	1	1	None	None
AOB292L	1	1	None	None
AOB296L	1	1	None	None
AOB409L	1	1	None	None
AOB410L	1	1	None	None
AOB411L	1	1	None	None
AOB412L	1	1	None	None
AOB414	1	1	None	None
AOB418L	1	1	None	None
AOB470L	1	1	None	None
AOB480L	1	1	None	None
AOB482L	1	1	None	None
AOB1100L	1	1	None	None
AOB1404L	1	1	None	None
AOB1608L	1	1	None	None
AOB2140L	1	1	None	None
AOB2144L	1	1	None	None
AOB2146L	1	1	None	None
AOB2500L	1	1	None	None
AOB2502L	1	1	None	None
AOB2904	1	1	None	None
AOB2910L	1	1	None	None
AOB4184	1	1	None	None
AOB66616L	1	1	None	None
AOD1N60	1	1	None	None
AOD1R4A70	1	1	None	None
AOD2N60	2	1	None	None
AOD3N50	1	1	None	None
AOD3N60	1	1	None	None
AOD3N80	1	1	None	None
AOD4N60	1	1	None	None
AOD4S60	1	1	None	None
AOD5N40	1	1	None	None
AOD5N50	1	1	None	None
AOD7N60	1	1	None	None
AOD7N65	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AOD7S65	1	1	None	None
AOD8N25	1	1	None	None
AOD9N40	1	1	None	None
AOD9N50	1	1	None	None
AOD11S60	1	1	None	None
AOD256	1	1	None	None
AOD294A	1	1	None	None
AOD296A	1	1	None	None
AOD380A60	1	1	None	None
AOD403	1	1	None	None
AOD407	1	1	None	None
AOD409	2	1	None	None
AOD413	1	1	None	None
AOD417	1	1	None	None
AOD418	1	1	None	None
AOD423	1	1	None	None
AOD424	2	1	None	None
AOD442	2	1	None	None
AOD444	1	1	None	None
AOD450	1	1	None	None
AOD454A	1	1	None	None
AOD458	1	1	None	None
AOD468	1	1	None	None
AOD478	1	1	None	None
AOD480	1	1	None	None
AOD482	1	1	None	None
AOD508	1	1	None	None
AOD514	1	1	None	None
AOD536	1	1	None	None
AOD538	1	1	None	None
AOD558	1	1	None	None
AOD603A	1	1	None	None
AOD607A	1	1	None	None
AOD609	1	1	None	None
AOD661	1	1	None	None
AOD950A70	1	1	None	None
AOD2144	1	1	None	None
AOD2146	1	1	None	None
AOD2210	1	1	None	None
AOD2544	1	1	None	None
AOD2606	1	1	None	None
AOD2610E	1	1	None	None
AOD2810	1	1	None	None
AOD2816	1	1	None	None
AOD2910	2	1	None	None
AOD2916	1	1	None	None
AOD2922	1	1	None	None
AOD4126	1	1	None	None
AOD4130	1	1	None	None
AOD4132	1	1	None	None
AOD4184	2	1	None	None
AOD4185	1	1	None	None
AOD4186	1	1	None	None
AOD4189	1	1	None	None
AOD4286	1	1	None	None
AOD4454	1	1	None	None
AOD4504	1	1	None	None
AOD21357	1	1	None	None
AOD66406	1	1	None	None
AOD66923	1	1	None	None
AOE6930	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AOE6932	1	1	None	None
AOE6936	1	1	None	None
AOH3106	1	1	None	None
AOH3254	1	1	None	None
AOI1N60	1	1	None	None
AOI1R4A70	1	1	None	None
AOI2N60A	1	1	None	None
AOI4N60	1	1	None	None
AOI4S60	1	1	None	None
AOI5N40	1	1	None	None
AOI7N60	1	1	None	None
AOI7N65	1	1	None	None
AOI8N25	1	1	None	None
AOI9N50	1	1	None	None
AOI11S60	1	1	None	None
AOI294A	1	1	None	None
AOI296A	1	1	None	None
AOI403	1	1	None	None
AOI409	1	1	None	None
AOI418	1	1	None	None
AOI423	1	1	None	None
AOI442	1	1	None	None
AOI444	1	1	None	None
AOI468	1	1	None	None
AOI478	1	1	None	None
AOI482	1	1	None	None
AOI508	1	1	None	None
AOI514	1	1	None	None
AOI538	1	1	None	None
AOI950A70	1	1	None	None
AOI2210	1	1	None	None
AOI2606	1	1	None	None
AOI2610E	1	1	None	None
AOI4126	1	1	None	None
AOI4130	1	1	None	None
AOI4184	1	1	None	None
AOI4185	1	1	None	None
AOI4286	1	1	None	None
AOI21357	1	1	None	None
AOI66406	1	1	None	None
AOK5N100	1	1	None	None
AOK40N30	1	1	None	None
AOK60N30L	1	1	None	None
AON1606	1	1	None	None
AON2240	1	1	None	None
AON2260	1	1	None	None
AON2290	1	1	None	None
AON2406	1	1	None	None
AON2408	1	1	None	None
AON2410	1	1	None	None
AON2420	1	1	None	None
AON2801	1	2	None	None
AON2802	1	2	None	None
AON2803	1	2	None	None
AON2810	1	2	None	None
AON2812	1	2	None	None
AON6144	1	1	None	None
AON6152	1	1	None	None
AON6154	1	1	None	None
AON6156	1	1	None	None
AON6160	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AON6162	1	1	None	None
AON6220	1	1	None	None
AON6224	2	1	None	None
AON6226	1	1	None	None
AON6234	1	1	None	None
AON6240	1	1	None	None
AON6242	1	1	None	None
AON6250	1	1	None	None
AON6260	1	1	None	None
AON6262E	1	1	None	None
AON6264E	1	1	None	None
AON6266E	1	1	None	None
AON6276	1	1	None	None
AON6278	1	1	None	None
AON6280	1	1	None	None
AON6282	1	1	None	None
AON6284	2	1	None	None
AON6290	1	1	None	None
AON6292	1	1	None	None
AON6294	1	1	None	None
AON6298	1	1	None	None
AON6312	1	1	None	None
AON6314	1	1	None	None
AON6354	1	1	None	None
AON6358	1	1	None	None
AON6360	1	1	None	None
AON6362	1	1	None	None
AON6366E	1	1	None	None
AON6368	1	1	None	None
AON6380	1	1	None	None
AON6384	1	1	None	None
AON6405	1	1	None	None
AON6407	1	1	None	None
AON6411	1	1	None	None
AON6414A	1	1	None	None
AON6435	1	1	None	None
AON6448	1	1	None	None
AON6452	1	1	None	None
AON6458	1	1	None	None
AON6482	1	1	None	None
AON6484	1	1	None	None
AON6500	1	1	None	None
AON6502	1	1	None	None
AON6510	1	1	None	None
AON6512	1	1	None	None
AON6516	1	1	None	None
AON6528	1	1	None	None
AON6548	1	1	None	None
AON6552	1	1	None	None
AON6558	1	1	None	None
AON6560	1	1	None	None
AON6566	1	1	None	None
AON6572	1	1	None	None
AON6576	1	1	None	None
AON6586	1	1	None	None
AON6588	1	1	None	None
AON6590	1	1	None	None
AON6594	1	1	None	None
AON6596	1	1	None	None
AON6661	1	2	None	None
AON6667	1	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AON6792	1	1	None	None
AON6796	1	1	None	None
AON6816	1	2	None	None
AON6850	1	2	None	None
AON6884	1	2	None	None
AON6906A	1	1	None	None
AON6912A	1	1	None	None
AON6926	1	1	None	None
AON6932A	1	1	None	None
AON6934A	1	1	None	None
AON6946	1	1	None	None
AON6980	1	1	None	None
AON6992	1	1	None	None
AON6994	1	1	None	None
AON6996	1	1	None	None
AON6998	1	1	None	None
AON7407	1	1	None	None
AON7421	1	1	None	None
AON7611	1	1	None	None
AOND32324	1	2	None	None
AONR21307	1	1	None	None
AONR21321	1	1	None	None
AONR21357	1	1	None	None
AONS21307	1	1	None	None
AONS21321	1	1	None	None
AONS21357	1	1	None	None
AONS32306	1	1	None	None
AONS32314	1	1	None	None
AONS62602	1	1	None	None
AONS62614	1	1	None	None
AONS62618	1	1	None	None
AONS62920	1	1	None	None
AONS62922	1	1	None	None
AONS66402	1	1	None	None
AONS66406	1	1	None	None
AONS66612	1	1	None	None
AONS66916	1	1	None	None
AONS66923	1	1	None	None
AONY36352	1	1	None	None
AONY36354	1	1	None	None
AOSD26313C	1	2	None	None
AOSD62666E	1	2	None	None
AOSP21307	1	1	None	None
AOSP21321	1	1	None	None
AOSP21357	1	1	None	None
AOSP32314	1	1	None	None
AOSP32368	1	1	None	None
AOSP66406	1	1	None	None
AOSS21311C	1	1	None	None
AOSS32136C	1	1	None	None
AOT1N60	1	1	None	None
AOT5N100	1	1	None	None
AOT10N60	1	1	None	None
AOT10N65	1	1	None	None
AOT10T60PL	1	1	None	None
AOT11N60L	1	1	None	None
AOT11N70	1	1	None	None
AOT11S60L	1	1	None	None
AOT11S65	1	1	None	None
AOT12N30	1	1	None	None
AOT12N40	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AOT12N50	1	1	None	None
AOT12N60	1	1	None	None
AOT12N65	1	1	None	None
AOT14N50	1	1	None	None
AOT20N25	1	1	None	None
AOT20N60	1	1	None	None
AOT20S60L	1	1	None	None
AOT22N50L	1	1	None	None
AOT25S65	1	1	None	None
AOT27S60L	1	1	None	None
AOT42S60L	1	1	None	None
AOT190A60CL	1	1	None	None
AOT190A60L	1	1	None	None
AOT240L	1	1	None	None
AOT254L	1	1	None	None
AOT260L	1	1	None	None
AOT262L	1	1	None	None
AOT264L	1	1	None	None
AOT270AL	1	1	None	None
AOT270L	1	1	None	None
AOT280L	1	1	None	None
AOT282L	1	1	None	None
AOT284L	1	1	None	None
AOT286L	1	1	None	None
AOT290L	1	1	None	None
AOT292L	1	1	None	None
AOT296L	1	1	None	None
AOT380A60L	1	1	None	None
AOT410L	1	1	None	None
AOT412	1	1	None	None
AOT414	1	1	None	None
AOT418L	1	1	None	None
AOT424	1	1	None	None
AOT430	1	1	None	None
AOT470	1	1	None	None
AOT480L	1	1	None	None
AOT482L	1	1	None	None
AOT1100L	1	1	None	None
AOT1404L	1	1	None	None
AOT1608L	1	1	None	None
AOT2140L	1	1	None	None
AOT2142L	1	1	None	None
AOT2144L	1	1	None	None
AOT2146L	1	1	None	None
AOT2500L	1	1	None	None
AOT2502L	1	1	None	None
AOT2904	1	1	None	None
AOT2910L	1	1	None	None
AOT66616L	1	1	None	None
AOTF4N90	1	1	None	None
AOTF5N100	1	1	None	None
AOTF6N90	1	1	None	None
AOTF7T60P	2	1	None	None
AOTF9N90	1	1	None	None
AOTF10N60	1	1	None	None
AOTF10N65	1	1	None	None
AOTF10T60P	2	1	None	None
AOTF11N60	2	1	None	None
AOTF11N70	1	1	None	None
AOTF11S60	2	1	None	None
AOTF11S65	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AOTF12N30	1	1	None	None
AOTF12N50	1	1	None	None
AOTF12N60	1	1	None	None
AOTF12N65	2	1	None	None
AOTF14N50	1	1	None	None
AOTF20N60	1	1	None	None
AOTF20S60	2	1	None	None
AOTF22N50	2	1	None	None
AOTF25S65	2	1	None	None
AOTF42S60	2	1	None	None
AOTF190A60	2	1	None	None
AOTF240L	1	1	None	None
AOTF256L	1	1	None	None
AOTF286L	1	1	None	None
AOTF290L	1	1	None	None
AOTF292L	1	1	None	None
AOTF296L	1	1	None	None
AOTF380A60L	1	1	None	None
AOTF409	1	1	None	None
AOTF454L	1	1	None	None
AOTF2142L	1	1	None	None
AOTF2144L	1	1	None	None
AOTF2146L	1	1	None	None
AOTF2910L	1	1	None	None
AOTF4126	1	1	None	None
AOTF4185	1	1	None	None
AOU1N60	1	1	None	None
AOU2N60	2	1	None	None
AOU3N50	1	1	None	None
AOU3N60	1	1	None	None
AOU4N60	1	1	None	None
AOU4S60	1	1	None	None
AOU7S65	1	1	None	None
AOU9N50	1	1	None	None
AOW7S60	1	1	None	None
AOW11N60	1	1	None	None
AOW284	1	1	None	None
AOW292	1	1	None	None
AOW296	1	1	None	None
AOW482	1	1	None	None
AOW2500	1	1	None	None
AOW2502	1	1	None	None
AOW66412	1	1	None	None
AOW66616	1	1	None	None
AOY423	1	1	None	None
AOY2610E	1	1	None	None
AUIRF540Z	2	1	None	None
AUIRF1010Z	3	1	None	None
AUIRF1324	4	1	None	None
AUIRF1404	3	1	None	None
AUIRF1404Z	3	1	None	None
AUIRF1405Z	2	1	None	None
AUIRF2804	4	1	None	None
AUIRF2805	1	1	None	None
AUIRF2903Z	1	1	None	None
AUIRF3205Z	2	1	None	None
AUIRF3415	1	1	None	None
AUIRF3710Z	2	1	None	None
AUIRF3805	4	1	None	None
AUIRF3808	1	1	None	None
AUIRF4104	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AUIRF4905	3	1	None	None
AUIRF6215	1	1	None	None
AUIRF7309Q	1	2	None	None
AUIRF7316Q	1	2	None	None
AUIRF7341Q	1	2	None	None
AUIRF7342Q	1	1	None	None
AUIRF7343Q	1	2	None	None
AUIRF7379Q	1	2	None	None
AUIRF9540N	1	1	None	None
AUIRFB4410	1	1	None	None
AUIRFB8405	1	1	None	None
AUIRFB8407	1	1	None	None
AUIRFB8409	1	1	None	None
AUIRFN7107	1	1	None	None
AUIRFP2907	1	1	None	None
AUIRFR024N	1	1	None	None
AUIRFR120Z	1	1	None	None
AUIRFR3504	1	1	None	None
AUIRFR3710Z	1	1	None	None
AUIRFR4104	1	1	None	None
AUIRFR4105	1	1	None	None
AUIRFR4615	1	1	None	None
AUIRFR5305	1	1	None	None
AUIRFR6215	1	1	None	None
AUIRFR8401	1	1	None	None
AUIRFR8403	1	1	None	None
AUIRFR8405	1	1	None	None
AUIRFS3107-7P	1	1	None	None
AUIRFS4115	1	1	None	None
AUIRFS4310	1	1	None	None
AUIRFS8403	1	1	None	None
AUIRFS8405	1	1	None	None
AUIRFS8407	2	1	None	None
AUIRFS8408-7P	1	1	None	None
AUIRFS8409	2	1	None	None
AUIRFSL4115	1	1	None	None
AUIRFSL4310	1	1	None	None
AUIRFSL8403	1	1	None	None
AUIRFSL8405	1	1	None	None
AUIRFSL8407	1	1	None	None
AUIRFSL8409	1	1	None	None
AUIRFU024N	1	1	None	None
AUIRFU120Z	1	1	None	None
AUIRFU4104	1	1	None	None
AUIRFU4615	1	1	None	None
AUIRFU5305	1	1	None	None
AUIRFU8401	1	1	None	None
AUIRFU8403	1	1	None	None
AUIRFU8405	1	1	None	None
AUIRFZ24N	2	1	None	None
AUIRFZ34N	1	1	None	None
AUIRFZ44VZS	1	1	None	None
AUIRL1404	2	1	None	None
AUIRL3705Z	3	1	None	None
AUIRLR014N	1	1	None	None
AUIRLR2703	1	1	None	None
AUIRLR3410	1	1	None	None
AUIRLS3034	1	1	None	None
AUIRLS3036-7P	1	1	None	None
AUIRLZ44Z	1	1	None	None
BF998	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BF2040	2	1	None	None
BF2040W	1	1	None	None
BF5030	2	1	None	None
BF5030W	1	1	None	None
BS107A	1	1	None	None
BS107KL	1	1	None	None
BS170	1	1	None	None
BS170F	1	1	None	None
BS250P	1	1	None	None
BS270	1	1	None	None
BSC007N04LS6	1	1	None	None
BSC009NE2LS	3	1	None	None
BSC010N04LS	3	1	None	None
BSC010NE2LS	2	1	None	None
BSC011N03LS	2	1	None	None
BSC12DN20NS3G	1	1	None	None
BSC014N03LS	2	1	None	None
BSC014N04LS	2	1	None	None
BSC014N06NS	1	1	None	None
BSC014NE2LSI	1	1	None	None
BSC16DN25NS3G	1	1	None	None
BSC016N03	2	1	None	None
BSC016N06NS	1	1	None	None
BSC017N04NSG	1	1	None	None
BSC018N04LSG	1	1	None	None
BSG018NE2LS	2	1	None	None
BSC019N02KSG	1	1	None	None
BSC019N04	2	1	None	None
BSC020N03	2	1	None	None
BSC22DN20NS3G	1	1	None	None
BSC022N04LS	2	1	None	None
BSC024NE2LS	1	1	None	None
BSC025N02KSG	2	1	None	None
BSC026N04LS	1	1	None	None
BSC026N04LS	1	1	None	None
BSC026N08NS5	1	1	None	None
BSC026NE2LS5	1	1	None	None
BSC027N04LSG	1	1	None	None
BSC028N06	2	1	None	None
BSC939N03	2	1	None	None
BSC030N04NSG	1	1	None	None
BSC030N08NS5	1	1	None	None
BSC030P03NS3G	1	1	None	None
BSC031N06NS3G	1	1	None	None
BSC032N04LS	1	1	None	None
BSC032NE2LS	1	1	None	None
BSC034N03LSG	1	1	None	None
BSC034N06NS	1	1	None	None
BSC035N10NS5	1	1	None	None
BSC036NE7NS3G	1	1	None	None
BSC037N08NS5	1	1	None	None
BSC039N06NS	1	1	None	None
BSC040N08NS5	1	1	None	None
BSC042N03	3	1	None	None
BSC042NE7NS3G	1	1	None	None
BSC046N10NS3G	1	1	None	None
BSC047N08NS3G	1	1	None	None
BSC050N03	2	1	None	None
BSC050NE2LS	1	1	None	None
BSC052N03LS	1	1	None	None
BSC052N08NS5	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BSC054N04NSG	1	1	None	None
BSC057N03	2	1	None	None
BSC057N08NS3G	1	1	None	None
BSC059N03S	1	1	None	None
BSC059N04LS	2	1	None	None
BSC060N10NS3G	1	1	None	None
BSC060P03NS3G	1	1	None	None
BSC061N08NS5	1	1	None	None
BSC066N06NS	1	1	None	None
BSC067N06LS3G	1	1	None	None
BSC070N10NS3	1	1	None	None
BSC072N08NS5	1	1	None	None
BSC077N12NS3G	1	1	None	None
BSC080N03MSG	1	1	None	None
BSC082N10LSG	1	1	None	None
BSC084P03NS3G	1	1	None	None
BSC090N03	2	1	None	None
BSC093N04LSG	1	1	None	None
BSC097N06NS	1	1	None	None
BSC098N10NS5	1	1	None	None
BSC100N03MSG	1	1	None	None
BSC100N06LS3G	1	1	None	None
BSC105N10LSFG	1	1	None	None
BSC109N10NS3G	1	1	None	None
BSC110N06NS3G	1	1	None	None
BSC117N08NS5	1	1	None	None
BSC118N10NSG	1	1	None	None
BSC119N03SG	1	1	None	None
BSC120N03	2	1	None	None
BSC123N08NS3G	1	1	None	None
BSC123N10LSG	1	1	None	None
BSC130P03LSG	1	1	None	None
BSC150N03LDG	1	2	None	None
BSC160N10NS3G	1	1	None	None
BSC190N12NS3G	1	1	None	None
BSC190N15NS3G	1	1	None	None
BSC196N10NSG	1	1	None	None
BSC252N10NSFG	1	1	None	None
BSC265N10LSFG	1	1	None	None
BSC320N20NS3G	1	1	None	None
BSC340N08NS3G	1	1	None	None
BSC360N15NS3G	1	1	None	None
BSC500N20NS3G	1	1	None	None
BSC0501NSI	1	1	None	None
BSC0504NSI	1	1	None	None
BSC520M15NS3G	1	1	None	None
BSC600N25NS3G	1	1	None	None
BSC900N20NS3G	1	1	None	None
BSC0901NS	2	1	None	None
BSC0902NS	2	1	None	None
BSC0904NSI	1	1	None	None
BSC0906NS	1	1	None	None
BSC0909NS	1	1	None	None
BSC0910NDI	1	1	None	None
BSC0911ND	1	1	None	None
BSC0923NDI	1	1	None	None
BSC0924NDI	1	1	None	None
BSC0925ND	1	1	None	None
BSD214SN	1	1	None	None
BSD223P	1	2	None	None
BSD235C	1	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BSD235N	1	2	None	None
BSD314SPE	1	1	None	None
BSD316SN	1	1	None	None
BSD840N	1	2	None	None
BSG0811ND	1	1	None	None
BSH103	1	1	None	None
BSH105	1	1	None	None
BSH108	1	1	None	None
BSH111	1	1	None	None
BSH114	1	1	None	None
BSH201	1	1	None	None
BSH202	1	1	None	None
BSH203	1	1	None	None
BSH205	1	1	None	None
BSL207SP	1	1	None	None
BSL211SP	1	1	None	None
BSL214N	1	2	None	None
BSL215C	1	2	None	None
BSL296SN	1	1	None	None
BSL305PE	1	1	None	None
BSL307SP	1	1	None	None
BSL308C	1	2	None	None
BSL308PE	1	2	None	None
BSL316C	1	2	None	None
BSL372SN	1	1	None	None
BSL373SN	1	1	None	None
BSL606SN	1	1	None	None
BSL716SN	1	1	None	None
BSL802SN	1	1	None	None
BSN20	1	1	None	None
BSN20BK	1	1	None	None
BSO033N03MSG	1	1	None	None
BSO080P03NS3E	1	1	None	None
BSO080P03SH	1	1	None	None
BSO110N03MSG	1	1	None	None
BSO130P03SH	1	1	None	None
BSO150N03MDG	1	1	None	None
BSO200P03SH	1	1	None	None
BSO201SPH	1	1	None	None
BSO203PH	1	2	None	None
BSO203SPH	1	1	None	None
BSO207PH	1	2	None	None
BSO211PH	1	2	None	None
BSO0220N03MD	1	1	None	None
BSO301SPH	1	1	None	None
BSO303SPH	1	1	None	None
BSO615CG	1	2	None	None
BSP88	1	1	None	None
BSP89	1	1	None	None
BSP92P	1	1	None	None
BSP122	1	1	None	None
BSP125	1	1	None	None
BSP126	1	1	None	None
BSP129	1	1	None	None
BSP135	1	1	None	None
BSP149	1	1	None	None
BSP170P	1	1	None	None
BSP171P	1	1	None	None
BSP220	1	1	None	None
BSP225	1	1	None	None
BSP230	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BSP250	1	1	None	None
BSP295	1	1	None	None
BSP297	1	1	None	None
BSP300	1	1	None	None
BSP315P	1	1	None	None
BSP316P	1	1	None	None
BSP317P	1	1	None	None
BSP318	1	1	None	None
BSP320	1	1	None	None
BSP321P	1	1	None	None
BSP322P	1	1	None	None
BSP324	1	1	None	None
BSP372	1	1	None	None
BSP373	1	1	None	None
BSP603S2L	1	1	None	None
BSP612P	1	1	None	None
BSP613P	1	1	None	None
BSP716N	1	1	None	None
BSR92P	1	1	None	None
BSR202N	1	1	None	None
BSR302N	1	1	None	None
BSR315P	1	1	None	None
BSR316P	1	1	None	None
BSR802N	1	1	None	None
BSS83P	1	1	None	None
BSS84	1	1	None	None
BSS84AK	1	1	None	None
BSS84AKS	1	2	None	None
BSS84DW	1	2	None	None
BSS84P	1	1	None	None
BSS84PW	1	1	None	None
BSS84W	1	1	None	None
BSS87	1	1	None	None
BSS119N	1	1	None	None
BSS123	1	1	None	None
BSS123L	1	1	None	None
BSS123N	1	1	None	None
BSS123W	1	1	None	None
BSS126	1	1	None	None
BSS127	1	1	None	None
BSS131	1	1	None	None
BSS138	1	1	None	None
BSS138BK	1	1	None	None
BSS138BKS	1	2	None	None
BSS138BKW	1	1	None	None
BSS138L	1	1	None	None
BSS138N	1	1	None	None
BSS138P	1	1	None	None
BSS138PW	1	1	None	None
BSS138W	1	1	None	None
BSS139	1	1	None	None
BSS159	1	1	None	None
BSS169	1	1	None	None
BSS192	1	1	None	None
BSS205N	1	1	None	None
BSS209PW	1	1	None	None
BSS214N	1	1	None	None
BSS215P	1	1	None	None
BSS223PW	1	1	None	None
BSS225	1	1	None	None
BSS306N	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BSS308PE	1	1	None	None
BSS314PE	1	1	None	None
BSS315P	1	1	None	None
BSS316N	1	1	None	None
BSS606N	1	1	None	None
BSS670S2L	1	1	None	None
BSS806N	2	1	None	None
BSS806NW	1	1	None	None
BSS7728N	1	1	None	None
BSS8402DW	1	2	None	None
BST82	1	1	None	None
BSV236SP	1	1	None	None
BSZ12DN20NS3G	1	1	None	None
BSZ014NE2LS5IF	1	1	None	None
BSZ15DC02KDH	1	1	None	None
BSZ16DN25NS3G	1	1	None	None
BSZ018NE2LS	2	1	None	None
BSZ019N03LS	1	1	None	None
BSZ22DN20NS3G	1	1	None	None
BSZ025N04LS	1	1	None	None
BSZ028N04LS	1	1	None	None
BSZ034N04LS	1	1	None	None
BSZ035N03	2	1	None	None
BSZ036NE2LS	1	1	None	None
BSZ040N04LSG	1	1	None	None
BSZ42DN25NS3G	1	1	None	None
BSZ042N06NS	1	1	None	None
BSZ050N03	2	1	None	None
BSZ058N03	2	1	None	None
BSZ065N03LS	1	1	None	None
BSZ067N06LS3G	1	1	None	None
BSZ068N06NS	1	1	None	None
BSZ075N08NS5	1	1	None	None
BSZ084N08NS5	1	1	None	None
BSZ086P03NS3	2	1	None	None
BSZ088N03	2	1	None	None
BSZ097N04LSG	1	1	None	None
BSZ099N06LS5	1	1	None	None
BSZ100N03LSG	1	1	None	None
BSZ100N03	2	1	None	None
BSZ100N06LS3G	1	1	None	None
BSZ100N06NS	1	1	None	None
BSZ105N04NSG	1	1	None	None
BSZ110N08NS5	1	1	None	None
BSZ120P03NS3G	1	1	None	None
BSZ123N08NSZ3	1	1	None	None
BSZ130N03	2	1	None	None
BSZ150N10LS3G	1	1	None	None
BSZ160N10NS3G	1	1	None	None
BSZ180P03NS3	2	1	None	None
BSZ240N12NS3G	1	1	None	None
BSZ340N08NS3G	1	1	None	None
BSZ440N10NS3G	1	1	None	None
BSZ0506NS	1	1	None	None
BSZ520N15NS3G	1	1	None	None
BSZ900N15NS3G	1	1	None	None
BSZ900N20NS3G	1	1	None	None
BSZ0901NS	2	1	None	None
BSZ0902NS	2	1	None	None
BSZ0904NSI	1	1	None	None
BSZ0909NS	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BSZ0994NS	1	1	None	None
BUK7Y7R6-40E	1	1	None	None
BUK555-60	2	1	None	None
BUK765R0-100E	1	1	None	None
BUK7628-100A	1	1	None	None
BUK7635-55A	1	1	None	None
BUK7635-100A	1	1	None	None
BUK96180-100A	1	1	None	None
BUZ10	1	1	None	None
BUZ11	1	1	None	None
C2M0025120D	1	1	None	None
C2M0040120D	1	1	None	None
C2M0045170D	1	1	None	None
C2M0080120D	1	1	None	None
C2M0160120D	1	1	None	None
C2M1000170D	1	1	None	None
C2M1000170J	1	1	None	None
C3M0015065K	1	1	None	None
C3M0016120K	1	1	None	None
C3M0030090K	1	1	None	None
C3M0060065D	1	1	None	None
C3M0060065J	1	1	None	None
C3M0060065K	1	1	None	None
C3M0065090D	1	1	None	None
C3M0065090J	1	1	None	None
C3M0065100J	1	1	None	None
C3M0065100K	1	1	None	None
C3M0075120D	1	1	None	None
C3M0075120J	1	1	None	None
C3M0075120K	1	1	None	None
C3M0120090D	1	1	None	None
C3M0120090J	1	1	None	None
C3M0120100J	1	1	None	None
C3M0120100K	1	1	None	None
C3M0160120D	1	1	None	None
C3M0160120J	1	1	None	None
C3M028009D	1	1	None	None
C3M0280090J	1	1	None	None
C3M0350120D	1	1	None	None
C3M0350120J	1	1	None	None
CPC3701CTR	1	1	None	None
CPC3703CTR	1	1	None	None
CPC3710CTR	1	1	None	None
CPC3714CTR	1	1	None	None
CPC3720CTR	1	1	None	None
CPC3730CTR	1	1	None	None
CPC3902CTR	1	1	None	None
CPC3902ZTR	1	1	None	None
CPC3909CTR	1	1	None	None
CPC3909ZTR	1	1	None	None
CPC3960ZTR	1	1	None	None
CPC3980ZTR	1	1	None	None
CPC3982TTR	1	1	None	None
CPC5602CTR	1	1	None	None
CPC5603CTR	1	1	None	None
DI010N03PW	1	1	None	None
DI012N60D1	1	1	None	None
DI015N25D1	1	1	None	None
DI020N06D1	1	1	None	None
DI028P03PT	1	1	None	None
DI030N03D1	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DI035N10PT	1	1	None	None
DI036N20PQ	1	1	None	None
DI040N03PT	1	1	None	None
DI045N03PT	1	1	None	None
DI050N04PT	1	1	None	None
DI080N03PQ	1	1	None	None
DI080N06PQ	1	1	None	None
DI100N10PQ	1	1	None	None
DI110N03PQ	1	1	None	None
DI110N04PQ	1	1	None	None
DI110N15PQ	1	1	None	None
DI150N03PQ	1	1	None	None
DIT050N06	1	1	None	None
DIT090N06	1	1	None	None
DIT095N08	1	1	None	None
DIT100N10	1	1	None	None
DIT120N08	1	1	None	None
DIT150N03	1	1	None	None
DIT195N08	1	1	None	None
DMC2004	2	2	None	None
DMC2020USD	1	2	None	None
DMC2038LVT	1	2	None	None
DMC2400UV	1	2	None	None
DMC2450UV	1	2	None	None
DMC2700UDM	1	2	None	None
DMC2990UDJ	1	2	None	None
DMC3016LSD	1	2	None	None
DMC3021LK4	1	1	None	None
DMC3021LSD	1	2	None	None
DMC3025LSD	1	2	None	None
DMC3028LSD	1	2	None	None
DMC3032LSD	1	2	None	None
DMC3400SDW	1	2	None	None
DMC4015SSD	1	2	None	None
DMC4028SSD	1	2	None	None
DMC4029SSD	1	2	None	None
DMC4040SSD	1	2	None	None
DMC4047SSD	1	2	None	None
DMC4050SSD	1	2	None	None
DMC6040SSD	1	2	None	None
DMG301NU	1	1	None	None
DMG1012	2	1	None	None
DMG1013UW	1	1	None	None
DMG1016	2	2	None	None
DMG1023UV	1	2	None	None
DMG1024UV	1	2	None	None
DMG1029SV	1	2	None	None
DMG1045U	1	1	None	None
DMG2302U	1	1	None	None
DMG2305UX	1	1	None	None
DMG2307L	1	1	None	None
DMG3402L	1	1	None	None
DMG3404L	1	1	None	None
DMG3406L	1	1	None	None
DMG3414U	1	1	None	None
DMG3415U	1	1	None	None
DMG3418L	1	1	None	None
DMG4511SK4	1	1	None	None
DMG4800LK3	1	1	None	None
DMG4800LSD	1	2	None	None
DMG6301UDW	1	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DMG6402LVT	1	1	None	None
DMG6601LVT	1	2	None	None
DMG6602LVT	1	2	None	None
DMG6968UDM	1	1	None	None
DMG7430LFG	1	1	None	None
DMN5L06	2	2	None	None
DMN10H120SE	1	1	None	None
DMN10H170S	2	1	None	None
DMN10H220LQ	1	1	None	None
DMN26D0UFB4	1	1	None	None
DMN26D0UT	1	1	None	None
DMN30H4D0LFD	1	1	None	None
DMN53D0L	1	1	None	None
DMN53D0LDW	1	2	None	None
DMN55D0UT	1	1	None	None
DMN61D9UDW	1	2	None	None
DMN62D0U	2	1	None	None
DMN63D8L	1	1	None	None
DMN63D8LDW	1	2	None	None
DMN63D8LV	1	2	None	None
DMN63D8LW	1	1	None	None
DMN65D8L	2	1	None	None
DMN66D0LT	1	1	None	None
DMN90H8D5HCT	1	1	None	None
DMN601WK	1	1	None	None
DMN1004UFV	1	1	None	None
DMN1019UFDE	1	1	None	None
DMN1029UFDB	1	2	None	None
DMN2004K	1	1	None	None
DMN2004VK	1	2	None	None
DMN2005LPK	1	1	None	None
DMN2022UFDF	1	1	None	None
DMN2028USS	1	1	None	None
DMN2029USD	1	2	None	None
DMN2046U	1	1	None	None
DMN2050L	1	1	None	None
DMN2050LFDB	1	2	None	None
DMN2056U	1	1	None	None
DMN2058U	1	1	None	None
DMN2100UDM	1	1	None	None
DMN2215UDM	1	2	None	None
DMN2230U	1	1	None	None
DMN2300UFB4	1	1	None	None
DMN2400UFB4	1	1	None	None
DMN2400UV	1	2	None	None
DMN2990UDJ	1	2	None	None
DMN3018SSD	1	2	None	None
DMN3023L	1	1	None	None
DMN3024LSD	1	2	None	None
DMN3033L	2	1	None	None
DMN3042L	1	1	None	None
DMN3053L	1	1	None	None
DMN3065LW	1	1	None	None
DMN3070SSN	1	1	None	None
DMN3404L	1	1	None	None
DMN4020LFDE	1	1	Free	None
DMN4036LK3	1	1	None	None
DMN4060SVT	1	1	None	None
DMN6040SSD	1	2	None	None
DMN6040SSS	1	1	None	None
DMN4068SE	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DMN6070SSD	1	2	None	None
DMN6075S	1	1	None	None
DMNH6021SPD	1	2	None	None
DMNH6021SPSQ	1	1	None	None
DMP10H4D2S	1	1	None	None
DMP10H400SE	1	1	None	None
DMP10H400SK3	1	1	None	None
DMP32D4SFB	1	1	None	None
DMP56D0UFB	1	1	None	None
DMP58D0SV	1	2	None	None
DMP2004K	1	1	None	None
DMP2004VK	1	2	None	None
DMP2022LS5	1	1	None	None
DMP2035U	2	1	None	None
DMP2039UFDE	1	1	Free	None
DMP2045U	1	1	None	None
DMP2065UFDB	1	2	None	None
DMP2066LDM	1	1	None	None
DMP2066LSD	1	2	None	None
DMP2066LSS	1	1	None	None
DMP2100U	1	1	None	None
DMP2130L	2	1	None	None
DMP2160U	1	1	None	None
DMP2215L	1	1	None	None
DMP2225L	1	1	None	None
DMP2305U	1	1	None	None
DMP3010LK3	1	1	None	None
DMP3036SFG	1	1	None	None
DMP3036SSS	1	1	None	None
DMP3056L	2	1	None	None
DMP3056LSD	1	2	None	None
DMP3068L	1	1	None	None
DMP3099L	1	1	None	None
DMP3125L	1	1	None	None
DMP3130LQ	1	1	None	None
DMP3160L	1	1	None	None
DMP4015SK3	1	1	None	None
DMP4015SSSQ	1	1	None	None
DMP4025SFGQ	1	1	None	None
DMP4047LFDE	1	1	Free	None
DMP4047SK3	1	1	None	None
DMP4050SSD	1	2	None	None
DMP4050SSS	1	1	None	None
DMP4051KL3	1	1	None	None
DMP4065S	1	1	None	None
DMP6110SVT	1	1	None	None
DMPH3010LPS	1	1	None	None
DMPH6050SSD	1	2	None	None
DMT10H010LPS	1	1	None	None
DMT34M1LPS	1	1	None	None
DMT6007LFG	1	1	None	None
DMT8012LFG	1	1	None	None
DMTH6004SK3Q	1	1	None	None
DMTH6016LSD	1	2	None	None
DN1509N8	1	1	None	None
DN2450	2	1	None	None
DN2470K4	1	1	None	None
DN2530	2	1	None	None
DN2535	2	1	None	None
DN2540	3	1	None	None
DN2625K4	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DN3135	2	1	None	None
DN3525N8	1	1	None	None
DN3535N8	1	1	None	None
DN3545	2	1	None	None
DPM2023UFDF	1	1	None	None
FCA47N60	1	1	None	None
FCB20N60	1	1	None	None
FCD5N60	1	1	None	None
FCH47N60	1	1	None	None
FCP11N60	1	1	None	None
FCP20N60	1	1	None	None
FCP22N60	1	1	None	None
FCP36N60N	1	1	None	None
FCPF11N60	1	1	None	None
FCPF20N60	1	1	None	None
FCPF22N60	1	1	None	None
FCPF36N60NT	1	1	None	None
FCPF400N80Z	1	1	None	None
FCPF1300N80Z	1	1	None	None
FCU5N60	1	1	None	None
FDA16N50	1	1	None	None
FDA50N50	1	1	None	None
FDB13AN06A0	1	1	None	None
FDB14N30	1	1	None	None
FDB15N50	1	1	None	None
FDB28N30	1	1	None	None
FDB33N25	1	1	None	None
FDB035AN06A0	1	1	None	None
FDB44N25	1	1	None	None
FDB045AN08A0	1	1	None	None
FDB050AN060A0	1	1	None	None
FDB52N20	1	1	None	None
FDB070AN06A0	1	1	None	None
FDB075N15A	1	1	None	None
FDB2532	1	1	None	None
FDB2572	1	1	None	None
FDB2614	1	1	None	None
FDB2710	1	1	None	None
FDB2632	1	1	None	None
FDB3652	1	1	None	None
FDB5800	1	1	None	None
FDC604P	1	1	None	None
FDC606P	1	1	None	None
FDC608PZ	1	1	None	None
FDC610PZ	1	1	None	None
FDC634PZ	1	1	None	None
FDC637	1	1	None	None
FDC638	2	1	None	None
FDC640P	1	1	None	None
FDC653N	1	1	None	None
FDC655BN	1	1	None	None
FDC658AP	1	1	None	None
FDC2512	1	1	None	None
FDC2612	1	1	None	None
FDC5612	1	1	None	None
FDC5614P	1	1	None	None
FDC6301N	1	2	None	None
FDC6303N	1	2	None	None
FDC6305N	1	2	None	None
FDC6306P	1	2	None	None
FDC6318P	1	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
FDC6321C	1	2	None	None
FDC6333C	1	2	None	None
FDC6401N	1	2	None	None
FDC6420C	1	2	None	None
FDC6561AN	1	2	None	None
FDD3N50C	1	1	None	None
FDD6N25	1	1	None	None
FDD10AN06A0	1	1	None	None
FDD13AN06A0	1	1	None	None
FDD16AN08A0	1	1	None	None
FDD120AN15A0	1	1	None	None
FDD306P	1	1	None	None
FDD2572	1	1	None	None
FDD2582	1	1	None	None
FDD3672	1	1	None	None
FDD3682	1	1	None	None
FDD4141	1	1	None	None
FDD4243	1	1	None	None
FDD4685	1	1	None	None
FDD5353	1	1	None	None
FDD5612	1	1	None	None
FDD5670	1	1	None	None
FDD5690	1	1	None	None
FDD6637	1	1	None	None
FDD6690A	1	1	None	None
FDD8424H	1	1	None	None
FDD8445	1	1	None	None
FDD8447L	1	1	None	None
FDD8647L	1	1	None	None
FDD8896	1	1	None	None
FDD86102LZ	1	1	None	None
FDG315N	1	1	None	None
FDG1024NZ	1	2	None	None
FDG6301N	1	2	None	None
FDG6304P	1	2	None	None
FDG3606P	1	2	None	None
FDG3608P	1	2	None	None
FDG6321C	1	2	None	None
FDG6322C	1	2	None	None
FDG6332C	1	2	None	None
FDG6335N	1	2	None	None
FDG8850NZ	1	2	None	None
FDH44N50	1	1	None	None
FDH50N50	1	1	None	None
FDH3632	1	1	None	None
FDL100N50F	1	1	None	None
FDMA291P	1	1	None	None
FDMA507PZ	1	1	None	None
FDMA530PZ	1	1	None	None
FDMA1023PZ	1	2	None	None
FDMA6023PZT	1	2	None	None
FDMC510P	1	1	None	None
FDMC4435BZ	1	1	None	None
FDMC7660	1	1	None	None
FDMC8462	1	1	None	None
FDMC8651	1	1	None	None
FDMC86102L	1	1	None	None
FDMC86324	1	1	None	None
FDME1024NZT	1	2	None	None
FDMS5352	1	1	None	None
FDMS5672	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
FDMS8460	1	1	None	None
FDMS86101	1	1	None	None
FDMS86104	1	1	None	None
FDMS86163P	1	1	None	None
FDMS86200	1	1	None	None
FDMS86300	1	1	None	None
FDN302P	1	1	None	None
FDN304P	2	1	None	None
FDN306P	1	1	None	None
FDN308P	1	1	None	None
FDN327N	1	1	None	None
FDN335N	1	1	None	None
FDN336P	1	1	None	None
FDN337N	1	1	None	None
FDN338P	1	1	None	None
FDN339N	1	1	None	None
FDN340P	1	1	None	None
FDN342P	1	1	None	None
FDN352AP	1	1	None	None
FDN357N	1	1	None	None
FDN358P	1	1	None	None
FDN359AN	1	1	None	None
FDN360P	1	1	None	None
FDN361BN	1	1	None	None
FDN5618P	1	1	None	None
FDN5630	1	1	None	None
FDP12N50	1	1	None	None
FDP18N50	1	1	None	None
FDP20N50F	1	1	None	None
FDP22N50N	1	1	None	None
FDP39N20	1	1	None	None
FDP42AN15A0	1	1	None	None
FDP050AN060A0	1	1	None	None
FDP51N25	1	1	None	None
FDP52N20	1	1	None	None
FDP55N06	1	1	None	None
FDP075N15A	1	1	None	None
FDP2532	1	1	None	None
FDP3632	1	1	None	None
FDP3651U	1	1	None	None
FDP3652	1	1	None	None
FDPF12N50T	1	1	None	None
FDPF18N50	2	1	None	None
FDPF39N20	1	1	None	None
FDPF51N25	1	1	None	None
FDPF51N25	1	1	None	None
FDPF52N20T	1	1	None	None
FDPF55N06	1	1	None	None
FDS2572	1	1	None	None
FDS2582	1	1	None	None
FDS2672	1	1	None	None
FDS2734	1	1	None	None
FDS3692	1	1	None	None
FDS3992	1	2	None	None
FDS4435BZ	1	1	None	None
FDS4465	1	1	None	None
FDS4559	1	2	None	None
FDS4675	1	1	None	None
FDS4685	1	1	None	None
FDS4897	2	2	None	None
FDS4935	2	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
FDS5351	1	1	None	None
FDS5670	1	1	None	None
FDS5672	1	1	None	None
FDS5680	1	1	None	None
FDS6294	1	1	None	None
FDS6375	1	1	None	None
FDS6574A	1	1	None	None
FDS6673BZ	1	1	None	None
FDS6675BZ	1	1	None	None
FDS6679BZ	1	1	None	None
FDS6680A	2	1	None	None
FDS6681Z	1	1	None	None
FDS6690A	2	1	None	None
FDS6699S	1	1	None	None
FDS6875	1	2	None	None
FDS6890A	1	2	None	None
FDS6898A	1	2	None	None
FDS6900AS	1	1	None	None
FDS6912A	1	2	None	None
FDS6930B	1	2	None	None
FDS6961A	1	2	None	None
FDS6975	1	2	None	None
FDS6982AS	1	2	None	None
FDS8447	1	1	None	None
FDS8449	1	1	None	None
FDS8870	1	1	None	None
FDS8880	1	1	None	None
FDS8884	1	1	None	None
FDS8949	1	2	None	None
FDS8958A	1	2	None	None
FDS8984	1	2	None	None
FDS9431A	1	1	None	None
FDS9435A	1	1	None	None
FDS9926A	1	2	None	None
FDS9934C	1	2	None	None
FDS9945	1	2	None	None
FDS9958	1	2	None	None
FDS86141	1	1	None	None
FDS89141	1	2	None	None
FDS89161	1	2	None	None
FDT458P	1	1	None	None
FDU2572	1	1	None	None
FDU8896	1	1	None	None
FDV301N	1	1	None	None
FDV303N	1	1	None	None
FDV304P	1	1	None	None
FDV305N	1	1	None	None
FDY100PZ	1	1	None	None
FDY101PZ	1	1	None	None
FDY2000PZ	1	2	None	None
FDY3000NZ	1	2	None	None
FDY4000CZ	1	2	None	None
FQA11N90C	1	1	None	None
FQA24N60	1	1	None	None
FQA30N40	1	1	None	None
FQA32N20C	1	1	None	None
FQA36P15	1	1	None	None
FQA70N10	1	1	None	None
FQAF11N90C	1	1	None	None
FQAF16N50	1	1	None	None
FQB1P50	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
FQB5N50C	1	1	None	None
FQB5N90	1	1	None	None
FQB6N80	1	1	None	None
FQB12P20	1	1	None	None
FQB19N20L	1	1	None	None
FQB22P10	1	1	None	None
FQB27P06	1	1	None	None
FQB33N10	1	1	None	None
FQB34N20L	1	1	None	None
FQB34P10	1	1	None	None
FQB47P06	1	1	None	None
FQB55N10	1	1	None	None
FQD1N80	1	1	None	None
FQD2N60C	1	1	None	None
FQD2N100	1	1	None	None
FQD3P50	1	1	None	None
FQD5P20	1	1	None	None
FQD6N40C	1	1	None	None
FQD7N10L	1	1	None	None
FQD7P20	1	1	None	None
FQD8P10	1	1	None	None
FQD9N25	1	1	None	None
FQD10N20C	1	1	None	None
FQD11P06	1	1	None	None
FQD12N20L	1	1	None	None
FQD13N06L	1	1	None	None
FQD13N10L	1	1	None	None
FQD16N25C	1	1	None	None
FQD17P06	1	1	None	None
FQD18N20V2	1	1	None	None
FQD19N10L	1	1	None	None
FQD20N06	1	1	None	None
FQI12P20	1	1	None	None
FQP2N60C	1	1	None	None
FQP3N80C	1	1	None	None
FQP3P50	1	1	None	None
FQP4N90C	1	1	None	None
FQP4P40	1	1	None	None
FQP6N80C	1	1	None	None
FQP6N90C	1	1	None	None
FQP7P06	1	1	None	None
FQP8N80C	1	1	None	None
FQP9N50C	1	1	None	None
FQP9N90C	1	1	None	None
FQP11N40C	1	1	None	None
FQP13N06L	1	1	None	None
FQP13N10	1	1	None	None
FQP13N50	2	1	None	None
FQP17P06	1	1	None	None
FQP19N20C	1	1	None	None
FQP20N06L	1	1	None	None
FQP27P06	1	1	None	None
FQP32N20C	1	1	None	None
FQP33N10C	1	1	None	None
FQP45N15V2	1	1	None	None
FQP46N15	1	1	None	None
FQP47P06	1	1	None	None
FQP50N06L	1	1	None	None
FQP70N10	1	1	None	None
FQP85N06	1	1	None	None
FQPF2N60C	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
FQPF3N80C	1	1	None	None
FQPF4N90C	1	1	None	None
FQPF6N80C	1	1	None	None
FQPF6N90C	1	1	None	None
FQPF8N80C	1	1	None	None
FQPF9N50C	1	1	None	None
FQPF9N90C	1	1	None	None
FQPF11N40C	1	1	None	None
FQPF13N50C	1	1	None	None
FQPF19N20C	1	1	None	None
FQPF20N06	1	1	None	None
FQPF27P06	1	1	None	None
FQPF32N20C	1	1	None	None
FQPF45N15V2	1	1	None	None
FQPF47P06	1	1	None	None
FQPF65N06	1	1	None	None
FQS4901	1	2	None	None
FQS4903	1	2	None	None
FQT1N60C	1	1	None	None
FQT4N20L	1	1	None	None
FQT5P10	1	1	None	None
FQT7N10L	1	1	None	None
FQU1N80	1	1	None	None
FQU2N60C	1	1	None	None
FQU2N100	1	1	None	None
FQU5P20	1	1	None	None
FQU8P10	1	1	None	None
FQU9N25	1	1	None	None
FQU10N20C	1	1	None	None
FQU11P06	1	1	None	None
FQU12N20L	1	1	None	None
FQU13N06L	1	1	None	None
FQU13N10L	1	1	None	None
FQU17P06	1	1	None	None
FTD439N	1	1	None	None
FTD457N	1	1	None	None
FTD86102LZ	1	1	None	None
G2R1000MT17	2	1	None	None
G2R1000MT33J	1	1	None	None
G3R20MT12K	1	1	None	None
G3R20MT17K	1	1	None	None
G3R30MT12	2	1	None	None
G3R40MT12	3	1	None	None
G3R45MT12K	1	1	None	None
G3R45MT17	2	1	None	None
G3R75MT12	2	1	None	None
G3R160MT12	2	1	None	None
G3R160MT17	2	1	None	None
G3R350MT12	2	1	None	None
G3R450MT17	2	1	None	None
HUF75332P3	1	1	None	None
HUF75339P3	1	1	None	None
HUF75344	2	1	None	None
HUF75345	3	1	None	None
HUF75545	2	1	None	None
HUF75639	4	1	None	None
HUF75645	2	1	None	None
HUF75652G3	1	1	None	None
HUF76423P3	1	1	None	None
IAUC120N04S6L	2	1	None	None
IAUT150N10S5N	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IAUT165N08S5N	1	1	None	None
IAUT200N08S5N	1	1	None	None
IAUT240N08S5N	1	1	None	None
IAUT260N10S5N	1	1	None	None
IAUT300N08S5N	2	1	None	None
IAUT300N10S5N	1	1	None	None
IPA028N08N3G	1	1	None	None
IPA029N06N	1	1	None	None
IPA030N10N3G	1	1	None	None
IPA032N06N3G	1	1	None	None
IPA037N08N3G	1	1	None	None
IPA040N06N	1	1	None	None
IPA041N04NG	1	1	None	None
IPA045N10N3G	1	1	None	None
IPA50R140CP	1	1	None	None
IPA50R190CE	1	1	None	None
IPA50R199CP	1	1	None	None
IPA50R250CP	1	1	None	None
IPA50R280CE	1	1	None	None
IPA50R299CP	1	1	None	None
IPA50R350CP	1	1	None	None
IPA50R399CP	1	1	None	None
IPA50R500CE	1	1	None	None
IPA50R520CP	1	1	None	None
IPA50R800CE	1	1	None	None
IPA50R905CE	1	1	None	None
IPA057N06N3G	1	1	None	None
IPA057N08N3G	1	1	None	None
IPA060N06N	1	1	None	None
IPA60R060P7	1	1	None	None
IPA60R080P7	1	1	None	None
IPA60R099	4	1	None	None
IPA60R120	2	1	None	None
IPA60R125	3	1	None	None
IPA60R160	2	1	None	None
IPA60R165CP	1	1	None	None
IPA60R170CFD7	1	1	None	None
IPA60R180P7S	1	1	None	None
IPA60R190	3	1	None	None
IPA60R199CP	1	1	None	None
IPA60R230P6	1	1	None	None
IPA60R250CP	1	1	None	None
IPA60R280	4	1	None	None
IPA60R330P6	1	1	None	None
IPA60R380	3	1	None	None
IPA60R385CP	1	1	None	None
IPA60R400CE	1	1	None	None
IPA60R450E6	1	1	None	None
IPA60R460CE	1	1	None	None
IPA60R520	2	1	None	None
IPA60R600	4	1	None	None
IPA60R650CE	1	1	None	None
IPA60R750E6	1	1	None	None
IPA60R950C6	1	1	None	None
IPA65R045C7	1	1	None	None
IPA65R065C7	1	1	None	None
IPA65R095C7	1	1	None	None
IPA65R099C6	1	1	None	None
IPA65R110CFD	1	1	None	None
IPA65R125C7	1	1	None	None
IPA65R150CFD	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPA65R190	4	1	None	None
IPA65R225C7	1	1	None	None
IPA65R280	2	1	None	None
IPA65R310CFD	1	1	None	None
IPA65R380	2	1	None	None
IPA65R420CFD	1	1	None	None
IPA65R600	2	1	None	None
IPA65R650CE	1	1	None	None
IPA65R660CFD	1	1	None	None
IPA075N15N3G	1	1	None	None
IPA80R1K0CE	1	1	None	None
IPA80R750P7	1	1	None	None
IPA80R900P7	1	1	None	None
IPA083N10N5	1	1	None	None
IPA086N10N3G	1	1	None	None
IPA90R1K0C3	1	1	None	None
IPA90R1K2C3	1	1	None	None
IPA90R340C3	1	1	None	None
IPA90R500C3	1	1	None	None
IPA90R800C3	1	1	None	None
IPA093N06N3G	1	1	None	None
IPA95R1K2P7	1	1	None	None
IPA95R450P7	1	1	None	None
IPA95R750P7	1	1	None	None
IPA105N15N3G	1	1	None	None
IPA126N10N3G	1	1	None	None
IPAN70R360P7S	1	1	None	None
IPAN70R450P7S	1	1	None	None
IPAN70R600P7S	1	1	None	None
IPAN70R750P7S	1	1	None	None
IPAN70R900P7S	1	1	None	None
IPAN80R280P7	1	1	None	None
IPAN80R360P7	1	1	None	None
IPB04CN10NG	1	1	None	None
IPB06N03LA	1	1	None	None
IPB09N03LA	1	1	None	None
IPB009N03LG	1	1	None	None
IPB010N06N	1	1	None	None
IPB011N04	2	1	None	None
IPB12CN10NG	1	1	None	None
IPB014N06N	1	1	None	None
IPB015N04	2	1	None	None
IPB015N08N5	1	1	None	None
IPB016N06L3G	1	1	None	None
IPB017N08N5	1	1	None	None
IPB017N10N5	1	1	None	None
IPB019N06L3G	1	1	None	None
IPB019N08N3G	1	1	None	None
IPB020N04NG	1	1	None	None
IPB020N10N5	2	1	None	None
IPB021N06N3G	1	1	None	None
IPB023N04NG	1	1	None	None
IPB025N08N3G	1	1	None	None
IPB025N10N3G	1	1	None	None
IPB026N06N	1	1	None	None
IPB027N10N	2	1	None	None
IPB029N06N3G	1	1	None	None
IPB030N08N3G	1	1	None	None
IPB031N08N3G	1	1	None	None
IPB031NE7N3G	1	1	None	None
IPB033N10N5LF	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPB034N03LG	1	1	None	None
IPB034N06L3G	1	1	None	None
IPB035N08N3G	1	1	None	None
IPB036N12N3G	1	1	None	None
IPB037N06N3G	1	1	None	None
IPB038N12N3G	1	1	None	None
IPB039N04LG	1	1	None	None
IPB039N10N3G	1	1	None	None
IPB041N04NG	1	1	None	None
IPB042N03LG	1	1	None	None
IPB042N10N3G	1	1	None	None
IPB048N15N5LF	1	1	None	None
IPB049N06L3G	1	1	None	None
IPB049N08N5	1	1	None	None
IPB049NE7N3G	1	1	None	None
IPB50R140CP	1	1	None	None
IPB50R199CP	1	1	None	None
IPB50R250CP	1	1	None	None
IPB50R299CP	1	1	None	None
IPB054N06N3G	1	1	None	None
IPB054N08N3G	1	1	None	None
IPB055N03LG	1	1	None	None
IPB057N06N	1	1	None	None
IPB60R060P7	1	1	None	None
IPB60R080P7	1	1	None	None
IPB60R099	4	1	None	None
IPB60R120P7	1	1	None	None
IPB60R125C6	1	1	None	None
IPB60R160	2	1	None	None
IPB60R165CP	1	1	None	None
IPB60R180	2	1	None	None
IPB60R190	2	1	None	None
IPB60R199CPA	1	1	None	None
IPB60R230P6	1	1	None	None
IPB60R250CP	1	1	None	None
IPB60R280	3	1	None	None
IPB60R299CPA	1	1	None	None
IPB60R330P6	1	1	None	None
IPB60R360P7	1	1	None	None
IPB60R380	2	1	None	None
IPB60R385CP	1	1	None	None
IPB60R600	2	1	None	None
IPB60R950	1	1	None	None
IPB065N15N3G	1	1	None	None
IPB65R045C7	1	1	None	None
IPB65R065C7	1	1	None	None
IPB65R095C7	1	1	None	None
IPB65R099C6	1	1	None	None
IPB65R110CFD	1	1	None	None
IPB65R125C7	1	1	None	None
IPB65R150CFD	1	1	None	None
IPB65R190	4	1	None	None
IPB65R225C7	1	1	None	None
IPB65R280	2	1	None	None
IPB65R310CFD	1	1	None	None
IPB65R380C6	1	1	None	None
IPB65R420CFD	1	1	None	None
IPB65R600C6	1	1	None	None
IPB65R660CFD	1	1	None	None
IPB067N08N3G	1	1	None	None
IPB070N10S3-12	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPB072N15N3G	1	1	None	None
IPB073N15N3G	1	1	None	None
IPB077N06S2-12	1	1	None	None
IPB079CN10NG	1	1	None	None
IPB80N04S2-H4	1	1	None	None
IPB80N04S4L-04	1	1	None	None
IPB80N06S2	2	1	None	None
IPB081N06L3G	1	1	None	None
IPB083N10N3G	1	1	None	None
IPB083N15N5LF	1	1	None	None
IPB090N06N3G	1	1	None	None
IPB90R340C3	1	1	None	None
IPB097N08N3G	1	1	None	None
IPB100N04S3-03	1	1	None	None
IPB100N06S2	2	1	None	None
IPB107N20N	2	1	None	None
IPB108N15N3G	1	1	None	None
IPB110N20N3LF	1	1	None	None
IPB117N20NFD	1	1	None	None
IPB120N04S4-02	1	1	None	None
IPB126N10N3G	1	1	None	None
IPB144N12N3G	1	1	None	None
IPB180N04S4-H0	1	1	None	None
IPB180P04P4	2	1	None	None
IPB200N15N3G	1	1	None	None
IPB200N25N3G	1	1	None	None
IPB320N20N3G	1	1	None	None
IPB407N30N	1	1	None	None
IPB530N15N3G	1	1	None	None
IPB600N25N3G	1	1	None	None
IPC50N04S5	2	1	None	None
IPC100N04S5	4	1	None	None
IPC100N04S5L	4	1	None	None
IPD12CN10NG	1	1	None	None
IPD025N06N	1	1	None	None
IPD26N06S2L-35	1	1	None	None
IPD30N03S4L-09	1	1	None	None
IPD30N08S2-22	1	1	None	None
IPD031N03LG	1	1	None	None
IPD031N06L3G	1	1	None	None
IPD034N06L3G	1	1	None	None
IPD038N06N3G	1	1	None	None
IPD050N03LG	1	1	None	None
IPD50N06S4L	1	1	None	None
IPD50R1K4CE	1	1	None	None
IPD50R3K0CE	1	1	None	None
IPD50R280CE	1	1	None	None
IPD50R399CP	1	1	None	None
IPD50R500CE	1	1	None	None
IPD50R520CP	1	1	None	None
IPD50R950CE	1	1	None	None
IPD053N06N	1	1	None	None
IPD060N03LG	1	1	None	None
IPD60R1K0CE	1	1	None	None
IPD60R170CFD7	1	1	None	None
IPD60R280	3	1	None	None
IPD60R360P7	1	1	None	None
IPD60R380	3	1	None	None
IPD60R400CE	1	1	None	None
IPD60R450E6	1	1	None	None
IPD60R520C6	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPD60R600	4	1	None	None
IPD60R650CE	1	1	None	None
IPD60R750E6	1	1	None	None
IPD60R950C6	1	1	None	None
IPD65R1K4C	2	1	None	None
IPD65R190C7	1	1	None	None
IPD65R225C7	1	1	None	None
IPD65R250	2	1	None	None
IPD65R380	2	1	None	None
IPD65R400CE	1	1	None	None
IPD65R420CFD	1	1	None	None
IPD65R600	2	1	None	None
IPD65R650CE	1	1	None	None
IPD65R660CFD	1	1	None	None
IPD65R950C	2	1	None	None
IPD068P03L3G	1	1	None	None
IPD70R1K4	2	1	None	None
IPD70R2K0CE	1	1	None	None
IPD70R360P7S	1	1	None	None
IPD70R600P7S	1	1	None	None
IPD70R900P7S	1	1	None	None
IPD70R950CE	1	1	None	None
IPD075N03LG	1	1	None	None
IPD78CN10NG	1	1	None	None
IPD079N06L3G	1	1	None	None
IPD80R1K0CE	1	1	None	None
IPD80R1K2P7	1	1	None	None
IPD80R1K4	2	1	None	None
IPD80R2K0P7	1	1	None	None
IPD80R2K4P7	1	1	None	None
IPD80R3K3P7	1	1	None	None
IPD80R4K5P7	1	1	None	None
IPD80R280P7	1	1	None	None
IPD80R360P7	1	1	None	None
IPD80R450P7	1	1	None	None
IPD80R750P7	1	1	None	None
IPD80R900P7	1	1	None	None
IPD082N10N3G	1	1	None	None
IPD090N03LG	1	1	None	None
IPD90N03S4L-02	1	1	None	None
IPD90N04S3-04	1	1	None	None
IPD90N04S4-04	1	1	None	None
IPD90N04S4-05	1	1	None	None
IPD090R1K2C3	1	1	None	None
IPD095R2K0P7	1	1	None	None
IPD095R450P7	1	1	None	None
IPD095R750P7	1	1	None	None
IPD135N03LG	1	1	None	None
IPD200N15N3G	1	1	None	None
IPD350N06LG	1	1	None	None
IPD530N15N3G	1	1	None	None
IPDD60R050G7	1	1	None	None
IPDD60R080G7	1	1	None	None
IPDD60R102G7	1	1	None	None
IPDD60R125G7	1	1	None	None
IPDD60R150G7	1	1	None	None
IPDD60R190G7	1	1	None	None
IPG20N04S4	2	2	None	None
IPI04CN10NG	1	1	None	None
IPI06N03LA	1	1	None	None
IPI09N03LA	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPI12CN10NG	1	1	None	None
IPI020N06N	1	1	None	None
IPI023NE7N3G	1	1	None	None
IPI024N06N3G	1	1	None	None
IPI029N06N	1	1	None	None
IPI030N10N3G	1	1	None	None
IPI032N06N3G	1	1	None	None
IPI034NE7N3G	1	1	None	None
IPI037N06L3G	1	1	None	None
IPI037N08N3G	1	1	None	None
IPI040N06N3G	1	1	None	None
IPI041N12N3G	1	1	None	None
IPI045N10N3G	1	1	None	None
IPI50R140CP	1	1	None	None
IPI50R199CP	1	1	None	None
IPI50R250CP	1	1	None	None
IPI50R350CP	1	1	None	None
IPI50R399CP	1	1	None	None
IPI052NE7N3G	1	1	None	None
IPI057N08N3G	1	1	None	None
IPI60R099CPA	1	1	None	None
IPI60R125CP	1	1	None	None
IPI60R165CP	1	1	None	None
IPI60R190C6	1	1	None	None
IPI60R199CP	1	1	None	None
IPI60R250CP	1	1	None	None
IPI60R280C6	1	1	None	None
IPI60R380C6	1	1	None	None
IPI60R385CP	1	1	None	None
IPI65R099C6	1	1	None	None
IPI65R110CFD	1	1	None	None
IPI65R150CFD	1	1	None	None
IPI65R190	3	1	None	None
IPI65R280	2	1	None	None
IPI65R310CFD	1	1	None	None
IPI65R380C6	1	1	None	None
IPI65R420CFD	1	1	None	None
IPI65R600C6	1	1	None	None
IPI65R660CFD	1	1	None	None
IPI070N08N3G	1	1	None	None
IPI70N10S3-12	1	1	None	None
IPI70R950CE	1	1	None	None
IPI072N10N3G	1	1	None	None
IPI075N15N3G	1	1	None	None
IPI076N12N3G	1	1	None	None
IPI80CN10NG	1	1	None	None
IPI80N04S2-H4	1	1	None	None
IPI80N04S4L-04	1	1	None	None
IPI80N08S2-07	1	1	None	None
IPI084N06L3G	1	1	None	None
IPI086N10N3G	1	1	None	None
IPI90R1K2C3	1	1	None	None
IPI90R340C3	1	1	None	None
IPI90R500C3	1	1	None	None
IPI90R800C3	1	1	None	None
IPI100N04S3-03	1	1	None	None
IPI100N08	2	1	None	None
IPI110N20N3G	1	1	None	None
IPI111N15N3G	1	1	None	None
IPI120N04S4-02	1	1	None	None
IPI126N10N3G	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPI147N12N3G	1	1	None	None
IPI180N10N3G	1	1	None	None
IPI200N15N3G	1	1	None	None
IPI200N25N3G	1	1	None	None
IPI320N20N3G	1	1	None	None
IPI530N15N3G	1	1	None	None
IPI600N25N3G	1	1	None	None
IPL60R1K5C6S	1	1	None	None
IPL60R2K1C6S	1	1	None	None
IPL60R065P7	1	1	None	None
IPL60R075CFD7	1	1	None	None
IPL60R085P7	1	1	None	None
IPL60R104C7	1	1	None	None
IPL60R105P7	1	1	None	None
IPL60R125P7	1	1	None	None
IPL60R180P6	1	1	None	None
IPL60R185CFD7	1	1	None	None
IPL60R199CP	1	1	None	None
IPL60R210P6	1	1	None	None
IPL60R285P7	1	1	None	None
IPL60R299CP	1	1	None	None
IPL60R365P7	1	1	None	None
IPL60R650P6S	1	1	None	None
IPL65R1K5C6S	1	1	None	None
IPL65R070C7	1	1	None	None
IPL65R099C7	1	1	None	None
IPL65R130C7	1	1	None	None
IPL65R165CFD	1	1	None	None
IPL65R190E6	1	1	None	None
IPL65R195C7	1	1	None	None
IPL65R210CFD	1	1	None	None
IPL65R230C7	1	1	None	None
IPL65R310E6	1	1	None	None
IPL65R340CFD	1	1	None	None
IPL65R420E6	1	1	None	None
IPL65R460CFD	1	1	None	None
IPL65R650C6S	1	1	None	None
IPL65R660E6	1	1	None	None
IPN50R2K0CE	1	1	None	None
IPN50R3K0CE	1	1	None	None
IPN50R650CE	1	1	None	None
IPN50R800CE	1	1	None	None
IPN50R950CE	1	1	None	None
IPN60R2K1CE	1	1	None	None
IPN60R600P7S	1	1	None	None
IPN65R1K5CE	1	1	None	None
IPN70R1K0CE	1	1	None	None
IPN70R1K0CE	1	1	None	None
IPN70R1K5CE	1	1	None	None
IPN70R360P7S	1	1	None	None
IPN80R1K2P7	1	1	None	None
IPN80R1K4P7	1	1	None	None
IPN80R2K0P7	1	1	None	None
IPN80R2K4P7	1	1	None	None
IPN80R3K3P7	1	1	None	None
IPN80R4K5P7	1	1	None	None
IPN80R600P7	1	1	None	None
IPN80R750P7	1	1	None	None
IPN80R900P7	1	1	None	None
IPN95R1K2P7	1	1	None	None
IPN95R2K0P7	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPN95R3K7P7	1	1	None	None
IPP04CN10NG	1	1	None	None
IPP06N03LA	1	1	None	None
IPP09N03LA	1	1	None	None
IPP12CN10	2	1	None	None
IPP015N04NG	1	1	None	None
IPP020N08N5	1	1	None	None
IPP023N04NG	1	1	None	None
IPP023N10N5	1	1	None	None
IPP023NE7N3G	1	1	None	None
IPP024N06N3G	1	1	None	None
IPP027N08N5	1	1	None	None
IPP029N06N	1	1	None	None
IPP030N10N	2	1	None	None
IPP032N06N3G	1	1	None	None
IPP034N03LG	1	1	None	None
IPP034N08N5	1	1	None	None
IPP037N06L3G	1	1	None	None
IPP037N08N3G	1	1	None	None
IPP039N04LG	1	1	None	None
IPP040N06N	2	1	None	None
IPP041N04NG	1	1	None	None
IPP041N12N3G	1	1	None	None
IPP042N03LG	1	1	None	None
IPP045N10N3G	1	1	None	None
IPP048N04NG	1	1	None	None
IPP50R140CP	1	1	None	None
IPP50R190CE	1	1	None	None
IPP50R199CP	1	1	None	None
IPP50R250CP	1	1	None	None
IPP50R280CE	1	1	None	None
IPP50R299CP	1	1	None	None
IPP50R350CP	1	1	None	None
IPP50R380CE	1	1	None	None
IPP50R399CP	1	1	None	None
IPP50R500CE	1	1	None	None
IPP50R520CP	1	1	None	None
IPP052N06L3G	1	1	None	None
IPP052N08N5	1	1	None	None
IPP052NE7N3G	1	1	None	None
IPP055N03LG	1	1	None	None
IPP057N06N3G	1	1	None	None
IPP057N08N3G	1	1	None	None
IPP60R1K4C6	1	1	None	None
IPP60R040C7	1	1	None	None
IPP60R060C7	1	1	None	None
IPP60R074C6	1	1	None	None
IPP60R080P7	1	1	None	None
IPP60R099	5	1	None	None
IPP60R120P7	1	1	None	None
IPP60R125	3	1	None	None
IPP60R160	2	1	None	None
IPP60R165CP	1	1	None	None
IPP60R180P7	1	1	None	None
IPP60R190	3	1	None	None
IPP60R199CP	1	1	None	None
IPP60R230P6	1	1	None	None
IPP60R250CP	1	1	None	None
IPP60R280	5	1	None	None
IPP60R299CP	1	1	None	None
IPP60R330P6	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPP60R360P7	1	1	None	None
IPP60R380	3	1	None	None
IPP60R385CP	1	1	None	None
IPP60R450E6	1	1	None	None
IPP60R520	2	1	None	None
IPP60R600	4	1	None	None
IPP60R750E6	1	1	None	None
IPP60R950C6	1	1	None	None
IPP062NE7N3G	1	1	None	None
IPP65R045C7	1	1	None	None
IPP65R065C7	1	1	None	None
IPP65R074C6	1	1	None	None
IPP65R095C7	1	1	None	None
IPP65R099C6	1	1	None	None
IPP65R110CFD	1	1	None	None
IPP65R125C7	1	1	None	None
IPP65R150CFD	1	1	None	None
IPP65R190	4	1	None	None
IPP65R225C7	1	1	None	None
IPP65R280	2	1	None	None
IPP65R310CFD	1	1	None	None
IPP65R380	2	1	None	None
IPP65R420CFD	1	1	None	None
IPP65R600	2	1	None	None
IPP65R660CFD	1	1	None	None
IPP070N08N3G	1	1	None	None
IPP70N10S3-12	1	1	None	None
IPP072N10N3G	1	1	None	None
IPP075N15N3G	1	1	None	None
IPP076N12N3G	1	1	None	None
IPP076N15N5	1	1	None	None
IPP77N06S2-12	1	1	None	None
IPP80CN10NG	1	1	None	None
IPP80N04S2-H4	1	1	None	None
IPP80N04S4L-04	1	1	None	None
IPP80N06S2L-07	1	1	None	None
IPP80N08S2	2	1	None	None
IPP080R1K2P7	1	1	None	None
IPP080R280P7	1	1	None	None
IPP080R360P7	1	1	None	None
IPP080R600P7	1	1	None	None
IPP080R750P7	1	1	None	None
IPP083N10N5	1	1	None	None
IPP084N06L3G	1	1	None	None
IPP086N10N3G	1	1	None	None
IPP090R1K0C3	1	1	None	None
IPP090R1K2C3	1	1	None	None
IPP090R340C3	1	1	None	None
IPP090R500C3	1	1	None	None
IPP090R800C3	1	1	None	None
IPP093N06N3G	1	1	None	None
IPP100N04S3-03	1	1	None	None
IPP100N06S2	2	1	None	None
IPP100N08	2	1	None	None
IPP107N20NA	1	1	None	None
IPP110N20N3G	1	1	None	None
IPP111N15N3G	1	1	None	None
IPP114N12N3G	1	1	None	None
IPP120N04S4-02	1	1	None	None
IPP120N20NFD	1	1	None	None
IPP126N10N3G	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPP147N12N3G	1	1	None	None
IPP180N10N3G	1	1	None	None
IPP200N15N3G	1	1	None	None
IPP200N25N3G	1	1	None	None
IPP220N25NFD	1	1	None	None
IPP320N20N3G	1	1	None	None
IPP410N30N	1	1	None	None
IPP530N15N3G	1	1	None	None
IPP600N25N3G	1	1	None	None
IPS12CN10LG	1	1	None	None
IPS031N03LG	1	1	None	None
IPS050N03LG	1	1	None	None
IPS060N03LG	1	1	None	None
IPS65R1K4C6	1	1	None	None
IPS65R1K5CE	1	1	None	None
IPS65R400CE	1	1	None	None
IPS65R905C6	1	1	None	None
IPS70R1K4	2	1	None	None
IPS70R360P7S	1	1	None	None
IPS70R905CE	1	1	None	None
IPS075N03LG	1	1	None	None
IPS80R2K0P7	1	1	None	None
IPS80R2k4P7	1	1	None	None
IPS135N03LG	1	1	None	None
IPSA70R360P7S	1	1	None	None
IPT004N03L	1	1	None	None
IPT007N06L	1	1	None	None
IPT012N08N5	1	1	None	None
IPT015N10N5	1	1	None	None
IPT020N10N3	1	1	None	None
IPT029N08N5	1	1	None	None
IPT059N15N3	1	1	None	None
IPT60R022S7	1	1	None	None
IPU050N03LG	1	1	None	None
IPU50R1K4CE	1	1	None	None
IPU50R3K0CE	1	1	None	None
IPU50R950CE	1	1	None	None
IPU060N03LG	1	1	None	None
IPU075N03LG	1	1	None	None
IPU80R1K0CE	1	1	None	None
IPU80R1K2P7	1	1	None	None
IPU80R1K4	2	1	None	None
IPU80R2K0P7	1	1	None	None
IPU80R2K4P7	1	1	None	None
IPU80R3K3P7	1	1	None	None
IPU80R4K5P7	1	1	None	None
IPU80R600P7	1	1	None	None
IPU80R750P7	1	1	None	None
IPU80R900P7	1	1	None	None
IPU95R1K2P7	1	1	None	None
IPU95R3K7P7	1	1	None	None
IPU95R450P7	1	1	None	None
IPU95R750P7	1	1	None	None
IPU135N03LG	1	1	None	None
IPW50R140CFP	1	1	None	None
IPW50R190CE	1	1	None	None
IPW50R280CE	1	1	None	None
IPW60R031CFD7	1	1	None	None
IPW60R037	2	1	None	None
IPW60R040C7	1	1	None	None
IPW60R041	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IPW60R045CPA	1	1	None	None
IPW60R070	3	1	None	None
IPW60R80P7	1	1	None	None
IPW60R099	5	1	None	None
IPW60R120P7	1	1	None	None
IPW60R125	3	1	None	None
IPW60R160	2	1	None	None
IPW60R165CP	1	1	None	None
IPW60R170CFD7	1	1	None	None
IPW60R180	2	1	None	None
IPW60R190	3	1	None	None
IPW60R199CP	1	1	None	None
IPW60R230P6	1	1	None	None
IPW60R280	3	1	None	None
IPW60R299CP	1	1	None	None
IPW60R330P6	1	1	None	None
IPW65R019C7	1	1	None	None
IPW65R037C6	1	1	None	None
IPW65R041CFD	1	1	None	None
IPW65R045C7	1	1	None	None
IPW65R065C7	1	1	None	None
IPW65R070C6	1	1	None	None
IPW65R080CFD	1	1	None	None
IPW65R095C7	1	1	None	None
IPW65R099C6	1	1	None	None
IPW65R110CFD	1	1	None	None
IPW65R125C7	1	1	None	None
IPW65R150CFD	1	1	None	None
IPW65R190	4	1	None	None
IPW65R280	2	1	None	None
IPW65R310CFD	1	1	None	None
IPW65R380E6	1	1	None	None
IPW65R420CFD	1	1	None	None
IPW65R600E6	1	1	None	None
IPW65R660CFD	1	1	None	None
IPW80R280P7	1	1	None	None
IPW80R360P7	1	1	None	None
IPW90R1K0C3	1	1	None	None
IPW90R340C3	1	1	None	None
IPW90R500C3	1	1	None	None
IPZ40N04S5	3	1	None	None
IPZ40N04S5L	3	1	None	None
IPZ60R017C7	1	1	None	None
IPZ60R040C7	1	1	None	None
IPZ60R099C7	1	1	None	None
IPZ65R019C7	1	1	None	None
IPZ65R045C7	1	1	None	None
IPZ65R065C7	1	1	None	None
IPZ65R095C7	1	1	None	None
IPZA65R037P7	1	1	None	None
IPZA65R060P7	1	1	None	None
IPZA65R080P7	1	1	None	None
IPZA65R099P7	1	1	None	None
IPZA65R120P7	1	1	None	None
IPZA65R180P7	1	1	None	None
IRF9Z24	2	1	None	None
IRF9Z24N	1	1	None	None
IRF9Z34	1	1	None	None
IRF9Z34N	3	1	None	None
IRF40B207	1	1	None	None
IRF40R207	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRF100B202	1	1	None	None
IRF135B203	1	1	None	None
IRF135S203	1	1	None	None
IRF200P222	1	1	None	None
IRF200P223	1	1	None	None
IRF250P225	1	1	None	None
IRF300P226	1	1	None	None
IRF300P227	1	1	None	None
IRF510	2	1	None	None
IRF520	1	1	None	None
IRF520N	3	1	None	None
IRF530	2	1	None	None
IRF530A	1	1	None	None
IRF530M	3	1	None	None
IRF540	2	1	None	None
IRF540N	3	1	None	None
IRF540Z	3	1	None	None
IRF610	1	1	None	None
IRF620	1	1	None	None
IRF630	2	1	None	None
IRF630N	3	1	None	None
IRF634	1	1	None	None
IRF640	2	1	None	None
IRF640N	3	1	None	None
IRF644	2	1	None	None
IRF710	2	1	None	None
IRF720	1	1	None	None
IRF730	1	1	None	None
IRF740	2	1	None	None
IRF740A	3	1	None	None
IRF740LC	1	1	None	None
IRF820	1	1	None	None
IRF820A	1	1	None	None
IRF830	3	1	None	None
IRF840	2	1	None	None
IRF840A	3	1	None	None
IRF840LC	1	1	None	None
IRF1010E	1	1	None	None
IRF1010EZ	3	1	None	None
IRF1010N	3	1	None	None
IRF1010Z	3	1	None	None
IRF1018E	3	1	None	None
IRF1104	1	1	None	None
IRF1310N	1	1	None	None
IRF1324	1	1	None	None
IRF1404	3	1	None	None
IRF1404Z	3	1	None	None
IRF1405	3	1	None	None
IRF1405Z	3	1	None	None
IRF1407	1	1	None	None
IRF1503	1	1	None	None
IRF2204	3	1	None	None
IRF2804	4	1	None	None
IRF2805	3	1	None	None
IRF2807	3	1	None	None
IRF2807Z	3	1	None	None
IRF2903Z	3	1	None	None
IRF2907Z	3	1	None	None
IRF3007	1	1	None	None
IRF3205	3	1	None	None
IRF3205Z	3	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRF3315	3	1	None	None
IRF3415	3	1	None	None
IRF3610S	1	1	None	None
IRF3703	1	1	None	None
IRF3709	3	1	None	None
IRF3710	3	1	None	None
IRF3710Z	3	1	None	None
IRF3805	3	1	None	None
IRF3808	3	1	None	None
IRF4104	3	1	None	None
IRF4905	3	1	None	None
IRF5210	3	1	None	None
IRF5305	3	1	None	None
IRF5801	1	1	None	None
IRF5802	1	1	None	None
IRF5803	1	1	None	None
IRF6215	2	1	None	None
IRF6216	1	1	None	None
IRF6217	1	1	None	None
IRF6218	2	1	None	None
IRF7101	1	2	None	None
IRF7103	2	2	None	None
IRF7104	1	2	None	None
IRF7105	1	2	None	None
IRF7201	1	1	None	None
IRF7204	1	1	None	None
IRF7205	1	1	None	None
IRF7240	1	1	None	None
IRF7241	1	1	None	None
IRF7301	1	2	None	None
IRF7303	1	2	None	None
IRF7304	1	2	None	None
IRF7306	1	2	None	None
IRF7307	1	2	None	None
IRF7309	1	2	None	None
IRF7311	1	2	None	None
IRF7313	1	2	None	None
IRF7314	1	2	None	None
IRF7316	1	2	None	None
IRF7317	1	2	None	None
IRF7319	1	2	None	None
IRF7324	1	2	None	None
IRF7328	1	2	None	None
IRF7341	1	2	None	None
IRF7342	1	2	None	None
IRF7343	1	2	None	None
IRF7351	1	2	None	None
IRF7379	1	2	None	None
IRF7380	1	2	None	None
IRF7389	1	2	None	None
IRF7401	1	1	None	None
IRF7403	1	1	None	None
IRF7404	1	1	None	None
IRF7406	1	1	None	None
IRF7410	1	1	None	None
IRF7413	2	1	None	None
IRF7416	1	1	None	None
IRF7420	1	1	None	None
IRF7424	1	1	None	None
IRF7425	1	1	None	None
IRF7451	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRF7452	1	1	None	None
IRF7455	1	1	None	None
IRF7456	1	1	None	None
IRF7457	1	1	None	None
IRF7458	1	1	None	None
IRF7463	1	1	None	None
IRF7465	1	1	None	None
IRF7469	1	1	None	None
IRF7470	1	1	None	None
IRF7473	1	1	None	None
IRF7476	1	1	None	None
IRF7490	1	1	None	None
IRF7493	1	1	None	None
IRF7495	1	1	None	None
IRF7501	1	2	None	None
IRF7503	1	2	None	None
IRF7504	1	2	None	None
IRF7506	1	2	None	None
IRF0507	1	2	None	None
IRF7509	1	2	None	None
IRF7530	1	2	None	None
IRF7601	1	1	None	None
IRF7606	1	1	None	None
IRF7607	1	1	None	None
IRF7726	1	1	None	None
IRF7805	1	1	None	None
IRF7805Z	1	1	None	None
IRF7807V	1	1	None	None
IRF7807Z	1	1	None	None
IRF7809AV	1	1	None	None
IRF7811AV	1	1	None	None
IRF7815	1	1	None	None
IRF7821	1	1	None	None
IRF7831	1	1	None	None
IRF7832	1	1	None	None
IRF7834	1	1	None	None
IRF7842	1	1	None	None
IRF7853	1	1	None	None
IRF7854	1	1	None	None
IRF7855	1	1	None	None
IRF7862	1	1	None	None
IRF7904	1	2	None	None
IRF7907	1	2	None	None
IRF7910	1	2	None	None
IRF8010	3	1	None	None
IRF8313	1	2	None	None
IRF8714	1	1	None	None
IRF8721	1	1	None	None
IRF8734	1	1	None	None
IRF8736	1	1	None	None
IRF8788	1	1	None	None
IRF8910	1	2	None	None
IRF9310	1	1	None	None
IRF9317	1	1	None	None
IRF9321	1	1	None	None
IRF9328	1	1	None	None
IRF9332	1	1	None	None
IRF9333	1	1	None	None
IRF9335	1	1	None	None
IRF9358	1	2	None	None
IRF9362	1	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRF9389	1	2	None	None
IRF9410	1	1	None	None
IRF9510	2	1	None	None
IRF9520	2	1	None	None
IRF9520N	1	1	None	None
IRF9530	2	1	None	None
IRF9530N	3	1	None	None
IRF9540	2	1	None	None
IRF9540N	3	1	None	None
IRF9610	1	1	None	None
IRF9620	1	1	None	None
IRF9630	2	1	None	None
IRF9640	3	1	None	None
IRF9910	1	2	None	None
IRF9952	1	2	None	None
IRF9956	1	2	None	None
IRFB9N60A	1	1	None	None
IRFB9N65A	1	1	None	None
IRFB11N50A	1	1	None	None
IRFB17N50L	1	1	None	None
IRFB18N50K	1	1	None	None
IRFB20N50K	1	1	None	None
IRFB23N20D	1	1	None	None
IRFB31N20D	1	1	None	None
IRFB38N20D	1	1	None	None
IRFB52N15D	1	1	None	None
IRFB260N	1	1	None	None
IRFB3004	1	1	None	None
IRFB3006	2	1	None	None
IRFB3077	1	1	None	None
IRFB3206	1	1	None	None
IRFB3207	1	1	None	None
IRFB3207Z	2	1	None	None
IRFB3256	1	1	None	None
IRFB3306	1	1	None	None
IRFB3307	1	1	None	None
IRFB3307Z	1	1	None	None
IRFB3607	1	1	None	None
IRFB3806	1	1	None	None
IRFB4019	1	1	None	None
IRFB4020	1	1	None	None
IRFB4110	2	1	None	None
IRFB4115	1	1	None	None
IRFB4127	1	1	None	None
IRFB4137	1	1	None	None
IRFB4227	1	1	None	None
IRFB4228	1	1	None	None
IRFB4229	1	1	None	None
IRFB4310	1	1	None	None
IRFB4310Z	1	1	None	None
IRFB4321	1	1	None	None
IRFB4322	1	1	None	None
IRFB4410	1	1	None	None
IRFB4410Z	1	1	None	None
IRFB4510	1	1	None	None
IRFB4610	1	1	None	None
IRFB4615	1	1	None	None
IRFB4620	1	1	None	None
IRFB4710	1	1	None	None
IRFB5615	1	1	None	None
IRFB5620	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRFB7430	1	1	None	None
IRFB7434	1	1	None	None
IRFB7437	1	1	None	None
IRFB7440	1	1	None	None
IRFB7446	1	1	None	None
IRFB7530	1	1	None	None
IRFB7534	1	1	None	None
IRFB7537	1	1	None	None
IRFB7540	1	1	None	None
IRFB7545	1	1	None	None
IRFB7546	1	1	None	None
IRFB7730	1	1	None	None
IRFB7734	1	1	None	None
IRFBC20	3	1	None	None
IRFBC30	1	1	None	None
IRFBC40	3	1	None	None
IRFBC40A	1	1	None	None
IRFBC40LC	1	1	None	None
IRFBE20	1	1	None	None
IRFBE30	3	1	None	None
IRFBF20	3	1	None	None
IRFBF30	1	1	None	None
IRFBG20	1	1	None	None
IRFBG30	1	1	None	None
IRFD014	1	1	None	None
IRFD024	1	1	None	None
IRFD110	1	1	None	None
IRFD120	1	1	None	None
IRFD210	1	1	None	None
IRFD220	1	1	None	None
IRFD320	1	1	None	None
IRFD420	1	1	None	None
IRFD9014	1	1	None	None
IRFD9024	1	1	None	None
IRFD9110	1	1	None	None
IRFD9120	1	1	None	None
IRFD9210	1	1	None	None
IRFD9220	1	1	None	None
IRFH3702	1	1	None	None
IRFH4210D	1	1	None	None
IRFH4234	1	1	None	None
IRFH5004	1	1	None	None
IRFH5006	1	1	None	None
IRFH5007	1	1	None	None
IRFH5010	1	1	None	None
IRFH5015	1	1	None	None
IRFH5020	1	1	None	None
IRFH5025	1	1	None	None
IRFH5053	1	1	None	None
IRFH5110	1	1	None	None
IRFH5210	1	1	None	None
IRFH5215	1	1	None	None
IRFH5250	2	1	None	None
IRFH5300	1	1	None	None
IRFH5301	1	1	None	None
IRFH5302	2	1	None	None
IRFH5304	1	1	None	None
IRFH5406	1	1	None	None
IRFH6200	1	1	None	None
IRFH7084	1	1	None	None
IRFH7110	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRFH7440	1	1	None	None
IRFH7446	1	1	None	None
IRFH7914	1	1	None	None
IRFH7921	1	1	None	None
IRFH7932	1	1	None	None
IRFH7934	1	1	None	None
IRFH8201	1	1	None	None
IRFH8202	1	1	None	None
IRFH8303	1	1	None	None
IRFH8307	1	1	None	None
IRFH8311	1	1	None	None
IRFH8316	1	1	None	None
IRFH8321	1	1	None	None
IRFH8324	1	1	None	None
IRFH8325	1	1	None	None
IRFH8330	1	1	None	None
IRFH9310	1	1	None	None
IRFHM830	1	1	None	None
IRFHM8326	1	1	None	None
IRFHM8329	1	1	None	None
IRFHM9331	1	1	None	None
IRFHS8242	1	1	None	None
IRFHS8342	1	1	None	None
IRFHS9301	1	1	None	None
IRFHS9351	1	2	None	None
IRFI520G	1	1	None	None
IRFI530G	1	1	None	None
IRFI530N	1	1	None	None
IRFI540G	1	1	None	None
IRFI540N	1	1	None	None
IRFI630G	1	1	None	None
IRFI640G	1	1	None	None
IRFI644G	1	1	None	None
IRFI740G	1	1	None	None
IRFI820G	1	1	None	None
IRFI830G	1	1	None	None
IRFI840GLC	1	1	None	None
IRFI1310N	1	1	None	None
IRFI3205	1	1	None	None
IRFI4110G	1	1	None	None
IRFI4229	1	1	None	None
IRFI4321	1	1	None	None
IRFI4410Z	1	1	None	None
IRFI4510G	1	1	None	None
IRFI9520G	1	1	None	None
IRFI9530G	1	1	None	None
IRFI9540G	1	1	None	None
IRFI9630G	1	1	None	None
IRFI9634G	1	1	None	None
IRFI9640G	1	1	None	None
IRFIB6N60A	1	1	None	None
IRFIB7N50A	1	1	None	None
IRFIBC20G	1	1	None	None
IRFIBC30G	1	1	None	None
IRFIBC40G	1	1	None	None
IRFIBE30G	1	1	None	None
IRFIBF20G	1	1	None	None
IRFIBF30G	1	1	None	None
IRFIZ24N	1	1	None	None
IRFIZ34G	1	1	None	None
IRFIZ34N	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRFIZ44N	1	1	None	None
IRFIZ48G	1	1	None	None
IRFL014	1	1	None	None
IRFL014N	1	1	None	None
IRFL024N	1	1	None	None
IRFL024Z	1	1	None	None
IRFL110	1	1	None	None
IRFL210	1	1	None	None
IRFL214	1	1	None	None
IRFL4105	1	1	None	None
IRFL4310	1	1	None	None
IRFL4315	1	1	None	None
IRFL9014	1	1	None	None
IRFL9110	1	1	None	None
IRFML8244	1	1	None	None
IRFP22N50A	1	1	None	None
IRFP23N50L	1	1	None	None
IRFP27N60K	1	1	None	None
IRFP31N50L	1	1	None	None
IRFP32N50K	1	1	None	None
IRFP054	1	1	None	None
IRFP054N	1	1	None	None
IRFP064	1	1	None	None
IRFP064N	1	1	None	None
IRFP90N20D	1	1	None	None
IRFP140	1	1	None	None
IRFP140N	1	1	None	None
IRFP150	1	1	None	None
IRFP150M	1	1	None	None
IRFP150N	1	1	None	None
IRFP240	1	1	None	None
IRFP244	1	1	None	None
IRFP250	1	1	None	None
IRFP250M	1	1	None	None
IRFP250N	1	1	None	None
IRFP254	1	1	None	None
IRFP260	1	1	None	None
IRFP260M	1	1	None	None
IRFP260N	1	1	None	None
IRFP264	1	1	None	None
IRFP340	1	1	None	None
IRFP350	1	1	None	None
IRFP360	1	1	None	None
IRFP360LC	1	1	None	None
IRFP440	1	1	None	None
IRFP450	1	1	None	None
IRFP450A	1	1	None	None
IRFP450LC	1	1	None	None
IRFP460	3	1	None	None
IRFP460LC	1	1	None	None
IRFP1405	1	1	None	None
IRFP2907	1	1	None	None
IRFP2907Z	1	1	None	None
IRFP3006	1	1	None	None
IRFP3077	1	1	None	None
IRFP3206	1	1	None	None
IRFP3306	1	1	None	None
IRFP3415	1	1	None	None
IRFP3703	1	1	None	None
IRFP3710	1	1	None	None
IRFP4004	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRFP4110	1	1	None	None
IRFP4127	1	1	None	None
IRFP4137	1	1	None	None
IRFP4227	1	1	None	None
IRFP4229	1	1	None	None
IRFP4310Z	1	1	None	None
IRFP4321	1	1	None	None
IRFP4332	1	1	None	None
IRFP4368	1	1	None	None
IRFP4468	1	1	None	None
IRFP4568	1	1	None	None
IRFP4668	1	1	None	None
IRFP4710	1	1	None	None
IRFP4868	1	1	None	None
IRFP7430	1	1	None	None
IRFP7530	1	1	None	None
IRFP7537	1	1	None	None
IRFP7718	1	1	None	None
IRFP9140	1	1	None	None
IRFP9140N	1	1	None	None
IRFP9240	1	1	None	None
IRFPC40	1	1	None	None
IRFPC50	2	1	None	None
IRFPC60	1	1	None	None
IRFPC60LC	1	1	None	None
IRFPE30	1	1	None	None
IRFPE40	1	1	None	None
IRFPE50	1	1	None	None
IRFPF40	1	1	None	None
IRFPF50	1	1	None	None
IRFPG30	1	1	None	None
IRFPG40	1	1	None	None
IRFPG50	1	1	None	None
IRFR1N60A	1	1	None	None
IRFR9N20D	1	1	None	None
IRFR13N15D	1	1	None	None
IRFR13N20D	1	1	None	None
IRFR014	1	1	None	None
IRFR15N20D	1	1	None	None
IRFR18N15D	1	1	None	None
IRFR024	1	1	None	None
IRFR024N	1	1	None	None
IRFR24N15D	1	1	None	None
IRFR110	1	1	None	None
IRFR120	1	1	None	None
IRFR120N	1	1	None	None
IRFR120Z	1	1	None	None
IRFR210	1	1	None	None
IRFR220	1	1	None	None
IRFR220N	1	1	None	None
IRFR224	1	1	None	None
IRFR310	1	1	None	None
IRFR320	1	1	None	None
IRFR420	2	1	None	None
IRFR430A	1	1	None	None
IRFR825	1	1	None	None
IRFR1010Z	1	1	None	None
IRFR1018	1	1	None	None
IRFR1205	1	1	None	None
IRFR2307Z	1	1	None	None
IRFR2405	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRFR2407	1	1	None	None
IRFR2607	1	1	None	None
IRFR2905Z	1	1	None	None
IRFR3410	1	1	None	None
IRFR3411	1	1	None	None
IRFR3504Z	1	1	None	None
IRFR3518	1	1	None	None
IRFR3607	1	1	None	None
IRFR3707Z	1	1	None	None
IRFR3708	1	1	None	None
IRFR3709Z	1	1	None	None
IRFR3710Z	1	1	None	None
IRFR3711	1	1	None	None
IRFR3711Z	1	1	None	None
IRFR3806	1	1	None	None
IRFR3910	1	1	None	None
IRFR4104	1	1	None	None
IRFR4105	1	1	None	None
IRFR4105Z	1	1	None	None
IRFR4510	1	1	None	None
IRFR4615	1	1	None	None
IRFR4620	1	1	None	None
IRFR5305	1	1	None	None
IRFR5410	1	1	None	None
IRFR5505	1	1	None	None
IRFR6215	1	1	None	None
IRFR7440	1	1	None	None
IRFR7446	1	1	None	None
IRFR7540	1	1	None	None
IRFR7546	1	1	None	None
IRFR7740	1	1	None	None
IRFR8314	1	1	None	None
IRFR9014	1	1	None	None
IRFR9024	1	1	None	None
IRFR9024N	1	1	None	None
IRFR9110	1	1	None	None
IRFR9120	1	1	None	None
IRFR9120N	1	1	None	None
IRFR9210	1	1	None	None
IRFR9214	1	1	None	None
IRFRC20	1	1	None	None
IRFS9N60A	1	1	None	None
IRFS11N50A	1	1	None	None
IRFS23N20D	1	1	None	None
IRFS31N20D	1	1	None	None
IRFS38N20D	1	1	None	None
IRFS52N15D	1	1	None	None
IRFS450B	1	1	None	None
IRFS3004	1	1	None	None
IRFS3006	1	1	None	None
IRFS3107	2	1	None	None
IRFS3206	1	1	None	None
IRFS3207	1	1	None	None
IRFS3207Z	1	1	None	None
IRFS3306	1	1	None	None
IRFS3307	1	1	None	None
IRFS3307Z	1	1	None	None
IRFS3607	1	1	None	None
IRFS3806	1	1	None	None
IRFS4010	1	1	None	None
IRFS4020	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRFS4127	1	1	None	None
IRFS4227	1	1	None	None
IRFS4229	1	1	None	None
IRFS4310	1	1	None	None
IRFS4130Z	1	1	None	None
IRFS4321	1	1	None	None
IRFS4410	1	1	None	None
IRFS4410Z	1	1	None	None
IRFS4510	1	1	None	None
IRFS4610	1	1	None	None
IRFS4615	1	1	None	None
IRFS4710	1	1	None	None
IRFS7430	2	1	None	None
IRFS7434	1	1	None	None
IRFS7440	1	1	None	None
IRFS7530	2	1	None	None
IRFS7534	1	1	None	None
IRFS7537	1	1	None	None
IRFS7540	1	1	None	None
IRFS7730	1	1	None	None
IRFS7734	1	1	None	None
IRFSL11N50A	1	1	None	None
IRFSL23N20D	1	1	None	None
IRFSL31N20D	1	1	None	None
IRFSL38N20D	1	1	None	None
IRFSL52N15D	1	1	None	None
IRFSL3004	1	1	None	None
IRFSL3006	1	1	None	None
IRFSL3107	1	1	None	None
IRFSL3206	1	1	None	None
IRFSL3207	1	1	None	None
IRFSL3207Z	1	1	None	None
IRFSL3306	1	1	None	None
IRFSL3307	1	1	None	None
IRFSL3307Z	1	1	None	None
IRFSL3607	1	1	None	None
IRFSL3806	1	1	None	None
IRFSL4010	1	1	None	None
IRFSL4020	1	1	None	None
IRFSL4127	1	1	None	None
IRFSL4227	1	1	None	None
IRFSL4310	1	1	None	None
IRFSL4310Z	1	1	None	None
IRFSL4321	1	1	None	None
IRFSL4410	1	1	None	None
IRFSL4410Z	1	1	None	None
IRFSL4510	1	1	None	None
IRFSL4610	1	1	None	None
IRFSL4615	1	1	None	None
IRFSL4710	1	1	None	None
IRFSL7430	1	1	None	None
IRFSL7434	1	1	None	None
IRFSL7440	1	1	None	None
IRFSL7530	1	1	None	None
IRFSL7534	1	1	None	None
IRFSL7537	1	1	None	None
IRFSL7540	1	1	None	None
IRFSL7730	1	1	None	None
IRFSL7734	1	1	None	None
IRFT8342	1	1	None	None
IRFT9342	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRFU1N60A	1	1	None	None
IRFU9N20D	1	1	None	None
IRFU13N15D	1	1	None	None
IRFU13N20D	1	1	None	None
IRFU014	1	1	None	None
IRFU15N20D	1	1	None	None
IRFU18N15D	1	1	None	None
IRFU024	1	1	None	None
IRFU024N	1	1	None	None
IRFU24N15D	1	1	None	None
IRFU110	1	1	None	None
IRFU120	1	1	None	None
IRFU120N	1	1	None	None
IRFU120Z	1	1	None	None
IRFU210	1	1	None	None
IRFU220	1	1	None	None
IRFU220N	1	1	None	None
IRFU224	1	1	None	None
IRFU310	1	1	None	None
IRFU320	1	1	None	None
IRFU420	2	1	None	None
IRFU430A	1	1	None	None
IRFU1010Z	1	1	None	None
IRFU1018	1	1	None	None
IRFU1205	1	1	None	None
IRFU2307Z	1	1	None	None
IRFU2405	1	1	None	None
IRFU2407	1	1	None	None
IRFU2607	1	1	None	None
IRFU2905Z	1	1	None	None
IRFU3410	1	1	None	None
IRFU3411	1	1	None	None
IRFU3504Z	1	1	None	None
IRFU3518	1	1	None	None
IRFU3607	1	1	None	None
IRFU3707Z	1	1	None	None
IRFU3708	1	1	None	None
IRFU3709Z	1	1	None	None
IRFU3710Z	1	1	None	None
IRFU3711	1	1	None	None
IRFU3711Z	1	1	None	None
IRFU3806	1	1	None	None
IRFU3910	1	1	None	None
IRFU4104	1	1	None	None
IRFU4105	1	1	None	None
IRFU4105Z	1	1	None	None
IRFU4510	1	1	None	None
IRFU4615	1	1	None	None
IRFU4620	1	1	None	None
IRFU5305	1	1	None	None
IRFU5410	1	1	None	None
IRFU5505	1	1	None	None
IRFU6215	1	1	None	None
IRFU7440	1	1	None	None
IRFU7540	1	1	None	None
IRFU7546	1	1	None	None
IRFU7740	1	1	None	None
IRFU9014	1	1	None	None
IRFU9024	1	1	None	None
IRFU9024N	1	1	None	None
IRFU9110	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRFU9120	1	1	None	None
IRFU9120N	1	1	None	None
IRFU9210	1	1	None	None
IRFU9214	1	1	None	None
IRFU9220	1	1	None	None
IRFU9310	1	1	None	None
IRFUC20	1	1	None	None
IRFZ14	1	1	None	None
IRFZ24N	1	1	None	None
IRFZ34	1	1	None	None
IRFZ34N	3	1	None	None
IRFZ44	1	1	None	None
IRFZ44E	3	1	None	None
IRFZ44N	3	1	None	None
IRFZ44V	1	1	None	None
IRFZ44VZ	3	1	None	None
IRFZ44Z	3	1	None	None
IRFZ46N	3	1	None	None
IRFZ48N	3	1	None	None
IRFZ48R	1	1	None	None
IRL40B212	1	1	None	None
IRL40B215	1	1	None	None
IRL40S212	1	1	None	None
IRL60B216	1	1	None	None
IRL60HS118	1	1	None	None
IRL80HS120	1	1	None	None
IRL100HS121	1	1	None	None
IRL510	1	1	None	None
IRL520	1	1	None	None
IRL520N	1	1	None	None
IRL530N	3	1	None	None
IRL540	1	1	None	None
IRL540N	3	1	None	None
IRL630	1	1	None	None
IRL640	2	1	None	None
IRL1004	1	1	None	None
IRL1404	2	1	None	None
IRL1404Z	3	1	None	None
IRL2203N	2	1	None	None
IRL2505	1	1	None	None
IRL2910	3	1	None	None
IRL3103	2	1	None	None
IRL3302	1	1	None	None
IRL3705N	3	1	None	None
IRL3705Z	3	1	None	None
IRL3803	3	1	None	None
IRL6342	1	1	None	None
IRL6372	1	2	None	None
IRL7833	3	1	None	None
IRLB3034	1	1	None	None
IRLB3036	1	1	None	None
IRLB3813	1	1	None	None
IRLB4030	1	1	None	None
IRLB8721	1	1	None	None
IRLB8743	1	1	None	None
IRLB8748	1	1	None	None
IRLD014	1	1	None	None
IRLD024	1	1	None	None
IRLD110	1	1	None	None
IRLD120	1	1	None	None
IRLH5030	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRLH5034	1	1	None	None
IRLH6224	1	1	None	None
IRLH6276	1	2	None	None
IRLHM620	1	1	None	None
IRLHM630	1	1	None	None
IRLHS2242	1	1	None	None
IRLHS6242	1	1	None	None
IRLHS6342	1	1	None	None
IRLHS6376	1	2	None	None
IRLI520N	1	1	None	None
IRLI640G	1	1	None	None
IRLI3705N	1	1	None	None
IRLIZ34N	1	1	None	None
IRLL014	1	1	None	None
IRLL014N	1	1	None	None
IRLL024N	1	1	None	None
IRLL024Z	1	1	None	None
IRLL110	1	1	None	None
IRLL2705	1	1	None	None
IRLL3303	1	1	None	None
IRLML0030	1	1	None	None
IRLML0040	1	1	None	None
IRLML0060	1	1	None	None
IRLML0100	1	1	None	None
IRLML2030	1	1	None	None
IRLML2060	1	1	None	None
IRLML2244	1	1	None	None
IRLML2246	1	1	None	None
IRLML2402	1	1	None	None
IRLML2502	1	1	None	None
IRLML2803	1	1	None	None
IRLML5103	1	1	None	None
IRLML5203	1	1	None	None
IRLML6244	1	1	None	None
IRLML6246	1	1	None	None
IRLML6302	1	1	None	None
IRLML6344	1	1	None	None
IRLML6346	1	1	None	None
IRLML6401	1	1	None	None
IRLML6402	1	1	None	None
IRLML9301	1	1	None	None
IRLML9303	1	1	None	None
IRLMS1503	1	1	None	None
IRLMS2002	1	1	None	None
IRLMS5703	1	1	None	None
IRLMS6702	1	1	None	None
IRLMS6802	1	1	None	None
IRLP3034	1	1	None	None
IRLR014	1	1	None	None
IRLR024	1	1	None	None
IRLR024N	1	1	None	None
IRLR110	1	1	None	None
IRLR120	1	1	None	None
IRLR120N	1	1	None	None
IRLR2705	1	1	None	None
IRLR2905	1	1	None	None
IRLR2905Z	1	1	None	None
IRLR2908	1	1	None	None
IRLR3103	1	1	None	None
IRLR3105	1	1	None	None
IRLR3110Z	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IRLR3114Z	1	1	None	None
IRLR3410	1	1	None	None
IRLR3636	1	1	None	None
IRLR3705Z	1	1	None	None
IRLR3915	1	1	None	None
IRLR6225	1	1	None	None
IRLR7807Z	1	1	None	None
IRLR7833	1	1	None	None
IRLR7843	1	1	None	None
IRLR8103	1	1	None	None
IRLR8256	1	1	None	None
IRLR8743	1	1	None	None
IRLR9343	1	1	None	None
IRLS3034	1	1	None	None
IRLS3036	1	1	None	None
IRLS3813	1	1	None	None
IRLS4030	1	1	None	None
IRLSL3034	1	1	None	None
IRLSL3036	1	1	None	None
IRLSL4030	1	1	None	None
IRLTS2242	1	1	None	None
IRLTS6342	1	1	None	None
IRLU014	1	1	None	None
IRLU024	1	1	None	None
IRLU024N	1	1	None	None
IRLU110	1	1	None	None
IRLU120	1	1	None	None
IRLU120N	1	1	None	None
IRLU2705	1	1	None	None
IRLU2905	1	1	None	None
IRLU2905Z	1	1	None	None
IRLU2908	1	1	None	None
IRLU3103	1	1	None	None
IRLU3105	1	1	None	None
IRLU3110Z	1	1	None	None
IRLU3114Z	1	1	None	None
IRLU3410	1	1	None	None
IRLU3636	1	1	None	None
IRLU3705Z	1	1	None	None
IRLU3915	1	1	None	None
IRLU7807Z	1	1	None	None
IRLU7833	1	1	None	None
IRLU7843	1	1	None	None
IRLU8256	1	1	None	None
IRLU8743	1	1	None	None
IRLU9343	1	1	None	None
IRLZ14	1	1	None	None
IRLZ24	1	1	None	None
IRLZ24N	3	1	None	None
IRLZ34N	1	1	None	None
IRLZ44	1	1	None	None
IRLZ44N	3	1	None	None
IRLZ44Z	3	1	None	None
ISL9N315AD3	2	1	None	None
IXFA3N120	1	1	None	None
IXFA4N85X	1	1	None	None
IXFA5N100P	1	1	None	None
IXFA6N120P	1	1	None	None
IXFA7N80P	1	1	None	None
IXFA7N100P	1	1	None	None
IXFA8N65X2	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXFA8N85XHV	1	1	None	None
IXFA10N60P	1	1	None	None
IXFA10N80P	1	1	None	None
IXFA12N50P	1	1	None	None
IXFA12N65X2	1	1	None	None
IXFA14N60P	1	1	None	None
IXFA14N85XHV	1	1	None	None
IXFA16N50P	2	1	None	None
IXFA16N60P3	1	1	None	None
IXFA18N60X	1	1	None	None
IXFA18N65X2	1	1	None	None
IXFA20N50P3	1	1	None	None
IXFA20N85XHV	1	1	None	None
IXFA22N60P3	1	1	None	None
IXFA22N65X2	1	1	None	None
IXFA24N60X	1	1	None	None
IXFA26N30X3	1	1	None	None
IXFA26N50P3	1	1	None	None
IXFA30N25X3	1	1	None	None
IXFA30N60X	1	1	None	None
IXFA34N65X2	1	1	None	None
IXFA36N20X3	1	1	None	None
IXFA36N30P3	1	1	None	None
IXFA38N30X3	1	1	None	None
IXFA56N30X3	1	1	None	None
IXFA60N25X3	1	1	None	None
IXFA72N20X3	1	1	None	None
IXFA72N30X3	1	1	None	None
IXFA76N15T2	1	1	None	None
IXFA80N25X3	1	1	None	None
IXFA90N20X3	1	1	None	None
IXFA102N15T	1	1	None	None
IXFA110N15T2	1	1	None	None
IXFA130N10T2	1	1	None	None
IXFA130N15X3	1	1	None	None
IXFA180N10T2	1	1	None	None
IXFA220N06T3	1	1	None	None
IXFA230N075T2	2	1	None	None
IXFA270N06T3	1	1	None	None
IXFH5N100P	1	1	None	None
IXFH6N120	2	1	None	None
IXFH7N100P	1	1	None	None
IXFH10N80P	1	1	None	None
IXFH10N100P	1	1	None	None
IXFH12N65X2	1	1	None	None
IXFH12N80P	1	1	None	None
IXFH12N90P	1	1	None	None
IXFH12N100P	1	1	None	None
IXFH12N120P	1	1	None	None
IXFH14N60P	1	1	None	None
IXFH14N80P	1	1	None	None
IXFH14N85X	1	1	None	None
IXFH15N80Q	1	1	None	None
IXFH15N100P	2	1	None	None
IXFH16N50P	2	1	None	None
IXFH16N60P3	1	1	None	None
IXFH16N80P	1	1	None	None
IXFH16N120P	1	1	None	None
IXFH18N60	2	1	None	None
IXFH18N65X2	1	1	None	None
IXFH18N90P	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXFH18N100Q3	1	1	None	None
IXFH20N50P3	1	1	None	None
IXFH20N80P	1	1	None	None
IXFH20N100P	1	1	None	None
IXFH22N50P	1	1	None	None
IXFH22N60P	2	1	None	None
IXFH22N65X2	1	1	None	None
IXFH24N60X	1	1	None	None
IXFH24N80P	1	1	None	None
IXFH24N90P	1	1	None	None
IXFH26N50P	2	1	None	None
IXFH26N60P	1	1	None	None
IXFH28N60P3	1	1	None	None
IXFH30N50	2	1	None	None
IXFH30N60	2	1	None	None
IXFH30N85X	1	1	None	None
IXFH34N50P3	1	1	None	None
IXFH34N60X2A	1	1	None	None
IXFH34N65X2	1	1	None	None
IXFH36N50P	1	1	None	None
IXFH36N60P	1	1	None	None
IXFH40N50Q	1	1	None	None
IXFH40N85X	1	1	None	None
IXFH42N50P2	1	1	None	None
IXFH42N60P3	1	1	None	None
IXFH44N50	2	1	None	None
IXFH46N65X2	1	1	None	None
IXFH50N30Q	1	1	None	None
IXFH50N60	2	1	None	None
IXFH50N85X	1	1	None	None
IXFH52N30P	1	1	None	None
IXFH52N50P2	1	1	None	None
IXFH56N30X3	1	1	None	None
IXFH60N50P3	1	1	None	None
IXFH60N60X	2	1	None	None
IXFH60N65X2	2	1	None	None
IXFH69N30P	1	1	None	None
IXFH70N20Q2	1	1	None	None
IXFH70N30Q3	1	1	None	None
IXFH72N30X3	1	1	None	None
IXFH74N30P	1	1	None	None
IXFH76N15T2	1	1	None	None
IXFH80N25X3	1	1	None	None
IXFH80N60X2A	1	1	None	None
IXFH80N65X2	2	1	None	None
IXFH86N30T	1	1	None	None
IXFH88N30P	1	1	None	None
IXFH90N20X3	1	1	None	None
IXFH94N30	2	1	None	None
IXFH96N15P	1	1	None	None
IXFH96N20P	1	1	None	None
IXFH100N25P	1	1	None	None
IXFH100N30X3	1	1	None	None
IXFH102N15T	1	1	None	None
IXFH110N10P	1	1	None	None
IXFH110N15T2	1	1	None	None
IXFH110N25T	1	1	None	None
IXFH120N15P	1	1	None	None
IXFH120N20P	1	1	None	None
IXFH120N25	2	1	None	None
IXFH120N30X3	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXFH130N15X3	1	1	None	None
IXFH140N10P	1	1	None	None
IXFH140N20X3	1	1	None	None
IXFH150N15P	1	1	None	None
IXFH150N17T2	1	1	None	None
IXFH150N20T	1	1	None	None
IXFH150N25X3	1	1	None	None
IXFH150N30X3	1	1	None	None
IXFH160N15T2	1	1	None	None
IXFH170N10P	1	1	None	None
IXFH170N25X3	1	1	None	None
IXFH180N20X3	1	1	None	None
IXFH220N06T3	1	1	None	None
IXFH220N20X3	1	1	None	None
IXFH230N10T	1	1	None	None
IXFH230N075T2	1	1	None	None
IXFH270N06T3	1	1	None	None
IXFH320N10T2	1	1	None	None
IXFH340N075T2	1	1	None	None
IXFH400N075T2	1	1	None	None
IXFJ20N85X	1	1	None	None
IXFJ26N50P3	1	1	None	None
IXFJ80N25X3	1	1	None	None
IXFK20N120P	1	1	None	None
IXFK21N100F	1	1	None	None
IXFK24N80P	1	1	None	None
IXFK26N100P	1	1	None	None
IXFK26N129P	1	1	None	None
IXFK27N80Q	1	1	None	None
IXFK32N80	2	1	None	None
IXFK32N90P	1	1	None	None
IXFK32N100	2	1	None	None
IXFK34N80	1	1	None	None
IXFK36N60P	1	1	None	None
IXFK40N90P	1	1	None	None
IXFK44N50	2	1	None	None
IXFK44N60	1	1	None	None
IXFK44N80	2	1	None	None
IXFK48N50	1	1	None	None
IXFK48N60	2	1	None	None
IXFK50N85X	1	1	None	None
IXFK52N100X	1	1	None	None
IXFK64N50	2	1	None	None
IXFK64N60	3	1	None	None
IXFK66N85X	1	1	None	None
IXFK78N50P3	1	1	None	None
IXFK80N50	2	1	None	None
IXFK80N60P3	1	1	None	None
IXFK80N65X2	1	1	None	None
IXFK88N30P	1	1	None	None
IXFK90N60X	1	1	None	None
IXFK94N50P2	1	1	None	None
IXFK96N50P3	1	1	None	None
IXFK100N65X2	1	1	None	None
IXFK102N30P	1	1	None	None
IXFK120N20P	1	1	None	None
IXFK120N25P	1	1	None	None
IXFK120N30	2	1	None	None
IXFK120N65X2	1	1	None	None
IXFK140N20P	1	1	None	None
IXFK140N25T	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXFK140N30P	1	1	None	None
IXFK150N15P	1	1	None	None
IXFK150N30	2	1	None	None
IXFK160N30T	1	1	None	None
IXFK170N10P	1	1	None	None
IXFK170N20	2	1	None	None
IXFK170N25X3	1	1	None	None
IXFK180N15P	1	1	None	None
IXFK180N25T	1	1	None	None
IXFK200N10P	1	1	None	None
IXFK210N30X3	1	1	None	None
IXFK220N15P	1	1	None	None
IXFK220N17T2	1	1	None	None
IXFK230N20T	1	1	None	None
IXFK240N15T2	1	1	None	None
IXFK240N25X3	1	1	None	None
IXFK240N100Q3	1	1	None	None
IXFK250N10P	1	1	None	None
IXFK300N20X3	1	1	None	None
IXFK320N17T2	1	1	None	None
IXFK360N10T	1	1	None	None
IXFK360N15T2	1	1	None	None
IXFK420N10T	1	1	None	None
IXFK520N075T2	1	1	None	None
IXFP3N120	1	1	None	None
IXFP4N85X	2	1	None	None
IXFP4N100P	2	1	None	None
IXFP5N100P	1	1	None	None
IXFP6N120P	1	1	None	None
IXFP7N80P	1	1	None	None
IXFP7N100P	1	1	None	None
IXFP8N65X2	1	1	None	None
IXFP8N85X	1	1	None	None
IXFP10N60P	1	1	None	None
IXFP10N80P	1	1	None	None
IXFP12N50P	1	1	None	None
IXFP12N65X2	2	1	None	None
IXFP14N60P	1	1	None	None
IXFP14N85X	2	1	None	None
IXFP16N50P	2	1	None	None
IXFP16N60P3	1	1	None	None
IXFP18N60X	1	1	None	None
IXFP18N65X2	2	1	None	None
IXFP20N50P3	2	1	None	None
IXFP20N85X	1	1	None	None
IXFP22N60P3	1	1	None	None
IXFP22N65X2	2	1	None	None
IXFP24N60X	1	1	None	None
IXFP26N30X3	1	1	None	None
IXFP26N50P3	1	1	None	None
IXFP30N25X3	2	1	None	None
IXFP30N60X	1	1	None	None
IXFP34N65X2	2	1	None	None
IXFP36N20X3	2	1	None	None
IXFP36N30P3	1	1	None	None
IXFP38N30X3	1	1	None	None
IXFP56N30X3	2	1	None	None
IXFP60N25X3	2	1	None	None
IXFP72N20X3	2	1	None	None
IXFP72N30X3	2	1	None	None
IXFP76N15T2	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXFP80N25X3	1	1	None	None
IXFP90N20X3	2	1	None	None
IXFP102N15T	1	1	None	None
IXFP110N15T2	1	1	None	None
IXFP130N10T2	1	1	None	None
IXFP130N15X3	1	1	None	None
IXFP180N10T2	1	1	None	None
IXFP220N06T3	1	1	None	None
IXFP230N075T2	1	1	None	None
IXFP270N06T3	1	1	None	None
IXFQ8N85X	1	1	None	None
IXFQ10N80P	1	1	None	None
IXFQ12N80P	1	1	None	None
IXFQ14N80P	1	1	None	None
IXFQ20N50P3	1	1	None	None
IXFQ22N60P3	1	1	None	None
IXFQ24N50P2	1	1	None	None
IXFQ24N60X	1	1	None	None
IXFQ26N50P3	1	1	None	None
IXFQ28N60P3	1	1	None	None
IXFQ30N60X	1	1	None	None
IXFQ34N50P3	1	1	None	None
IXFQ50N60	2	1	None	None
IXFQ60N25X3	1	1	None	None
IXFQ60N50P3	1	1	None	None
IXFQ60N60X	1	1	None	None
IXFQ72N20X3	1	1	None	None
IXFQ72N30X3	1	1	None	None
IXFQ80N25X3	1	1	None	None
IXFQ90N20X3	1	1	None	None
IXFQ94N30P3	1	1	None	None
IXFQ120N25X3	1	1	None	None
IXFQ140N20X3	1	1	None	None
IXFT6N120P	1	1	None	None
IXFT14N80P	1	1	None	None
IXFT15N80Q	1	1	None	None
IXFT15N100Q3	1	1	None	None
IXFT16N80P	1	1	None	None
IXFT16N120P	1	1	None	None
IXFT18N90P	1	1	None	None
IXFT18N100Q3	1	1	None	None
IXFT20N80P	1	1	None	None
IXFT20N100P	1	1	None	None
IXFT24N80P	1	1	None	None
IXFT24N90P	1	1	None	None
IXFT26N60P	1	1	None	None
IXFT30N50	2	1	None	None
IXFT30N60	2	1	None	None
IXFT30N85XHV	1	1	None	None
IXFT36N50P	1	1	None	None
IXFT36N60P	1	1	None	None
IXFT40N50Q	1	1	None	None
IXFT40N85XHV	1	1	None	None
IXFT42N50P2	1	1	None	None
IXFT44N50	2	1	None	None
IXFT50N30Q3	1	1	None	None
IXFT50N60	2	1	None	None
IXFT50N85XHV	1	1	None	None
IXFT52N50P2	1	1	None	None
IXFT60N50P3	1	1	None	None
IXFT60N65X2HV	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXFT69N30P	1	1	None	None
IXFT70N20Q3	1	1	None	None
IXFT70N30Q3	1	1	None	None
IXFT80N65X2HV	1	1	None	None
IXFT86N30T	1	1	None	None
IXFT88N30P	1	1	None	None
IXFT94N30	2	1	None	None
IXFT96N20P	1	1	None	None
IXFT100N30X3HV	1	1	None	None
IXFT120N15P	1	1	None	None
IXFT120N25	2	1	None	None
IXFT120N39X3HV	1	1	None	None
IXFT140N10P	1	1	None	None
IXFT140N20X3HV	1	1	None	None
IXFT150N17T2	1	1	None	None
IXFT150N20T	1	1	None	None
IXFT150N25X3HV	1	1	None	None
IXFT150N30X3HV	1	1	None	None
IXFT170N25X3HV	1	1	None	None
IXFT180N20X3HV	1	1	None	None
IXFT220N20X3HV	1	1	None	None
IXFT320N10T2	1	1	None	None
IXFT340N075T2	1	1	None	None
IXFT400N075T2	1	1	None	None
IXFY4N85X	1	1	None	None
IXFY8N65X2	1	1	None	None
IXFY26N30X3	1	1	None	None
IXFY30N25X3	1	1	None	None
IXFY36N20X3	1	1	None	None
IXKH20N60C5	1	1	None	None
IXKH24N60C5	1	1	None	None
IXKH30N60C5	1	1	None	None
IXKH35N60C5	1	1	None	None
IXKH47N60C5	1	1	None	None
IXKH70N60C5	1	1	None	None
IXKK85N60C	1	1	None	None
IXKP20N60C5	1	1	None	None
IXKP24N60C5	1	1	None	None
IXKT70N60C5	1	1	None	None
IXTA1N80P	1	1	None	None
IXTA1N100P	1	1	None	None
IXTA1N120P	1	1	None	None
IXTA1N170DHV	1	1	None	None
IXTA1N200P3HV	1	1	None	None
IXTA1R4N100P	1	1	None	None
IXTA1R4N120P	1	1	None	None
IXTA1R6N50D2	1	1	None	None
IXTA1R6N100D2	2	1	None	None
IXTA2N100P	1	1	None	None
IXTA02N250HV	1	1	None	None
IXTA02N450HV	1	1	None	None
IXTA2R4N120P	1	1	None	None
IXTA3N50	2	1	None	None
IXTA3N100	3	1	None	None
IXTA3N120	2	1	None	None
IXTA3N150	1	1	None	None
IXTA4N65X2	1	1	None	None
IXTA4N80P	1	1	None	None
IXTA4N150HV	1	1	None	None
IXTA05N100	3	1	None	None
IXTA6N50	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXTA6N100D2	1	1	None	None
IXTA06N120P	1	1	None	None
IXTAP08N50D2	1	1	None	None
IXTA8N50P	1	1	None	None
IXTA8N65X2	1	1	None	None
IXTA8N70X2	1	1	None	None
IXTA08N100	3	1	None	None
IXTA08N120P	1	1	None	None
IXTA10N60P	1	1	None	None
IXTA10P15T	1	1	None	None
IXTA10P50P	1	1	None	None
IXTA12N50P	1	1	None	None
IXTA12N65X2	1	1	None	None
IXTA12N70X2	1	1	None	None
IXTA14N60P	1	1	None	None
IXTA14N65X2	1	1	None	None
IXTA15N50L2	1	1	None	None
IXTA15P15T	1	1	None	None
IXTA16N50P	1	1	None	None
IXTA18P10T	1	1	None	None
IXTA20N65X	2	1	None	None
IXTA24N65X2	1	1	None	None
IXTA24P085T	1	1	None	None
IXTA26P10T	1	1	None	None
IXTA26P20P	1	1	None	None
IXTA28P065T	1	1	None	None
IXTA32N20T	1	1	None	None
IXTA32P05T	1	1	None	None
IXTA32P20T	1	1	None	None
IXTA34N65X2	1	1	None	None
IXTA36N30P	1	1	None	None
IXTA36P15P	1	1	None	None
IXTA42P25P	1	1	None	None
IXTA44P15T	1	1	None	None
IXTA48N05T	1	1	None	None
IXTA48N20T	1	1	None	None
IXTA48P05T	1	1	None	None
IXTA50N20P	1	1	None	None
IXTA50N25T	1	1	None	None
IXTA52P10P	1	1	None	None
IXTA56N15T	1	1	None	None
IXTA60N10T	1	1	None	None
IXTA60N20T	1	1	None	None
IXTA62N15P	1	1	None	None
IXTA64N10L2	1	1	None	None
IXTA70N075L2	1	1	None	None
IXTA75N10P	1	1	None	None
IXTA76N25T	1	1	None	None
IXTA76P10T	1	1	None	None
IXTA80N10T	1	1	None	None
IXTA80N12T2	1	1	None	None
IXTA80N075L2	1	1	None	None
IXTA86N20T	1	1	None	None
IXTA90N05T2	1	1	None	None
IXTA96P085T	1	1	None	None
IXTA100N04T2	1	1	None	None
IXTA102N15T	1	1	None	None
IXTA110N12T2	1	1	None	None
IXTA110N055T2	1	1	None	None
IXTA120N04T2	1	1	None	None
IXTA120N075T2	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXTA130N10T	1	1	None	None
IXTA140N12T2	1	1	None	None
IXTA140N055T2	1	1	None	None
IXTA140P05T	1	1	None	None
IXTA160N04T2	1	1	None	None
IXTA160N10T	1	1	None	None
IXTA170N075T2	1	1	None	None
IXTA180N10T	1	1	None	None
IXTA200N055T2	1	1	None	None
IXTA220N04T2	2	1	None	None
IXTA230N04T2	1	1	None	None
IXTA230N075T2	2	1	None	None
IXTA260N055T2	2	1	None	None
IXTA270N04T4	2	1	None	None
IXTA300N04T2	1	1	None	None
IXTA340N04T4	2	1	None	None
IXTA380N036T4-7	1	1	None	None
IXTA460P2	1	1	None	None
IXTH1N200P3	1	1	None	None
IXTH2N150L	1	1	None	None
IXTH2N170D2	1	1	None	None
IXTH2R4N120P	1	1	None	None
IXTH3N100P	1	1	None	None
IXTH3N120	1	1	None	None
IXTH3N150	1	1	None	None
IXTH4N100L	1	1	None	None
IXTH4N150	1	1	None	None
IXTH6N50D2	1	1	None	None
IXTH6N100D2	1	1	None	None
IXTH6N120	1	1	None	None
IXTH6N150	1	1	None	None
IXTH8P50	1	1	None	None
IXTH10N100D	2	1	None	None
IXTH10P50P	1	1	None	None
IXTH10P60	1	1	None	None
IXTH11P50	1	1	None	None
IXTH12N65X2	1	1	None	None
IXTH12N70X2	1	1	None	None
IXTH12N100L	1	1	None	None
IXTH12N150	1	1	None	None
IXTH14N65X2	1	1	None	None
IXTH15N50L2	1	1	None	None
IXTH16N10D2	1	1	None	None
IXTH16N20D2	1	1	None	None
IXTH16N50D2	1	1	None	None
IXTH16P60P	1	1	None	None
IXTH20N65X	2	1	None	None
IXTH20P50P	1	1	None	None
IXTH22N50P	1	1	None	None
IXTH24N50L	1	1	None	None
IXTH24N65X2	1	1	None	None
IXTH24P20	1	1	None	None
IXTH26N60P	1	1	None	None
IXTH26P20P	1	1	None	None
IXTH30N50	3	1	None	None
IXTH30N60	2	1	None	None
IXTH32N65X	1	1	None	None
IXTH32P20T	1	1	None	None
IXTH34N65X2	1	1	None	None
IXTH36N50P	1	1	None	None
IXTH36P10	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXTH36P15P	1	1	None	None
IXTH38N30L2	1	1	None	None
IXTH40N50L2	1	1	None	None
IXTH44P15T	1	1	None	None
IXTH48N65X2	1	1	None	None
IXTH48P20P	1	1	None	None
IXTH50N25T	1	1	None	None
IXTH50N30L2	1	1	None	None
IXTH50P10	1	1	None	None
IXTH52N65X	1	1	None	None
IXTH52P10P	1	1	None	None
IXTH60N20L2	1	1	None	None
IXTH62N65X2	1	1	None	None
IXTH64N10L2	1	1	None	None
IXTH64N65X	1	1	None	None
IXTH68P20T	1	1	None	None
IXTH75N10L2	1	1	None	None
IXTH76N25T	1	1	None	None
IXTH76P10T	1	1	None	None
IXTH80N20L	1	1	None	None
IXTH80N65X2	1	1	None	None
IXTH80N075L2	1	1	None	None
IXTH88N15	1	1	None	None
IXTH88N30P	1	1	None	None
IXTH90P10P	1	1	None	None
IXTH96N20P	1	1	None	None
IXTH96N25T	1	1	None	None
IXTH96P085T	1	1	None	None
IXTH102N15T	1	1	None	None
IXTH110N10L2	1	1	None	None
IXTH110N25T	1	1	None	None
IXTH120P065T	1	1	None	None
IXTH130P15X4	1	1	None	None
IXTH130N20T	1	1	None	None
IXTH140N075L2	1	1	None	None
IXTH140P05T	1	1	None	None
IXTH140P10T	1	1	None	None
IXTH150N15X4	1	1	None	None
IXTH200N10T	1	1	None	None
IXTH240N15X4	1	1	None	None
IXTH260N055T2	1	1	None	None
IXTH270N04T4	1	1	None	None
IXTH300N04T2	1	1	None	None
IXTH340N04T4	1	1	None	None
IXTH360N055T2	1	1	None	None
IXTH420N04T2	1	1	None	None
IXTH440N055T2	1	1	None	None
IXTH450P2	1	1	None	None
IXTH460P2	1	1	None	None
IXTH500N04T2	1	1	None	None
IXTI76N25T	1	1	None	None
IXTI90N055T2	1	1	None	None
IXTK3N250L	1	1	None	None
IXTK8N150L	1	1	None	None
IXTK17N120L	1	1	None	None
IXTK20N150	1	1	None	None
IXTK22N100L	1	1	None	None
IXTK32P60P	1	1	None	None
IXTK40P50P	1	1	None	None
IXTK46N50L	1	1	None	None
IXTK60N50L2	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXTK82N25P	1	1	None	None
IXTK88N30P	1	1	None	None
IXTK90N25L2	1	1	None	None
IXTK90P20P	1	1	None	None
IXTK100N25P	1	1	None	None
IXTK102N30P	1	1	None	None
IXTK102N65X2	1	1	None	None
IXTK110N20L2	1	1	None	None
IXTK120N20P	1	1	None	None
IXTK120N25P	1	1	None	None
IXTK120N65X2	1	1	None	None
IXTK120P20T	1	1	None	None
IXTK140N20P	1	1	None	None
IXTK140N30P	1	1	None	None
IXTK150N15P	1	1	None	None
IXTK170N10P	1	1	None	None
IXTK170P10P	1	1	None	None
IXTK180N15P	1	1	None	None
IXTK200N10P	1	1	None	None
IXTK210P10T	1	1	None	None
IXTK240N075L2	1	1	None	None
IXTK550N055T2	1	1	None	None
IXTK600N04T2	1	1	None	None
IXTP1N80P	1	1	None	None
IXTP01N100D	1	1	None	None
IXTP1N100P	1	1	None	None
IXTP1N120P	1	1	None	None
IXTP1R4N100P	1	1	None	None
IXTP1R4N120P	1	1	None	None
IXTP1R6N50D2	1	1	None	None
IXTP1R6N100D2	1	1	None	None
IXTP02N50D	1	1	None	None
IXTP2N65X2	1	1	None	None
IXTP2N100P	1	1	None	None
IXTP02N120P	1	1	None	None
IXTP2R4N50P	1	1	None	None
IXTP2R4N120P	1	1	None	None
IXTP3N50D2	1	1	None	None
IXTP3N50P	1	1	None	None
IXTP3N100	2	1	None	None
IXTP3N120	1	1	None	None
IXTP4N65X2	1	1	None	None
IXTP4N80P	1	1	None	None
IXTP05N100	3	1	None	None
IXTP6N50	2	1	None	None
IXTP6N100D2	1	1	None	None
IXTP06N120P	1	1	None	None
IXTP08N50D2	1	1	None	None
IXTP8N50P	1	1	None	None
IXTP8N65X2	2	1	None	None
IXTP8N70X2	2	1	None	None
IXTP08N100	2	1	None	None
IXTP08N120P	1	1	None	None
IXTP10N60P	1	1	None	None
IXTP10P15T	1	1	None	None
IXTP10P50P	1	1	None	None
IXTP12N50P	1	1	None	None
IXTP12N65X2	1	1	None	None
IXTP12N70X2	1	1	None	None
IXTP14N60P	2	1	None	None
IXTP14N65X2	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXTP15N50L2	1	1	None	None
IXTP15P15T	1	1	None	None
IXTP16N50P	1	1	None	None
IXTP18P10T	1	1	None	None
IXTP20N65X	4	1	None	None
IXTP24N65X2	2	1	None	None
IXTP24P085T	1	1	None	None
IXTP26P10T	1	1	None	None
IXTP26P20P	1	1	None	None
IXTP28P065T	1	1	None	None
IXTP32N20T	1	1	None	None
IXTP32N65X	2	1	None	None
IXTP32P05T	1	1	None	None
IXTP32P20T	1	1	None	None
IXTP34N65X2	1	1	None	None
IXTP36N30P	1	1	None	None
IXTP36P15P	1	1	None	None
IXTP42P25P	1	1	None	None
IXTP44N10T	1	1	None	None
IXTP44P15T	1	1	None	None
IXTP48N05T	1	1	None	None
IXTP48N20T	1	1	None	None
IXTP48P05T	1	1	None	None
IXTP50N20P	2	1	None	None
IXTP50N25T	1	1	None	None
IXTP52P10P	1	1	None	None
IXTP56N15T	1	1	None	None
IXTP60N10T	1	1	None	None
IXTP60N20T	1	1	None	None
IXTP62N15P	1	1	None	None
IXTP64N10L2	1	1	None	None
IXTP70N075L2	1	1	None	None
IXTP75N10P	1	1	None	None
IXTP76N25T	1	1	None	None
IXTP76P10T	1	1	None	None
IXTP80N10T	1	1	None	None
IXTP80N12T2	1	1	None	None
IXTP80N075L2	1	1	None	None
IXTP86N20T	1	1	None	None
IXTP90N055T2	1	1	None	None
IXTP96P085T	1	1	None	None
IXTP100N04T2	1	1	None	None
IXTP102N15T	1	1	None	None
IXTP110N12T2	1	1	None	None
IXTP110N055T2	1	1	None	None
IXTP120N04T2	1	1	None	None
IXTP120N075T2	1	1	None	None
IXTP120P065T	1	1	None	None
IXTP130N10T	1	1	None	None
IXTP130N15X4	1	1	None	None
IXTP140N12T2	1	1	None	None
IXTP140N055T2	1	1	None	None
IXTP140P05T	1	1	None	None
IXTP150N15X4	2	1	None	None
IXTP160N04T2	1	1	None	None
IXTP160N10T	1	1	None	None
IXTP170N075T2	1	1	None	None
IXTP180N10T	1	1	None	None
IXTP200N055T2	1	1	None	None
IXTP220N04T2	1	1	None	None
IXTP230N04T	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXTP230N075T2	1	1	None	None
IXTP260N055T2	1	1	None	None
IXTP270N04T4	1	1	None	None
IXTP300N04T2	1	1	None	None
IXTP340N04T4	1	1	None	None
IXTP450P2	1	1	None	None
IXTP460P2	1	1	None	None
IXTQ3N150M	1	1	None	None
IXTQ10P50P	1	1	None	None
IXTQ14N60P	1	1	None	None
IXTQ16N50P	1	1	None	None
IXTQ18N60P	1	1	None	None
IXTQ22N50P	1	1	None	None
IXTQ22N60P	1	1	None	None
IXTQ26N50P	1	1	None	None
IXTQ26N60P	1	1	None	None
IXTQ26P20P	1	1	None	None
IXTQ30N50	3	1	None	None
IXTQ30N60	2	1	None	None
IXTQ32N65X	1	1	None	None
IXTQ32P20T	1	1	None	None
IXTQ36N30P	1	1	None	None
IXTQ36N50P	1	1	None	None
IXTQ36P15P	1	1	None	None
IXTQ40N50L2	1	1	None	None
IXTQ42P25P	1	1	None	None
IXTQ44N50P	1	1	None	None
IXTQ44P15T	1	1	None	None
IXTQ48N20T	1	1	None	None
IXTQ50N20P	1	1	None	None
IXTQ50N25T	1	1	None	None
IXTQ52N30P	1	1	None	None
IXTQ52P10P	1	1	None	None
IXTQ60N20	2	1	None	None
IXTQ62N15P	1	1	None	None
IXTQ64N25P	1	1	None	None
IXTQ69N30P	1	1	None	None
IXTQ74N20P	1	1	None	None
IXTQ75N10P	1	1	None	None
IXTQ76N25T	1	1	None	None
IXTQ82N25P	1	1	None	None
IXTQ86N20T	1	1	None	None
IXTQ88N30P	1	1	None	None
IXTQ96N15P	1	1	None	None
IXTQ96N20P	1	1	None	None
IXTQ96N25T	1	1	None	None
IXTQ100N25P	1	1	None	None
IXTQ102N15T	1	1	None	None
IXTQ110N10P	1	1	None	None
IXTQ120N15P	1	1	None	None
IXTQ120N20P	1	1	None	None
IXTQ130N20T	1	1	None	None
IXTQ140N10P	1	1	None	None
IXTQ150N15P	1	1	None	None
IXTQ170N10P	1	1	None	None
IXTQ200N10T	1	1	None	None
IXTQ450P2	1	1	None	None
IXTQ460P2	1	1	None	None
IXTQ470P2	1	1	None	None
IXTQ480P2	1	1	None	None
IXTT1N250HV	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXTT1N300P3HV	1	1	None	None
IXTT1N450HV	1	1	None	None
IXTT2N170D2	1	1	None	None
IXTT2N300P3HV	1	1	None	None
IXTT02N450HV	1	1	None	None
IXTT3N200P3HV	1	1	None	None
IXTT4N150HV	1	1	None	None
IXTT6N120	1	1	None	None
IXTT6N150	1	1	None	None
IXTT8P50	1	1	None	None
IXTT10N100D	2	1	None	None
IXTT10P60	1	1	None	None
IXTT11P50	1	1	None	None
IXTT12N150	2	1	None	None
IXTT16N10D2	1	1	None	None
IXTT16N20D2	1	1	None	None
IXTT16N50D2	1	1	None	None
IXTT16P60P	1	1	None	None
IXTT20P50P	1	1	None	None
IXTT24P20	1	1	None	None
IXTT26N50P	1	1	None	None
IXTT26N60P	1	1	None	None
IXTT30N50	3	1	None	None
IXTT30N60	2	1	None	None
IXTT34N65X2HV	1	1	None	None
IXTT36N50P	1	1	None	None
IXTT38N30L2HV	1	1	None	None
IXTT40N50L2	1	1	None	None
IXTT48P20P	1	1	None	None
IXTT50P10	1	1	None	None
IXTT52N30P	1	1	None	None
IXTT60N20L2	1	1	None	None
IXTT64N25P	1	1	None	None
IXTT68P20T	1	1	None	None
IXTT69N30P	1	1	None	None
IXTT74N20P	1	1	None	None
IXTT75N10L2	1	1	None	None
IXTT76P10T	1	1	None	None
IXTT80N20L	1	1	None	None
IXTT82N25P	1	1	None	None
IXTT88N15	1	1	None	None
IXTT88N30P	1	1	None	None
IXTT90P10P	1	1	None	None
IXTT96N15P	1	1	None	None
IXTT96N20P	1	1	None	None
IXTT100N25P	1	1	None	None
IXTT110N10L2	1	1	None	None
IXTT110N10P	1	1	None	None
IXTT120N15P	1	1	None	None
IXTT140N10P	1	1	None	None
IXTT140N075L2H	1	1	None	None
IXTT140P10T	1	1	None	None
IXTT170N10P	1	1	None	None
IXTT240N15X4HV	1	1	None	None
IXTT360N055T2	1	1	None	None
IXTT440N04T4HV	1	1	None	None
IXTT440N055T2	1	1	None	None
IXTT500N04T2	1	1	None	None
IXTU1N80P	1	1	None	None
IXTU01N100	2	1	None	None
IXTU02N50D	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
IXTU8N70X2	1	1	None	None
IXTY1N80P	1	1	None	None
IXTY01N100	2	1	None	None
IXTY1N100P	1	1	None	None
IXTY1N120P	1	1	None	None
IXTY1R4N120P	2	1	None	None
IXTY1R6N50D2	1	1	None	None
IXTY1R6N100D2	1	1	None	None
IXTY02N50D	1	1	None	None
IXTY2N65X2	1	1	None	None
IXTY2N100P	1	1	None	None
IXTY02N120P	1	1	None	None
IXTY2R4N50P	1	1	None	None
IXTY3N50P	1	1	None	None
IXTY4N65X2	1	1	None	None
IXTY08N50D2	1	1	None	None
IXTY8N65X2	1	1	None	None
IXTY8N70X2	1	1	None	None
IXTY08100	2	1	None	None
IXTY10P15T	1	1	None	None
IXTY15P15T	1	1	None	None
IXTY18P10T	1	1	None	None
IXTY26P10T	1	1	None	None
IXTY32P05T	1	1	None	None
IXTY44N10T	1	1	None	None
IXTY48N05T	1	1	None	None
IXTY48P05T	1	1	None	None
IXTY90N055T2	1	1	None	None
LND150	3	1	None	None
LP0701N3	1	1	None	None
LSIC1MO120E008	1	1	None	None
LSIC1MO120E012	1	1	None	None
LSIC1MO120E016	1	1	None	None
LSIC1MO170E100	1	1	None	None
MGSF1N02L	1	1	None	None
MGSF2N02LE	1	1	None	None
MMBF170	1	1	None	None
MMBT7002DW	1	2	None	None
MMBT7002K	1	1	None	None
MMDF2N05ZR2	1	2	None	None
MMDF2P01HD	1	2	None	None
MMDFS2P102	1	1	None	None
MMFTN20	1	1	None	None
MMFTN123	1	1	None	None
MMFTN138	1	1	None	None
MMFTN170	1	1	None	None
MMFTN3018W	1	1	None	None
MMFTN3402	1	1	None	None
MMFTN6001	1	1	None	None
MMFTP84	1	1	None	None
MMFTP3401	1	1	None	None
MTD20N03HDL	1	1	None	None
MTD20N06HDL	1	1	None	None
MTD20P03HDL	1	1	None	None
MTD20P06HDL	1	1	None	None
NDB6060L	1	1	None	None
NDC7001C	1	2	None	None
NDC7002N	1	2	None	None
NDC7003P	1	2	None	None
NDP6060L	1	1	None	None
NDS331N	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
NDS351N	1	1	None	None
NDS352AP	1	1	None	None
NDS355AN	1	1	None	None
NDS356AP	1	1	None	None
NDS0605	1	1	None	None
NDS0610	1	1	None	None
NDS7002A	1	1	None	None
NDS9407	1	1	None	None
NDS9945	1	2	None	None
NDS9948	1	2	None	None
NDT451AN	1	1	None	None
NDT2955	1	1	None	None
NDT3055L	1	1	None	None
NTA4001N	1	1	None	None
NTA4153N	1	1	None	None
NTD20N06L	3	1	None	None
NTD20P06L	2	1	None	None
NTD24N06LT4G	1	1	None	None
NTD25P03L	1	1	None	None
NTD40N03R	1	1	None	None
NTD60N02R	1	1	None	None
NTD85N02R-1G	1	1	None	None
NTD3055L104	3	1	None	None
NTD5865NL	2	1	None	None
NTD5867NL	2	1	None	None
NTF3055-100	1	1	None	None
NTGS3443	1	1	None	None
NTH4L020N120	1	1	None	None
NTH4L040N120	1	1	None	None
NTH4L080N120	1	1	None	None
NTH4L160N120	1	1	None	None
NTHL020N090	1	1	None	None
NTHL020N120	1	1	None	None
NTHL027N65	1	1	None	None
NTHL033N65	1	1	None	None
NTHL040N65	1	1	None	None
NTHL040N90	1	1	None	None
NTHL040N120	1	1	None	None
NTHL065N65	1	1	None	None
NTHL080N120	1	1	None	None
NTHL082N65	1	1	None	None
NTHL110N65	1	1	None	None
NTHL160N120	1	1	None	None
NTJD4105C	1	2	None	None
NTJD4401N	1	2	None	None
NTJD5121N	1	2	None	None
NTK3134N	1	1	None	None
NTK3139P	1	1	None	None
NTMFS4835N	1	1	None	None
NTR1P02L	1	1	None	None
NTR0202PL	1	1	None	None
NTR4003N	1	1	None	None
NTR4101P	1	1	None	None
NTR4171P	1	1	None	None
NTR4501N	1	1	None	None
NTR4502P	1	1	None	None
NTR5103N	1	1	None	None
NTS4101P	1	1	None	None
NTS4409N	1	1	None	None
NTTFS5820NL	1	1	None	None
NTZD3152P	1	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
NTZD3154N	1	2	None	None
NTZD3155C	1	2	None	None
NVHL020N090	1	1	None	None
NVMFS5C430NL	1	1	None	None
NVTR4503N	1	1	None	None
NX138AK	1	1	None	None
NX138BK	1	1	None	None
NX2301P	1	1	None	None
NX3008CBKS	1	2	None	None
NX3008CBKV	1	2	None	None
NX3008NBK	1	1	None	None
NX3008NBKS	1	2	None	None
NX3008NBKV	1	2	None	None
NX3008NBKW	1	1	None	None
NX3008PBK	1	1	None	None
NX3008PBKS	1	2	None	None
NX3008PBKV	1	2	None	None
NX3008PBKW	1	1	None	None
NX3020NAKW	1	1	None	None
NX7002AK	1	1	None	None
PHB66NQ03LT	1	1	None	None
PHC2300	1	2	None	None
PHD66NQ03LT	1	1	None	None
PMBF170	1	1	None	None
PMF170XP	1	1	None	None
PMF370XN	1	1	None	None
PMGD280UN	1	2	None	None
PMGD780SN	1	2	None	None
PMV20EN	1	1	None	None
PMV30XPEA	1	1	None	None
PMV32UP	1	1	None	None
PMV40UN2	1	1	None	None
PMV45EN2	1	1	None	None
PMV65XP	1	1	None	None
PMV160UP	1	1	None	None
PMV213SN	1	1	None	None
PMV250EPEA	1	1	None	None
PSMN0R7-25YLD	1	1	None	None
PSMD0R9-25YLC	1	1	None	None
PSMN1R0-25YLD	1	1	None	None
PSMN1R7-30YL	1	1	None	None
PSMN1R7-60BS	1	1	None	None
PSMN1R8-40YLC	1	1	None	None
PSMN2R0-30	3	1	None	None
PSMN2R0-60	2	1	None	None
PSMN2R2-25YLC	1	1	None	None
PSMN2R2-30YLC	1	1	None	None
PSMN2R2-40PS	1	1	None	None
PSMN2R6-40YS	1	1	None	None
PSMN2R9-30MLC	1	1	None	None
PSMN3R0-30MLC	1	1	None	None
PSMN3R8-100BS	1	1	None	None
PSMN004-60B	1	1	None	None
PSMN4R0-30YL	1	1	None	None
PSMN4R0-40YS	1	1	None	None
PSMN4R2-60PL	1	1	None	None
PSMN4R8-100BS	1	1	None	None
PSMN005-30K	1	1	None	None
PSMN5R0-30YL	1	1	None	None
PSMN5R5-60YS	1	1	None	None
PSMN6R0-30YLB	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
PSMN6R5-25YLC	1	1	None	None
PSMN7R0-60YS	1	1	None	None
PSMN012-60YS	1	1	None	None
PSMN012-80PS	1	1	None	None
PSMN012-100YS	1	1	None	None
PSMN013-30YLC	1	1	None	None
PSMN013-100BS	1	1	None	None
PSMN014-40YS	1	1	None	None
PSMN015-100	2	1	None	None
PSMN017-60YS	1	1	None	None
PSMN018-80YS	1	1	None	None
PSMN020-100YS	1	1	None	None
PSMN025-100D	1	1	None	None
PSMN026-80YS	1	1	None	None
PSMNR90-30BL	1	1	None	None
RF1S50N06SM	1	1	None	None
RF1S70N06	2	1	None	None
RFD12N06RLESM	1	1	None	None
RFD14N05	3	1	None	None
RFD15P05	2	1	None	None
RFD16N05	2	1	None	None
RFD16N06LESM	1	1	None	None
RFD3055LE	2	1	None	None
RFG50N06	1	1	None	None
RFG70N06	1	1	None	None
RFM04U6P	1	1	None	None
RFP12N10L	1	1	None	None
RFP14N05L	1	1	None	None
RFP15P05	1	1	None	None
RFP50N06	1	1	None	None
RFP70N06	1	1	None	None
SCT20N120	1	1	None	None
SCT30N120	1	1	None	None
SCT50N120	1	1	None	None
SCT2450KE	1	1	None	None
Si1012R	1	1	None	None
Si1013R	1	1	None	None
Si1022R	1	1	None	None
Si1026X	1	2	None	None
Si1034CX	1	2	None	None
Si1302DL	1	1	None	None
Si1403CDL	1	1	None	None
Si1411DH	1	1	None	None
Si1424EDH	1	1	None	None
Si1428EDH	1	1	None	None
Si2301CDS	1	1	None	None
Si2302	2	1	None	None
Si2304DDS	1	1	None	None
Si2305CDS	1	1	None	None
Si2306BDS	1	1	None	None
Si2307CDS	1	1	None	None
Si2308BDS	1	1	None	None
Si2309CDS	1	1	None	None
Si2312CDS	1	1	None	None
Si2315BDS	1	1	None	None
Si2316DS	1	1	None	None
Si2318CDS	1	1	None	None
Si2319CDS	1	1	None	None
Si2323	2	1	None	None
Si2324DS	1	1	None	None
Si2325DS	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
Si2328DS	1	1	None	None
Si2329DS	1	1	None	None
Si2334DS	1	1	None	None
Si2336DS	1	1	None	None
Si2337DS	1	1	None	None
Si2367DS	1	1	None	None
Si2374DS	1	1	None	None
Si2377EDS	1	1	None	None
Si3407DV	1	1	None	None
Si3429EDV	1	1	None	None
Si3443	4	1	None	None
Si3457CDV	1	1	None	None
Si3483CDV	1	1	None	None
Si3585CDV	1	2	None	None
Si4062DY	1	1	None	None
Si4128DY	1	1	None	None
Si4134DY	1	1	None	None
Si4162DY	1	1	None	None
Si4174DY	1	1	None	None
Si4178DY	1	1	None	None
Si4288DY	1	2	None	None
Si4401BDY	1	1	None	None
Si4403DDY	1	1	None	None
Si4410BDY	1	1	None	None
Si4425DDY	1	1	None	None
Si4435	2	1	None	None
Si4436DY	1	1	None	None
Si4455DY	1	1	None	None
Si4459ADY	1	1	None	None
Si4463BDY	1	1	None	None
Si4483ADY	1	1	None	None
Si4490DY	1	1	None	None
Si4497DY	1	1	None	None
Si4590DY	1	2	None	None
Si4686DY	1	1	None	None
Si4800BDY	1	1	None	None
Si4816BDY	1	1	None	None
Si4833DY	1	1	None	None
Si4835DDY	1	1	None	None
Si4850EY	1	1	None	None
Si4894BDY	1	1	None	None
Si4896DY	1	1	None	None
Si4925	2	2	None	None
Si4936CDY	1	2	None	None
Si4946BEY	1	2	None	None
Si6926ADQ	1	2	None	None
Si7149ADP	1	1	None	None
Si7308DN	1	1	None	None
Si7414DN	1	1	None	None
Si7415DN	1	1	None	None
Si7461DP	1	1	None	None
Si7615CDN	1	1	None	None
Si7810DN	1	1	None	None
Si7848BDP	1	1	None	None
Si9407BDY	1	1	None	None
Si9433BDY	1	1	None	None
Si9435BDY	1	1	None	None
Si9926CDY	1	2	None	None
Si9933	2	2	None	None
Si9936BDY	1	2	None	None
Si9956DY	1	2	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SiDR626DP	1	1	None	None
SiHB12N60E	1	1	None	None
SiHB33N60E	1	1	None	None
SiHF9Z24	2	1	None	None
SiHF9Z34	1	1	None	None
SiHF30N60E	1	1	None	None
SiHF510	2	1	None	None
SiHF520	1	1	None	None
SiHF530	2	1	None	None
SiHF540	2	1	None	None
SiHF610	1	1	None	None
SiHF620	1	1	None	None
SiHF630	2	1	None	None
SiHF634	1	1	None	None
SiHF640	3	1	None	None
SiHF644	2	1	None	None
SiHF710	2	1	None	None
SiHF720	1	1	None	None
SiHF730	1	1	None	None
SiHF740	2	1	None	None
SiHF740A	3	1	None	None
SiHF740LC	1	1	None	None
SiHF820	1	1	None	None
SiHF820A	1	1	None	None
SiHF830	2	1	None	None
SiHF840	2	1	None	None
SiHF840A	3	1	None	None
SiHF840LC	1	1	None	None
SiHF9510	2	1	None	None
SiHF9520	2	1	None	None
SiHF9530	2	1	None	None
SiHF9540	2	1	None	None
SiHF9610	1	1	None	None
SiHF9620	1	1	None	None
SiHF9630	2	1	None	None
SiHF9640	3	1	None	None
SiHFB9N60A	1	1	None	None
SiHFB9N65A	1	1	None	None
SiHFB11N50A	1	1	None	None
SiFHB17N50L	1	1	None	None
SiFHB18N50K	1	1	None	None
SiHFB20N50K	1	1	None	None
SiFHBC20	3	1	None	None
SiFHBC30	1	1	None	None
SiHFBC40	3	1	None	None
SiHFBC40A	1	1	None	None
SiHFBC40LC	1	1	None	None
SiHFBE20	1	1	None	None
SiHFBE30	3	1	None	None
SiHFBF20	3	1	None	None
SiHFBF30	1	1	None	None
SiHFBG20	1	1	None	None
SiHFBG30	1	1	None	None
SiHFD014	1	1	None	None
SiHFD024	1	1	None	None
SiHFD110	1	1	None	None
SiHFD120	1	1	None	None
SiHFD210	1	1	None	None
SiHFD220	1	1	None	None
SiHFD320	1	1	None	None
SiHFD420	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SiHFD9014	1	1	None	None
SiHFD9024	1	1	None	None
SiHFD9110	1	1	None	None
SiHFD9120	1	1	None	None
SiHFD9210	1	1	None	None
SiHFD9220	1	1	None	None
SiHFI9Z34G	1	1	None	None
SiHFI520G	1	1	None	None
SiHFI530G	1	1	None	None
SiHFI540G	1	1	None	None
SiHFI630G	1	1	None	None
SiHFI640G	1	1	None	None
SiHFI644G	1	1	None	None
SiHFI740G	1	1	None	None
SiHFI820G	1	1	None	None
SiHFI830G	1	1	None	None
SiHFI840GLC	1	1	None	None
SiHFI9520G	1	1	None	None
SiHFI9530G	1	1	None	None
SiHFI9540G	1	1	None	None
SiHFI9630G	1	1	None	None
SiHFI9634G	1	1	None	None
SiHFI9640G	1	1	None	None
SiHFIB6N60A	1	1	None	None
SiHFIB7N50A	1	1	None	None
SiHFIBC20G	1	1	None	None
SiHFIBC30G	1	1	None	None
SiHFIBC40G	1	1	None	None
SiHFIBE30G	1	1	None	None
SiHFIBF20G	1	1	None	None
SiHFIBF30G	1	1	None	None
SiHFIZ34G	1	1	None	None
SiHFIZ48G	1	1	None	None
SiHFL014	1	1	None	None
SiHFL110	1	1	None	None
SiHFL210	1	1	None	None
SiHFL9014	1	1	None	None
SiHFL9110	1	1	None	None
SiHFP22N50A	1	1	None	None
SiHFP23N50L	1	1	None	None
SiHFP27N60K	1	1	None	None
SiHFP31N50L	1	1	None	None
SiHFP32N50K	1	1	None	None
SiHFP054	1	1	None	None
SiHFP064	1	1	None	None
SiHFP140	1	1	None	None
SiHFP150	1	1	None	None
SiHFP240	1	1	None	None
SiHFP244	1	1	None	None
SiHFP250	1	1	None	None
SiHFP254	1	1	None	None
SiHFP260	1	1	None	None
SiHFP264	1	1	None	None
SiHFP340	1	1	None	None
SiHFP350	1	1	None	None
SiHFP360	2	1	None	None
SiHFP440	1	1	None	None
SiHFP450	3	1	None	None
SiHFP460	4	1	None	None
SiHFP9140	1	1	None	None
SiHFP9240	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SiHFPC40	1	1	None	None
SiHFPC50	2	1	None	None
SiHFPC60LC	1	1	None	None
SiHFPE30	1	1	None	None
SiHFPE50	1	1	None	None
SiHFPF40	1	1	None	None
SiHFPF50	1	1	None	None
SiHFPG30	1	1	None	None
SiHFPG40	1	1	None	None
SiHFPG50	1	1	None	None
SiHFR1N60A	1	1	None	None
SiHFR014	1	1	None	None
SiHFR024	1	1	None	None
SiHFR110	1	1	None	None
SiHFR120	1	1	None	None
SiHFR210	1	1	None	None
SiHFR220	1	1	None	None
SiHFR224	1	1	None	None
SiHFR310	1	1	None	None
SiHFR320	1	1	None	None
SiHFR420	2	1	None	None
SiHFR430A	1	1	None	None
SiHFR9014	1	1	None	None
SiHFR9024	1	1	None	None
SiHFR9110	1	1	None	None
SiHFR9120	1	1	None	None
SiHFR9210	1	1	None	None
SiHFR9214	1	1	None	None
SiHFR9220	1	1	None	None
SiHFR9310	1	1	None	None
SiHFRC20	1	1	None	None
SiHFS9N60A	1	1	None	None
SiHFS11N50A	1	1	None	None
SiHFSL11N50A	1	1	None	None
SiHFU1N60A	1	1	None	None
SiHFU014	1	1	None	None
SiHFU024	1	1	None	None
SiHFU110	1	1	None	None
SiHFU120	1	1	None	None
SiHFU210	1	1	None	None
SiHFU220	1	1	None	None
SiHFU224	1	1	None	None
SiHFU310	1	1	None	None
SiHFU320	1	1	None	None
SiHFU420	2	1	None	None
SiHFU430A	1	1	None	None
SiHFU9014	1	1	None	None
SiHFU9024	1	1	None	None
SiHFU9110	1	1	None	None
SiHFU9120	1	1	None	None
SiHFU9210	1	1	None	None
SiHFU9214	1	1	None	None
SiHFU9220	1	1	None	None
SiHFU9310	1	1	None	None
SiHFUC20	1	1	None	None
SiHFZ14	1	1	None	None
SiHFZ34	1	1	None	None
SiHFZ44	1	1	None	None
SiHFZ48R	1	1	None	None
SiHG20N50C	1	1	None	None
SiHG30N60C	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SiHG47N60	2	1	None	None
SiHG73N60E	1	1	None	None
SiHL510	1	1	None	None
SiHL520	1	1	None	None
SiHL540	1	1	None	None
SiHL630	1	1	None	None
SiHL640	2	1	None	None
SiHLD014	1	1	None	None
SiHLD024	1	1	None	None
SiHLD110	1	1	None	None
SiHLD120	1	1	None	None
SiHLI640G	1	1	None	None
SiHLL014	1	1	None	None
SiHLL110	1	1	None	None
SiHLR014	1	1	None	None
SiHLR024	1	1	None	None
SiHLR110	1	1	None	None
SiHLR120	1	1	None	None
SiHLU014	1	1	None	None
SiHLR024	1	1	None	None
SiHLR110	1	1	None	None
SiHLR120	1	1	None	None
SiHLU014	1	1	None	None
SiHLU024	1	1	None	None
SiHLU110	1	1	None	None
SiHLU120	1	1	None	None
SiHLZ14	1	1	None	None
SiHLZ24	1	1	None	None
SiHLZ44	1	1	None	None
SiHP14N50D	1	1	None	None
SiHP25N40D	1	1	None	None
SiHP30N60AEL	1	1	None	None
SiHP065N60E	1	1	None	None
SiS402DN	1	1	None	None
SiS892ADN	1	1	None	None
SiSS05DN	1	1	None	None
SN7002N	1	1	None	None
SN7002W	1	1	None	None
SPA07N60C3	1	1	None	None
SPA17N80C3	1	1	None	None
SPA20N60	2	1	None	None
SPA21N50C3	1	1	None	None
SPB17N80C3	1	1	None	None
SPB18P06PG	1	1	None	None
SPB20N60S5	1	1	None	None
SPB80P06PG	1	1	None	None
SPD03N60C3	1	1	None	None
SPD04N50C3	1	1	None	None
SPD04P10P	2	1	None	None
SPD08N50C3	1	1	None	None
SPD08P06PG	1	1	None	None
SPD09P06PLG	1	1	None	None
SPD15P10P	2	1	None	None
SPD18P06PG	1	1	None	None
SPD30N03S2L	1	1	None	None
SPD30P06PG	1	1	None	None
SPD50N03S2	1	1	None	None
SPD50P03LG	1	1	Free	None
SPI07N60	2	1	None	None
SPI11N60S5	1	1	None	None
SPI11N80C3	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SPI20N60C3	1	1	None	None
SPI21N50C3	1	1	None	None
SPP04N80C3	1	1	None	None
SPP06N80C3	1	1	None	None
SPP07N60	2	1	None	None
SPP11N60S5	1	1	None	None
SPP15P10P	2	1	None	None
SPP17N80C3	1	1	None	None
SPP18P06PH	1	1	None	None
SPP20N60	3	1	None	None
SPP21N50C3	1	1	None	None
SPP24N60C3	1	1	None	None
SPP80P06PH	1	1	None	None
SPU03N60C3	1	1	None	None
SPW11N80C3	1	1	None	None
SPW17N80C3	1	1	None	None
SPW20N60	2	1	None	None
SPW35N60C	2	1	None	None
SPW47N60C	2	1	None	None
SPW47N65C3	1	1	None	None
SQ1421EDH	1	1	None	None
SQ2301ES	1	1	None	None
SQ2310ES	1	1	None	None
SQ2318AES	1	1	None	None
SQ2319ADS	1	1	None	None
SQ2337ES	1	1	None	None
SQ2351ES	1	1	None	None
SQ3461EV	1	1	None	None
SQ4153EY	1	1	None	None
SQ4284EY	1	2	None	None
SQ4850EY	1	1	None	None
SQ9945BEY	1	2	None	None
SQA401EEJ	1	1	Free	None
SQD19P06-60L	1	1	None	None
SQD25N15-52	1	1	None	None
SQD45P03-12	1	1	None	None
SQD50N04-4m5L	1	1	None	None
SQD50N05-11L	1	1	None	None
SQD40031EL	1	1	None	None
SQM100N04-2m7	1	1	None	None
SQM100P10-19L	1	1	None	None
SQM120N06-3m5	1	1	None	None
SQM120N10-3m8	1	1	None	None
SSM3J16FS	1	1	None	None
SSM3J327R	1	1	None	None
SSM3J328R	1	1	None	None
SSM3J331R	1	1	None	None
SSM3J332R	1	1	None	None
SSM3J334R	1	1	None	None
SSM3J355R	1	1	None	None
SSM3K15AF	2	1	None	None
SSM3K16FU	1	1	None	None
SSM3K35MFV	1	1	None	None
SSM3K36FS	1	1	None	None
SSM3K37MFV	1	1	None	None
SSM3K72	3	1	None	None
SSM3K123TU	1	1	None	None
SSM3K324R	1	1	None	None
SSM3K329R	1	1	None	None
SSM3K333R	1	1	None	None
SSM3K339R	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SSM3K341R	1	1	None	None
SSM3K7002KFU	1	1	None	None
SSM6J501NU	1	1	None	None
SSM6J502NU	1	1	None	None
SSM6J503NU	1	1	None	None
SSM6K403TU	1	1	None	None
SSM6L12TU	1	2	None	None
SSM6N15AFU	1	2	None	None
SSM6N35FE	1	2	None	None
SSM6N40TU	1	2	None	None
SSM6N7002	2	2	None	None
SSS7N60A	1	1	None	None
STB2N62K3	1	1	None	None
STB3N62K3	1	1	None	None
STB3NK60ZT4	1	1	None	None
STB4N62K3	1	1	None	None
STB4NK60Z	2	1	None	None
STB5N52K3	1	1	None	None
STB5N62K3	1	1	None	None
STB5NK50Z	2	1	None	None
STB6N52K3	1	1	None	None
STB6N80K5	1	1	None	None
STB6NK60Z	2	1	None	None
STB6NK90Z	1	1	None	None
STB7NK80Z	2	1	None	None
STB8N65M5	1	1	None	None
STB9NK50Z	2	1	None	None
STB9NK60Z	1	1	None	None
STB9NK70Z	2	1	None	None
STB9NK90Z	1	1	None	None
STB10N60M2	1	1	None	None
STB10N95K5	1	1	None	None
STB10NK60Z	2	1	None	None
STB11NK40Z	1	1	None	None
STB11NK50Z	1	1	None	None
STB11NM50	2	1	None	None
STB11NM60FD	2	1	None	None
STB11NM80	1	1	None	None
STB12NK80Z	1	1	None	None
STB13N60M2	1	1	None	None
STB13N80K5	1	1	None	None
STB13NK60ZT4	1	1	None	None
STB13NM60N	1	1	None	None
STB14NK50Z	2	1	None	None
STB14NK60ZT4	1	1	None	None
STB15N80K5	1	1	None	None
STB15NK50Z	2	1	None	None
STB16NF06L	1	1	None	None
STB18N55M5	1	1	None	None
STB18N60M2	1	1	None	None
STB18N65M5	1	1	None	None
STB18NF20	1	1	None	None
STB18NM60N	1	1	None	None
STB18NM80	1	1	None	None
STB19NF20	1	1	None	None
STB20N65M5	1	1	None	None
STB20N95K5	1	1	None	None
STB20NM60	2	1	None	None
STB21N65M5	1	1	None	None
STB21N90K5	1	1	None	None
STB21NM60ND	1	1	None	None

Device	No. of symbols	No. of units	NC pins	Alternate body style
STB22NM60N	1	1	None	None
STB23NM50N	1	1	None	None
STB24N60	2	1	None	None
STB24NF10	1	1	None	None
STB25N80K5	1	1	None	None
STB28N60M2	1	1	None	None
STB28NM50N	1	1	None	None
STB28NM60ND	1	1	None	None
STB30NF10	1	1	None	None
STB30NF20	1	1	None	None
STB31N65M5	1	1	None	None
STB32N65M5	1	1	None	None
STB34N65M5	1	1	None	None
STB34NM60ND	1	1	None	None
STB35NF10	1	1	None	None
STB36NF06L	1	1	None	None
STB36NM60ND	1	1	None	None
STB38N65M5	1	1	None	None
STB38N65M5	1	1	None	None
STB40NF10L	1	1	None	None
STB40NF20	1	1	None	None
STB42N60M2-EP	1	1	None	None
STB42N65M5	1	1	None	None
STB45N65M5	1	1	None	None
STB55NF06	3	1	None	None
STB57N65M5	1	1	None	None
STB60NF06L	1	1	None	None
STB60NF10	2	1	None	None
STB75NF20	1	1	None	None
STB75NF75	2	1	None	None
STB80N20M5	1	1	None	None
STB80NF06	1	1	None	None
STB80NF10	1	1	None	None
STB80NF55	3	1	None	None
STB100NF04T4	1	1	None	None
STB120NF10	1	1	None	None
STB140NF75	2	1	None	None
STD1HN60K3	1	1	None	None
STD1NK60	2	1	None	None
STD1NK80Z	2	1	None	None
STD2LN60K3	1	1	None	None
STD2N62K3	1	1	None	None
STD2N80K5	1	1	None	None
STD2N95K5	1	1	None	None
STD2N105K5	1	1	None	None
STD2NK90Z	2	1	None	None
STD2NK100Z	1	1	None	None
STD3LN62K3	1	1	None	None
STD3N62K3	1	1	None	None
STD3NK50Z	2	1	None	None
STD3NK60Z	2	1	None	None
STD3NK80Z	2	1	None	None
STD3NK90ZT4	1	1	None	None
STD4N52K3	1	1	None	None
STD4N62K3	1	1	None	None
STD4NK50Z	2	1	None	None
STD4NK60Z	2	1	None	None
STD4NK80Z	2	1	None	None
STD5N52K3	1	1	None	None
STD5N62K3	1	1	None	None
STD5NK40Z	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STD5NK50Z	2	1	None	None
STD6N52K3	1	1	None	None
STD6N80K5	1	1	None	None
STD6NF10	1	1	None	None
STD6NK50Z	1	1	None	None
STD7N52DK3	1	1	None	None
STD7N60M2	1	1	None	None
STD7N80K5	1	1	None	None
STD7NK40Z	2	1	None	None
STD7NM60N	1	1	None	None
STD7NM80	2	1	None	None
STD8N65M5	1	1	None	None
STD8N80K5	1	1	None	None
STD8NM50N	1	1	None	None
STD10N60M2	1	1	None	None
STD10NF10	2	1	None	None
STD10NM60N	1	1	None	None
STD10P6F6	1	1	None	None
STD11NM60N	1	1	None	None
STD12NF06	3	1	None	None
STD13N60M2	1	1	None	None
STD13NM60N	1	1	None	None
STD15NF10	1	1	None	None
STD16NF06	3	1	None	None
STD16NF25	1	1	None	None
STD17NF03L	2	1	None	None
STD17NF25	1	1	None	None
STD18N55M5	1	1	None	None
STD18N65M5	1	1	None	None
STD18NF20	1	1	None	None
STD19NF20	1	1	None	None
STD20NF06	3	1	None	None
STD20NF20	1	1	None	None
STD25NF10	3	1	None	None
STD26P3LLH6	1	1	None	None
STD30NF03L	2	1	None	None
STD30NF06L	2	1	None	None
STD30PF03L	2	1	None	None
STD35NF06	1	1	None	None
STD35P6LLF	1	1	None	None
STD46P4LLF	1	1	None	None
STD60NF06	1	1	None	None
STD60NF55L	2	1	None	None
STD65NF55F3	1	1	None	None
STF2LN60K3	1	1	None	None
STF2N62K3	1	1	None	None
STF2N80K5	1	1	None	None
STF2N95K5	1	1	None	None
STF3LN62K3	1	1	None	None
STF3N62K3	1	1	None	None
STF3NK80Z	1	1	None	None
STF4N52K3	1	1	None	None
STF5N62K3	1	1	None	None
STF5KN100Z	1	1	None	None
STF6N52K3	1	1	None	None
STF6N60M2	1	1	None	None
STF6N62K3	1	1	None	None
STF6N95K5	1	1	None	None
STF6NK50Z	1	1	None	None
STF7N52DK3	1	1	None	None
STF7N95K3	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STF7NM60N	1	1	None	None
STF7NM80	1	1	None	None
STF8N65M5	1	1	None	None
STF8NK100Z	1	1	None	None
STF9NK90Z	1	1	None	None
STF10N95K5	1	1	None	None
STF10N105K5	1	1	None	None
STF10NM60N	1	1	None	None
STF10P6F6	1	1	None	None
STF11NM60ND	1	1	None	None
STF11NM80	1	1	None	None
STF12N120K5	1	1	None	None
STF12NK80Z	1	1	None	None
STF13N80K5	1	1	None	None
STF14NM50N	1	1	None	None
STF15N65M5	1	1	None	None
STF15N80K5	1	1	None	None
STF16N65M5	1	1	None	None
STF16NF25	1	1	None	None
STF17NF25	1	1	None	None
STF18N55M5	1	1	None	None
STF18NF20	1	1	None	None
STF18NM60N	1	1	None	None
STF18NM80	1	1	None	None
STF19NF20	1	1	None	None
STF19NM50N	1	1	None	None
STF20N95K5	1	1	None	None
STF20NF20	1	1	None	None
STF20NM60D	1	1	None	None
STF21N65M5	1	1	None	None
STF21N90K5	1	1	None	None
STF21NM60ND	1	1	None	None
STF22NM60N	1	1	None	None
STF23NM50N	1	1	None	None
STF24NM60N	1	1	None	None
STF25N80K5	1	1	None	None
STF28NM50N	1	1	None	None
STF28NM60ND	1	1	None	None
STF31N65M5	1	1	None	None
STF32N65M5	1	1	None	None
STF33N60M2	1	1	None	None
STF34NM60ND	1	1	None	None
STF35N60DM2	1	1	None	None
STF40NF03L	1	1	None	None
STF40NF20	1	1	None	None
STF42N65M5	1	1	None	None
STF45N65M5	1	1	None	None
STF57N65M5	1	1	None	None
STF120NF10	1	1	None	None
STFW3N150	1	1	None	None
STFW4N150	1	1	None	None
STFW12N120K5	1	1	None	None
STFW69N65M5	1	1	None	None
STH3N150	1	1	None	None
STH12N120K5	1	1	None	None
STI6N62K3	1	1	None	None
STI6N80K5	1	1	None	None
STI8N65M5	1	1	None	None
STI10NM60N	1	1	None	None
STI11NM60ND	1	1	None	None
STI11NM80	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STI14NM50N	1	1	None	None
STI16N65M5	1	1	None	None
STI20N65M5	1	1	None	None
STI21N65M5	1	1	None	None
STI22NM60N	1	1	None	None
STI24N60M2	1	1	None	None
STI24NM60N	1	1	None	None
STI32N65M5	1	1	None	None
STI33N60M2	1	1	None	None
STI34N65M5	1	1	None	None
STI42N65M5	1	1	None	None
STI57N65M5	1	1	None	None
STL20N6F7	1	1	None	None
STL130N8F7	1	1	None	None
STN1HNK60	1	1	None	None
STN1NK60Z	1	1	None	None
STN1NK80Z	1	1	None	None
STN3N40K3	1	1	None	None
STN3N45K3	1	1	None	None
STN3P6F6	1	1	None	None
STN4NF03L	1	1	None	None
STP2N62K3	1	1	None	None
STP2N80K5	1	1	None	None
STP2N95K5	1	1	None	None
STP2N105K5	1	1	None	None
STP2NK90Z	1	1	None	None
STP2NK100Z	1	1	None	None
STP3LN62K3	1	1	None	None
STP3N62K3	1	1	None	None
STP3N150	1	1	None	None
STP3NK60Z	2	1	None	None
STP3NK80Z	1	1	None	None
STP3NK90Z	2	1	None	None
STP4N52K3	1	1	None	None
STP4N150	1	1	None	None
STP4NK50Z	2	1	None	None
STP4NK60Z	2	1	None	None
STP4NK80Z	2	1	None	None
STP5N52K3	1	1	None	None
STP5N62K3	1	1	None	None
STP5N105K5	1	1	None	None
STP5NK40Z	2	1	None	None
STP5NK50Z	2	1	None	None
STP5NK80Z	2	1	None	None
STP5NK100Z	1	1	None	None
STP6N52K3	1	1	None	None
STP6N60M2	1	1	None	None
STP6N62K3	1	1	None	None
STP6N80K5	1	1	None	None
STP6NB80	2	1	None	None
STP6NK50Z	1	1	None	None
STP6NK60Z	2	1	None	None
STP6NK90Z	2	1	None	None
STP7N52DK3	1	1	None	None
STP7N60M2	1	1	None	None
STP7N80K5	1	1	None	None
STP7N95K3	1	1	None	None
STP7NK40Z	2	1	None	None
STP7NK80Z	2	1	None	None
STP7NM60N	1	1	None	None
STP7NM80	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STP8N65M5	1	1	None	None
STP8NK80Z	2	1	None	None
STP8NK100Z	1	1	None	None
STP8NM50N	1	1	None	None
STP9NK50Z	2	1	None	None
STP9NK60Z	2	1	None	None
STP9NK70Z	2	1	None	None
STP9NK90Z	1	1	None	None
STP10N60M2	1	1	None	None
STP10N95K5	1	1	None	None
STP10N105K5	1	1	None	None
STP10NK60Z	2	1	None	None
STP10NK80Z	2	1	None	None
STP10NM60N	1	1	None	None
STP10P6F6	1	1	None	None
STP11NK40Z	2	1	None	None
STP11NK50Z	2	1	None	None
STP11NM50	2	1	None	None
STP11NM60FD	2	1	None	None
STP11NM80	1	1	None	None
STP12N120K5	1	1	None	None
STP12NK30Z	1	1	None	None
STP12NK80Z	1	1	None	None
STP13N80K5	1	1	None	None
STP13NK60Z	2	1	None	None
STP14NF10	1	1	None	None
STP14NK50Z	2	1	None	None
STP14NK60ZFP	1	1	None	None
STP14NM50N	1	1	None	None
STP15N65M5	1	1	None	None
STP15N80K5	1	1	None	None
STP15N95K5	1	1	None	None
STP15NK50Z	2	1	None	None
STP16N65M5	1	1	None	None
STP16NF06	4	1	None	None
STP16NF25	1	1	None	None
STP17NF25	1	1	None	None
STP17NK40Z	2	1	None	None
STP18N55M5	1	1	None	None
STP18N60M2	1	1	None	None
STP18NF20	1	1	None	None
STP18NM60N	1	1	None	None
STP18NM80	1	1	None	None
STP19NF20	1	1	None	None
STP19NM50N	1	1	None	None
STP20N65M5	1	1	None	None
STP20N90K5	1	1	None	None
STP20N95K5	1	1	None	None
STP20NF06L	1	1	None	None
STP20NF20	1	1	None	None
STP20NM60	3	1	None	None
STP21N65M5	1	1	None	None
STP21N90K5	1	1	None	None
STP21NM60ND	1	1	None	None
STP22NM60ND	1	1	None	None
STP23NM50N	1	1	None	None
STP24N60	2	1	None	None
STP24NF10	1	1	None	None
STP24NM60N	1	1	None	None
STP25N80K5	1	1	None	None
STP26N60M2	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STP28N60M2	1	1	None	None
STP28NM50N	1	1	None	None
STP28NM60ND	1	1	None	None
STP30NF10	2	1	None	None
STP30NF20	1	1	None	None
STP31N65M5	1	1	None	None
STP32N65M5	1	1	None	None
STP33N60M2	1	1	None	None
STP34N65M5	1	1	None	None
STP34NM60D	1	1	None	None
STP35N60DM2	1	1	None	None
STP35NF10	1	1	None	None
STP36N55M5	1	1	None	None
STP36NF06L	1	1	None	None
STP38N65M5	1	1	None	None
STP40NF03L	1	1	None	None
STP40NF10	2	1	None	None
STP40NF20	1	1	None	None
STP42N60M2-EP	1	1	None	None
STP42N65M5	1	1	None	None
STP45N65M5	1	1	None	None
STP45NF06	1	1	None	None
STP55NF06	3	1	None	None
STP57N65M5	1	1	None	None
STP60NF06	3	1	None	None
STP60NF10	1	1	None	None
STP75NF20	1	1	None	None
STP75NF75	2	1	None	None
STP80N20M5	1	1	None	None
STP80NF06	1	1	None	None
STP80NF10	2	1	None	None
STP80NF12	1	1	None	None
STP80NF55-06	2	1	None	None
STP80NF55L-06	1	1	None	None
STP100N6F7	1	1	None	None
STP100NF04	1	1	None	None
STP120NF10	1	1	None	None
STP140NF75	1	1	None	None
STP310N10F7	1	1	None	None
STQ1HNK60R	2	1	None	None
STQ1NK60ZR	1	1	None	None
STQ1NK80ZR	1	1	None	None
STQ3NK50ZR	1	1	None	None
STR2N2VH	1	1	None	None
STR2P3LLH6	1	1	None	None
STS4DNF60L	1	2	None	None
STS5DNF20V	1	2	None	None
STS5NF60L	1	1	None	None
STS5P3LLH6	1	1	None	None
STS8C5H30L	1	2	None	None
STS11NF30L	1	1	None	None
STU1HN60K3	1	1	None	None
STU2LN60K3	1	1	None	None
STU2N62K3	1	1	None	None
STU2N80K5	1	1	None	None
STU2N95K5	1	1	None	None
STU2N105K5	1	1	None	None
STU2NK100Z	1	1	None	None
STU3LN62K3	1	1	None	None
STU3N62K3	1	1	None	None
STU4N52K3	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STU5N52K3	1	1	None	None
STU5N62K3	1	1	None	None
STU6N60M2	1	1	None	None
STU6N62K3	1	1	None	None
STU6NF10	1	1	None	None
STU7N60M2	1	1	None	None
STU7N80K5	1	1	None	None
STU7NM60N	1	1	None	None
STU8N65M5	1	1	None	None
STU8NM50N	1	1	None	None
STU10N60M2	1	1	None	None
STU10NM60N	1	1	None	None
STU10P6F6	1	1	None	None
STU11NM60ND	1	1	None	None
STU16N65M5	1	1	None	None
STW3N150	1	1	None	None
STW4N150	1	1	None	None
STW5NK100Z	1	1	None	None
STW7N95K3	1	1	None	None
STW7NK90Z	1	1	None	None
STW8NK80Z	1	1	None	None
STW9N150	1	1	None	None
STW9NK70Z	1	1	None	None
STW9NK90Z	1	1	None	None
STW10N95K5	1	1	None	None
STW10N105K5	1	1	None	None
STW10NK60Z	1	1	None	None
STW10NK80Z	1	1	None	None
STW11NK100Z	1	1	None	None
STW11NM80	1	1	None	None
STW12N120K5	1	1	None	None
STW12N150K5	1	1	None	None
STW12NK80Z	1	1	None	None
STW12NK90Z	1	1	None	None
STW13N80K5	1	1	None	None
STW13NK60Z	1	1	None	None
STW13NK100Z	1	1	None	None
STW14NK50Z	1	1	None	None
STW15N80K5	1	1	None	None
STW15N95K5	1	1	None	None
STW15NK50Z	1	1	None	None
STW15NK90Z	1	1	None	None
STW16N65M5	1	1	None	None
STW18N60	2	1	None	None
STW18NM60N	1	1	None	None
STW18NM80	1	1	None	None
STW19NM50N	1	1	None	None
STW20N65M5	1	1	None	None
STW20N95K5	1	1	None	None
STW20NK50Z	1	1	None	None
STW20NM50FD	1	1	None	None
STW20NM60	2	1	None	None
STW21N65M5	1	1	None	None
STW21N90K5	1	1	None	None
STW21N150K5	1	1	None	None
STW21NM60ND	1	1	None	None
STW22N95K5	1	1	None	None
STW22NM60ND	1	1	None	None
STW23NM50N	1	1	None	None
STW24N60	2	1	None	None
STW24NM60N	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
STW25N80K5	1	1	None	None
STW26N60M2	1	1	None	None
STW26NM50	1	1	None	None
STW26NM60N	1	1	None	None
STW28N60M2	1	1	None	None
STW28NM50N	1	1	None	None
STW28NM60ND	1	1	None	None
STW30NF20	1	1	None	None
STW31N65M5	1	1	None	None
STW32N65M5	1	1	None	None
STW33N60M2	1	1	None	None
STW34N65M5	1	1	None	None
STW34NM60N	2	1	None	None
STW35N60DM2	1	1	None	None
STW36N55M5	1	1	None	None
STW36NM60ND	1	1	None	None
STW38N65M5	1	1	None	None
STW40N95K5	1	1	None	None
STW40NF20	1	1	None	None
STW42N60M2-EP	1	1	None	None
STW42N65M5	1	1	None	None
STW45N60DM2A	1	1	None	None
STW45NM50	1	1	None	None
STW45NM60	1	1	None	None
STW48N60M2-4	1	1	None	None
STW48NM60N	1	1	None	None
STW50N65DM2A	1	1	None	None
STW52NK25Z	1	1	None	None
STW56N60DM2	1	1	None	None
STW56N65DM2	1	1	None	None
STW57N65M5-4	1	1	None	None
STW62N65M5	1	1	None	None
STW69N65M5	1	1	None	None
STW70N60	2	1	None	None
STW75NF20	1	1	None	None
STW77N65M5	1	1	None	None
STW78N65M5	1	1	None	None
STW80NF06	1	1	None	None
STW88N65M5	1	1	None	None
STW120NF10	1	1	None	None
STWA12N120K5	1	1	None	None
STWA48N60M2	1	1	None	None
STWA63N65DM2	1	1	None	None
STWA88N65M5	1	1	None	None
SUB85N10-10	1	1	None	None
SUD19N20-90	1	1	None	None
SUD19P06-60	1	1	None	None
SUD23N06-31	1	1	None	None
SUD50N6-09L	1	1	None	None
SUM55P06-09L	1	1	None	None
SUM65N20-30	1	1	None	None
SUM90N10-8m2P	1	1	None	None
SUM90P10-19L	1	1	None	None
SUM110P04-05	1	1	None	None
SUM110P06-07L	1	1	None	None
SUM110P08-11L	1	1	None	None
SUM10250E	1	1	None	None
SUM70040E	1	1	None	None
SUM80090E	1	1	None	None
SUM90140E	1	1	None	None
SUP57N20-33	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
SUP85N10-10	1	1	None	None
SUP90P06-09L	1	1	None	None
SUP10250E	1	1	None	None
SUP80090E	1	1	None	None
T2N7002	2	1	None	None
TJ9A10M3	1	1	None	None
TJ15S06M3L	1	1	None	None
TJ30S06M3L	1	1	None	None
TK1P90A	1	1	None	None
TK3A65D	1	1	None	None
TK3P50D	1	1	None	None
TK6A50D	1	1	None	None
TK6A60W	1	1	None	None
TK6A65	2	1	None	None
TK6A80E	1	1	None	None
TK6P60W	1	1	None	None
TK6A65W	1	1	None	None
TK6Q60W	1	1	None	None
TK6Q65W	1	1	None	None
TK6R7P06PL	1	1	None	None
TK7A60W	1	1	None	None
TK8A50D	1	1	None	None
TK8P60W	1	1	None	None
TK9J90E	1	1	None	None
TK10A60W	1	1	None	None
TK10A80W	1	1	None	None
TK10E60W	1	1	None	None
TK11P65W	1	1	None	None
TK12P60W	1	1	None	None
TK12Q60W	1	1	None	None
TK13A60D	1	1	None	None
TK13P25D	1	1	None	None
TK14A65W	1	1	None	None
TK15J50D	1	1	None	None
TK16A60W	2	1	None	None
TK16E60W	1	1	None	None
TK16N60W	2	1	None	None
TK18A30D	1	1	None	None
TK20A60W	1	1	None	None
TK20G60W	1	1	None	None
TK20N60W5	1	1	None	None
TK20P04M1	1	1	None	None
TK22E10N1	1	1	None	None
TK25S06N1L	1	1	None	None
TK30E06N1	1	1	None	None
TK31E60W	1	1	None	None
TK32E12N1	1	1	None	None
TK34E10N1	1	1	None	None
TK39J60W	1	1	None	None
TK39N60X	1	1	None	None
TK40A10N1	1	1	None	None
TK40E06N1	1	1	None	None
TK40E10N1	1	1	None	None
TK40J60U	1	1	None	None
TK040N65Z	1	1	None	None
TK42A12N1	1	1	None	None
TK49N65W	1	1	None	None
TK56E12N1	1	1	None	None
TK58E06N1	1	1	None	None
TK60S06K3L	1	1	None	None
TK60S10N1L	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TK62J60W	1	1	None	None
TK62N60	3	1	None	None
TK65A10N1	1	1	None	None
TK65E10N1	1	1	None	None
TK65G10N1	1	1	None	None
TK65S04N1L	1	1	None	None
TK72E08N1	1	1	None	None
TK72E12N1	1	1	None	None
TK100A06N1	1	1	None	None
TK100E06N1	1	1	None	None
TK100E10N1	1	1	None	None
TK110P10PL	1	1	None	None
TK380A60Y	1	1	None	None
TK650A60F	1	1	None	None
TN0104	2	1	None	None
TN0106N3	1	1	None	None
TN0110N3	1	1	None	None
TN0604N3	1	1	None	None
TN0606N3	1	1	None	None
TN0610N3	1	1	None	None
TN0620N3	1	1	None	None
TN0702N3	1	1	None	None
TN2106	2	1	None	None
TN2124K1	1	1	None	None
TN2130K1	1	1	None	None
TN2404K	2	1	None	None
TN2425N8	1	1	None	None
TN2435N8	1	1	None	None
TN2501N8	1	1	None	None
TN2504N8	1	1	None	None
TN2510N8	1	1	None	None
TN2524N8	1	1	None	None
TN2540	2	1	None	None
TN2640	2	1	None	None
TN5325	3	1	None	None
TN5335	2	1	None	None
TP0604N3	1	1	None	None
TP0606N3	1	1	None	None
TP0610	2	1	None	None
TP0620N3	1	1	None	None
TP2104	2	1	None	None
TP2424N8	1	1	None	None
TP2502N8	1	1	None	None
TP2510N8	1	1	None	None
TP2520N8	1	1	None	None
TP2522N8	1	1	None	None
TP2535N3	1	1	None	None
TP2540	2	1	None	None
TP2635N3	1	1	None	None
TP2640N3	1	1	None	None
TP5322	2	1	None	None
TP5335K1	1	1	None	None
TPC8124	1	1	None	None
TPC8125	1	1	None	None
TPH1R005PL	1	1	None	None
TPH1R204PL	1	1	None	None
TPH1R306PL	1	1	None	None
TPH2R903PL	1	1	None	None
TPH3R003PL	1	1	None	None
TPH4R10ANL	1	1	None	None
TPH4R50ANH	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
TPH4R606NH	1	1	None	None
TPH6R003NL	1	1	None	None
TPH6R30ANL	1	1	None	None
TPH11006NL	1	1	None	None
TPHR6503PL	1	1	None	None
TPHR8504PL	1	1	None	None
TPHR9003PL	1	1	None	None
TPN6R003NL	1	1	None	None
TPN8R903NL	1	1	None	None
TPN1600ANH	1	1	None	None
TPN13008NH	1	1	None	None
TPW1R306PL	1	1	None	None
TPW1500CNH	1	1	None	None
TSM1N80CW	1	1	None	None
TSM1NB60C	3	1	None	None
TSM2N60SCW	1	1	None	None
TSM2N7002K	1	1	None	None
TSM05N03CW	1	1	None	None
TSM35N10CP	1	1	None	None
TSM042N03CS	1	1	None	None
TSM320N03CX	1	1	None	None
TSM2301ACX	1	1	None	None
TSM2302CX	1	1	None	None
TSM2305CX	1	1	None	None
TSM2306CX	1	1	None	None
TSM2307CX	1	1	None	None
TSM2309CX	1	1	None	None
TSM2312CX	1	1	None	None
TSM2314CX	1	1	None	None
TSM2318CX	1	1	None	None
TSM2323CX	1	1	None	None
TSM3401CX	1	1	None	None
TSM4424	1	1	None	None
TSM4936D	1	2	None	None
TSM9926D	1	2	None	None
VN10	3	1	None	None
VN0104N3	1	1	None	None
VN0106N3	1	1	None	None
VN0300L	1	1	None	None
VN0550N3	1	1	None	None
VN0606L	1	1	None	None
VN0808L	1	1	None	None
VN1206L	1	1	None	None
VN2106N3	1	1	None	None
VN2110K1	1	1	None	None
VN2210N2	1	1	None	None
VN2222LL	1	1	None	None
VN2406L	1	1	None	None
VN2410L	1	1	None	None
VN2450N	2	1	None	None
VN2460N	2	1	None	None
VN3205N	2	1	None	None
VN4012L	1	1	None	None
VP0104N3	1	1	None	None
VP0106N3	1	1	None	None
VP0109N3	1	1	None	None
VP0550N3	1	1	None	None
VP0808L	1	1	None	None
VP2106N3	1	1	None	None
VP2110K1	1	1	None	None
VP2206N	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
VP2450N	2	1	None	None
VP3203N	2	1	None	None
ZVN2106G	1	1	None	None
ZVN2110G	1	1	None	None
ZVN3310F	1	1	None	None
ZVN3320F	1	1	None	None
ZVN4206G	1	1	None	None
ZVN4310G	1	1	None	None
ZVN4525E6	1	1	None	None
ZVNL110G	1	1	None	None
ZVNL120G	1	1	None	None
ZVP0545G	1	1	None	None
ZVP1320F	1	1	None	None
ZVP2106G	1	1	None	None
ZVP2110A	1	1	None	None
ZVP3306	2	1	None	None
ZVP3310F	1	1	None	None
ZVP4424	3	1	None	None
ZVP4525	2	1	None	None
ZXM61N02F	1	1	None	None
ZXM61N03F	1	1	None	None
ZXM61P02F	1	1	None	None
ZXM61P03F	1	1	None	None
ZXM62P03E6	1	1	None	None
ZXM64P03X	1	1	None	None
ZXMC3A16DN8	1	2	None	None
ZXMC3A17DN8	1	2	None	None
ZXMC3F31DN8	1	2	None	None
ZXMC6A09DN8	1	2	None	None
ZXMC10A81N8	1	2	None	None
ZXMC4559DN8	1	2	None	None
ZXMD63N03X	1	2	None	None
ZXMHC6A07T8	1	1	None	None
ZXMHC10A07N8	1	1	None	None
ZXMN2A03E6	1	1	None	None
ZXMN2A14F	1	1	None	None
ZXMN2F30FHQ	1	1	None	None
ZXMN2F34FH	1	1	None	None
ZXMN3A01F	1	1	None	None
ZXMN3A03E6	1	1	None	None
ZXMN3A14FQ	1	1	None	None
ZXMN3F30FH	1	1	None	None
ZXMN4A06	2	1	None	None
ZXMN6A07Z	1	1	None	None
ZXMN6A08G	1	1	None	None
ZXMN6A09G	1	1	None	None
ZXMN6A11DN8	1	2	None	None
ZXMN6A25K	1	1	None	None
ZXMN7A11G	1	1	None	None
ZXMN10A07	2	1	None	None
ZXMN10A09K	1	1	None	None
ZXMN10A11	2	1	None	None
ZXMN10A25G	1	1	None	None
ZXMN10B08E6	1	1	None	None
ZXMP3A13F	1	1	None	None
ZXMP3A16G	1	1	None	None
ZXMP4A16G	2	1	None	None
ZXMP6A16K	1	1	None	None
ZXMP6A17	2	1	None	None
ZXMP6A18DN8	1	2	None	None
ZXMP6A18K	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
ZXMP7A17GQ	1	1	None	None
ZXMP10A13F	1	1	None	None
ZXMP10A16K	1	1	None	None
ZXMP10A17E6	1	1	None	None
ZXMP10A18G	1	1	None	None
ZXMP2120G4	1	1	None	None

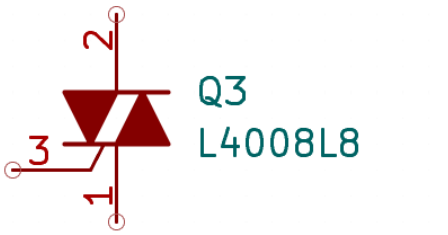
2.37. TRIAC Library

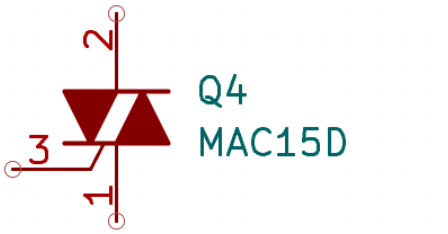
This library contains TRIACs (triode for alternating current, bidirectional triode thyristor or bilateral triode thyristor)

All TRIACs have Q as their reference designator.

All available orderable part numbers for each device with different package and electrical characteristics have separate specific symbols.

Filename: **Triac_AKL**	
Total symbols:	**814**
Generic symbols:	**2**
Specific symbols:	**812**

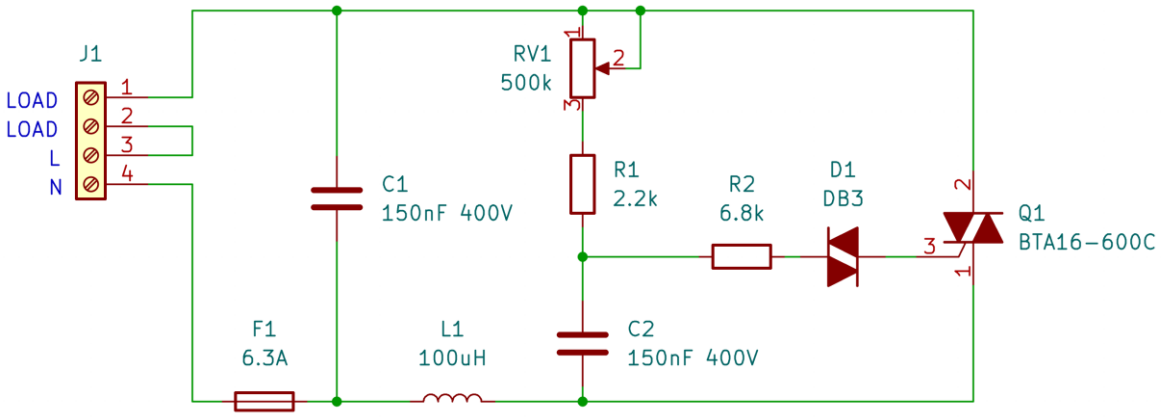




Schematic examples

Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



Example 1
AC power control circuit based on a BTA16-600C TRIAC.

Table 2.32. List of all devices included in Triac_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
2N6071	2	1	None	None
2N6073	2	1	None	None
2N6075	2	1	None	None
2N6344	1	1	None	None
2N6349	1	1	None	None
BT131-600	1	1	None	None
BT131W-600D	1	1	None	None
BT134W	3	1	None	None
BT136	3	1	None	None
BT136S	2	1	None	None
BT136X	3	1	None	None
BT137	5	1	None	None
BT137B	2	1	None	None
BT137S	3	1	None	None
BT137X	5	1	None	None
BT138	5	1	None	None
BT138B	2	1	None	None
BT138X	2	1	None	None
BT139	5	1	None	None
BT139B	3	1	None	None
BT139X	5	1	None	None
BT1308W	1	1	None	None
BTA06	12	1	None	None
BTA06T	1	1	None	None
BTA08	9	1	None	None
BTA10	8	1	None	None
BTA12	10	1	None	None
BTA16	9	1	None	None
BTA20	3	1	None	None
BTA24	6	1	None	None
BTA25	2	1	None	None
BTA26	6	1	None	None
BTA30	2	1	None	None
BTA41	2	1	None	None
BTA140	2	1	None	None
BTA201W	2	1	None	None
BTA203	1	1	None	None
BTA204	1	1	None	None
BTA204S	4	1	None	None
BTA204W	1	1	None	None
BTA208	3	1	None	None
BTA208B	1	1	None	None
BTA208S	4	1	None	None
BTA208X	1	1	None	None
BTA212	3	1	None	None
BTA212X	3	1	None	None
BTA216	6	1	None	None
BTA216X	3	1	None	None
BTA225	1	1	None	None
BTA225B	1	1	None	None
BTA308Y	1	1	None	None
BTA312	1	1	None	None
BTA312B	2	1	None	None
BTA312X	3	1	None	None
BTA312Y	1	1	None	None
BTA316	4	1	None	None
BTA316B	3	1	None	None
BTA316X	2	1	None	None
BTA316Y	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
BTA318	4	1	None	None
BTA330B	2	1	None	None
BTA330X	1	1	None	None
BTA330Y	1	1	None	None
BTA408X	1	1	None	None
BTA410Y	1	1	None	None
BTA412Y	4	1	None	None
BTA416Y	2	1	None	None
BTA440Z	1	1	None	None
BTA2008W	1	1	None	None
BTB04	1	1	None	None
BTB06	12	1	None	None
BTB08	9	1	None	None
BTB10	4	1	None	None
BTB12	7	1	None	None
BTB16	9	1	None	None
BTB24	6	1	None	None
BTB26	6	1	None	None
BTB41	2	1	None	None
CLA30MT1200	2	1	None	None
CLA40MT1200	2	1	None	None
CLA60MT1200	2	1	None	None
CLA80MT1200	2	1	None	None
CMA60MT1600	2	1	None	None
CMA80MT1600	1	1	None	None
HQ6025	4	1	None	None
L4X8E	4	1	None	None
L6X8E	4	1	None	None
L0103	6	1	None	None
L0107	6	1	None	None
L0109	6	1	None	None
L401E	4	1	None	None
L601E	4	1	None	None
L4004	12	1	None	None
L4006	12	1	None	None
L4008	8	1	None	None
L6004	12	1	None	None
L6006	12	1	None	None
L6008	8	1	None	None
LJ4004	2	1	None	None
LJ4006	2	1	None	None
LJ6004	2	1	None	None
LJ6006	2	1	None	None
LX803	4	1	None	None
LX807	4	1	None	None
MAC4	4	1	None	None
MAC08	2	1	None	None
MAC8	6	1	None	None
MAC9	3	1	None	None
MAC12	5	1	None	None
MAC15	8	1	None	None
MAC97	1	1	None	None
MAC228	4	1	None	None
MCR8	2	1	None	None
Q4X8E	2	1	None	None
Q6X8E	2	1	None	None
Q401E	2	1	None	None
Q601E	2	1	None	None
Q4004	8	1	None	None
Q4006	12	1	None	None
Q4008	12	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
Q4010	9	1	None	None
Q4015	3	1	None	None
Q4016	12	1	None	None
Q4025	9	1	None	None
Q4040	4	1	None	None
Q6004	8	1	None	None
Q6006	12	1	None	None
Q6008	12	1	None	None
Q6010	9	1	None	None
Q6015	3	1	None	None
Q6016	12	1	None	None
Q6025	9	1	None	None
Q6040	4	1	None	None
Q8004	8	1	None	None
Q8006	8	1	None	None
Q8008	8	1	None	None
Q8010	9	1	None	None
Q8015	3	1	None	None
Q8016	12	1	None	None
Q8025	9	1	None	None
Q8040	5	1	None	None
QJ4004	4	1	None	None
QJ4006	6	1	None	None
QJ6004	4	1	None	None
QJ6006	6	1	None	None
QK004	4	1	None	None
QK006	8	1	None	None
QK008	8	1	None	None
QK010	9	1	None	None
QK015	3	1	None	None
QK016LH2	12	1	None	None
QK025	6	1	None	None
QK040	3	1	None	None
T405	7	1	None	None
T410	8	1	None	None
T435	9	1	None	None
T810	3	1	None	None
T835	3	1	None	None
T835T	1	1	None	None
T850	2	1	None	None
T1010H	2	1	None	None
T1035H	3	1	None	None
T1050H	3	1	None	None
T1205	1	1	None	None
T1210	2	1	None	None
T1235	2	1	None	None
T1235H	3	1	None	None
T1250	1	1	None	None
T1250H	3	1	None	None
T1610	2	1	None	None
T1610H	1	1	None	None
T1610T	1	1	None	None
T1620T	2	1	None	None
T1635	2	1	None	None
T1635H	3	1	None	None
T1635T	2	1	None	None
T1650	1	1	None	None
T1650H	3	1	None	None
T2035H	3	1	None	None
T2050H	3	1	None	None
T2535	2	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
T3035H	3	1	None	None
T3050H	3	1	None	None
TPDV825	1	1	None	None
TPDV840	1	1	None	None
TPDV1025	1	1	None	None
TPDV1040	1	1	None	None
TPDV1225	1	1	None	None
TPDV1240	1	1	None	None
TXDV812	1	1	None	None
TXDV1212RG	1	1	None	None
Z0103	4	1	None	None
Z0107	4	1	None	None
Z0109	4	1	None	None
Z0110	4	1	None	None

2.38. Voltage Regulator Library (new)

This library contains integrated voltage regulator symbols.

Positive voltage regulator symbols have their input on the left side, output on the right and ground/adjust pins on the bottom.

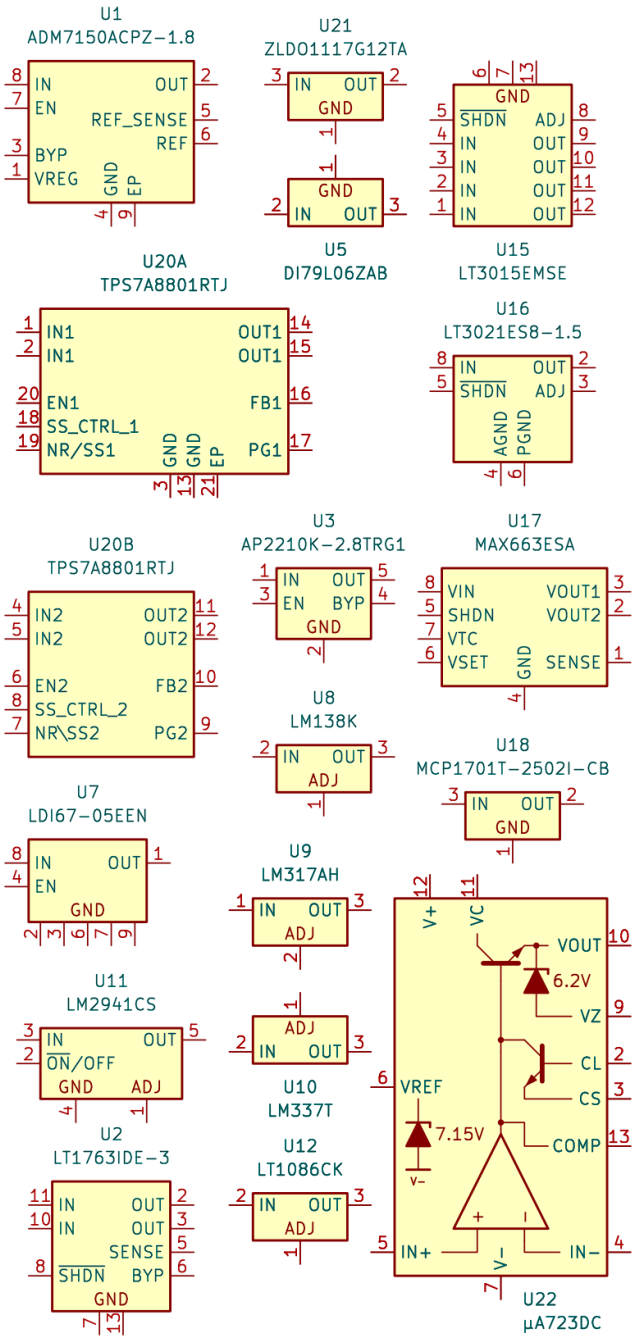
Negative voltage regulator symbols have their input on the left side, output on the right and ground/adjust pins on the top.

Most of the dual regulator symbols are only available as a single, aggregated symbol.

Each available orderable part number with different electrical characteristics, configuration, pinout and package for each IC type has a separate specific symbol.

Each separate pad has its own pin. As a result, there are multiple power output pins present on some symbols. Only one of these pins is set up as a power output to prevent ERC errors. Always connect these pins together on the schematic or refer to the device's datasheet.

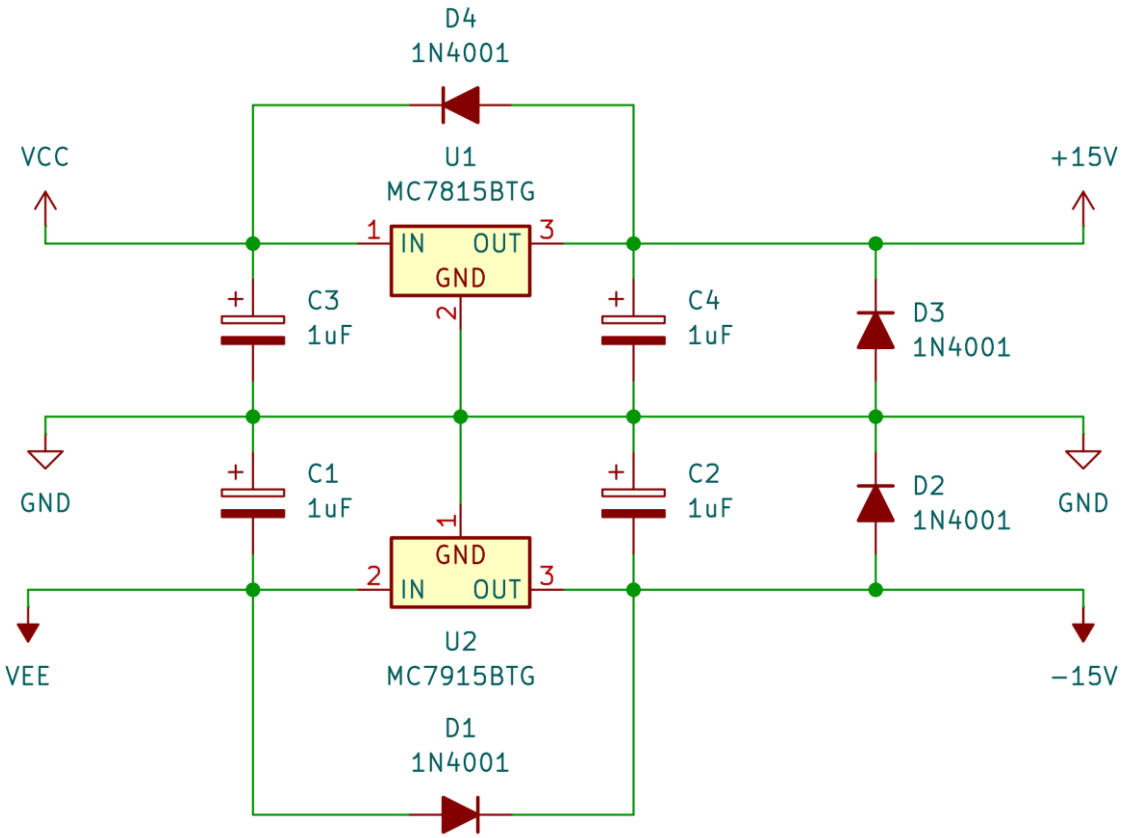
Filename: **Voltage_Regulator_AKL**	
Total symbols:	**2751**
Generic symbols:	**24**
Specific symbols:	**2727**



Schematic examples

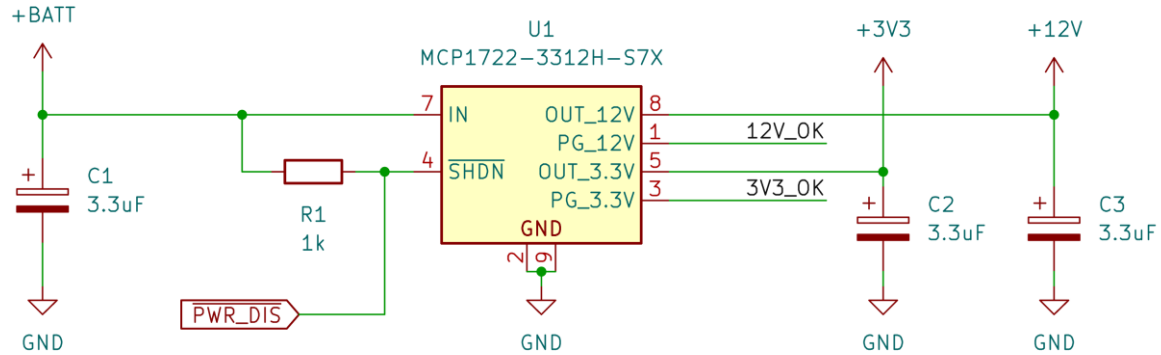
Disclaimer

Schematics provided here have not been validated in any capacity and are meant to serve as an illustration of the AKL symbols.



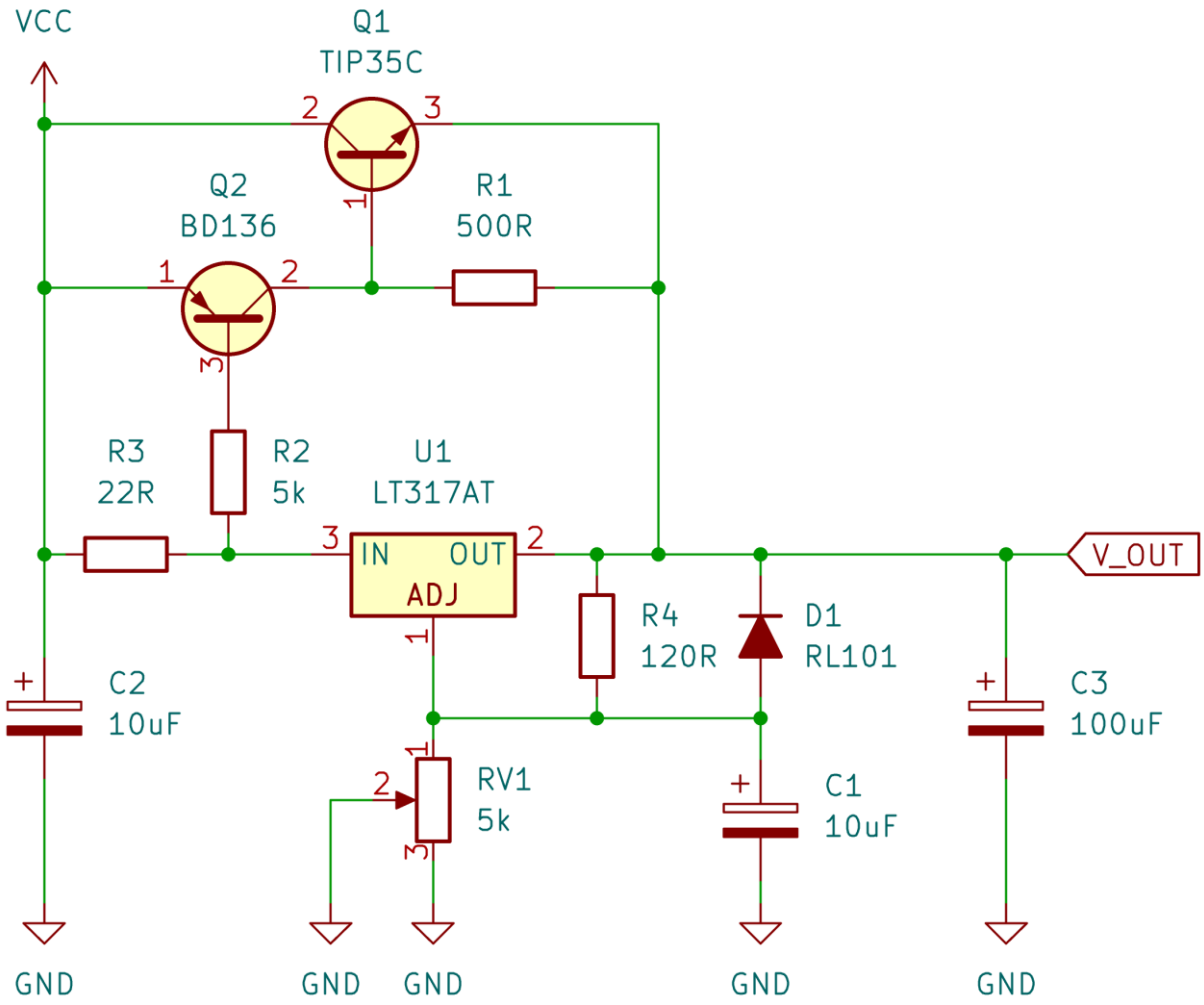
Example 1

Symmetrical ±15V power supply circuit using a MC7815BTG positive 15V regulator and a MC7915 negative 15V regulator.



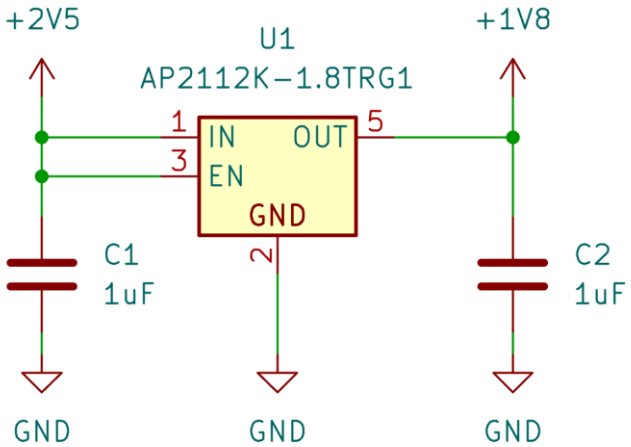
Example 2

12V and 3.3V power supply using MCP1722-3312H dual voltage regulator with shutdown input and output voltage monitoring.



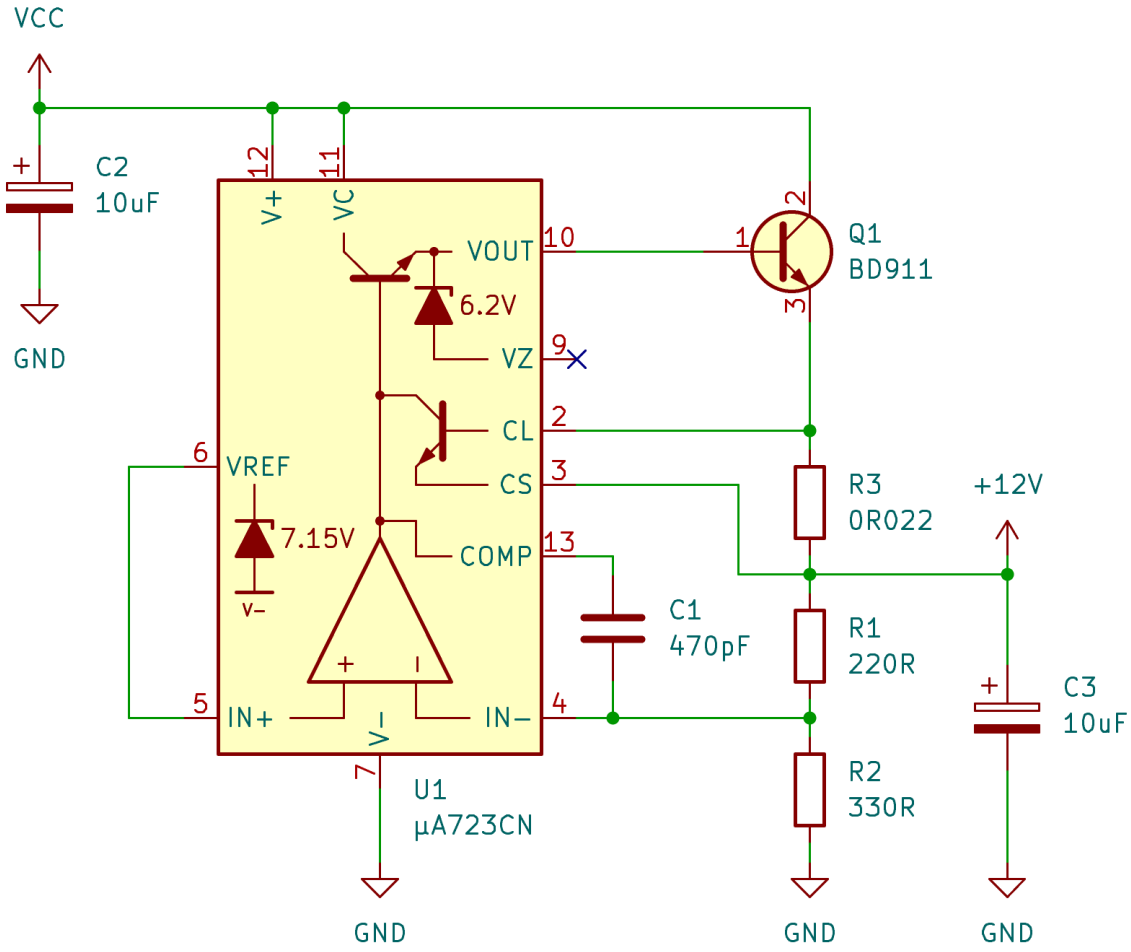
Example 3

Variable high-current power supply using LT317AT adjustable voltage regulator with external transistor for increased current capacity.



Example 4

1.8V power supply using an AP2112K-1.8 low-dropout voltage regulator connected to a 2.5V supply rail.



Example 5

12V high current (up to 2,5A) power supply utilizing the µA723 voltage regulator with an external pass transistor.

Table 2.33. List of all devices included in Voltage_Regulator_AKL

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
ADM7150	10	1	None	None
ADM7151	4	1	None	None
ADP1720	3	1	None	None
ADP3301	5	1	None	None
ADP3303	3	1	None	None
ADP3338	7	1	None	None
ADP7118	16	1	None	None
AP130	40	1	None	None
AP2112	20	1	Free	None
AP2114	32	1	None	None
AP2115	12	1	Free	None
AP2120	10	1	None	None
AP2121K	9	1	Free	None
AP2121N	9	1	None	None
AP2125K	7	1	Free	None
AP2125KS	6	1	Free	None
AP2125N	6	1	None	None
AP2127K	11	1	Free (none for adj variant)	None
AP2127N	10	1	None	None
AP2128K	13	1	Free (none for adj variant)	None
AP2132	4	1	Free	None
AP2138N	29	1	None	None
AP2139K	8	1	Free	None
AP2202	7	1	None	None
AP2204K	8	1	Free (none for adj variant)	None
AP2204MP	1	1	Free	None
AP2204R	7	1	None	None
AP2204RA	2	1	None	None
AP2204RB	2	1	None	None
AP2205	22	1	None (Free for SOT-23-5)	None
AP2210N	13	1	None	None
AP2213	9	1	None	None
AP7115	20	1	None	None
AP7217	1	1	Free	None
AP7311	10	1	Free (none for adj variant)	None
AP7312	8	1	None	None
AP7313	18	1	None	None
AP7315	68	1	None (Free for SOT-23-5)	None
AP7315D	34	1	None (Free for SOT-23-5)	None
AP7331	10	1	Free (none for adj variant)	None
AP7332	28	1	None	None
AP7333	18	1	None	None
AP7335	14	1	Free (none for adj variant)	None
AP7340	34	1	None	None
AP7341	30	1	None	None
AP7343	100	1	None (Free for SOT-23-5)	None
AP7351	26	1	None (Free for SOT-23-5)	None
AP7353	22	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
AP7354	47	1	None (Free for SOT-23-5)	None
AP7361	51	1	None (Free for SOT-23-5, DFN)	None
AP7362	28	1	Free (none for adj variant)	None
AP7363	51	1	None (Free for 8-pin packages)	None
AP7365	67	1	None (Free for SOT-23-5)	None
AP7366	12	1	Free (none for adj variant)	None
AP7370	48	1	None (Free for SOT-23-5, DFN)	None
AP7380	21	1	None (Free for SOT-23-5)	None
AP7381	12	1	None	None
AP7383	40	1	None (Free for SOT-23-5, DFN)	None
AP7384	12	1	None	None
AS78L05	4	1	None	None
AS78L12	3	1	None	None
AS78L15	3	1	None	None
AS7805A	3	1	None	None
AS7806A	3	1	None	None
AS7808A	3	1	None	None
AS7809A	3	1	None	None
AS7812A	3	1	None	None
AS7815A	3	1	None	None
AS7818A	3	1	None	None
AZ1084	24	1	None	None
AZ1085	24	1	None	None
AZ1086	24	1	None	None
AZ1117	54	1	None	None
DI78L3.3	3	1	None (Free for SO-8	None
DI78L05	3	1	None (Free for SO-8	None
DI78L06	3	1	None (Free for SO-8	None
DI78L08	3	1	None (Free for SO-8	None
DI78L09	3	1	None (Free for SO-8	None
DI78L10	3	1	None (Free for SO-8	None
DI78L12	3	1	None (Free for SO-8	None
DI78L15	3	1	None (Free for SO-8	None
DI78L18	3	1	None (Free for SO-8	None
DI78L20	3	1	None (Free for SO-8	None
DI78L24	3	1	None (Free for SO-8	None
DI78M05	1	1	None	None
DI78M06	1	1	None	None
DI79L05	3	1	None (Free for SO-8	None
DI79L06	3	1	None (Free for SO-8	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
DI79L08	3	1	None (Free for SO-8	None
DI79L09	3	1	None (Free for SO-8	None
DI79L10	3	1	None (Free for SO-8	None
DI79L12	3	1	None (Free for SO-8	None
DI79L15	3	1	None (Free for SO-8	None
DI79L18	3	1	None (Free for SO-8	None
DI79L24	3	1	None (Free for SO-8	None
DI6206	12	1	None	None
IFX27001TFV	6	1	None	None
L78L05	8	1	None (Free for SO-8	None
L78L06	4	1	None (Free for SO-8	None
L78L08	7	1	None (Free for SO-8	None
L78L09	7	1	None (Free for SO-8	None
L78L10	1	1	None	None
L78L12	7	1	None (Free for SO-8	None
L78L15	6	1	None (Free for SO-8	None
L78L18	2	1	None (Free for SO-8	None
L78L24	4	1	None (Free for SO-8	None
L78L33	7	1	None (Free for SO-8	None
L78M05	7	1	None	None
L78M06	2	1	None	None
L78M08	3	1	None	None
L78M09	3	1	None	None
L78M10	1	1	None	None
L78M12	5	1	None	None
L78M15	4	1	None	None
L78M24	4	1	None	None
L78S05	2	1	None	None
L78S09	2	1	None	None
L78S10	2	1	None	None
L78S12	2	1	None	None
L78S15	2	1	None	None
L78S18	2	1	None	None
L78S24	2	1	None	None
L78S75	2	1	None	None
L79L05	6	1	None (Free for SO-8	None
L79L08	1	1	Free	None
L79L12	3	1	None (Free for SO-8	None
L79L15	3	1	None (Free for SO-8	None
L5300GJ	1	1	Free	None
L7805	10	1	None	None
L7806	4	1	None	None
L7808	5	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
L7809	6	1	None	None
L7812	7	1	None	None
L7815	7	1	None	None
L7818	1	1	None	None
L7824	5	1	None	None
L7885	1	1	None	None
L7905	5	1	None	None
L7912	4	1	None	None
L7915	3	1	None	None
LD1084	1	1	None	None
LD1086	16	1	None (Free for DFN-8	None
LDI67	3	1	Free	None
LDI75	2	1	None	None
LDI559	5	1	Free	None
LDI812C	2	1	Free	None
LDI1117	21	1	None (Free for DFN-8	None
LDI8119	3	1	Free	None
LDI8233	3	1	Free	None
LE30CD	1	1	Free	None
LE33CD	1	1	Free	None
LE33CZ	1	1	None	None
LE45CD	1	1	Free	None
LE50CD	1	1	Free	None
LE80CD	1	1	Free	None
LM78L05	3	1	None (Free for SO-8	None
LM78L12	2	1	None (Free for SO-8	None
LM78L15	2	1	None (Free for SO-8	None
LM78M05	2	1	None	None
LM78M15	1	1	None	None
LM79L05	2	1	None (Free for SO-8	None
LM79L12	2	1	None (Free for SO-8	None
LM79L15	2	1	None (Free for SO-8	None
LM109	2	1	None	None
LM117	2	1	None	None
LM123	1	1	None	None
LM137	1	1	None	None
LM138	1	1	None	None
LM140	3	1	None	None
LM217	5	1	None	None
LM309	2	1	None	None
LM317	36	1	None (Free for 8-pin packages	None
LM323	2	1	None	None
LM337	5	1	None (Free for 8-pin packages	None
LM338	1	1	None	None
LM340	8	1	None	None
LM341	2	1	None	None
LM350	2	1	None	None
LM723	2	1	None	None
LM2941	5	1	None	None
LM2991	2	1	None	None
LM7805	3	1	None	None
LM7806	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
LM7808	1	1	None	None
LM7809	1	1	None	None
LM7810	1	1	None	None
LM7812	2	1	None	None
LM7815	1	1	None	None
LM7818	1	1	None	None
LM7824	1	1	None	None
LM7905	1	1	None	None
LM7912	1	1	None	None
LM7915	1	1	None	None
LP4951	1	1	None	None
LR8	3	1	None	None
LR12	3	1	None	None
LR645LG	1	1	Free	None
LR645N	3	1	None	None
LR745N	2	1	None	None
LT117A	2	1	None	None
LT123A	1	1	None	None
LT317A	3	1	None	None
LT323A	2	1	None	None
LT337A	2	1	None	None
LT1033	3	1	None	None
LT1083	2	1	None	None
LT1084	4	1	None	None
LT1085	3	1	None	None
LT1086	18	1	None	None
LT1117	12	1	None	None
LT1121	30	1	None (Free for 8-pin packages	None
LT1129	22	1	None (Free for 8-pin packages	None
LT1175	18	1	None	None
LT1521	18	1	None (Free for 8-pin packages	None
LT1529	12	1	None	None
LT1584	5	1	None	None
LT1585	8	1	None	None
LT1587	6	1	None	None
LT1761	22	1	None	None
LT1762	5	1	Free	None
LT1763	28	1	None (Free for DFN-12)	None
LT1764	30	1	None (Free for TSSOP-16)	None
LT1844	7	1	None	None
LT1962	8	1	Free	None
LT1963	24	1	None (Free for TSSOP and SO)	None
LT1964	8	1	None	None
LT1965	40	1	None	None
L3010	4	1	Free	None
LT3015	56	1	None	None
LT3021	9	1	Free	None
MAX663	4	1	None	None
MAX664	4	1	None	None
MAX666	4	1	None	None
MC78L05	3	1	None (Free for SO-8	None
MC78L08	3	1	None (Free for SO-8	None
MC78L09	3	1	None (Free for SO-8	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
MC78L12	3	1	None (Free for SO-8	None
MC78L15	3	1	None (Free for SO-8	None
MC78L18	4	1	None	None
MC78L24	4	1	None	None
MC78M05	5	1	None	None
MC78M06	1	1	None	None
MC78M08	2	1	None	None
MC78M09	2	1	None	None
MC78M12	6	1	None	None
MC78M15	5	1	None	None
MC78M18	1	1	None	None
MC79L05	4	1	None (Free for SO-8	None
MC79L12	4	1	None (Free for SO-8	None
MC79L15	4	1	None (Free for SO-8	None
MC79L18	1	1	None	None
MC79L24	2	1	None	None
MC79M05	4	1	None	None
MC79M08	4	1	None	None
MC79M12	4	1	None	None
MC79M15	4	1	None	None
MC7805	10	1	None	None
MC7808	2	1	None	None
MC7809	2	1	None	None
MC7812	9	1	None	None
MC7815	9	1	None	None
MC7818	3	1	None	None
MC7824	4	1	None	None
MC7905	3	1	None	None
MC7906	1	1	None	None
MC7912	4	1	None	None
MC7915	6	1	None	None
MC7918	1	1	None	None
MCP1700T	29	1	None (Free for DFN-6	None
MCP1701T	10	1	None	None
MCP1702T	27	1	None	None
MCP1703T	40	1	None (Free for DFN-8	None
MCP1711T	9	1	Free	None
MCP1722	8	1	Free	None
MCP1725T	16	1	None	None
MCP1726T	16	1	None	None
MCP1754ST	11	1	None (Free for DFN-8	None
MCP1754T	9	1	None (Free for DFN-8	None
MCP1755ST	6	1	None (Free for DFN-8	None
MCP1755T	9	1	None (Free for DFN-8	None
MCP1790T	6	1	None	None
MCP1791T	6	1	None	None
MIC5283	8	1	Free	None
NCP785AH33T1G	1	1	None	None
NCP785AH50T1G	1	1	None	None
NCP785AH120T1G	1	1	None	None
NCP785AH150T1G	1	1	None	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
NCV78L05	2	1	None (Free for SO-8	None
NCV78L08ABDR2G	1	1	Free	None
NCV78L12	2	1	None (Free for SO-8	None
NCV78L15ABDR2G	1	1	Free	None
NCV78M05	2	1	None	None
NCV78M08BDTRKG	1	1	None	None
NCV78M09BDTRKG	1	1	None	None
NCV78M15BDTRKG	1	1	None	None
NCV7805	3	1	None	None
NCV7808	2	1	None	None
NCV7809	2	1	None	None
NCV7812	3	1	None	None
NCV7815BTG	1	1	None	None
PB137ACV	1	1	None	None
TL317	4	1	None (Free for 8-pin packages	None
TL780	4	1	None	None
TLE4264G	1	1	None	None
TLE4266G	2	1	None	None
TLE4268G	2	1	Free	None
TLE4269G	3	1	None (Free for SO-20	None
TLE4271-2G	2	1	None	None
TLE4291E	1	1	Free	None
TLE4675	2	1	None	None
TLE42744	6	1	None (Free for SSOP-14	None
TLE42754	2	1	None	None
TLE42764	7	1	Free (none for adj variant)	None
TLE42994	2	1	None (Free for SSOP-14	None
TLF80511TC	1	1	None	None
TPS7A3901DSC	1	1	None	None
TPS7A8801RTJ	1	2	None	None
TS78L03	3	1	None (Free for SO-8	None
TS78L05	3	1	None (Free for SO-8	None
TS78L09	3	1	None (Free for SO-8	None
TS78L12	2	1	None (Free for SO-8	None
TS78L15	2	1	None (Free for SO-8	None
TS78L24	1	1	Free	None
TS317	5	1	None (Free for SO-8	None
ZLDO1117	14	1	None	None
ZMR250FTA	1	1	None	None
ZMR330FTA	1	1	None	None
ZMR500FTA	1	1	None	None
ZSR300FTA	1	1	None	None
ZSR330FTA	1	1	None	None
ZSR500FTA	1	1	None	None
ZSR800FTA	1	1	None	None
ZSR1000FTA	1	1	None	None
ZSR1200FTA	1	1	None	None
ZXCL250	2	1	Free	None
ZXCL260	2	1	Free	None

Device	No. of symbols	No. of units per symbol	NC pins	Alternate body style
ZXCL280	2	1	Free	None
ZXCL300	2	1	Free	None
ZXCL330	2	1	Free	None
ZXCL400	2	1	Free	None
ZXTR2005Z	1	1	None	None
µA78L02	2	1	None (Free for SO-8	None
µA78L05	9	1	None (Free for SO-8	None
µA78L06	2	1	None	None
µA78L08	3	1	None (Free for SO-8	None
µA78L09	3	1	None (Free for SO-8	None
µA78L10	3	1	None (Free for SO-8	None
µA78L12	3	1	None (Free for SO-8	None
µA78L15	3	1	None (Free for SO-8	None
µA78M05	6	1	None	None
µA78M06	1	1	None	None
µA78M08	3	1	None	None
µA78M09	1	1	None	None
µA78M10	1	1	None	None
µA78M12	2	1	None	None
µA78M33	4	1	None	None
µA79M05	2	1	None	None
µA79M08	1	1	None	None
µA723	5	1	None (Free for 14-pin packages	None
µA7805	2	1	None	None
µA7808	2	1	None	None
µA7810	2	1	None	None
µA7812	2	1	None	None
µA7815	2	1	None	None
µA7824	2	1	None	None
µA7905	2	1	None	None
µA7908	2	1	None	None

3. Footprint libraries

To mount components to a PCB, specific collections of pads (copper areas without soldermask coverage) and holes (for THT packages) need to be included in the design. Each component package type needs an array of pads with specified size and shape, spaced in a way that allows it to be soldered to the PCB. In KiCad, such arrays of pads are called Footprints.

Alternate KiCad Library provides over 10400 footprints distributed across 61 libraries. AKL contains footprints for:
- capacitors,
- crystal resonators and oscillators,
- diodes and rectifier bridges,
- inductors and ferrite beads,
- light emitting diodes,
- fuses and fuse holders,
- wire jumpers,
- IC packages (DIP, SO, QFN, DFN, QFP, PLCC etc.),
- transistor packages (SOT, TO etc.),
- resistors and potentiometers.

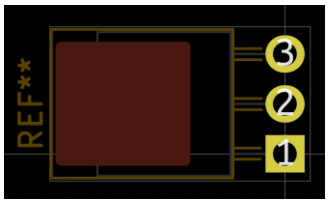
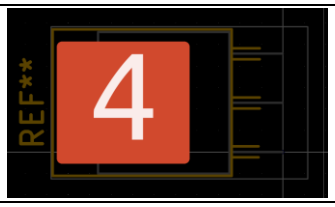
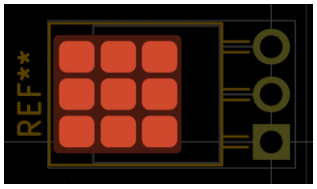
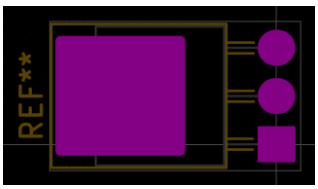
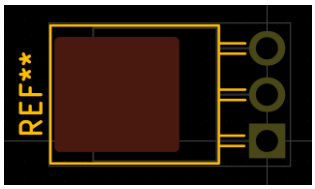
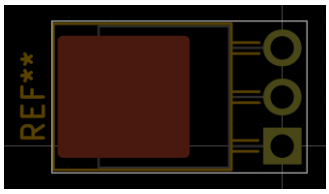
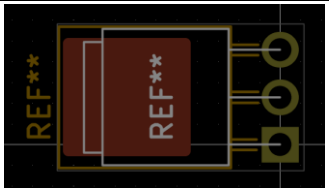
All footprints are either improved versions of the standard KiCad footprints or completely made from scratch with emphasis on PCB clarity both on the silkscreen and fabrication layers.

Section 3.1 introduces footprints by going over their base components, shows examples of THT and SMD footprints and explains their features. It explains how PCB fabrication capabilities might restrict the use of certain footprints, shows how to edit footprint text fields and how to review or add 3D models. Lastly the section explains different footprint library variants, lists their advantages, disadvantages and recommendations.

Further sections (3.2 to 3.30) review each footprint library by listing footprint count, library variants and names/naming conventions of every footprint included in the library.

3.1. Footprint Library Features

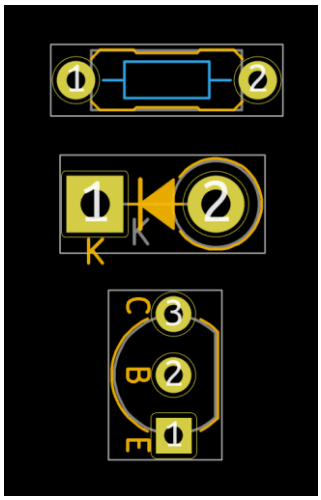
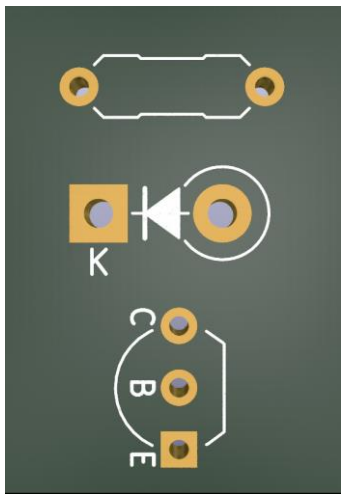
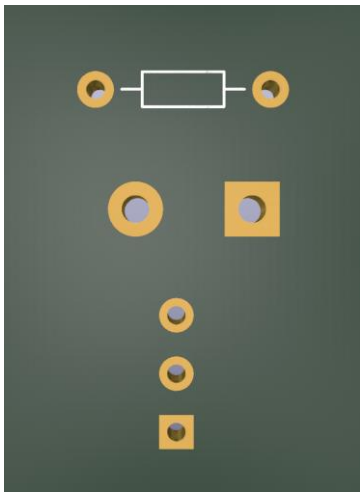
3.1.1. Typical Footprint Components

Footprint part	Description	Image
Through-Hole Pads	Copper pads included on all copper layers (this behavior can be changed in pad properties) with plated through hole (PTH) in the center. Used to mount THT components. Number of the pad corresponds to a pin number on a symbol.	
SMD Pads	Copper pads included on only one copper layer without any holes (some footprints have thermal vias included). Number of the pad corresponds to a pin number on a symbol.	
Solder Paste Aperture	Openings in solder paste stencil. During automated assembly areas marked on this layer will be covered by solder paste. Standard SMD pads have solder paste apertures of the same size as the pad by default and need to have solder paste clearance input by the user in the board setup window.	
Soldermask Windows	Openings in soldermask (solder resist) exposing solderable features on the PCB. All pads have soldermask openings of the same size. Soldermask clearance must be entered into the board setup by the user according to PCB supplier capabilities.	
Legend (Silkscreen)	PCB legend or silkscreen (typically white lines/text on the PCB) contains reference designators, component outlines (THT parts) or courtyards (SMD parts) and mounting direction indicators if applicable.	
Courtyard	Courtyard is a shape around a footprint denoting a minimum component to component clearance. If courtyards of two components intersect, a DRC error will be generated. Typically, courtyard extends 0.25mm from nearest pad or component outline.	
Fabrication layer	Fabrication layer contains reference designator, component outline and mounting direction marks if applicable. This layer is used to generate assembly drawings.	

3.1.2. Through Hole (THT) Footprints

Through-hole components have leads intended to go through holes in the PCB and then soldered on the other side.

THT Footprints and corresponding PCB views.

PCB Editor view	Top PCB view	Bottom PCB view
		

Through-Hole Pads:

Set of Plated Through Holes of sufficient spacing and diameters to ensure that the component can be mounted to a board. Copper pads around the holes are typically round or oval, with pad number 1 being square or rectangular. Some footprints have versions with enlarged pads (name contains "BigPads" keyword).
AKL symbols use footprint versions with larger pads where applicable.

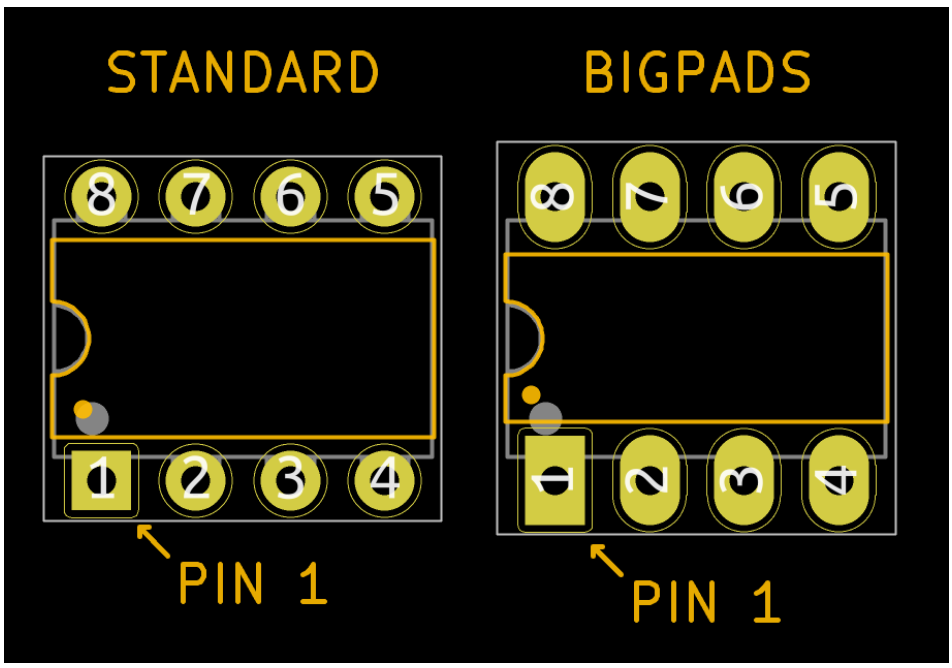


Figure 3.1 *DIP-8 footprint with standard pads (left) and enlarged pads (right).*

Silkscreen legend:

Shows the component outline, reference designator, polarity or pin 1 marks and optionally symbol of the component either on the same layer as the part is mounted or both layers. Double-sided silkscreen legend is available only for select footprints (footprint libraries with "Double" keyword in the name). AKL symbols don't use double-sided silkscreen by default, you need to change the footprints manually.
Some footprints have pin markings included on the silkscreen legend (example: E B C marks near transistor pins). AKL symbols have the correct pin-marking footprint variant pre-assigned if available. You can change the pin markings by changing the footprint manually.

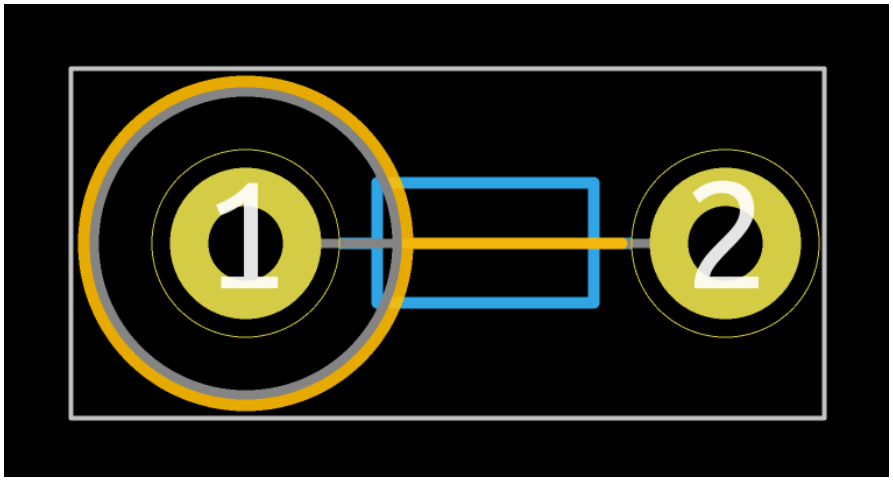


Figure 3.2. *Vertically mounted axial resistor footprint with double-sided silkscreen. Top silkscreen (yellow) contains just the component outline and bottom silkscreen (light blue) contains a resistor symbol.*

Fabrication layer:

Contains component outline, reference designator and polarity/mounting direction marks. It's used to generate assembly drawings. "Value" text is hidden on AKL footprints by default for clarity reasons, you need to re-enable it manually if you need to include component value.

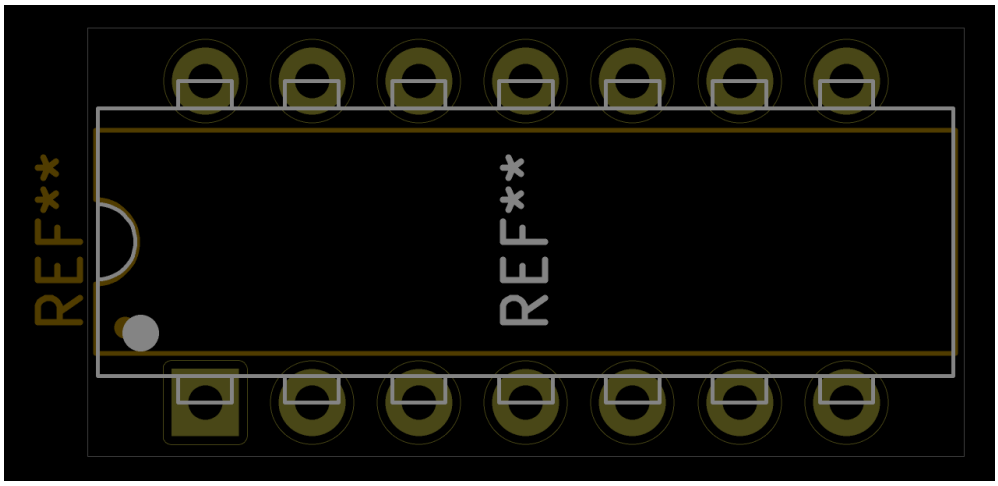


Figure 3.3. *DIP-14 fabrication layer view.*

Courtyard:

Typically has a form of rectangle extending 0.25mm away from copper pads or any part of the component outline. Courtyard is not tuned to any specific insertion machines or assembly houses and is primarily meant to prevent component collisions.

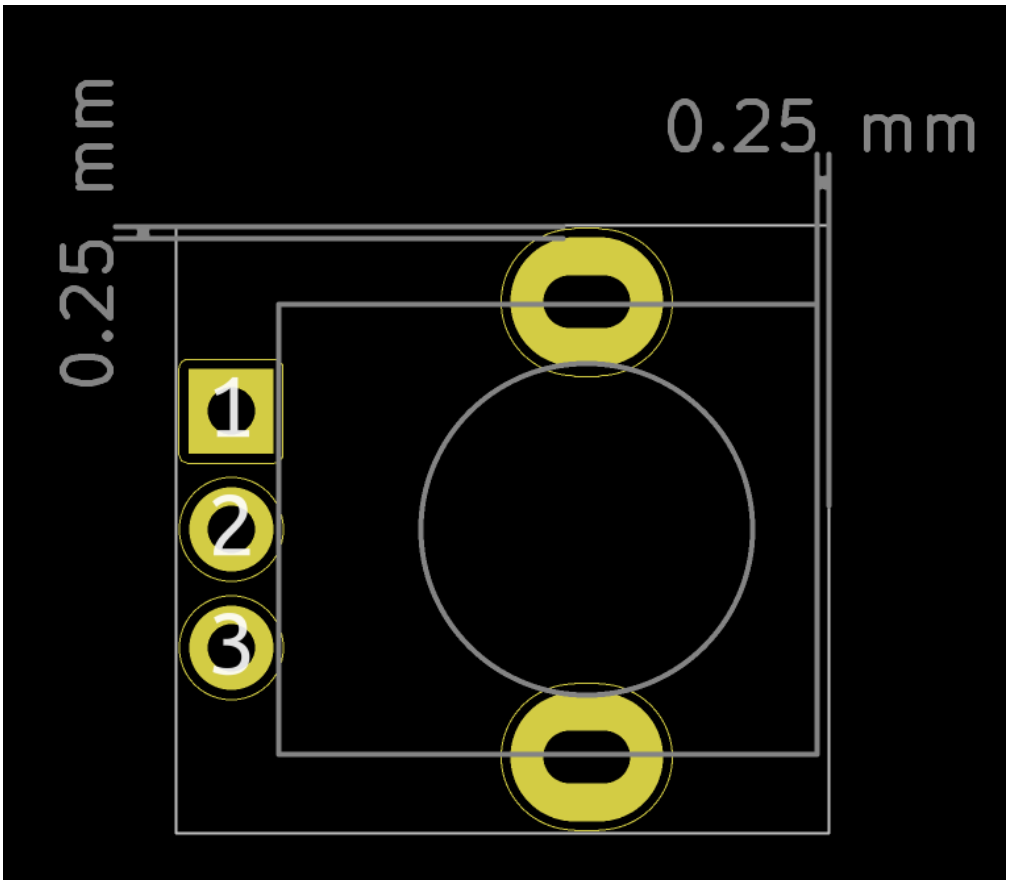
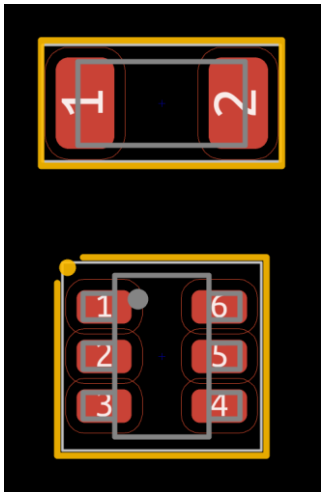
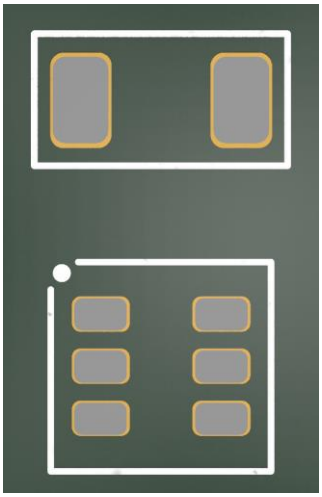


Figure 3.4. *Potentiometer footprint with distance from pad to courtyard and fabrication outline to courtyard shown (silkscreen layer hidden for clarity).*

3.1.3. Surface Mount (SMD) Footprints

SMD components have leads or pads intended to be soldered to the surface of the PCB.

SMD Footprints and corresponding PCB view.

PCB Editor view	PCB view
	

SMD Pads:

Set of exposed copper features of specific size, shape and spacing to ensure that a component can be mounted to a board. All standard pads are rounded rectangles with corner radius of 0.25mm or 25% (whichever is smaller). Rounded pads reduce risks of incomplete solder coverage without compromising electrical and mechanical strength of the connection. Solder paste stencils are also typically based on the pad shape and rounded corners make the paste application more reliable and uniform.

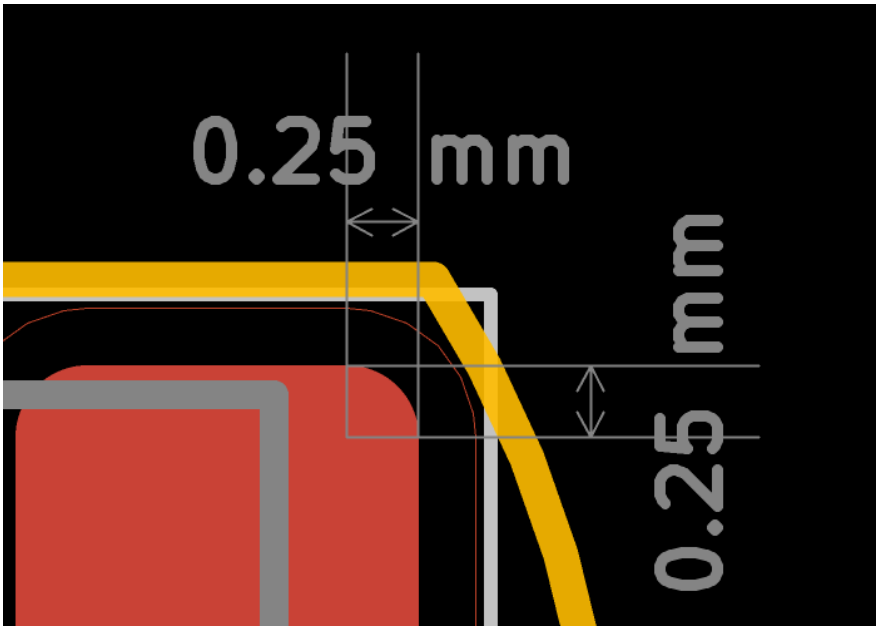


Figure 3.5. *Closeup of an SMD pad rounded corner, with corner radius indicated.*

Exposed (Heatsink) Pad solder paste apertures:

Solder paste used during reflow soldering can generate significant amount of gas from evaporating fluxes. Some components have large-area heatsink tabs that use the PCB copper planes to dissipate heat. During soldering, some of resulting gas might be trapped under the part forming a bubble or a void. These voids can lead to increased and unreliable thermal resistance between the part and the PCB or can even prevent the signal pins from making contact with the PCB.

Solder paste stencil openings used for these parts need to leave escape channels for the resulting gasses. AKL footprints divide the pad into an array of rectangular solder paste apertures (openings in the stencil) that leave channels for escaping gasses, increasing the reliability of the joint.

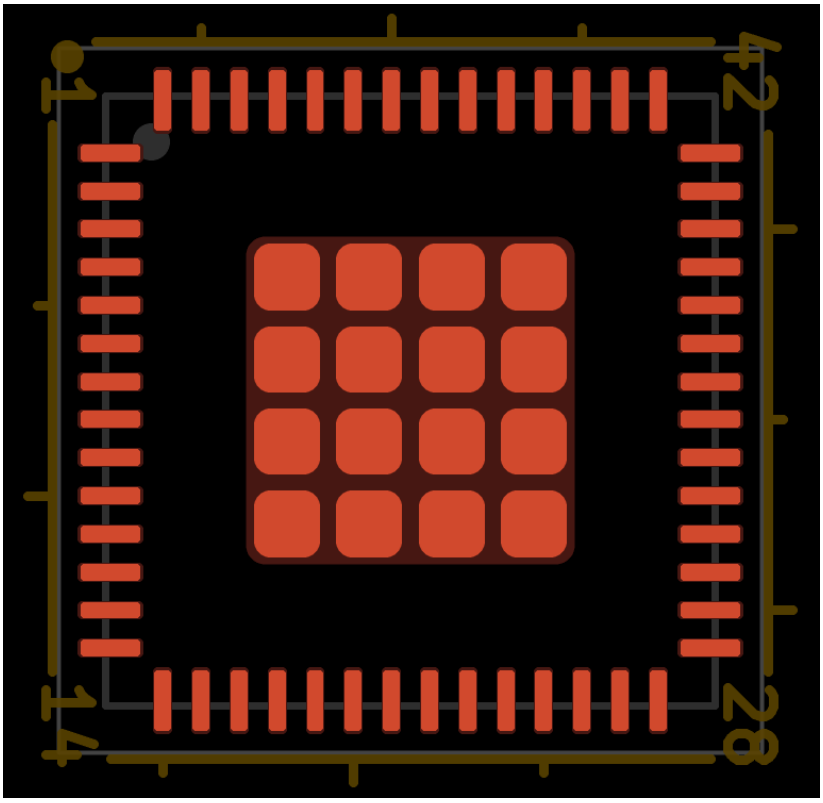


Figure 3.6. *QFP footprint with visible solder paste apertures on the heatsink pad.*

Please be aware that solder paste apertures will have to be adjusted by the user. Side pads can be adjusted easily by either setting a global solder paste clearance, or by setting solder paste overrides for specific footprints. Thermal pad under the part has to be adjusted by editing the footprint itself.

If you have adjusted the footprints to your own requirements, and want to keep those adjustments, it is recommended to copy the library to a separate location, so your changes won't get overridden with the next update.

Thermal (Heatsink) Vias:

Small diameter (≤0.3mm) vias present on select footprints (*ThermalVias* keyword in the footprint name) for parts with exposed thermal tab on the bottom of the package. Vias act as a thermal bridge between the top layer thermal pad and copper planes on other layers. Exposed copper pad is also present on the bottom layer, where all thermal vias terminate.

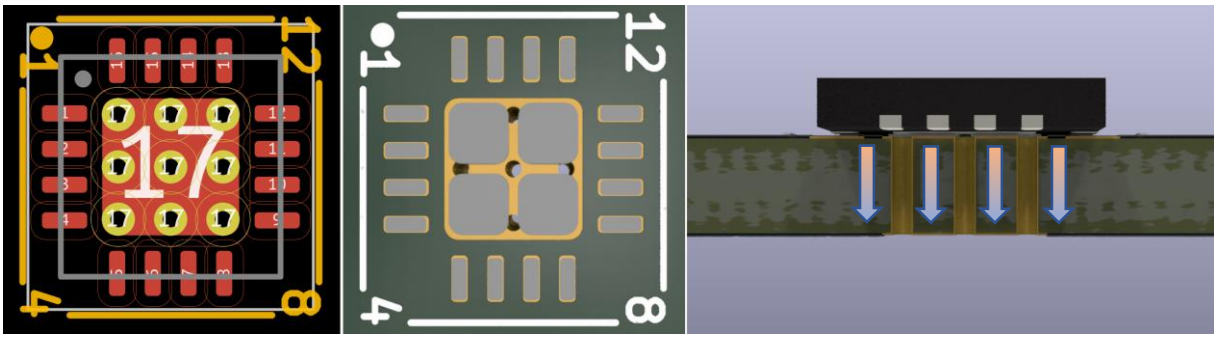


Figure 3.7. *QFN-16 footprint (left), corresponding PCB view (center) and a cutaway of the PCB showing the thermal vias and the direction of heat transfer.*

Thermal vias can potentially wick solder away from under the part or otherwise contribute to appearance of voids inside the solder joint during reflow soldering. This phenomenon can be mitigated by using Plating Over Filled Via (POFV) technology, potentially raising cost of the PCB.

All thermal vias are PTH pads with "Heatsink" fabrication property. If you need to use POFV for thermal vias, communicate it with your PCB fabricator as that information is not included in fabrication output files (Gerber).

During hand-assembly, soldering the bottom-side exposed pad is achievable by applying soldering iron to the bottom side of the PCB and flowing solder through the thermal vias. Bottom pad solder joint is still at risk of increased void presence and the assembly needs to be temperature-tested to ensure that the part is not overheating.

To provide a solution for a reliable and repeatable thermal pad contact, when no POFV vias are available, a new set of footprints was created, called *ThermalVias2* (Figure 3.8). These footprints use soldermask to keep solder from flowing into the vias. While this approach reduces the heat transfer efficiency somewhat, because of insulating effect of the soldermask, but it results in a more repeatable and predictable connection with reduced risk of voids under the part.

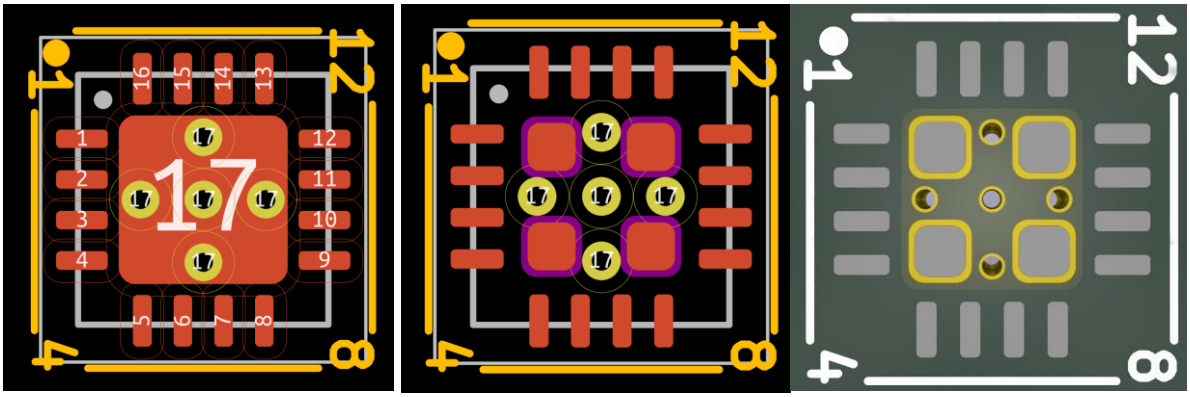


Figure 3.8. *QFN-16 ThermalVias2 footprint. Left to right: Standard view. Hidden copper thermal pad. 3D view.*

Silkscreen Legend:

Typically includes a rectangular outline around the component that acts as a sort-of secondary courtyard that snaps to 0.1mm grid. Silkscreen outline is further away than 0.25mm (standard courtyard) from component outlines or exposed copper pads. Silkscreen legend also contains additional features indicating polarity or mounting direction of the component. Some large IC footprints contain pin number indicators allowing for easier pin identification during testing or servicing.

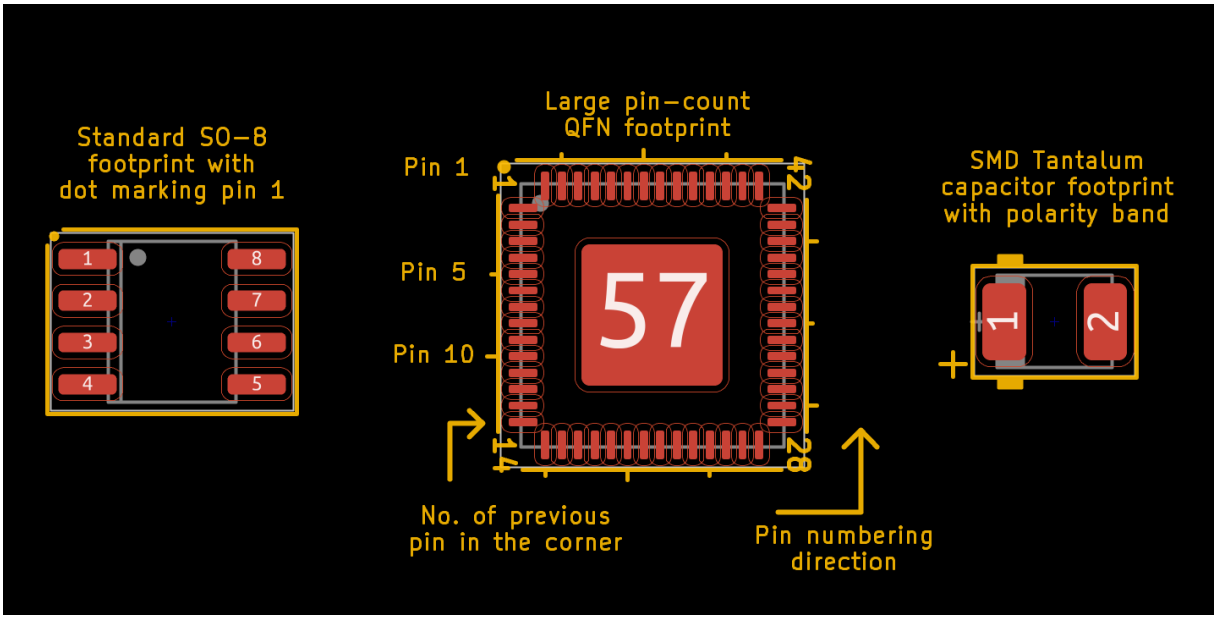
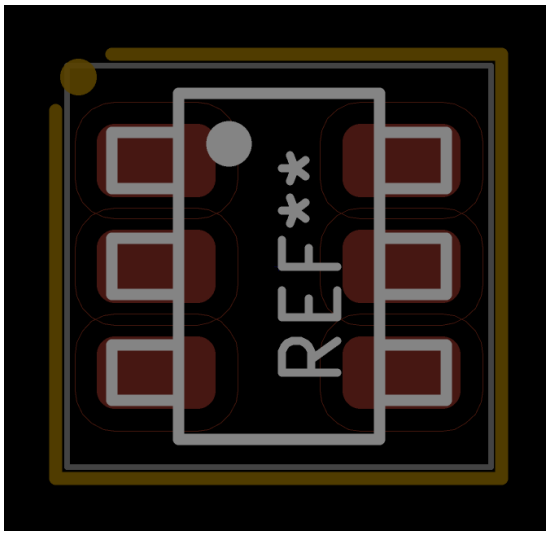


Figure 3.9. *Collection of footprints with polarity or orientation marks on the silkscreen legend.*

Fabrication layer:

Contains component outline, reference designator and polarity/mounting direction marks. It's used to generate assembly drawings. "Value" text is hidden on AKL footprints by default for clarity reasons, you need to re-enable it manually if you need to include component value.



Figue 3.10. *SOT-23-6 fabrication layer view.*

Courtyard:

Typically has a form of rectangle 0.25mm away from copper pads or any part of the component outline. Courtyard is not tuned to any specific pick&place machines or assembly houses and is primarily meant to prevent component collisions.

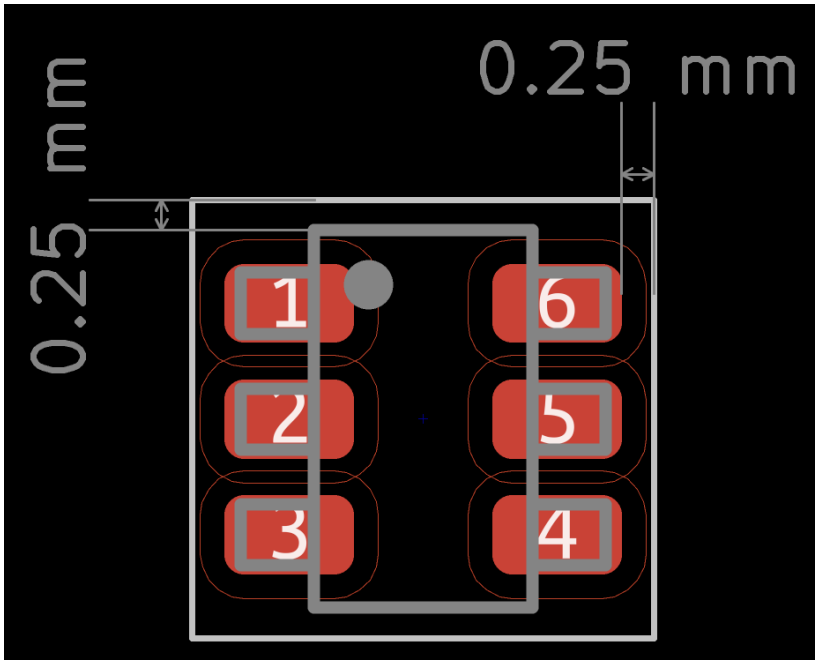


Figure 3.11. *SOT-23-6 footprint with distance from pad to courtyard and fabrication outline to courtyard shown (silkscreen layer hidden for clarity).*

Please note that the secondary courtyard on the silkscreen layer is always larger than the actual courtyard.

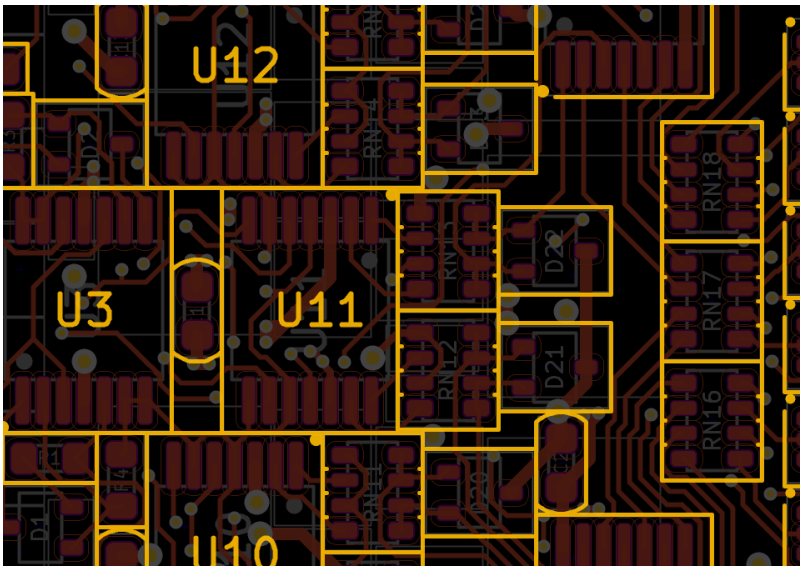


Figure 3.12. *Layout example showing that silkscreen secondary courtyard that snaps to 0.1mm grid leads to even and efficient component placement.*

3.1.4. Footprint Minimum Clearances

Part and package choices have a huge effect on the minimal clearances and hole sizes used during the PCB manufacturing. Any footprints used in the design need to comply with the chosen PCB fabricator capabilities.

Footprint pin or pad pitch is the main factor behind PCB clearance requirements. Devices with finer pitch will require smaller copper to copper clearance, hole to hole clearance, soldermask web width or annular ring. Small copper to copper distance between pads might require the entire pad row to be exposed if soldermask minimum web requirement is not met.

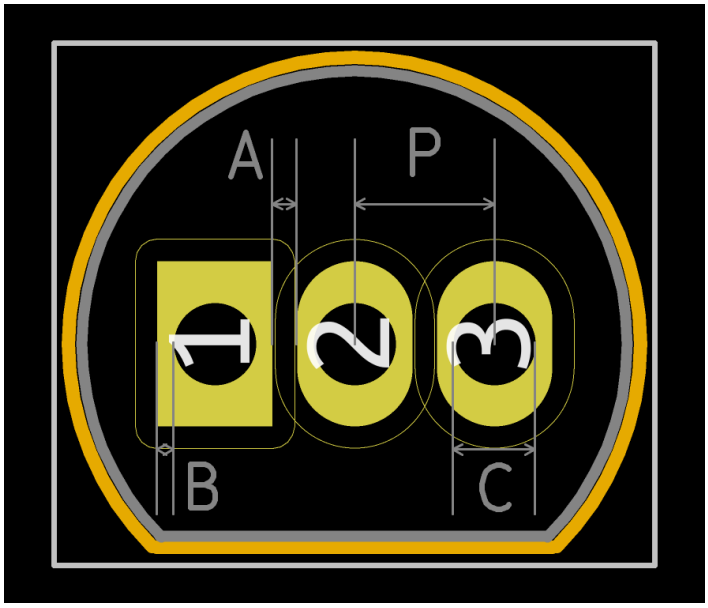


Figure 3.13. *THT footprint with pin pitch (P), copper to copper clearance (A), minimum annular ring (B) and hole diameter (C) indicated.*

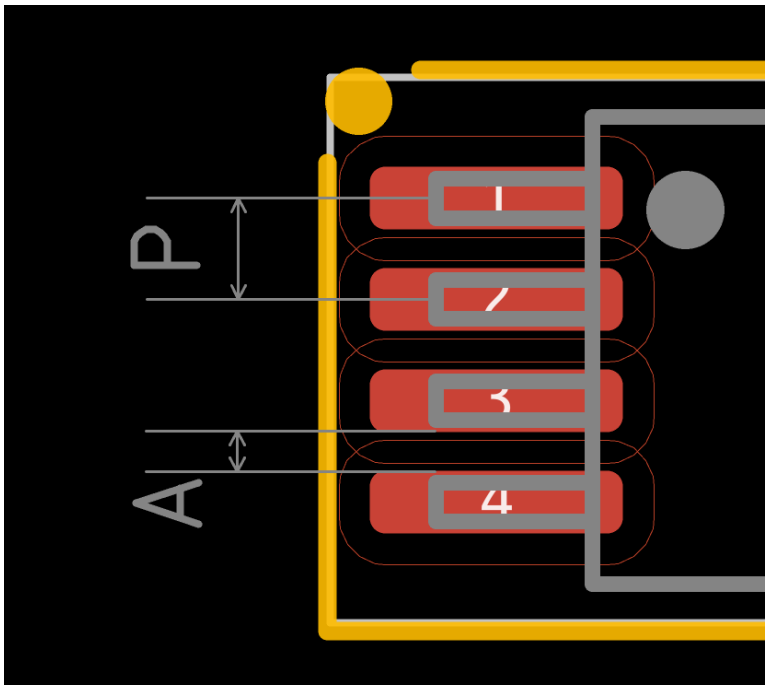


Figure 3.14 *SMD footprint with pin pitch (P) and copper to copper clearance indicated.*

3.1.5. Footprint Text

AKL footprints include text strings on silkscreen and fabrication layers. Some text is enabled and visible by default (reference designators, pin indicators), while other is hidden (component values).

To enable or disable certain text fields, select the footprint and open *Footprint Properties* (figure 3.15). In the popup window you can select which text strings are visible and change their layers as needed.

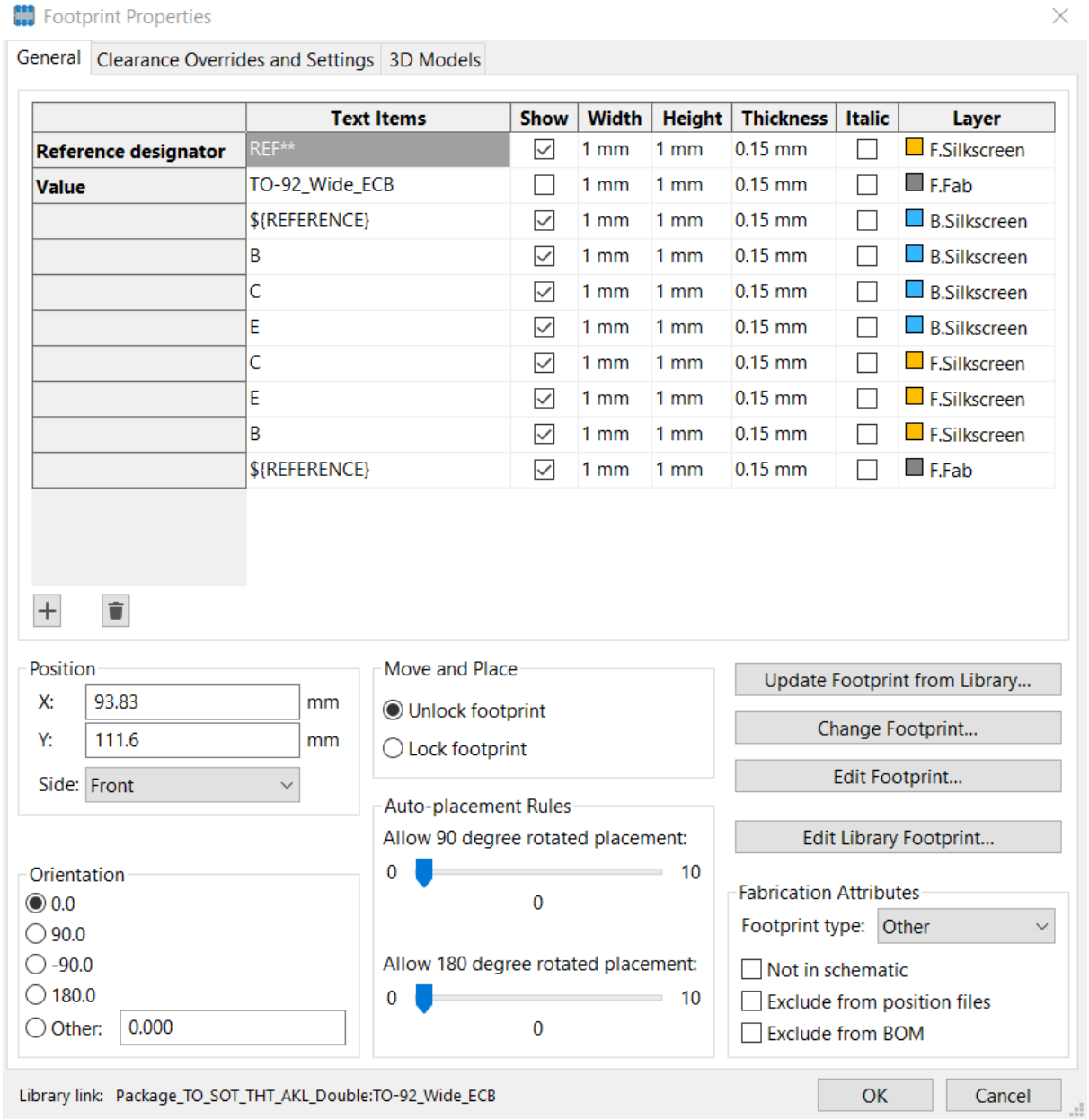


Figure 3.15. *Footprint properties window of "TO-92_Wide_ECB" footprint from "TO_SOT_THT_AKL_Double" library. Each text string has its own field and can be easily modified.*

3.1.6. 3D Models

Alternate KiCad Library does not provide its own 3D models, but since it is a modified version of the standard KiCad library, it is designed to link to existing 3D models whenever they're available. You can review and modify the 3D model location within *Footprint Properties* either within PCB Editor or Footprint Editor (keep in mind that future updates via Plugin and Content Manager will overwrite any changes you make to the library. Make a copy of the library in a different location to safely apply any changes). To view or edit 3D model references select the "3D Models" tab at the top of the Footprint Properties window.

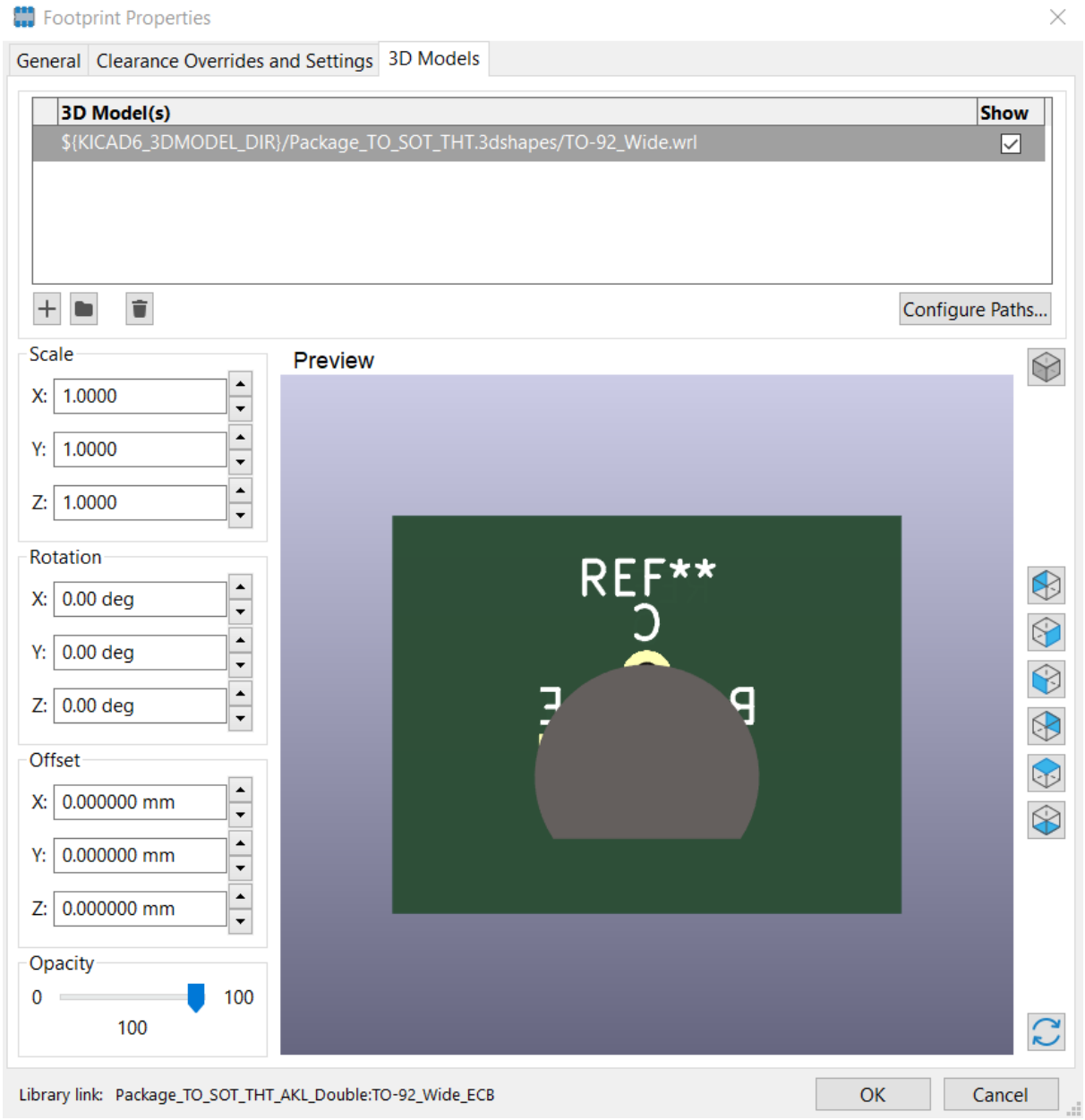


Figure 3.16. *Footprint Properties window switched to "3D Models" tab. You can add/edit 3D model's location in the 3D Model(s) table.*

3.1.7. Footprint Variants

Alternate KiCad Library often contains many different variants of the same footprint. Some of these variants include complete duplicate libraries with different silkscreen drawings. (Example: "Double" variant of a library has THT footprints with silkscreen markings on both sides of the PCB).

Designer can switch between these footprint variants depending on the required result (Example: PCB uses only THT components and is meant to be easy to troubleshoot – double sided silkscreen is recommended).

Replacing footprints by swapping libraries is relatively easy from the schematic window. Open the "Bulk-edit fields of all symbols in schematic" tool (table icon in the upper right-hand corner) and rename the library reference of a footprint to a desired library variant. Keep in mind that not all footprints might be present in the chosen variant library. After forward annotating changes to the PCB all footprints will be created or replaced as indicated in the table.

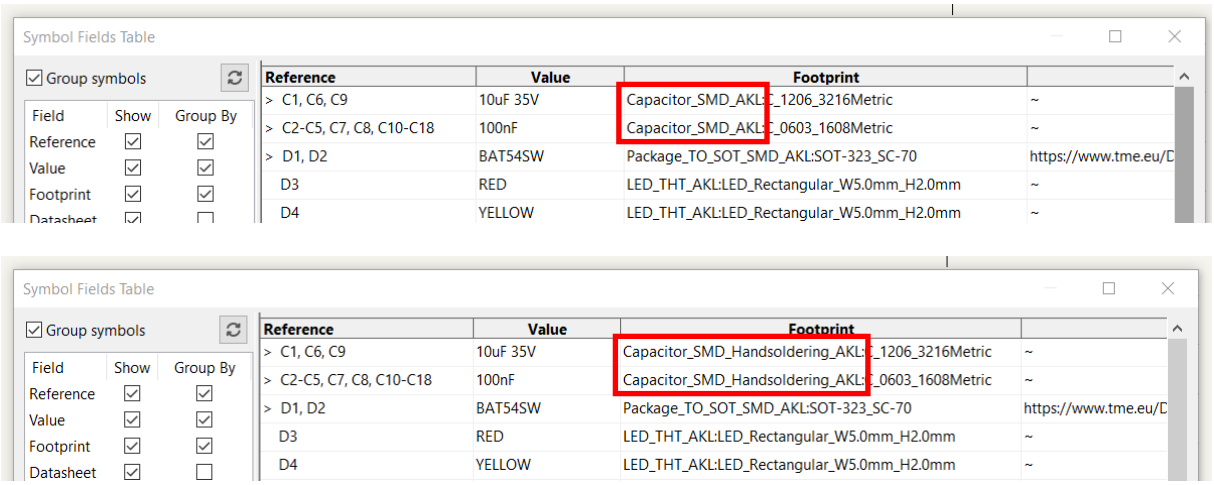


Figure 3.17. *Symbol fields table with initial footprint references (top) and edited footprint references (bottom). Library for the footprints was changed by adding "_Handsoldering" – new footprints will have silkscreen symbols under the parts.*

Handsoldering libraries:

Naming:
<Library name>_Handsoldering_AKL

These libraries contain SMD footprints with silkscreen symbols underneath the packages.

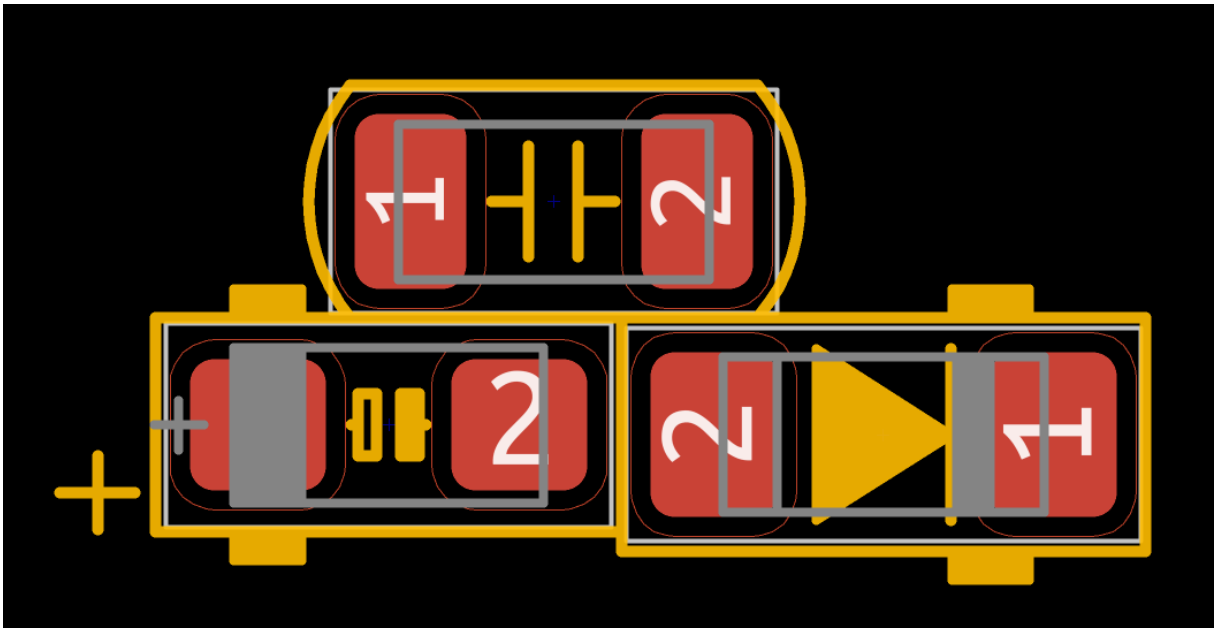


Figure 3.18. *"Handsoldering" footprint examples.*

Footprints with silkscreen symbols underneath the part bodies provide more clear information about component type and orientation, which might reduce placement errors during hand-assembly.

During reflow soldering height of the silkscreen under the part might lead to the component wobbling side-to-side and causing "tombstoning" (occurrence where a component is pulled into vertical orientation by liquid solder adhesion force on one of the pads). "Handsoldering" footprints are only recommended for prototypes or very low volume production where only hand-assembly is used.

Double-sided libraries:

Naming:
<Library name>_AKL_Double

These libraries contain THT footprints with silkscreen on both sides of the PCB.

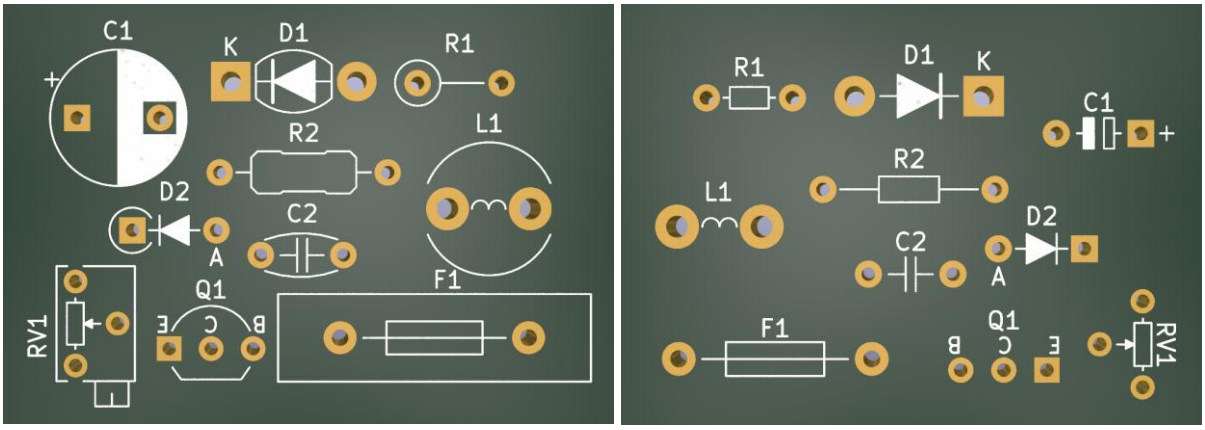


Figure 3.19. *"Double" footprint examples. PCB top view (left) and bottom view (right).*

Bottom silkscreen layer contains footprint electrical symbol, reference designator and optionally pin indicators. This information helps identify a component while looking at the bottom side of the PCB and is helpful during troubleshooting.

Silkscreen on the bottom side of the PCB might raise costs or potentially take away bottom-side component real estate and it's not recommended for high-density designs.

US-style symbol libraries

Naming:
<Library name>_US_AKL
<Library name>_US_Handsoldering_AKL
<Library name>_US_AKL_Double

Cross-compatible libraries:
<Library name>_AKL and <Library name>_US_AKL

These libraries contain footprints with alternate silkscreen symbols. Cross-compatible libraries have the exact same footprints (name, pads, spacing etc.) with only silkscreen layer being different. One or the other footprint library variants can be omitted during installation process without reducing effective functionality.

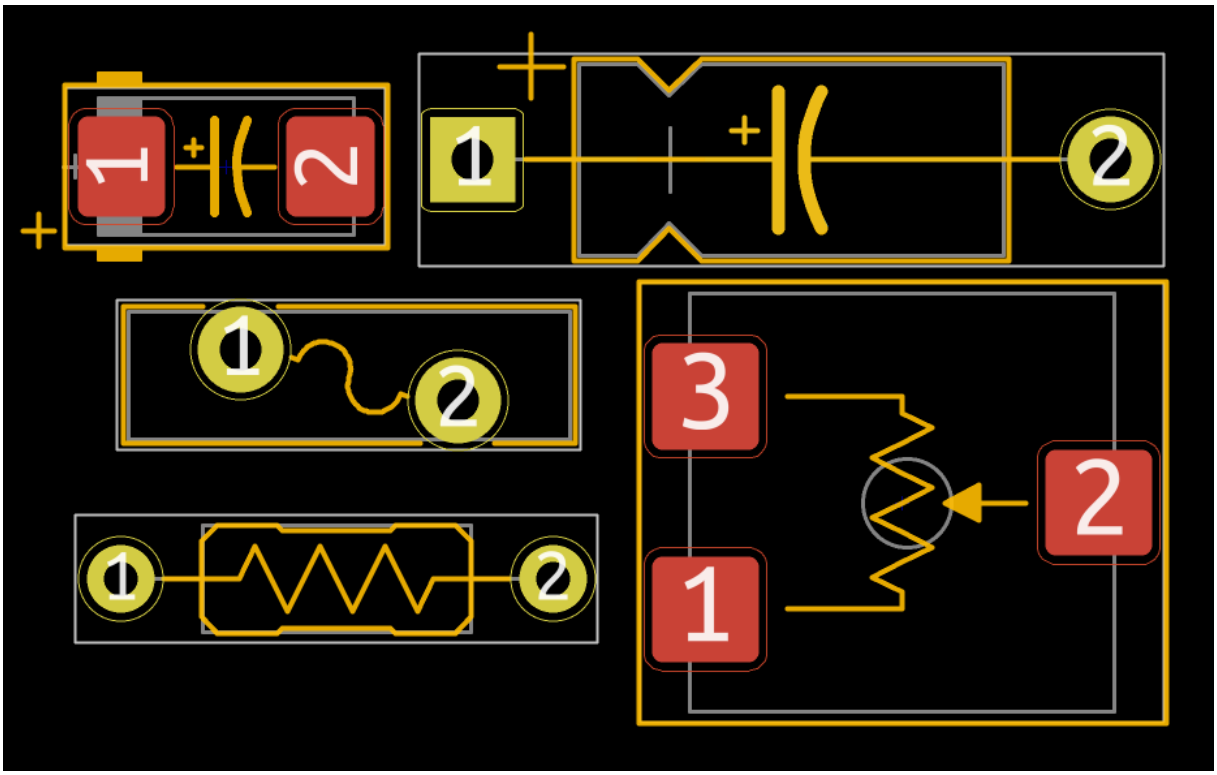


Figure 3.20. *"US" library variant footprint examples.*

3.2. SMD Capacitor Libraries

These libraries contain footprints for:
- MLCC chip capacitors,
- SMD aluminum polarized and bipolar electrolytic capacitors,
- SMD trimmers and variable capacitors.

Handsoldering library variant contains additional symbols on the silkscreen layer placed under the part.

Handsoldering (US symbol) library variant has additional US - style symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: **`Capacitor_SMD_AKL`**	
Footprint count:	**102**
Handsoldering variant	
Folder name: **`Capacitor_SMD_Handsoldering_AKL`**	
Footprint count:	**102**
Handsoldering variant (US symbol)	
Folder name: **`Capacitor_SMD_US_Handsoldering_AKL`**	
Footprint count:	**102**
Total footprints:	**306**

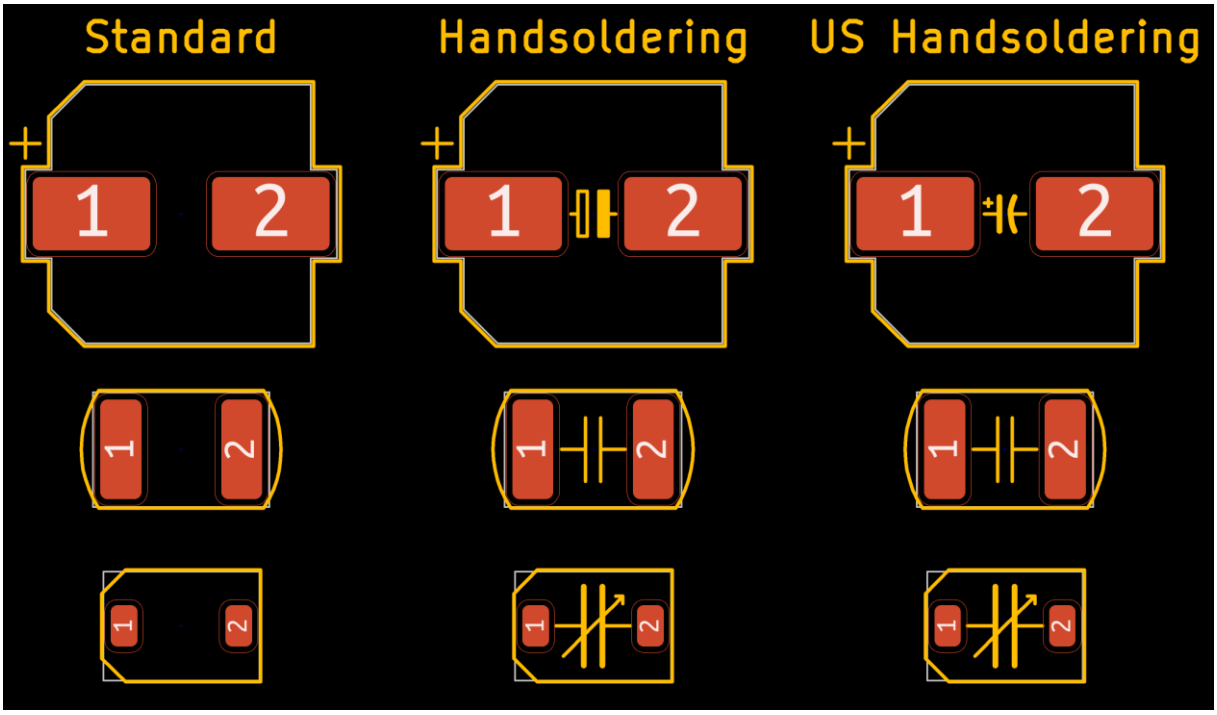


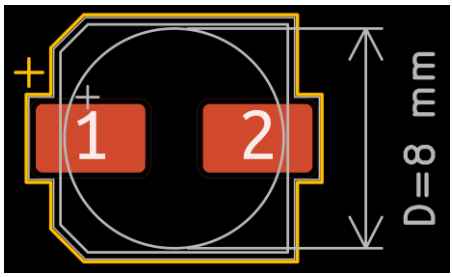
Figure 3.21. *Comparison between SMD capacitor footprints from different library variants.*

Polarized SMD electrolytic capacitor footprints

Footprint count: 42

Footprint naming convention:
CP_Elec_<diameter>**x**<height>

Name examples:
CP_Elec_5x5.9
CP_Elec_8x6.9



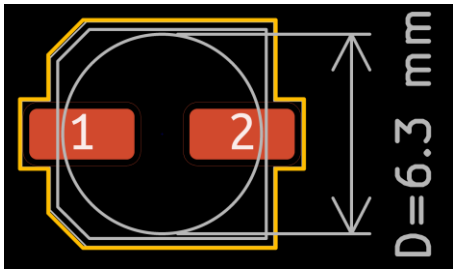
SMD electrolytic capacitor footprint with its diameter indicated.

Bipolar SMD electrolytic capacitor footprints

Footprint count: 9

Footprint naming convention:
C_Elec_<diameter>**x**<height>

Name examples:
C_Elec_5x5.8
C_Elec_8x6.2



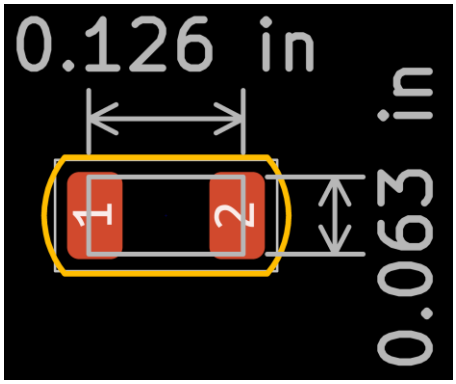
SMD bipolar electrolytic capacitor footprint with its diameter indicated.

SMD multi-layer chip capacitor (MLCC) footprints

Footprint count: 40

Footprint naming convention:
C_<imp. size code>_<metric size code>**Metric**
(optional: **_Pad**<pad width>**x**<pad length>**mm)**

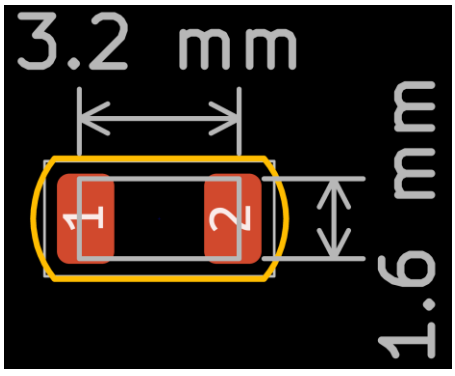
Name examples:
C_0805_2012Metric
C_0603_1608Metric_Pad1.08x095mm



MLCC with 1206 imperial size code with length and width of the package indicated.

Imperial size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.01 in. Example: 0805 size code means package length of 0.08 in and width of 0.05 in.

Metric size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.1 mm. Example: 2012 metric size code means package length of 2 mm and width of 1.2 mm.

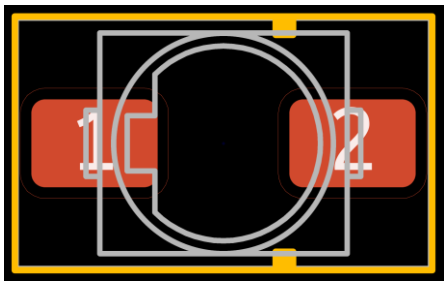


MLCC with 3216 metric size code with length and width of the package indicated.

Murata TZB4-A SMD trimmer footprint

Footprint name:
C_Trimmer_Murata_TZB4-A

Two squares on the silkscreen layer line up with the cutout in the underside of TZB4-A trimmer. If mounting direction is observed, external electrode is connected to pad 2.

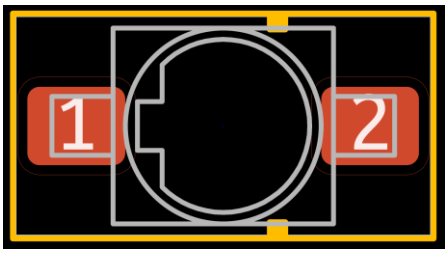


TZB4-A trimmer footprint.

Murata TZB4-B SMD trimmer footprint

Footprint name:
C_Trimmer_Murata_TZB4-B

Two squares on the silkscreen layer line up with the cutout in the underside of TZB4-B trimmer. If mounting direction is observed, external electrode is connected to pad 2.

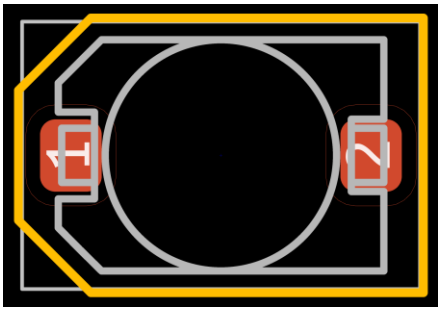


TZB4-B trimmer footprint.

Murata TZC3 SMD trimmer footprint

Footprint name:
C_Trimmer_Murata_TZC3

Slanted outline on the silkscreen layer lines up with the shape of the TZC3 trimmer body. If mounting direction is observed, external electrode is connected to pad 2.

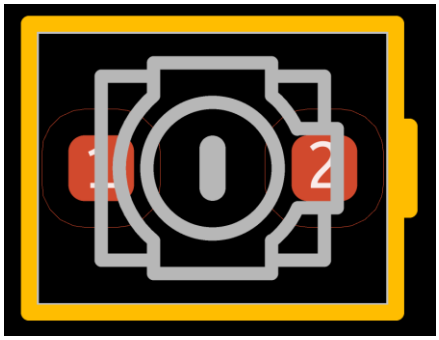


TZC3 trimmer footprint.

Murata TZR1 SMD trimmer footprint

Footprint name:
C_Trimmer_Murata_TZR1

Mark on the silkscreen layer lines up with the stator terminal of the TZR1 trimmer. If mounting direction is observed, external electrode is connected to pad 2.

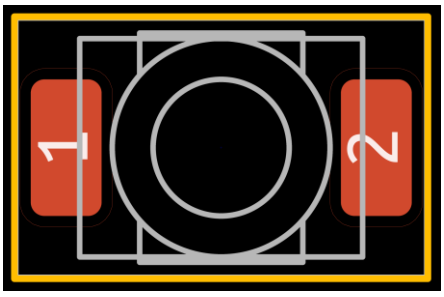


TZR1 trimmer footprint.

Murata TZW4 SMD trimmer footprint

Footprint name:
C_Trimmer_Murata_TZW4

TZW4 trimmer has no visible directional marks on its body, so there are no marks on the silkscreen and fab layers.

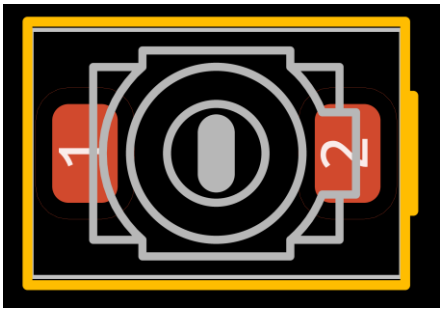


TZW4 trimmer footprint.

Murata TZY2 SMD trimmer footprint

Footprint name:
C_Trimmer_Murata_TZY2

Mark on the silkscreen layer lines up with the stator terminal of the TZY2 trimmer. If mounting direction is observed, external electrode is connected to pad 2.

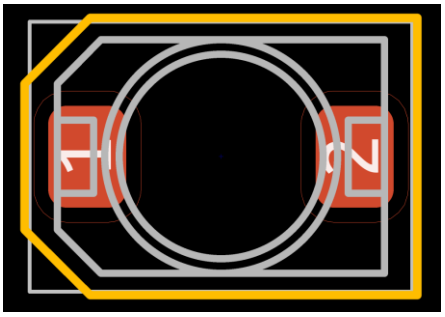


TZY2 trimmer footprint.

Sprague-Goodman SGC3 SMD trimmer footprint

Footprint name:
C_Trimmer_Sprague-Goodman_SGC3

Slanted outline on the silkscreen layer lines up with the shape of the SGC3 trimmer body. If mounting direction is observed, external electrode is connected to pad 2.

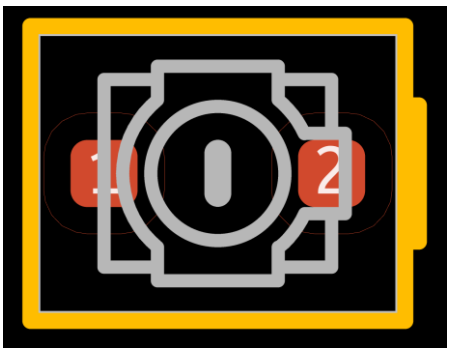


SGC3 trimmer footprint.

Voltronics JN SMD trimmer footprint

Footprint name:
C_Trimmer_Voltronics_JN

Mark on the silkscreen layer lines up with the stator terminal of the JN trimmer. If mounting direction is observed, external electrode is connected to pad 2.

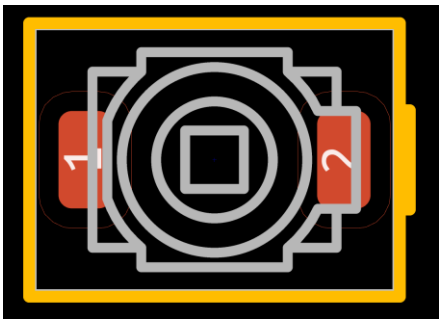


JN trimmer footprint.

Voltronics JQ SMD trimmer footprint

Footprint name:
C_Trimmer_Voltronics_JQ

Mark on the silkscreen layer lines up with the stator terminal of the JQ trimmer. If mounting direction is observed, external electrode is connected to pad 2.

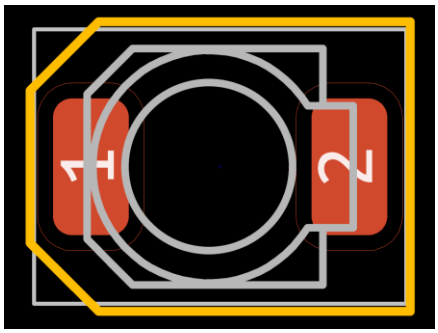


JQ trimmer footprint.

Voltronics JR SMD trimmer footprint

Footprint name:
C_Trimmer_Voltronics_JR

Slanted outline on the silkscreen layer lines up with the shape of the JR trimmer body. If mounting direction is observed, external electrode is connected to pad 2.

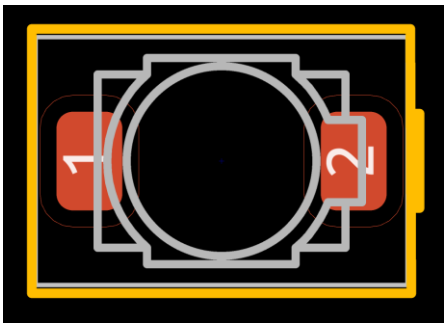


JR trimmer footprint.

Voltronics JV SMD trimmer footprint

Footprint name:
C_Trimmer_Voltronics_JV

Mark on the silkscreen layer lines up with the stator terminal of the JV trimmer. If mounting direction is observed, external electrode is connected to pad 2.

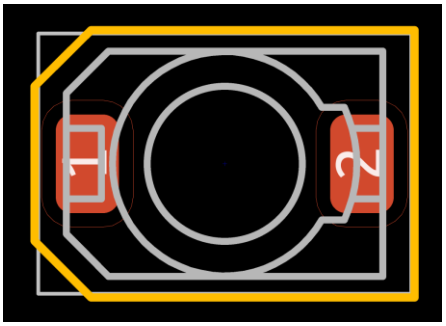


JV trimmer footprint.

Voltronics JZ SMD trimmer footprint

Footprint name:
C_Trimmer_Voltronics_JZ

Slanted outline on the silkscreen layer lines up with the shape of the JZ trimmer body. If mounting direction is observed, external electrode is connected to pad 2.



JZ trimmer footprint.

3.3. SMD Tantalum Capacitor Libraries

These libraries contain SMD tantalum capacitor footprints

Handsoldering library variant contains additional symbols on the silkscreen layer placed under the part.

Handsoldering (US symbol) library variant has additional US - style symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: **`Capacitor_Tantalum_SMD_AKL`**	
Footprint count:	**56**
Handsoldering variant	
Folder name: **`Capacitor_Tantalum_SMD_Handsoldering_AKL`**	
Footprint count:	**56**
Handsoldering variant (US symbol)	
Folder name: **`Capacitor_Tantalum_SMD_US_Handsoldering_AKL`**	
Footprint count:	**56**
Total footprints:	**168**

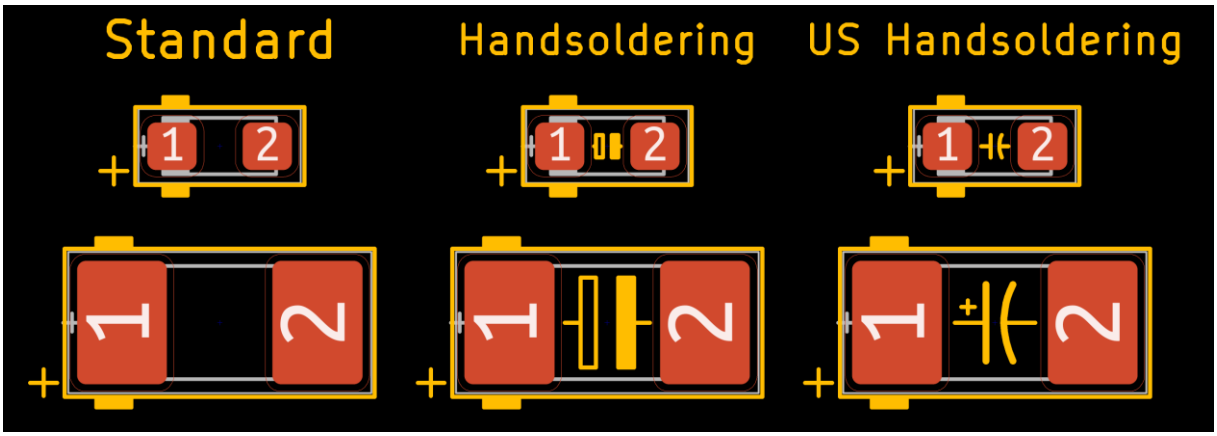


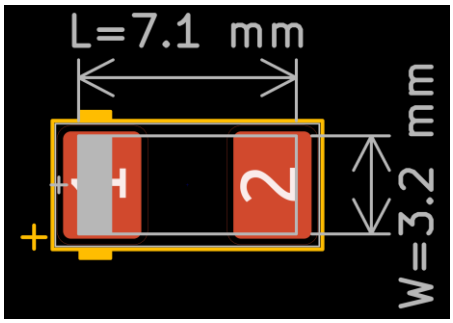
Figure 3.22. *Comparison between footprints from different library variants.*

SMD tantalum capacitor footprints

Footprint count: **56**

Footprint naming convention:
CP_EIA-<metric size code>**-**<height>_<manufacturer size>
(optional: **_Pad**<pad width>**x**<pad length>**mm)**

Name examples:
CP_EIA-3216-12_Kemet-S
CP_EIA-6032-28_Kemet-C_Pad2.25x2.35mm



7132 SMD tantalum capacitor footprint with its length and width indicated.

Two rectangles on the silkscreen layer line up with the positive electrode marking band on the capacitor package. Positive terminal is additionally marked with a plus sign on the silkscreen layer.

3.4. THT Capacitor Libraries

These libraries contain footprints for:
- Axial electrolytic capacitors,
- Radial electrolytic capacitors,
- Axial non-polarized capacitors,
- Ceramic disc capacitors,
- Radial non-polarized capacitors,
- THT tantalum capacitors,
- Rectangular film capacitors,
- Trimmers and variable capacitors.

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

US symbol library variants use the US - style electrolytic capacitor symbol instead of the standard one on the silkscreen.

Standard variant	
Folder name: `Capacitor_THT_AKL`	
Footprint count:	**597**
Double-sided variant	
Folder name: `Capacitor_THT_AKL_Double`	
Footprint count:	**597**
Standard variant (US symbol)	
Folder name: `Capacitor_THT_US_AKL`	
Footprint count:	**597**
Double-sided variant (US symbol)	
Folder name: `Capacitor_THT_US_AKL_Double`	
Footprint count:	**597**
Total footprints:	**2388**

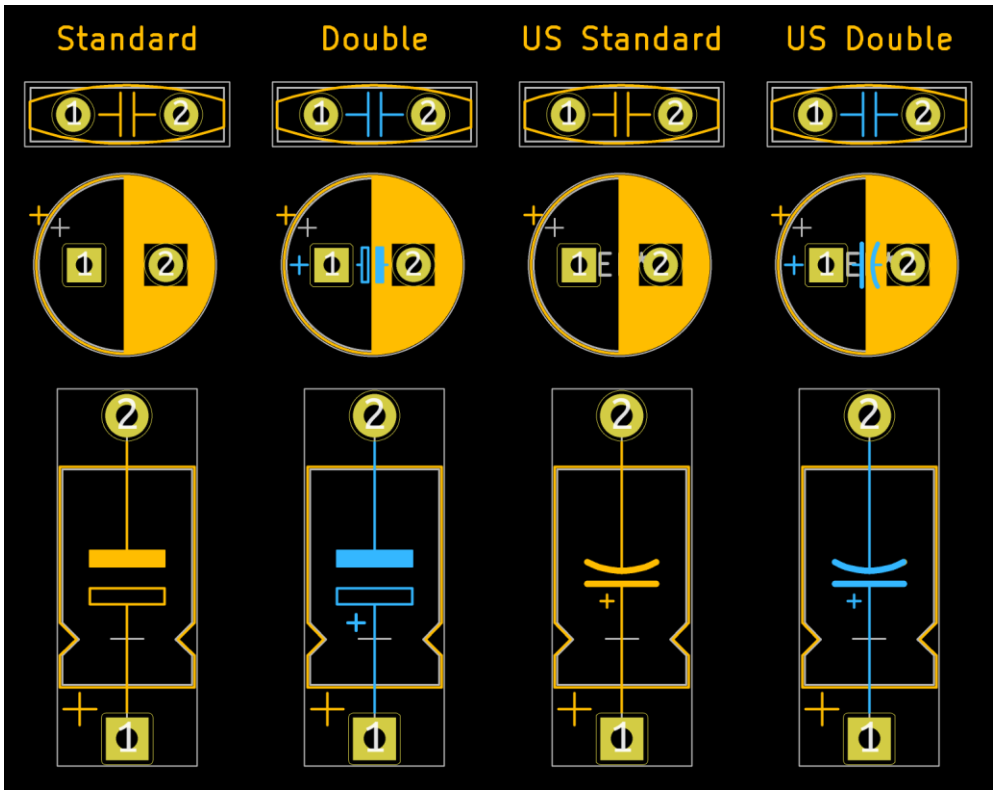


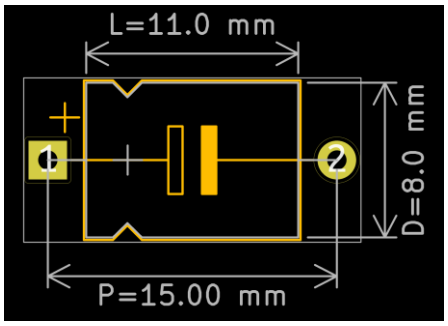
Figure 3.23. *Comparison between THT capacitor footprints from different library variants.*

Axial electrolytic capacitor footprints

Footprint count: **99**

Footprint naming convention:
CP_Axial_L<length>_**D**<diameter>_**P**<pitch>_**Horizontal**
(optional: _**Supported** for footprint variants with holes along the capacitor body meant to serve as structural supports)

Name examples:
CP_Axial_L25.0mm_D10.0mm_P30.00mm_Horizontal
CP_Axial_L37.0mm_D13.0mm_P43.00mm_Horizontal_Supported



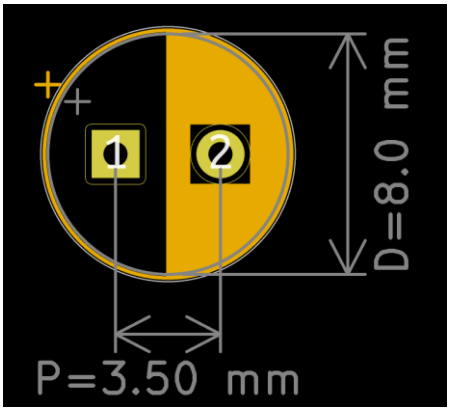
Axial electrolytic capacitor footprint with its dimensions indicated.

Radial electrolytic capacitor footprints

Footprint count: **28**

Footprint naming convention:
CP_Axial_D<diameter>_**P**<pitch>

Name examples:
CP_Radial_D5.0mm_P2.00mm
CP_Radial_D10.0mm_P2.50mm_P5.00mm



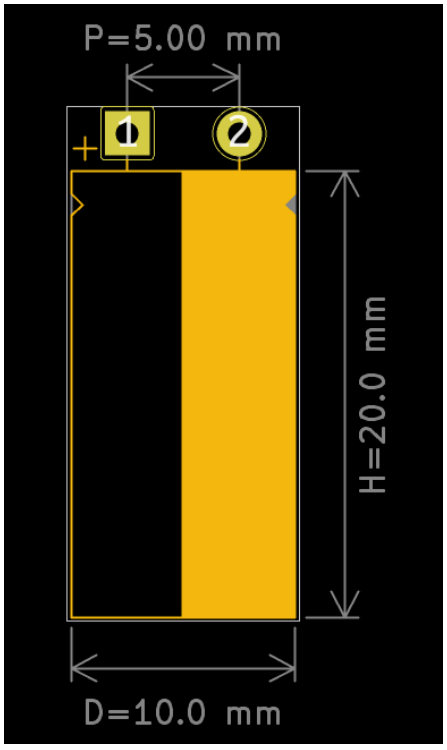
Radial electrolytic capacitor footprint with its dimensions indicated.

Horizontal radial electrolytic capacitor footprints

Footprint count: **136**

Footprint naming convention:
CP_Radial_D<diameter>_**P**<pitch>_**H**<height>_**Horizontal**
<1 – bent down, 2 – bent up>
(optional: _**Supported** for footprint variants with holes along the capacitor body meant to serve as structural supports)

Name examples:
CP_Radial_D10.0mm_P5.00mm_H40mm_Horizontal1
CP_Radial_D8.0mm_P3.50mm_H30mm_Horizontal1_Supported
CP_Radial_D16.0mm_P7.50mm_H35mm_Horizontal2
CP_Radial_D18.0mm_P7.50mm_H60mm_Horizontal2_Supported



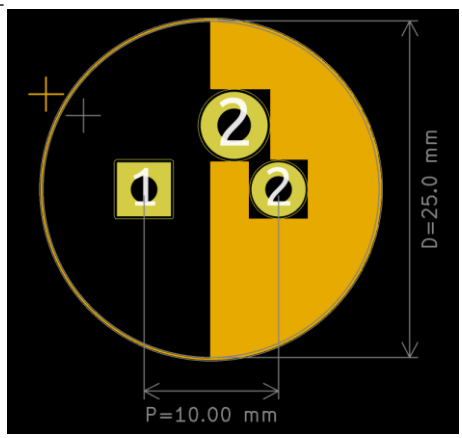
Horizontal radial electrolytic capacitor footprint with its diameter indicated.

Snap-in electrolytic capacitor footprints

Footprint count: **14**

Footprint naming convention:
CP_Radial_D<diameter>**_P**<pitch>_<SnapIn or 3pin_Snapin>

Name examples:
CP_Radial_D22.0mm_P10.00mm_SnapIn
CP_Radial_D35.0mm_P10.00mm_3pin_SnapIn



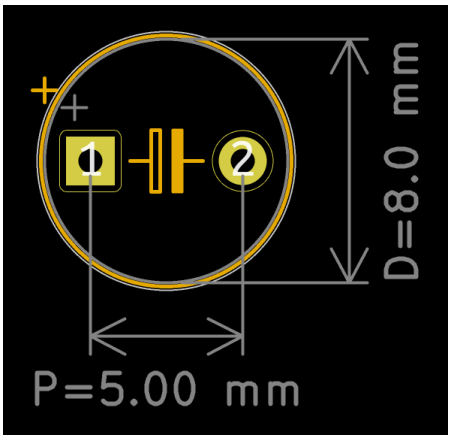
Axial electrolytic snap-in capacitor footprint with its dimensions indicated.

Radial tantalum electrolytic capacitor footprints

Footprint count: **16**

Footprint naming convention:
CP_Radial_Tantal_D<diameter>**_P**<pitch>

Name examples:
CP_Radial_Tantal_D4.5mm_P2.50mm
CP_Radial_Tantal_D9.0mm_P5.00mm



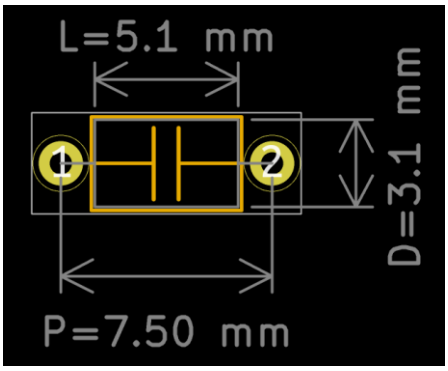
Tantalum electrolytic capacitor footprint with its dimensions indicated.

Axial non-polarized capacitor footprints

Footprint count: **56**

Footprint naming convention:
C_Axial_L<length>**_D**<diameter>**_P**<pitch>**_Horizontal**

Name examples:
C_Axial_L3.0mm_D2.3mm_P20.00mm_Horizontal
C_Axial_L19.0mm_D8.0mm_P25.00mm_Horizontal



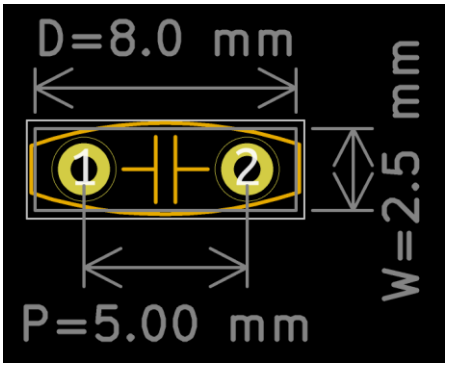
Axial capacitor footprint with its dimensions indicated.

Disc ceramic capacitor footprints

Footprint count: 38

Footprint naming convention:
C_Disc_D<diameter>_**W**<width>_**P**<pitch>

Name examples:
C_Disc_D3.8mm_W2.6mm_P2.50mm
C_Disc_D8.0mm_W5.0mm_P10.00mm



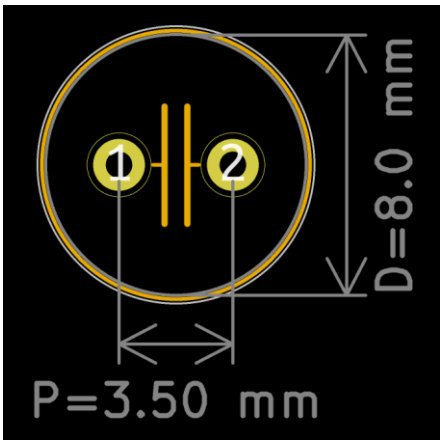
Disc ceramic capacitor footprint with its dimensions indicated.

Radial non-polarized capacitor footprints

Footprint count: 18

Footprint naming convention:
C_Radial_D<diameter>_**H**<height>_**P**<pitch>

Name examples:
C_Radial_D5.0mm_H7.0mm_P2.00mm
C_Radial_D16.0mm_H25.0mm_P7.50mm



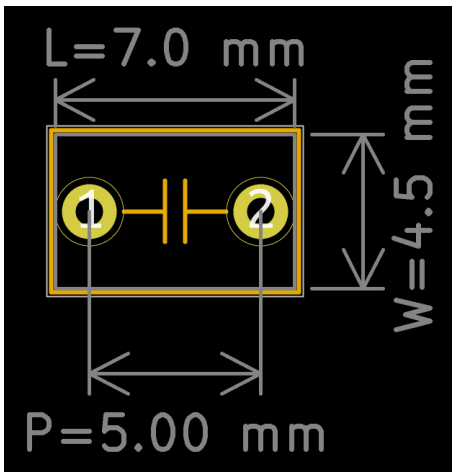
Radial non-polarized capacitor footprint with its dimensions indicated.

Rectangular film capacitor footprints

Footprint count: 179

Footprint naming convention:
C_Rect_L<length>_**W**<width>_**P**<pitch>

Name examples:
C_Rect_L4.6mm_W5.5mm_P2.50mm_MKS02_FKP02
C_Rect_L10.0mm_W5.0mm_P5.000mm_P7.50mm
C_Rect_L27.0mm_W9.0mm_P22.00mm



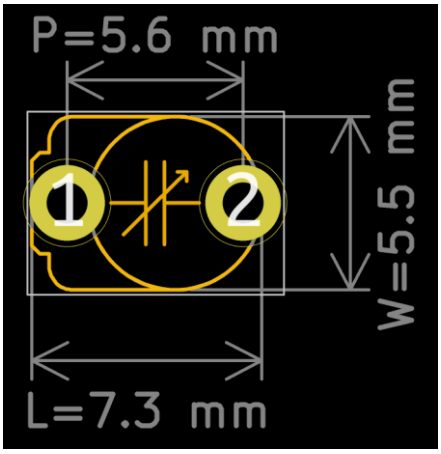
Rectangular footprint with its dimensions indicated.

BFC2-808 5mm series trimmer footprints

Footprint names:
C_Trimmer_BFC2-808_L7.3mm_W5.5mm_P5.6mm
C_Trimmer_BFC2-808_L7.3mm_W5.5mm_P5.6mm_Hole
C_Trimmer_BFC2-808_L7.3mm_W5.5mm_P5.08mm

Silkscreen outline matches the body shape of BFC2-808 trimmer. If mounting orientation is observed, external electrode is connected to pad 2.

Footprint variant with '_Hole' suffix has a NPTH hole included in the footprint meant to provide access to trimmer's head from the bottom of the PCB.



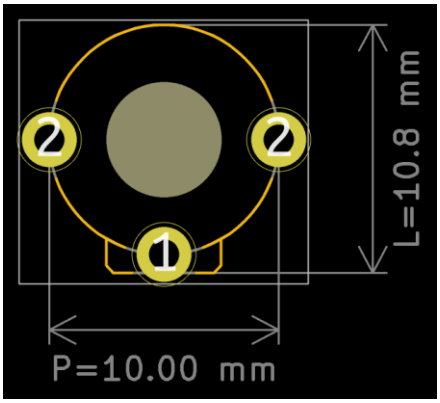
BFC2-808 trimmer footprint with all relevant dimensions indicated.

BFC2-808 10mm series trimmer footprints

Footprint names:
C_Trimmer_BFC2-808_L10.8mm_W10.6mm_P5mm
C_Trimmer_BFC2-808_L10.8mm_W10.6mm_P5mm_Hole
C_Trimmer_BFC2-808_L10.8mm_W10.6mm_P10mm
C_Trimmer_BFC2-808_L10.8mm_W10.6mm_P10mm_Hole

Silkscreen outline matches the body shape of BFC2-808 trimmer. If mounting orientation is observed, external electrode is connected to pads number 2.

Footprint variant with '_Hole' suffix has a NPTH hole included in the footprint meant to provide access to trimmer's rotor from the bottom of the PCB.

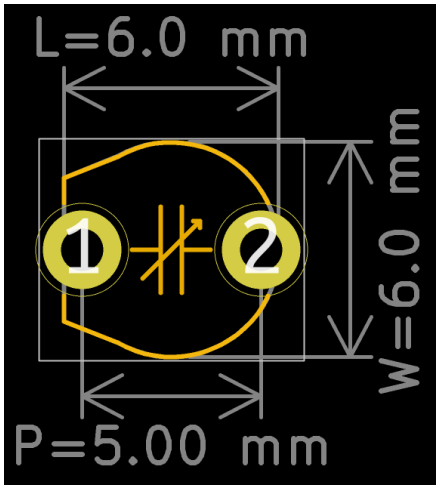


BFC2-808 trimmer footprint with all relevant dimensions indicated. Variant with NPTH hole for bottom access.

GKG15 trimmer footprint

Footprint name:
C_Trimmer_GKG15_L6.0mm_W6.0mm_P5.0mm

Silkscreen outline matches the body shape of GKG15 trimmer. If mounting orientation is observed, external electrode is connected to pad 2.



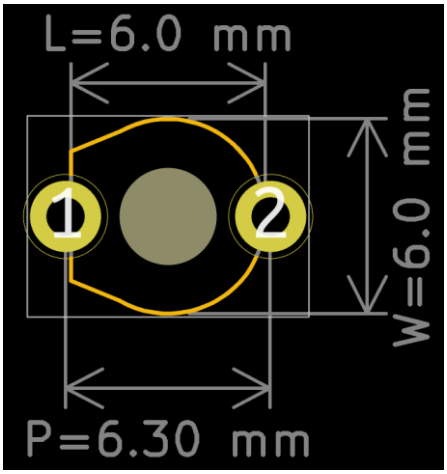
GKG15 trimmer footprint.

GKG16 trimmer footprint

Footprint name:
C_Trimmer_GKG16_L6.0mm_W6.0mm_P6.3mm_Hole

Silkscreen outline matches the body shape of GKG16 trimmer. If mounting orientation is observed, external electrode is connected to pad 2.

This footprint has a NPTH hole included, that allows acces to trimmer's rotor.

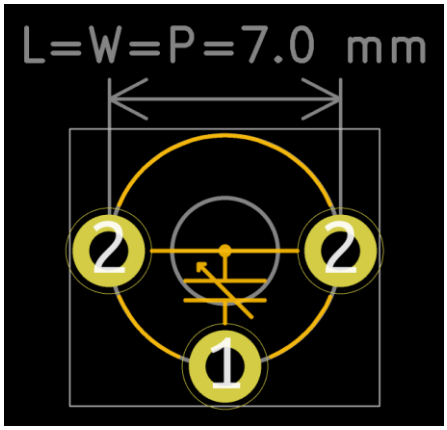


GKG16 trimmer footprint.

GKT trimmer footprint

Footprint name:
C_Trimmer_GKT_L7.0mm_W7.0mm_P7.0mm_Hole

Silkscreen outline matches the body shape of GKT trimmer. If mounting orientation is observed, external electrode is connected to pads number 2.

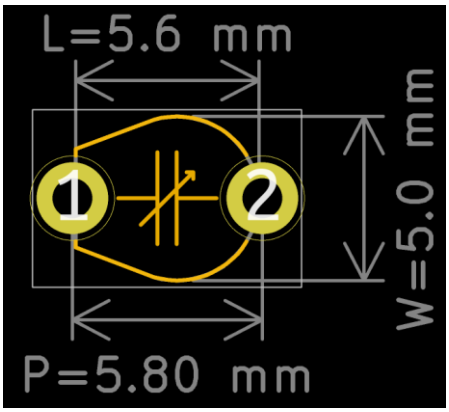


GKT trimmer footprint.

GKU trimmer footprint

Footprint name:
C_Trimmer_GKU_L7.0mm_W7.0mm_P7.0mm_Hole

Silkscreen outline matches the body shape of GKU trimmer. If mounting orientation is observed, external electrode is connected to pads number 2.



GKU trimmer footprint.

3.5. Crystal Resonator Libraries

These libraries contain footprints for:
- THT crystal resonators
- SMD crystal resonators
- THT ceramic resonators/filters
- SMD ceramic resonators/filters

Double-sided library variant contains THT footprints with both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Handsoldering library variant contains SMD footprints with additional symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: `Crystal_AKL`	
Footprint count:	**180**(+1)
Double-sided variant	
Folder name: `Crystal_AKL_Double`	
Footprint count:	**56**
Handsoldering variant	
Folder name: `Crystal_Handsoldering_AKL`	
Footprint count:	**104**(+1)
Total footprints:	**340**(+2)

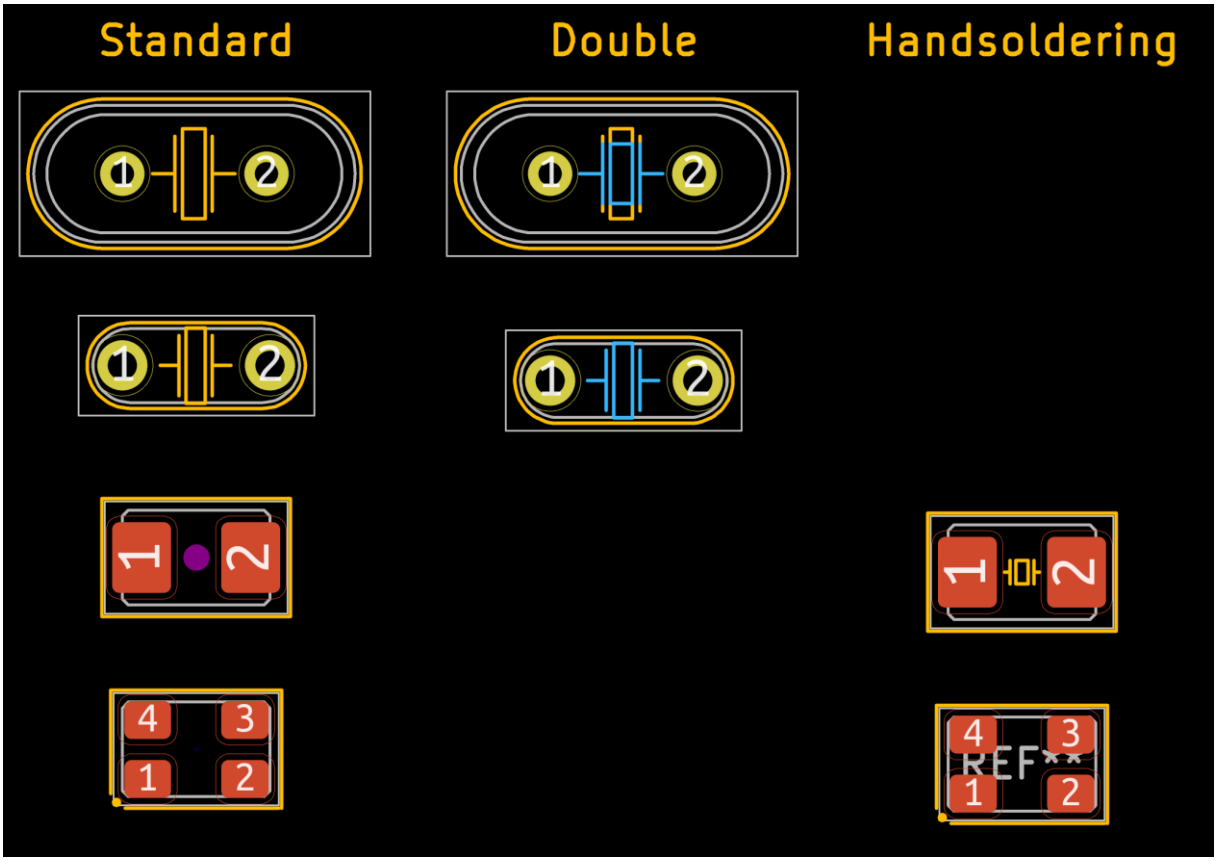


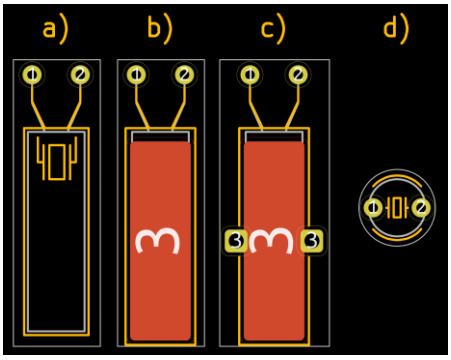
Figure 3.24. *Comparison between crystal footprints from different library variants.*

AT310 crystal footprints

Footprint names:
Crystal_AT310_D3.0mm_L10.0mm_Horizontal
Crystal_AT310_D3.0mm_L10.0mm_Horizontal_1EP-style1
Crystal_AT310_D3.0mm_L10.0mm_Horizontal_1EP-style2
Crystal_AT310_D3.0mm_L10.0mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



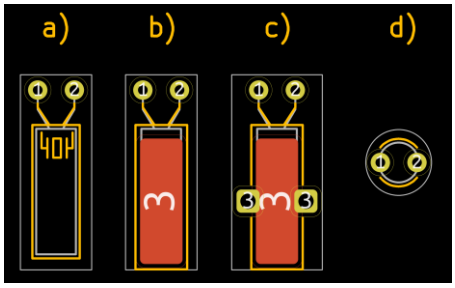
AT310 crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

C26-LF crystal footprints

Footprint names:
Crystal_C26-LF_D2.1mm_L6.5mm_Horizontal
Crystal_C26-LF_D2.1mm_L6.5mm_Horizontal_1EP-style1
Crystal_C26-LF_D2.1mm_L6.5mm_Horizontal_1EP-style2
Crystal_C26-LF_D2.1mm_L6.5mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

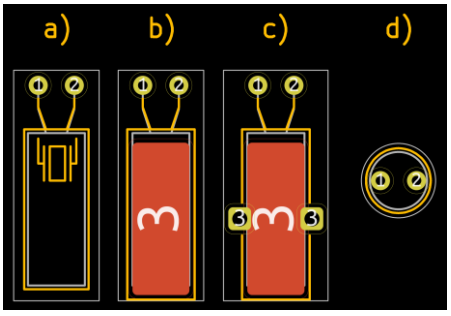
Designs that require high density of components can use the vertical variant of the footprint instead.



C26-LF crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

C38-LF crystal footprints

Footprint names:
Crystal_C38-LF_D3.0mm_L8.0mm_Horizontal
Crystal_C38-LF_D3.0mm_L8.0mm_Horizontal_1EP-style1
Crystal_C38-LF_D3.0mm_L8.0mm_Horizontal_1EP-style2
Crystal_C38-LF_D3.0mm_L8.0mm_Vertical



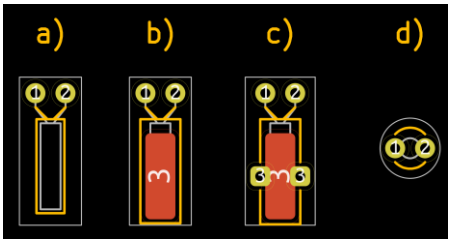
Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.

C38-LF crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

DS10 crystal footprints

Footprint names:
Crystal_DS10_D1.0mm_L4.3mm_Horizontal
Crystal_DS10_D1.0mm_L4.3mm_Horizontal_1EP-style1
Crystal_DS10_D1.0mm_L4.3mm_Horizontal_1EP-style2
Crystal_DS10_D1.0mm_L4.3mm_Vertical



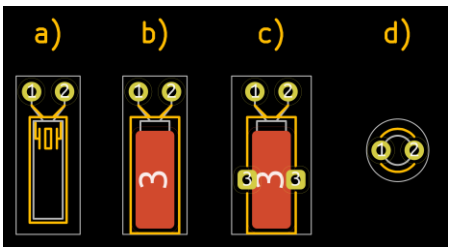
DS10 crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.

DS15 crystal footprints

Footprint names:
Crystal_DS15_D1.5mm_L5.0mm_Horizontal
Crystal_DS15_D1.5mm_L5.0mm_Horizontal_1EP-style1
Crystal_DS15_D1.5mm_L5.0mm_Horizontal_1EP-style2
Crystal_DS15_D1.5mm_L5.0mm_Vertical

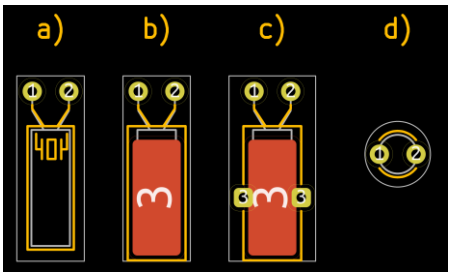


DS15 crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.

DS26 crystal footprints



Footprint names:
Crystal_DS26_D2.0mm_L6.0mm_Horizontal
Crystal_DS26_D2.0mm_L6.0mm_Horizontal_1EP-style1
Crystal_DS26_D2.0mm_L6.0mm_Horizontal_1EP-style2
Crystal_DS26_D2.0mm_L6.0mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.

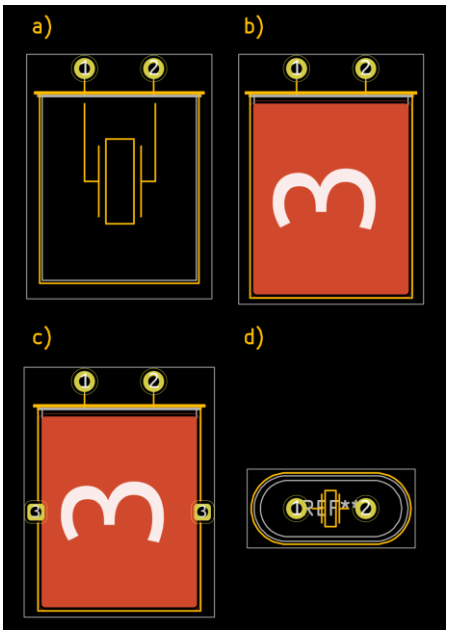
DS26 crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

HC18 crystal footprints

Footprint names:
Crystal_HC18-U_Horizontal
Crystal_HC18-U_Horizontal_1EP-style1
Crystal_HC18-U_Horizontal_1EP-style2
Crystal_HC18-U_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



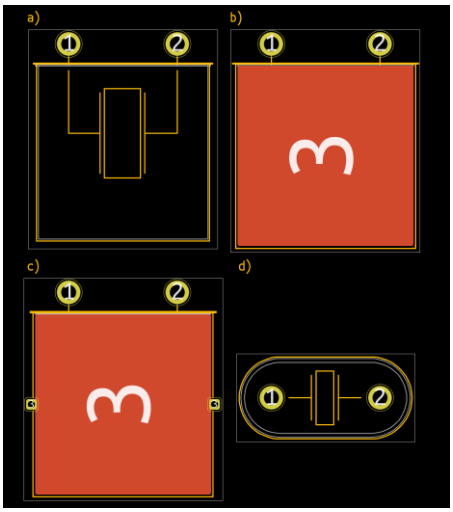
HC18 crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

HC33 crystal footprints

Footprint names:
Crystal_HC33-U_Horizontal
Crystal_HC33-U_Horizontal_1EP-style1
Crystal_HC33-U_Horizontal_1EP-style2
Crystal_HC33-U_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



HC33 crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

HC35 crystal footprint

Footprint name:
Crystal_HC35-U

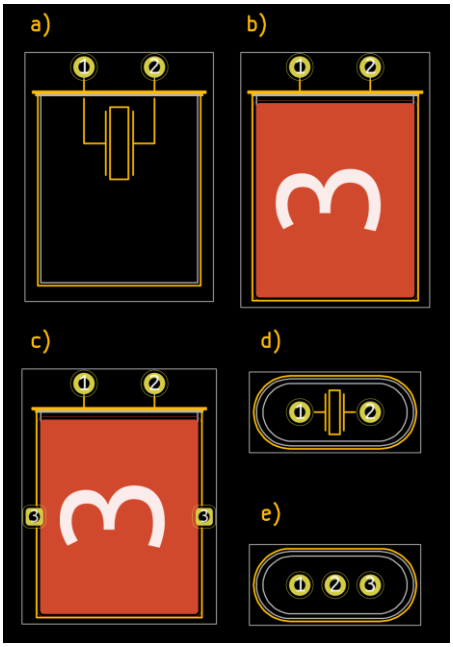
HC35 Crystal footprint.

HC49 crystal footprints

Footprint names:
Crystal_HC49-4H_Vertical
Crystal_HC49-U-3Pin_Vertical
Crystal_HC49-U_Horizontal
Crystal_HC49-U_Horizontal_1EP-style1
Crystal_HC49-U_Horizontal_1EP-style2
Crystal_HC49-U_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



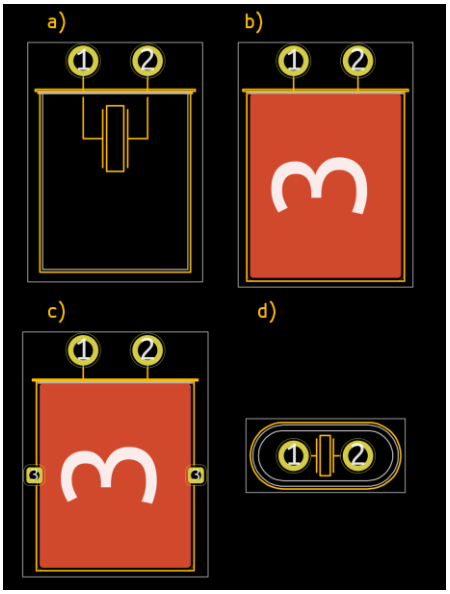
HC49 crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.
e) 3-pin vertical footprint.

HC50 crystal footprints

Footprint names:
Crystal_HC50_Horizontal
Crystal_HC50_Horizontal_1EP-style1
Crystal_HC50_Horizontal_1EP-style2
Crystal_HC50_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



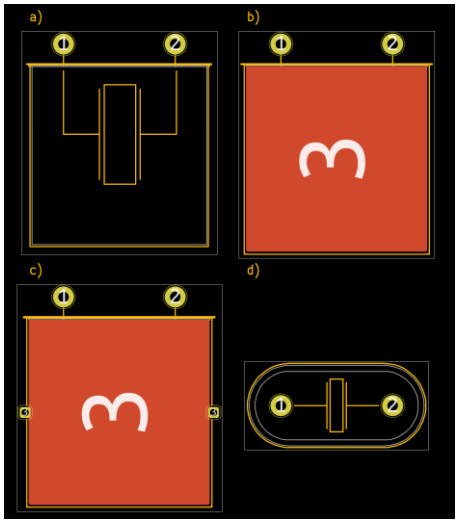
HC50 crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

HC51 crystal footprints

Footprint names:
Crystal_HC51_Horizontal
Crystal_HC51_Horizontal_1EP-style1
Crystal_HC51_Horizontal_1EP-style2
Crystal_HC51-U_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



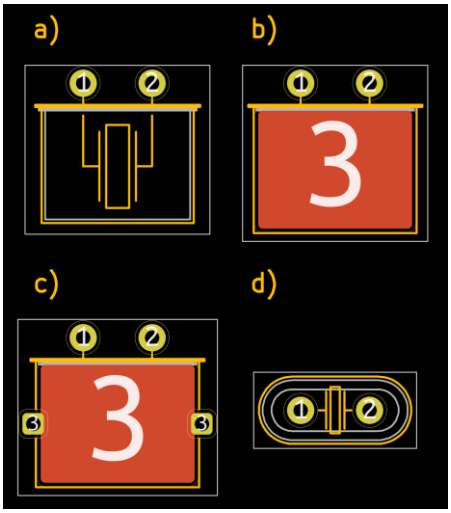
HC51 crystal footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

HC52 6mm crystal footprints

Footprint names:
Crystal_HC52-6mm_Horizontal
Crystal_HC52-6mm_Horizontal_1EP-style1
Crystal_HC52-6mm_Horizontal_1EP-style2
Crystal_HC52-6mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



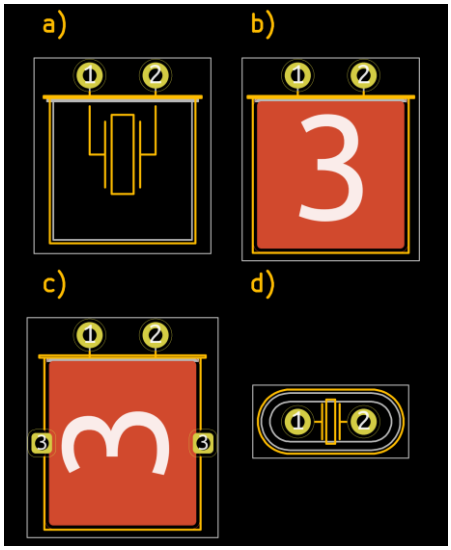
HC52 crystal (6mm package height) footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

HC52 8mm crystal footprints

Footprint names:
Crystal_HC52-8mm_Horizontal
Crystal_HC52-8mm_Horizontal_1EP-style1
Crystal_HC52-8mm_Horizontal_1EP-style2
Crystal_HC52-8mm_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



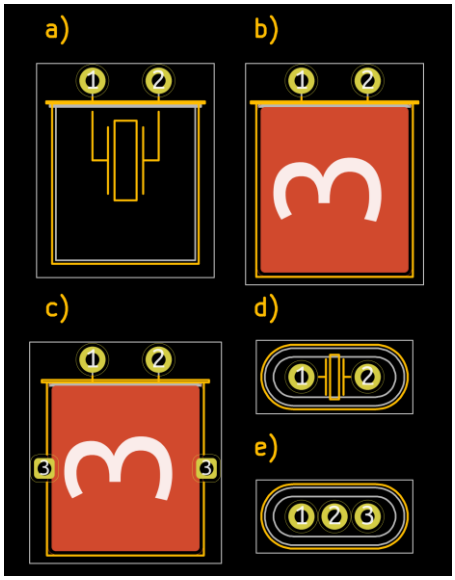
HC52 crystal (8mm package height) footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.

HC52 standard crystal footprints

Footprint names:
Crystal_HC52-U_Horizontal
Crystal_HC52-U_Horizontal_1EP-style1
Crystal_HC52-U_Horizontal_1EP-style2
Crystal_HC52-U_Vertical
Crystal_HC52-U-3Pin_Vertical

Metal case of the crystal should be connected to ground to provide additional shielding. Crystal can be soldered down directly (1EP-style1) or held down by a wire that is soldered to the board (1EP-style2).

Designs that require high density of components can use the vertical variant of the footprint instead.



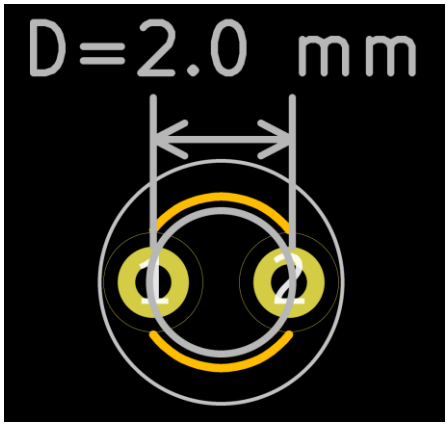
HC52 crystal (standard 9mm package height) footprint variants.
a) Standard horizontal footprint.
b) Horizontal footprint with exposed pad under the crystal body (1EP-style1).
c) Horizontal footprint with GND pad and holes for mounting structural support for the crystal (1EP-style2).
d) Standard vertical footprint.
e) 3-pin vertical footprint.

Round crystal footprints

Footprint count: 4

Footprint naming convention:
Crystal_Round_D<diameter>**_Vertical**

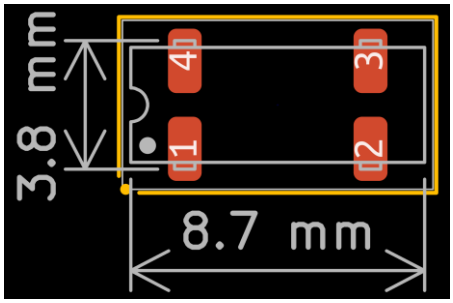
Name examples:
Crystal_Round_D1.0mm_Vertical
Crystal_Round_D3.0mm_Vertical



Round crystal footprint with its diameter indicated.

SMD 8.7x3.8mm crystal footprint (new)

Footprint name:
Crystal_SMD_8.7x3.8mm_P5.50m



8.7x3.8mm SMD crystal footprint.

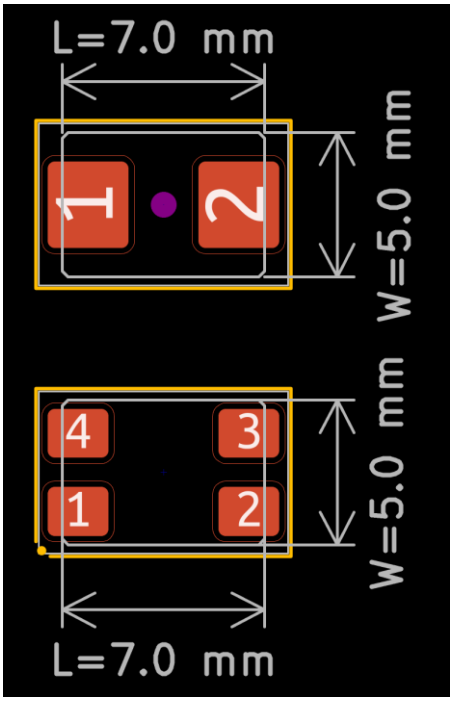
SMD Crystal footprints

Footprint count: 17

Footprint naming convention:
Crystal_SMD_<size code>**-**<no. of pads>
Pin_<length>**x**<width>**mm**
(optional: **_BigPads** suffix denotes a footprint with enlarged pads**)**

Note: crystal footprints with size code of 0603 (mfg. size code) are in fact sized like their code should be 6035 (their dimensions are 6.0x3.5mm, not 0.6x0.3mm).

Name examples:
Crystal_SMD_2012-2Pin_2.0x1.2mm
Crystal_SMD_5032-4Pin_5.0x3.2mm
Crystal_SMD_0603-2Pin_6.0x3.5mm_HandSoldering

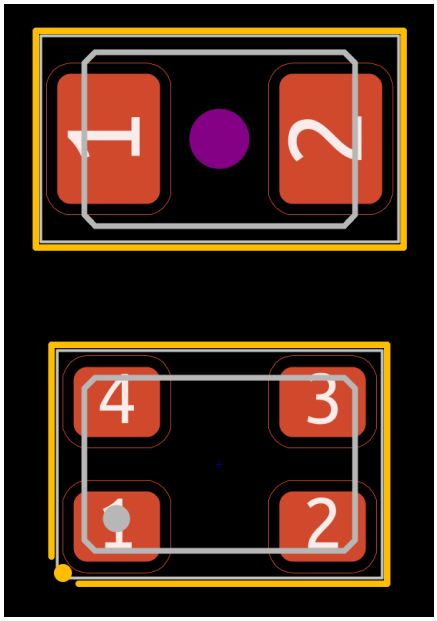


Two crystal footprints with a size of 7050.
Top: 2-pin variant.
Bottom: 4-pin variant.

Abracon ABM3 series crystal footprints

Footprint names:
Crystal_SMD_Abracon_ABM3-2Pin_5.0x3.2mm
Crystal_SMD_Abracon_ABM3_2Pin_5.0x3.2mm_BigPads
Crystal_SMD_Abracon_ABM3B-4Pin_5.0x3.2mm
Crystal_SMD_Abracon_ABM3C-4Pin_5.0x3.2mm

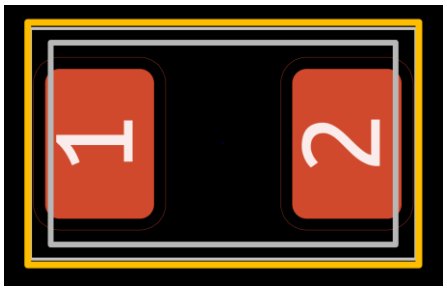
Note: BigPads suffix denotes a footprint with enlarged pads.



ABM3 crystal footprint examples.

Abracon ABM7 series crystal footprint

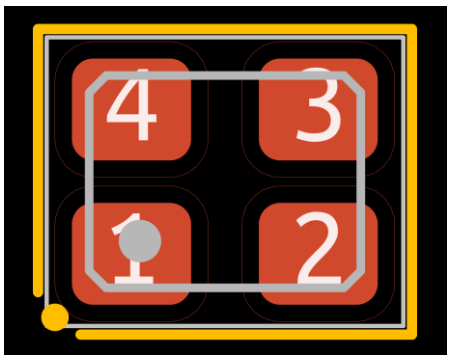
Footprint name:
Crystal_SMD_Abracon_ABM7-2Pin_6.0x3.5mm



ABM7 crystal footprint.

Abracon ABM8G series crystal footprint

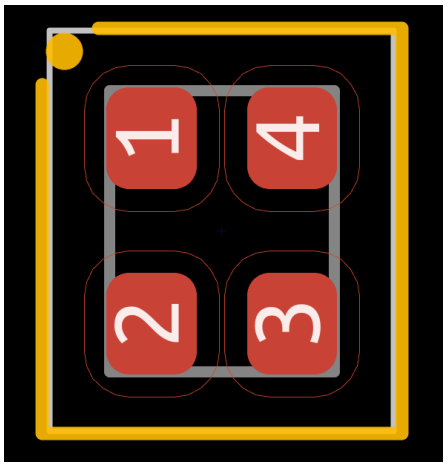
Footprint name:
Crystal_SMD_Abracon_ABM8G-4Pin_3.2x2.5mm



ABM8G crystal footprint.

Abracon ABM10 series crystal footprint

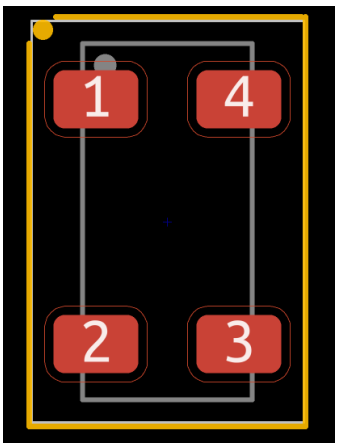
Footprint name:
Crystal_SMD_Abracon_ABM10-4Pin_2.5x2.0mm



ABM10 crystal footprint.

Abracon ABS25 series crystal footprint

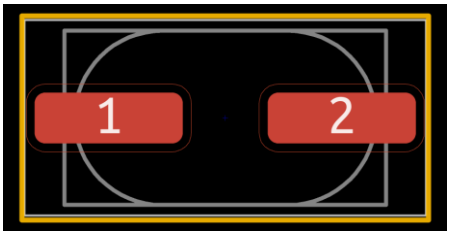
Footprint name:
Crystal_SMD_Abracon_ABS25-4Pin_8.0x3.8mm



ABS25 crystal footprint.

ECS CSM3X series crystal footprint

Footprint name:
Crystal_SMD_ECS_CSM3X-2Pin_7.6x4.1mm

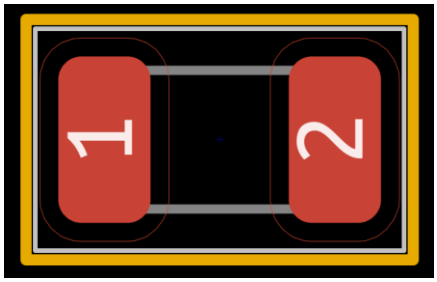


CSM3X crystal footprint.

Euro Quartz EQ161 series crystal footprints

Footprint names:
Crystal_SMD_EuroQuartz_EQ161-2Pin_3.2x1.5mm
Crystal_SMD_EuroQuartz_EQ161-2Pin_3.2x1.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

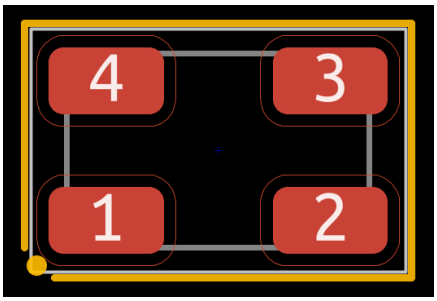


EQ161 crystal footprint.

Euro Quartz MJ series crystal footprints

Footprint names:
Crystal_SMD_EuroQuartz_MJ-4Pin_5.0x3.2mm
Crystal_SMD_EuroQuartz_MJ-4Pin_5.0x3.2mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

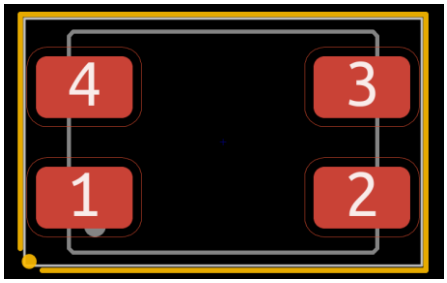


MJ crystal footprint.

Euro Quartz MQ series crystal footprints

Footprint names:
Crystal_SMD_EuroQuartz_MQ-4Pin_7.0x5.0mm
Crystal_SMD_EuroQuartz_MQ-4Pin_7.0x5.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

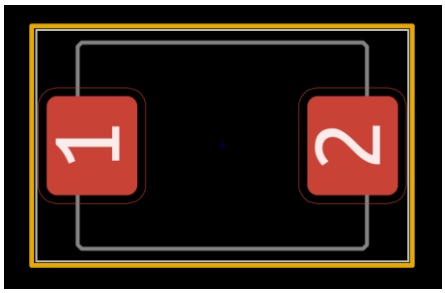


MQ crystal footprint.

Euro Quartz MQ2 series crystal footprints

Footprint names:
Crystal_SMD_EuroQuartz_MQ2-2Pin_7.0x5.0mm
Crystal_SMD_EuroQuartz_MQ2-2Pin_7.0x5.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

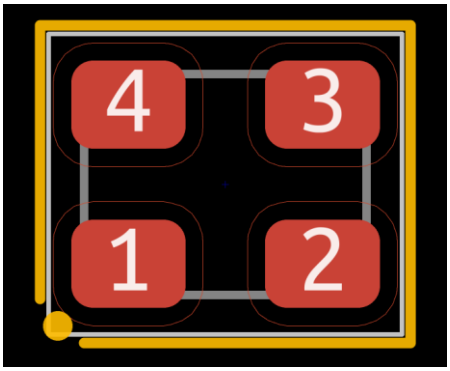


MQ2 crystal footprint.

Euro Quartz MT series crystal footprints

Footprint names:
Crystal_SMD_EuroQuartz_MT-4Pin_3.2x2.5mm
Crystal_SMD_EuroQuartz_MT-4Pin_3.2x2.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

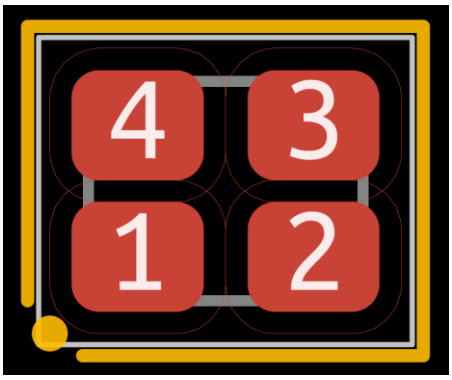


MT crystal footprint.

Euro Quartz X22 series crystal footprints

Footprint names:
Crystal_SMD_EuroQuartz_X22-4Pin_2.5x2.0mm
Crystal_SMD_EuroQuartz_X22-4Pin_2.5x2.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

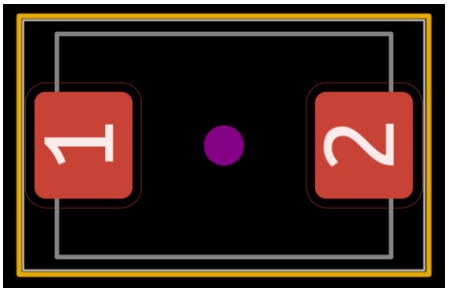


X22 crystal footprint.

FOX FE series crystal footprints

Footprint names:
Crystal_SMD_FOX_FE-2Pin_7.5x5.0mm
Crystal_SMD_FOX_FE-2Pin_7.5x5.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

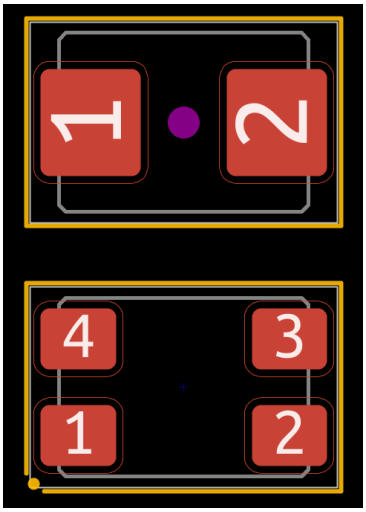


FE crystal footprint.

FOX FQ7050 series crystal footprints

Footprint names:
Crystal_SMD_FOX_FQ7050-2Pin_7.0x5.0mm
Crystal_SMD_FOX_FQ7050-2Pin_7.0x5.0mm_BigPads
Crystal_SMD_FOX_FQ7050-4Pin_7.0x5.0mm

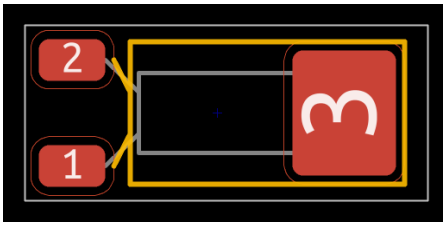
Note: BigPads suffix denotes a footprint with enlarged pads.



FQ7050 crystal footprints (2-pin and 4-pin).

Frontier Electronics FM206 series crystal footprint

Footprint name:
Crystal_SMD_FrontierElectronics_FM206

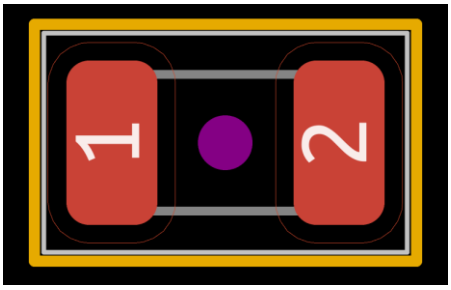


FM206 crystal footprint.

G8 series crystal footprints

Footprint names:
Crystal_SMD_G8-2Pin_3.2x1.5mm
Crystal_SMD_G8-2Pin_3.2x1.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

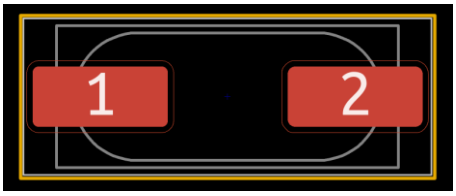


G8 crystal footprint.

HC49 SMD crystal footprints

Footprint names:
Crystal_SMD_HC49-SD
Crystal_SMD_HC49-SD_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

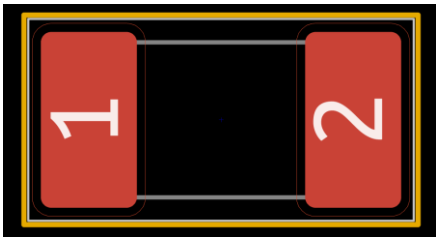


HC49 SMD crystal footprint.

Micro Crystal CC1V-T1A series crystal footprints

Footprint names:
Crystal_SMD_MicroCrystal_CC1V_T1A-2Pin_8.0x3.7mm
Crystal_SMD_MicroCrystal_CC1V_T1A-2Pin_8.0x3.7mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

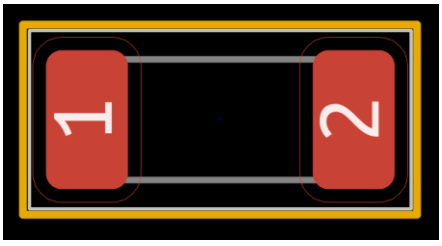


CC1V-T1A crystal footprint.

Micro Crystal CC4V-T1A series crystal footprints

Footprint names:
Crystal_SMD_MicroCrystal_CC4V_T1A-2Pin_5.0x1.9mm
Crystal_SMD_MicroCrystal_CC4V_T1A-2Pin_5.0x1.9mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

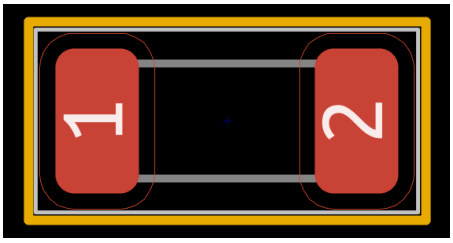


CC4V-T1A crystal footprint.

Micro Crystal CC5V-T1A series crystal footprints

Footprint names:
Crystal_SMD_MicroCrystal_CC5V_T1A-2Pin_4.1x1.5mm
Crystal_SMD_MicroCrystal_CC5V_T1A-2Pin_4.1x1.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

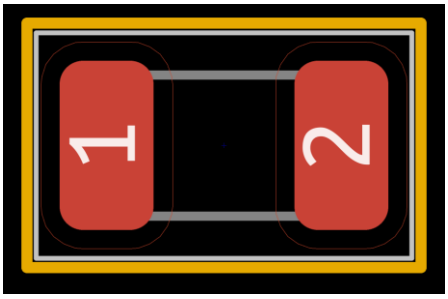


CC5V-T1A crystal footprint.

Micro Crystal CC7V-T1A series crystal footprints

Footprint names:
Crystal_SMD_MicroCrystal_CC7V_T1A-2Pin_3.2x1.5mm
Crystal_SMD_MicroCrystal_CC7V_T1A-2Pin_3.2x1.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

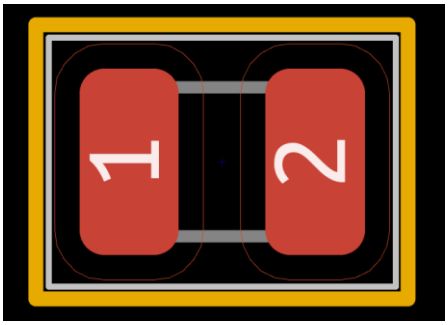


CC7V-T1A crystal footprint.

Micro Crystal CC8V-T1A series crystal footprints

Footprint names:
Crystal_SMD_MicroCrystal_CC8V_T1A-2Pin_2.0x1.2mm
Crystal_SMD_MicroCrystal_CC8V_T1A-2Pin_2.0x1.2mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

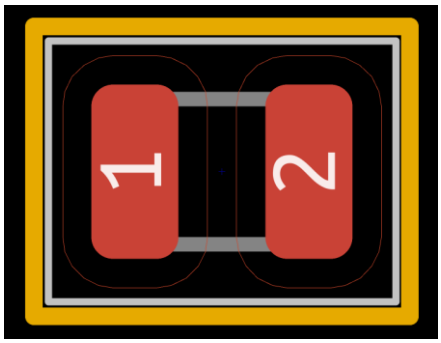


CC8V-T1A crystal footprint.

Micro Crystal CM9V-T1A series crystal footprints

Footprint names:
Crystal_SMD_MicroCrystal_CM9V_T1A-2Pin_1.6x1.0mm
Crystal_SMD_MicroCrystal_CM9V_T1A-2Pin_1.6x1.0mm_BigPads

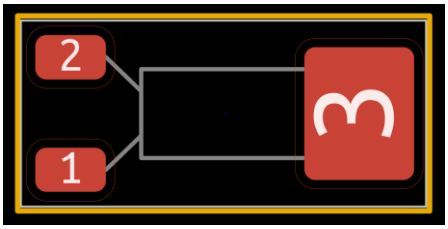
Note: BigPads suffix denotes a footprint with enlarged pads.



CM9V-T1A crystal footprint.

Micro Crystal MS1V-T1K series crystal footprint

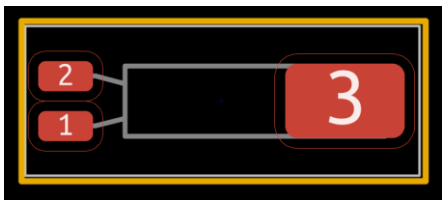
Footprint name:
Crystal_SMD_MicroCrystal_MS1V-T1K



MS1V-T1K crystal footprint.

Micro Crystal MS3V-T1K series crystal footprint

Footprint name:
Crystal_SMD_MicroCrystal_MS3V-T1K



MS3V-T1K crystal footprint.

Qantek QC5CB series crystal footprint

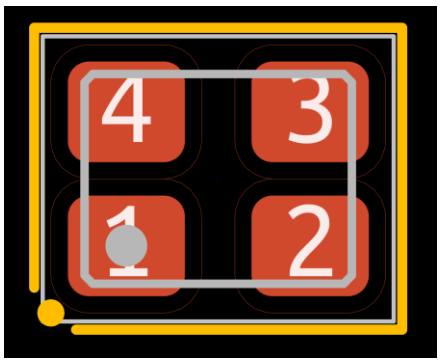
Footprint name:
Crystal_SMD_Qantek_QC5CB-2Pin_5x3.2mm

QC5CB crystal footprint.

Seiko Epson FA238 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_FA238-4Pin_3.2x2.5mm
Crystal_SMD_SeikoEpson_FA238-4Pin_3.2x2.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

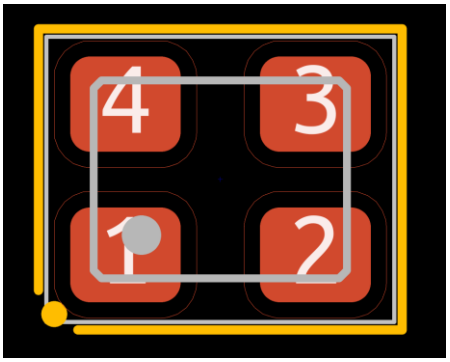


FA238 crystal footprint.

Seiko Epson FA238V series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_FA238V-4Pin_3.2x2.5mm
Crystal_SMD_SeikoEpson_FA238V-4Pin_3.2x2.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



FA238V crystal footprint.

Seiko Epson MA406 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_MA406-4Pin_11.7x4.0mm
Crystal_SMD_SeikoEpson_MA406-4Pin_11.7x4.0mm_BigPads

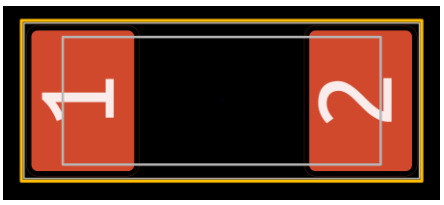
Note: BigPads suffix denotes a footprint with enlarged pads.

MA406 crystal footprint.

Seiko Epson MA505 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_MA505-2Pin_12.7x5.1mm
Crystal_SMD_SeikoEpson_MA505-2Pin_12.7x5.1mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

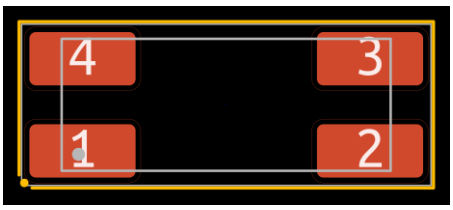


MA505 crystal footprint.

Seiko Epson MA506 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_MA506-4Pin_12.7x5.1mm
Crystal_SMD_SeikoEpson_MA506-4Pin_12.7x5.1mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



MA506 crystal footprint.

Seiko Epson MC146 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_MC146-4Pin_6.7x1.5mm
Crystal_SMD_SeikoEpson_MC146-4Pin_6.7x1.5mm_BigPads

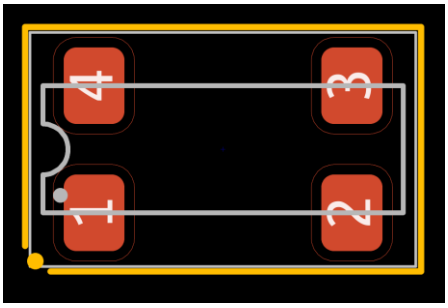
Note: BigPads suffix denotes a footprint with enlarged pads.

MC146 crystal footprint.

Seiko Epson MC156 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_MC156-4Pin_7.1x2.5mm
Crystal_SMD_SeikoEpson_MC156-4Pin_7.1x2.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

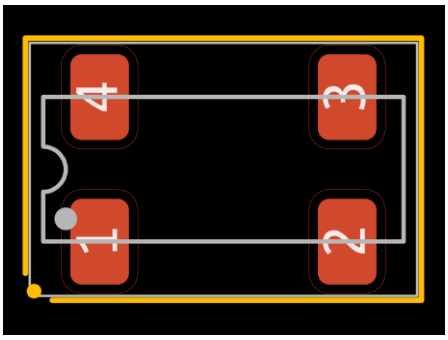


MC156 crystal footprint.

Seiko Epson MC306 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_MC306-4Pin_8.0x3.2mm
Crystal_SMD_SeikoEpson_MC306-4Pin_8.0x3.2mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

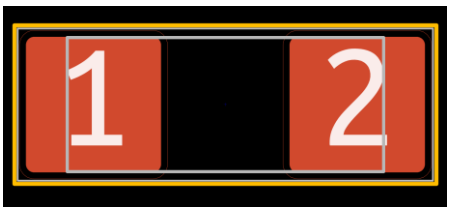


MC306 crystal footprint.

Seiko Epson MC405 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_MC405-2Pin_9.6x4.1mm
Crystal_SMD_SeikoEpson_MC405-2Pin_9.6x4.1mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

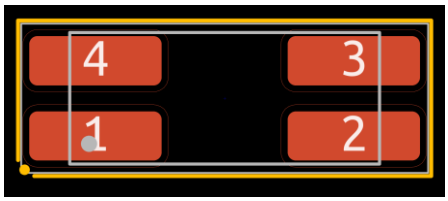


MC405 crystal footprint.

Seiko Epson MC406 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_MC406-4Pin_9.6x4.1mm
Crystal_SMD_SeikoEpson_MC406-4Pin_9.6x4.1mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

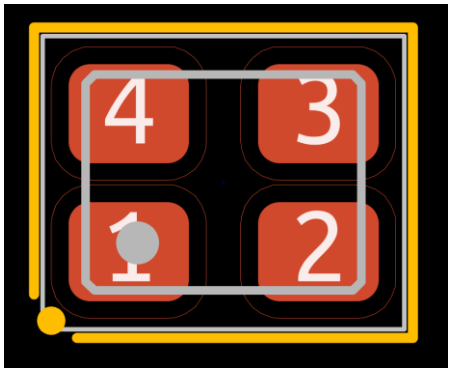


MC406 crystal footprint.

Seiko Epson TSX3225 series crystal footprints

Footprint names:
Crystal_SMD_SeikoEpson_TSSX3225-4Pin_3.2x2.5mm
Crystal_SMD_SeikoEpson_TSSX3225-4Pin_3.2x2.5mm_BigPads

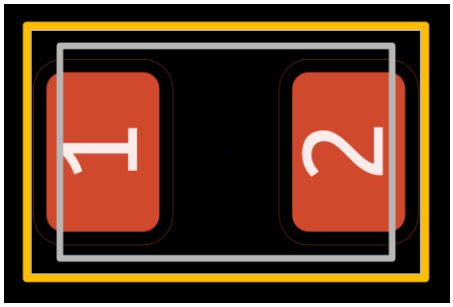
Note: BigPads suffix denotes a footprint with enlarged pads.



TSX3225 crystal footprint.

TXC 7A series crystal footprint

Footprint name:
Crystal_SMD_TXC_7A-2Pin_5x3.2mm

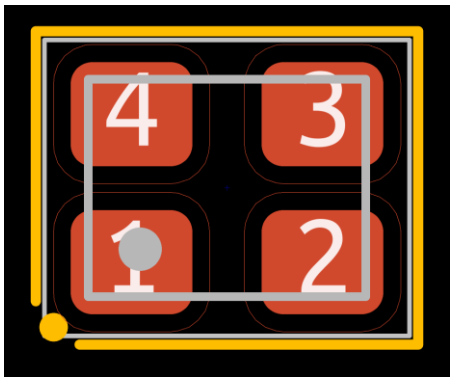


7A crystal footprint.

TXC 7M series crystal footprints

Footprint names:
Crystal_SMD_TXC_7M-4Pin_3.2x2.5mm
Crystal_SMD_TXC_7M-4Pin_3.2x2.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

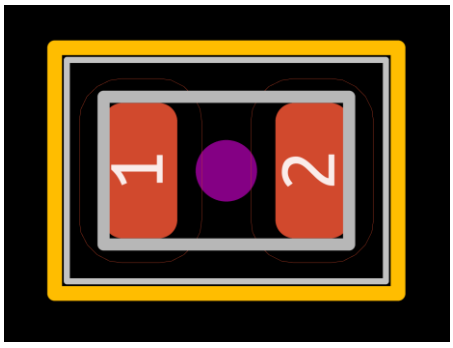


7M crystal footprint.

TXC 9HT11 series crystal footprints

Footprint names:
Crystal_SMD_TXC_9HT11-2Pin_2.0x1.2mm
Crystal_SMD_TXC_9HT11-2Pin_2.0x1.2mm_BigPads

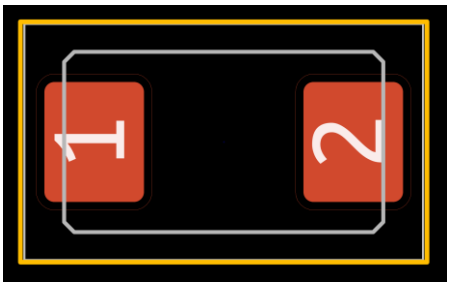
Note: BigPads suffix denotes a footprint with enlarged pads.



9HT11 crystal footprint.

TXC AX 8045 series crystal footprint

Footprint name:
Crystal_SMD_TXC_AX_8045-2Pin_8.0x4.5mm



AX 8045 crystal footprint.

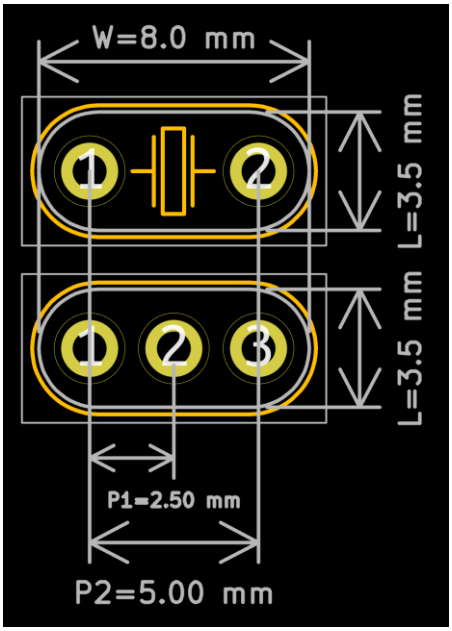
Ceramic resonator footprints

Footprint count: **8**

Footprint naming convention:
Resonator-<no. of pins>**Pin_W**<width>**mm_**
H<heigth>**mm**

Pin pitch is 2.50mm for 3-pin and 5.00mm for 2-pin resonator footprints.

Name examples:
Resonator-2Pin_W6.0mm_H3.0mm
Resonator-3Pin_W8.0mm_H3.5mm

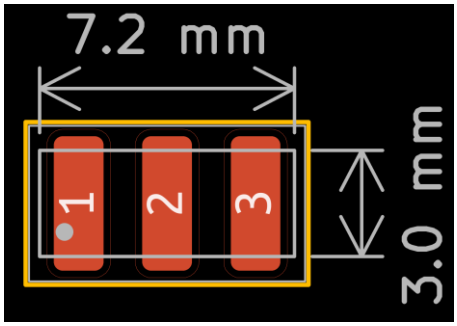


Two resonator footprints (2-pin and a 3-pin) with all relevant dimensions indicated.

SMD 3-pin 7.2x3.0mm resonator footprints

Footprint names:
Resonator_SMD-3Pin_7.2x3.0mm
Resonator_SMD-3Pin_7.2x3.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

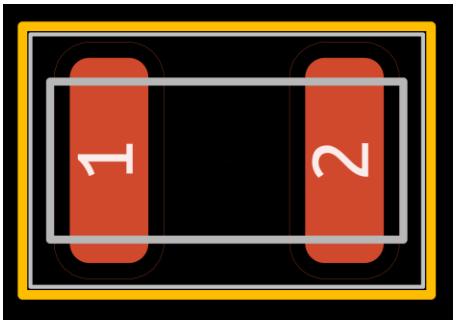


7.2x3.0mm 3-pin resonator footprint with its dimensions indicated.

muRata CDSCP series resonator footprints

Footprint names:
Resonator_SMD_muRata_CDSCB-2Pin_4.5x2.0mm
Resonator_SMD_muRata_CDSCB-2Pin_4.5x2.0mm _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

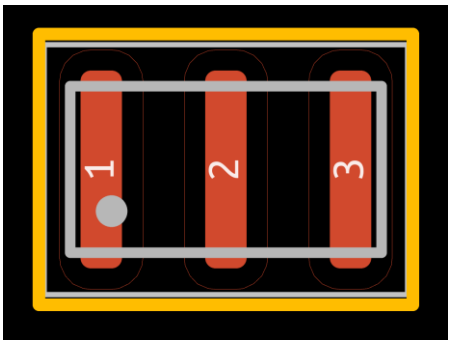


CDSCP resonator footprint.

muRata CSTxExxV series resonator footprints

Footprint names:
Resonator_SMD_muRata_CSTxExxV-3Pin_3.0x1.1mm
Resonator_SMD_muRata_CSTxExxV-3Pin_3.0x1.1mm _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

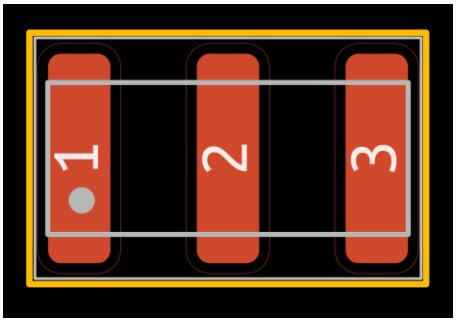


CSTxExxV resonator footprint.

muRata SFECV series resonator footprints

Footprint names:
Resonator_SMD_muRata_SFECV-3Pin_6.9x2.9mm
Resonator_SMD_muRata_SFECV-3Pin_6.9x2.9mm _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

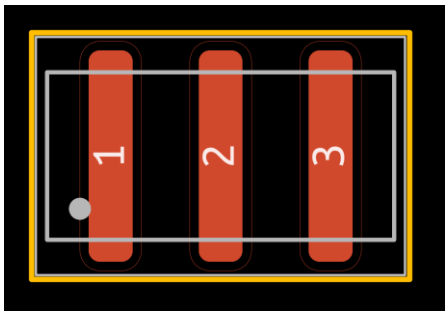


SFECV resonator footprint.

muRata SFSKA series resonator footprints

Footprint names:
Resonator_SMD_muRata_SFSKA-3Pin_7.9x3.8mm
Resonator_SMD_muRata_SFSKA-3Pin_7.9x3.8mm _BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

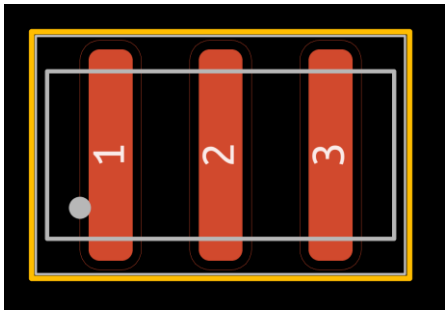


SFSKA resonator footprint.

muRata TPSKA series resonator footprints

Footprint names:
Resonator_SMD_muRata_TPSKA-3Pin_7.9x3.8mm
Resonator_SMD_muRata_TPSKA-3Pin_7.9x3.8mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

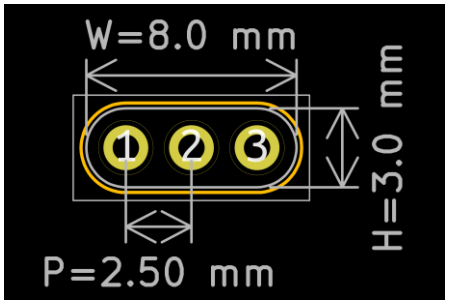


TPSKA resonator footprint.

muRata CSTLSxxxG series resonator footprints

Footprint names:
Resonator_muRata_CSTLSxxxG-3Pin_W8.0mm_H3.0mm
Resonator_muRata_CSTLSxxxG-3Pin_W8.0mm_H3.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

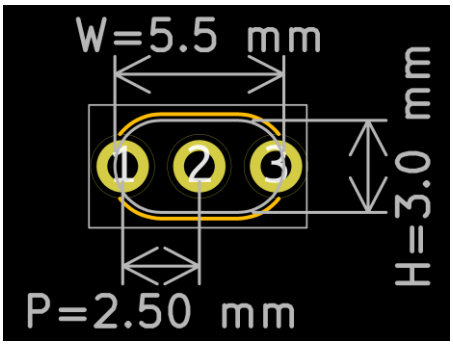


CSTLSxxxG resonator footprint with its dimensions indicated.

muRata CSTLSxxxX series resonator footprints

Footprint names:
Resonator_muRata_CSTLSxxxX-3Pin_W5.5mm_H3.0mm
Resonator_muRata_CSTLSxxxX-3Pin_W5.5mm_H3.0mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

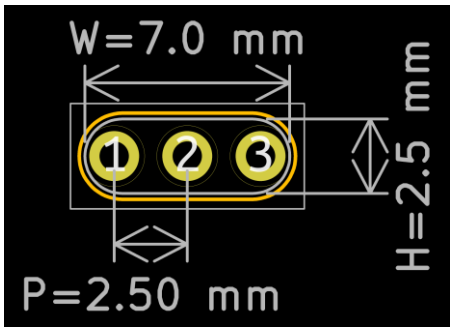


CSTLSxxxX resonator footprint with its dimensions indicated.

muRata DSN6 series resonator footprints

Footprint names:
Resonator_muRata_DSN6-3Pin_W7.0mm_H2.5mm
Resonator_muRata_DSN6-3Pin_W7.0mm_H2.5mm_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

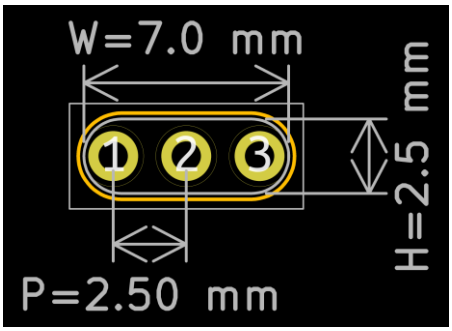


DSN6 resonator footprint with its dimensions indicated.

muRata DSS6 series resonator footprints

Footprint names:
Resonator_muRata_DSS6-3Pin_W7.0mm_H2.5mm
Resonator_muRata_DSS6-3Pin_W7.0mm_H2.5mm
_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.



DSS6 resonator footprint with its dimensions indicated.

3.6. SMD Diode and Diode Bridge Libraries

These libraries contain footprints for:
- SMD single diode footprints
- SMD dual diode footprints (that are not covered by TO-SOT library)
- SMD diode rectifier bridges.

Handsoldering library variant contains footprints with additional symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: **`Diode_SMD_AKL`**	
Footprint count:	**118**
Handsoldering variant	
Folder name: **`Diode_SMD_Handsoldering_AKL`**	
Footprint count:	**143**
Total footprints:	**261**

Silkscreen layer marks the cathode terminal with two rectangles on the outer edge of the outline. Some footprints have dedicated variants for bidirectional TVS (Transient Voltage Suppressors) which have no polarity markings on the silkscreen. Handsoldering library variant contains additional footprint variants for Zener/unidirectional TVS diodes.

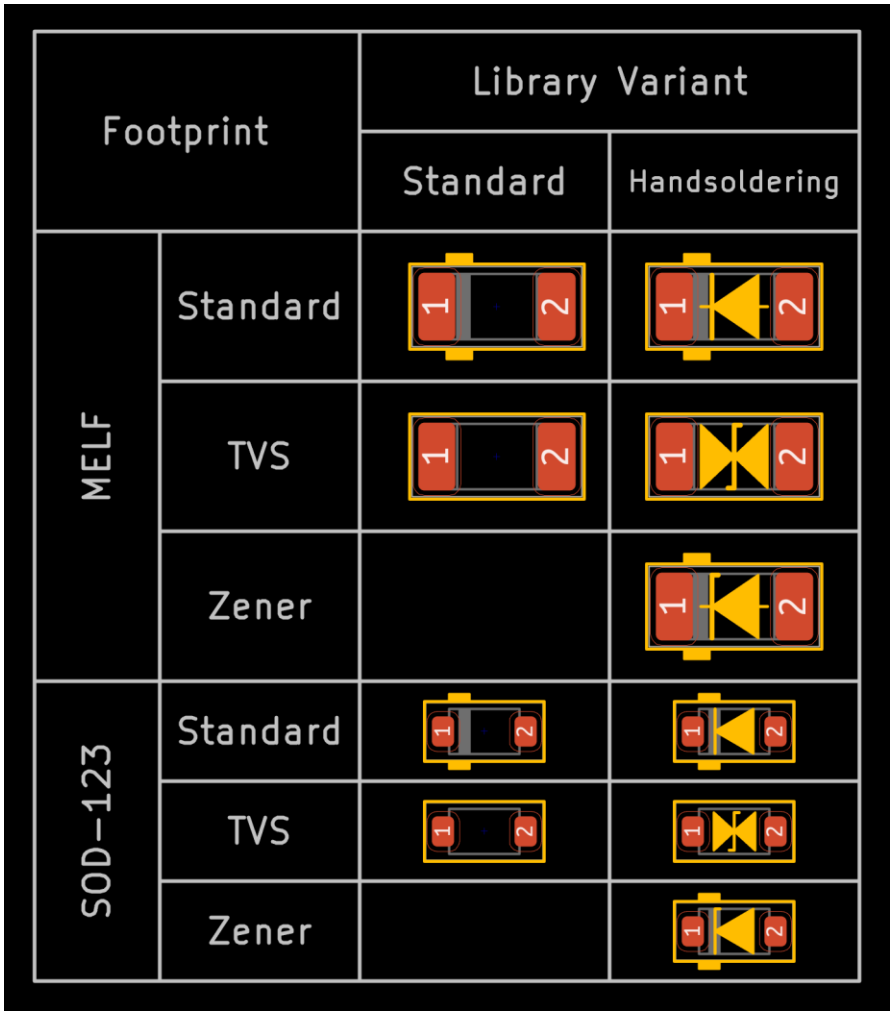


Figure 3.25. *Comparison between SMD diode footprints from different library variants.*

Rectangular diode footprints

Footprint count: **50** (60 for handsoldering lib.)

Footprint naming convention:

D_<imp. size code>_<metric size code>**Metric**_<variant>

Name examples:

D_0805_2012Metric
D_1206_3216Metric_Castellated
D_0603_1608Metric_Pad1.05x0.95mm
D_1210_3225Metric_TVS
D_0805_2012Metric_Zener

Available variants:

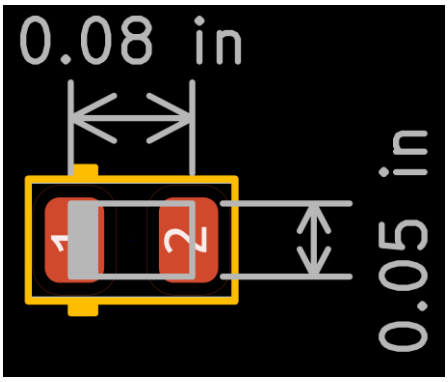
- Castellated – pad size optimized for castellated pads.
- Enlarged pads – variant name states the pad size, useful for manual soldering.
- TVS – has no cathode markings, intended to be used for bidirectional TVS diodes.
- Zener – handsoldering library variant only, has a Zener diode symbol on the silkscreen layer.

Imperial size code:

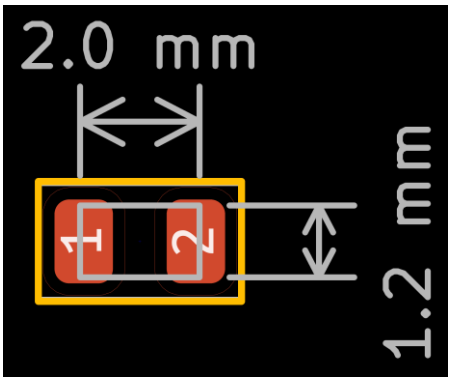
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.01 in. Example: 0805 size code means package length of 0.08 in and width of 0.05 in.

Metric size code:

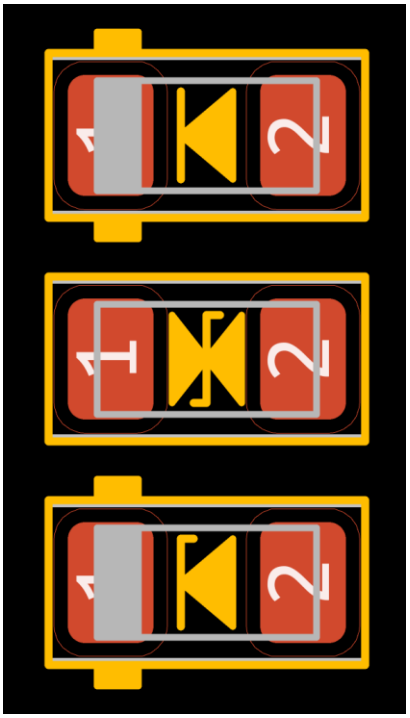
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.1 mm. Example: 2012 metric size code means package length of 2 mm and width of 1.2 mm.



Standard diode footprint with 0805 imperial size code with length and width of the package indicated.

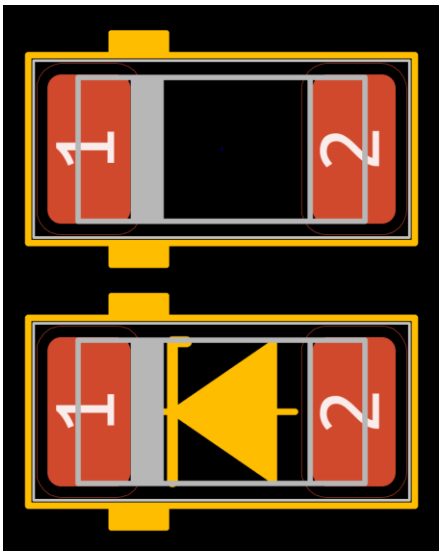


TVS diode footprint variant with 2012 metric size code with length and width of the package indicated.



1206 diode footprints from the handsoldering library. Standard, TVS and Zener variants respectively.

Metal Electrode Leadless Face (MELF) diode footprints



MELF diode footprint form the standard library (top) and a Zener variant of the footprint from the handsoldering library (bottom).

Footprint names:

D_MELF

Standard footprint.

D_MELF-RM10_Universal

Footprints containing both SMD pads for mounting the MELF diode and plated through-holes for mounting a THT diode in the same place.

D_MELF_BigPads

Standard footprint with enlarged pads.

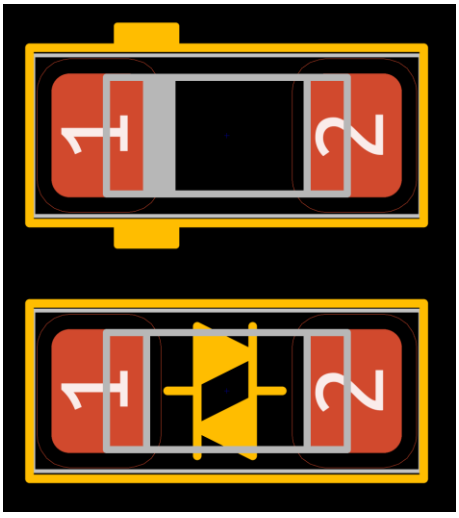
D_MELF_TVS

Footprint variant without polarity marks intended for bidirectional devices.

D_MELF_Zener

Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.

Mini Metal Electrode Leadless Face (MiniMELF) diode footprints



MiniMELF diode footprint form the standard library (top) and a Diac variant of the footprint from the handsoldering library (bottom).

Footprint names:

D_MiniMELF

Standard footprint.

D_MiniMELF_BigPads

Standard footprint with enlarged pads.

D_MiniMELF_TVS

Footprint variant without polarity marks intended for bidirectional devices.

D_MiniMELF_Zener

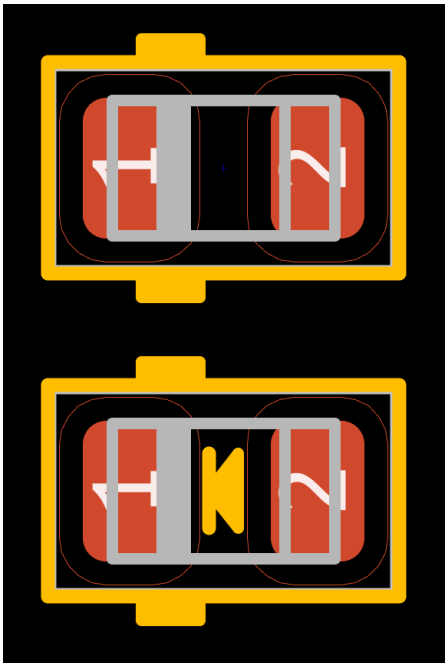
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.

D_MiniMELF_Diac

Handsoldering library variant only. Footprint with Diac (AC trigger diode) symbol instead of a standard one.

Micro Metal Electrode Leadless Face (MicroMELF) diode footprints

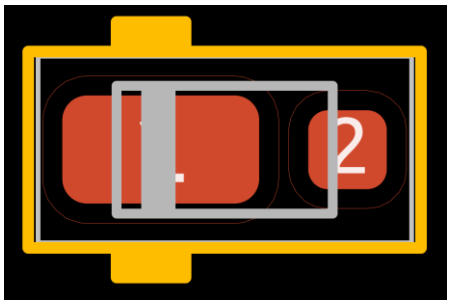
Footprint names:
D_MicroMELF
Standard footprint.
D_MicroMELF_BigPads
Standard footprint with enlarged pads.
D_MicroMELF_TVS
Footprint variant without polarity marks intended for bidirectional devices.
D_MicroMELF_Zener
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



MicroMELF diode footprint form the standard library (top) and from the handsoldering library (bottom).

MicroSMP (DO-219AD) diode footprint

Footprint name:
D_MicroSMP



MicroSMP diode footprint.

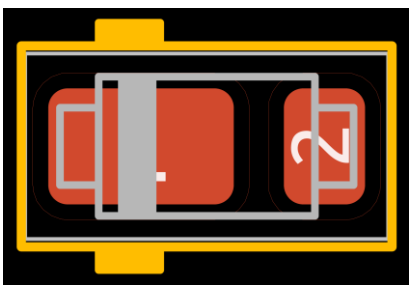
PowerDI-5 diode footprint

Footprint name:
D_PowerDI-5

PowerDI-5 diode footprint.

PowerDI-123 diode footprint

Footprint name:
D_PowerDI-123

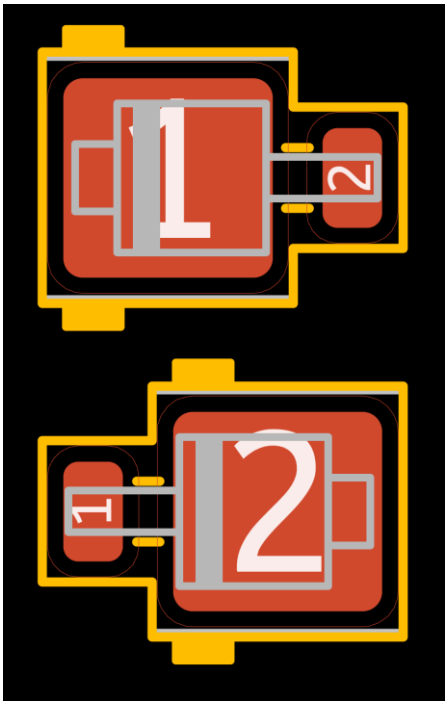


PowerDI-5 diode footprint.

Powermite 1 diode footprints

Footprint names:
D_Powermite_AK
D_Powermite_KA

AK or KA suffix refers to pin configuration of the package, AK has the cathode markings near the pig pad, KA has the markings near the small pad

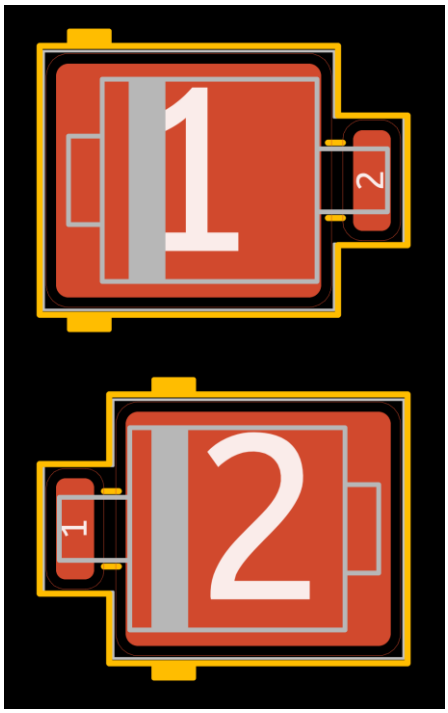


Powermite 1 diode footprints. AK variant (top) has the pin 1 (cathode) defined as the big pad. KA variant (bottom) has reversed pad configuration.

Powermite 2 diode footprints

Footprint names:
D_Powermite2_AK
D_Powermite2_KA

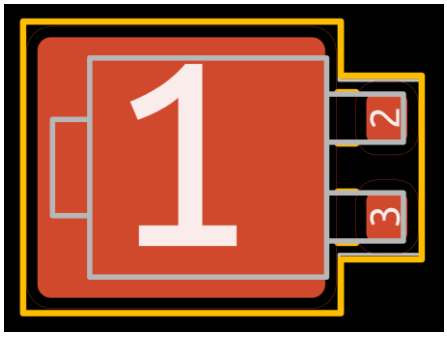
AK or KA suffix refers to pin configuration of the package, AK has the cathode markings near the pig pad, KA has the markings near the small pad



Powermite 2 diode footprints. AK variant (top) has the pin 1 (cathode) defined as the big pad. KA variant (bottom) has reversed pad configuration.

Powermite 3 diode footprint

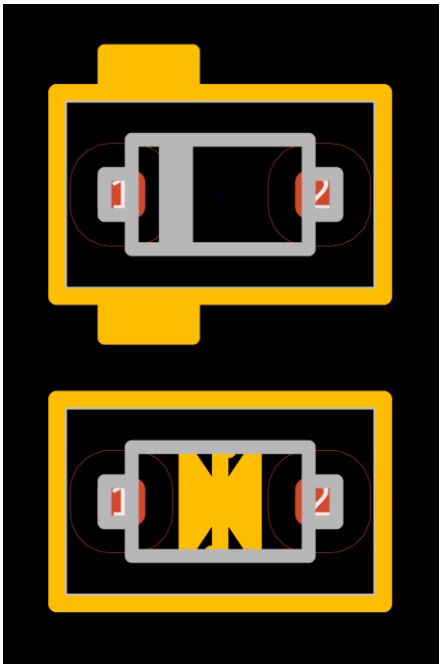
Footprint name:
D_Powermite3



Powermite 3 diode footprint.

SC-80 series diode footprints

Footprint names:
D_SC-80
Standard footprint.
D_SC-80_BigPads
Standard footprint with enlarged pads.
D_SC-80_TVS
Footprint variant without polarity marks intended for bidirectional devices.
D_SC-80_Zener
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SC-80 diode footprint form the standard library (top) and a TVS footprint from the handsoldering library (bottom).

SMA (DO-214AC) series diode footprints

Footprint names:

D_SMA

Standard footprint.

D_SMA-SMB_Universal

Footprint allows for installing both SMA and SMB diodes.

D_SMA_BigPads

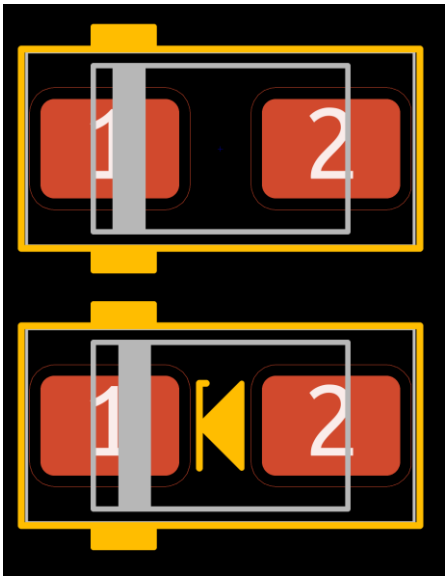
Standard footprint with enlarged pads.

D_SMA_TVS

Footprint variant without polarity marks intended for bidirectional devices.

D_SMA_Zener

Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SMA diode footprint form the standard library (top) and a TVS footprint from the handsoldering library (bottom).

SMB (DO-214AA) series diode footprints

Footprint names:

D_SMB

Standard footprint.

D_SMB-SMC_Universal

Footprint allows for installing both SMA and SMB diodes.

D_SMB_BigPads

Standard footprint with enlarged pads.

D_SMB_Modified

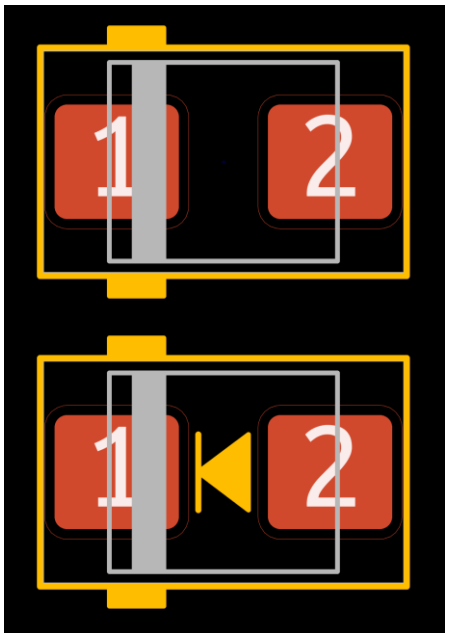
Footprint for a 3-pin version of the SMB diode package.

D_SMB_TVS

Footprint variant without polarity marks intended for bidirectional devices.

D_SMB_Zener

Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SMB diode footprint form the standard library (top) and a Zener footprint from the handsoldering library (bottom).

SMC (DO-214AB) series diode footprints

Footprint names:

D_SMC

Standard footprint.

D_SMC-RM10_Universal

Footprints containing both SMD pads for mounting the SMC diode and plated through-holes for mounting a THT diode in the same place.

D_SMC_BigPads

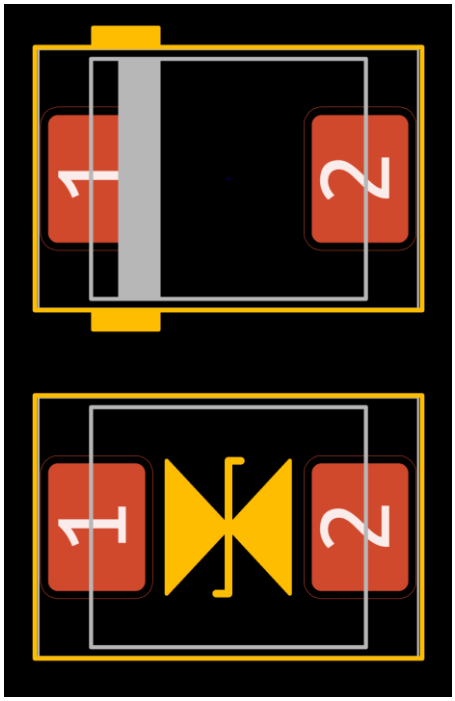
Standard footprint with enlarged pads.

D_SMC_TVS

Footprint variant without polarity marks intended for bidirectional devices.

D_SMC_Zener

Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



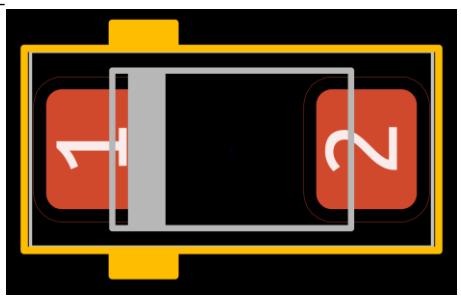
SMC diode footprint form the standard library (top) and a TVS footprint from the handsoldering library (bottom).

SMA flat-lead diode footprint

Footprint name:

D_SMAFL

Footprint intended for use with flat-lead variant of the SMA diode package.



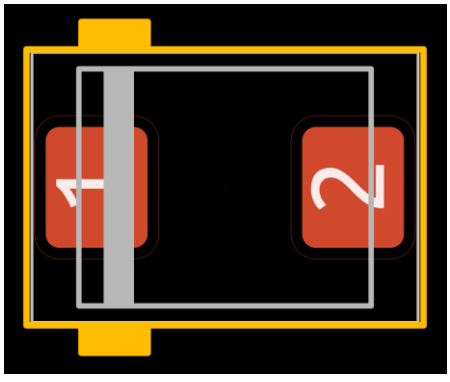
SMA flat-lead diode footprint.

SMB flat-lead diode footprint

Footprint name:

D_SMBFL

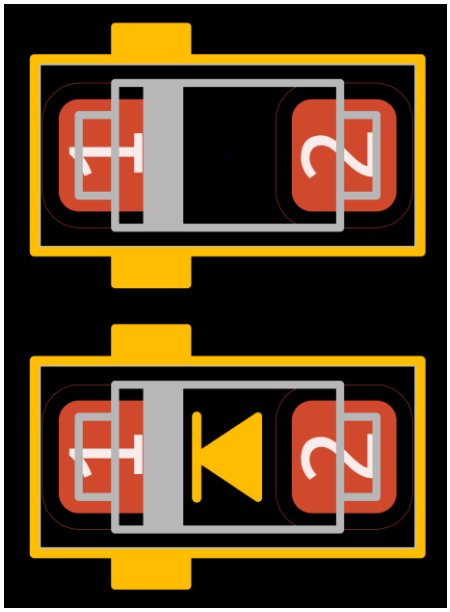
Footprint intended for use with flat-lead variant of the SMB diode package.



SMB flat-lead diode footprint.

SMF (DO-219AB) series diode footprints

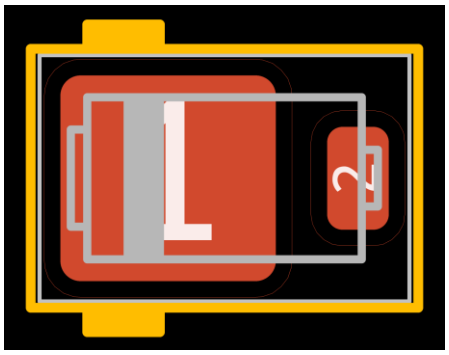
Footprint names:
D_SMF
Standard footprint.
D_SMF_TVS
Footprint variant without polarity marks intended for bidirectional devices.
D_SMF_Zener
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SMF diode footprint form the standard library (top) and a footprint from the handsoldering library (bottom).

SMP (DO-220AA) diode footprint

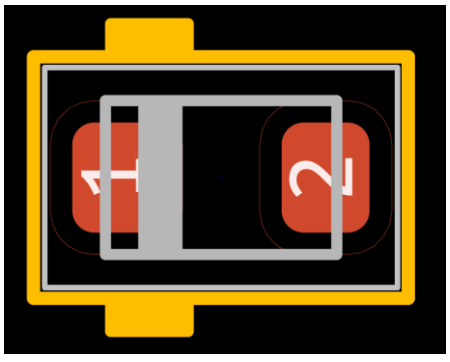
Footprint name:
D_SMP



SMP diode footprint.

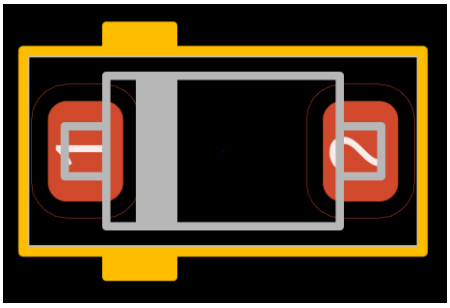
SOD-110 series diode footprints

Footprint names:
D_SOD-110
Standard footprint.
D_SOD-110_Zener
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SOD-110 diode footprint.

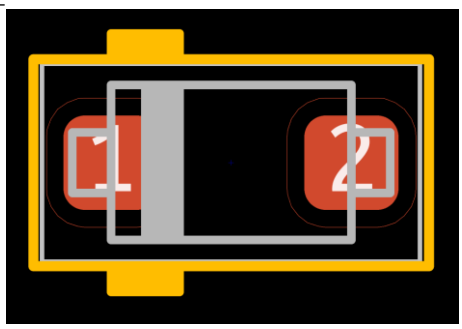
SOD-123 series diode footprints



SOD-123 diode footprint.

Footprint names:
D_SOD-123
Standard footprint.
D_SOD-123_TVS
Footprint variant without polarity marks intended for bidirectional devices.
D_SOD-123_Zener
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.

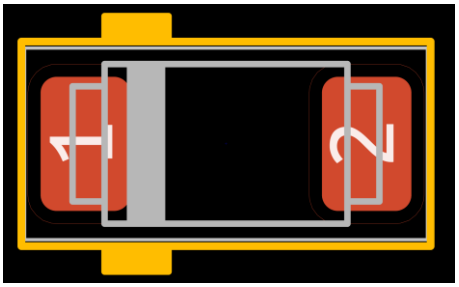
SOD-123 flat-lead series diode footprints



SOD-123 flat-lead diode footprint.

Footprint names:
D_SOD-123F
Standard footprint.
D_SOD-123F_TVS
Footprint variant without polarity marks intended for bidirectional devices.
D_SOD-123F_Zener
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.

SOD-128 series diode footprints

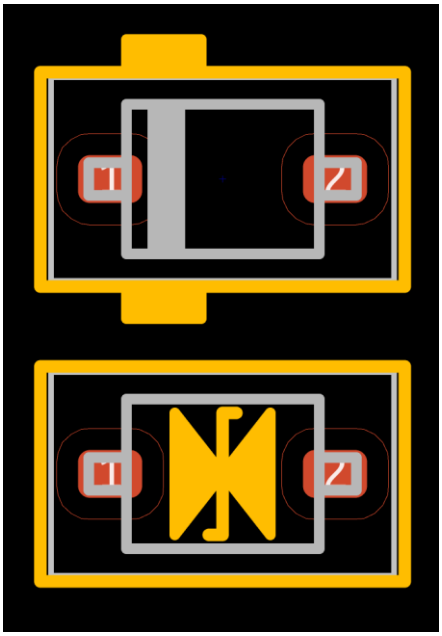


SOD-128 diode footprint.

Footprint names:
D_SOD-128
Standard footprint.
D_SOD-128_TVS
Footprint variant without polarity marks intended for bidirectional devices.
D_SOD-128_Zener
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.

SOD-323 series diode footprints

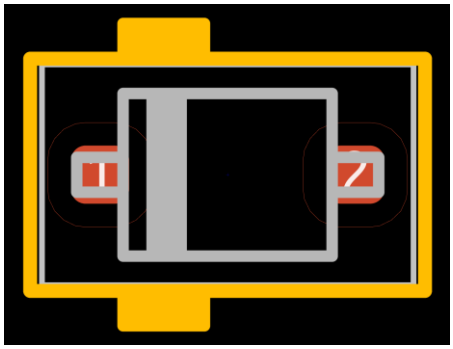
Footprint names:
D_SOD-323
Standard footprint.
D_SOD-323_BigPads
Standard footprint with enlarged pads.
D_SOD-323_TVS
Footprint variant without polarity marks intended for bidirectional devices.
D_SOD-323_Zener
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SOD-323 diode footprint from the standard library (top) and a TVS footprint from the handsoldering library (bottom).

SOD-323 flat-lead series diode footprints

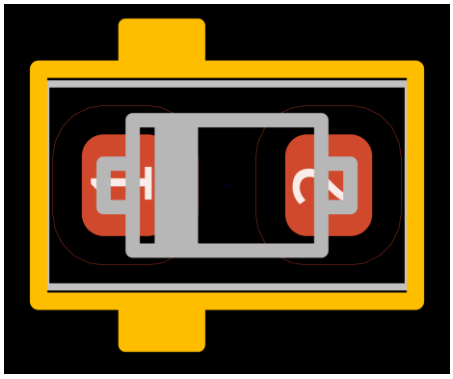
Footprint names:
D_SOD-323F
Standard footprint.
D_SOD-323F_TVS
Footprint variant without polarity marks intended for bidirectional devices.
D_SOD-323F_Zener
Handsoldering library variant only. Footprint with Zener diode symbol instead of a standard one.



SOD-323 flat-lead diode footprint.

SOD-523 series diode footprints

Footprint names:
D_SOD-523
Standard footprint.
D_SOD-523_TVS
Footprint variant without polarity marks intended for bidirectional devices.

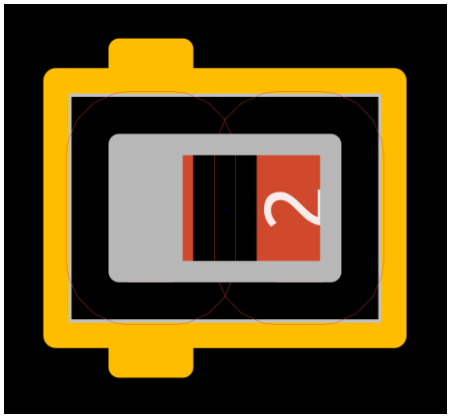


SOD-523 diode footprint.

SOD-882 (DFN1006-2) series diode footprints

Footprint names:
D_SOD-882_DFN1006-2
Standard footprint.
D_SOD-882_DFN1006-2_TVS
Footprint variant without polarity marks intended for bidirectional devices.

Note: Courtyard of this footprint has been reduced to 0.15mm (instead of standard 0.25mm).

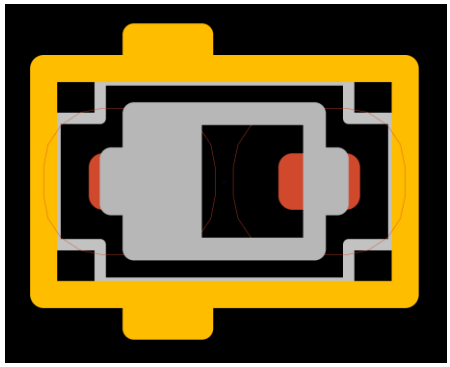


SOD-882 diode footprint.

SOD-923 series diode footprints

Footprint names:
D_SOD-923
Standard footprint.
D_SOD-923_TVS
Footprint variant without polarity marks intended for bidirectional devices.

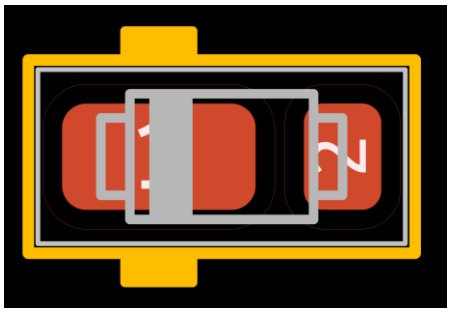
Note: Courtyard of this footprint has been reduced to 0.15mm (instead of standard 0.25mm).



SOD-923 diode footprint.

TUMD2 diode footprint

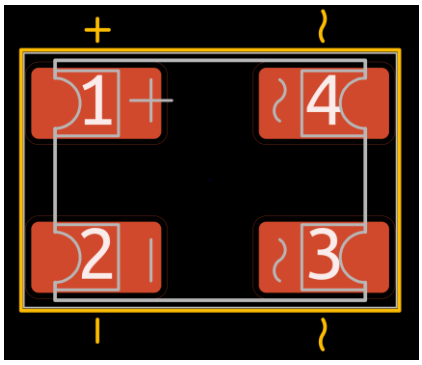
Footprint name:
D_TUMD2



TUMD2 diode footprint.

Bourns CD-DF4xxS series rectifier bridge footprint

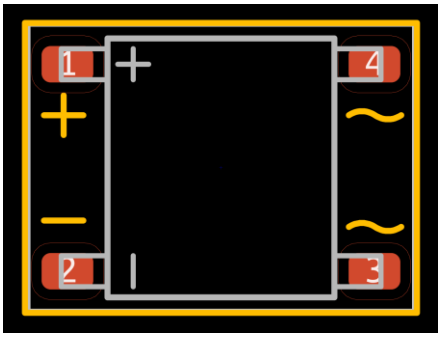
Footprint name:
Diode_Bridge_Bourns_CD-DF4xxS



CD-DF4xxS bridge footprint.

Diotec ABS series rectifier bridge footprint

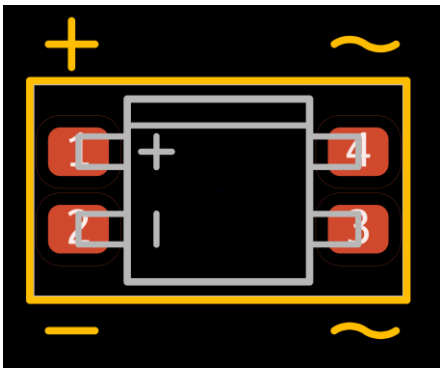
Footprint name:
Diode_Bridge_Diotec_ABS



ABS bridge footprint.

Diotec MicroDIL rectifier bridge footprint

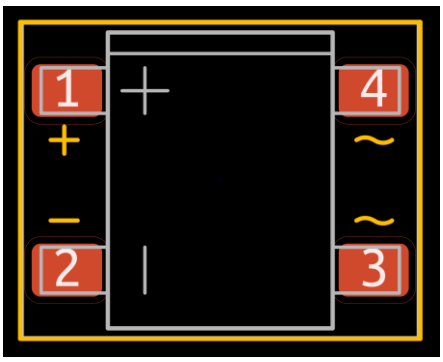
Footprint name:
Diode_Bridge_Diotec_MicroDil_3.0x3.0x1.8mm



MicroDIL bridge footprint.

Diotec SO-DIL rectifier bridge footprint

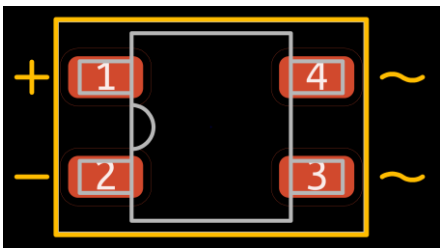
Footprint name:
Diode_Bridge_Diotec_SO-DIL-Slim



SO-DIL bridge footprint.

Diodes MBF rectifier bridge footprint

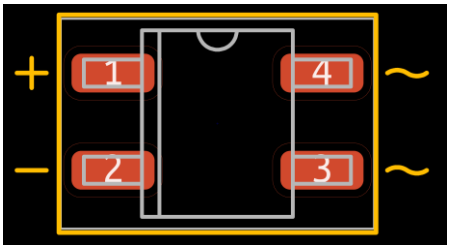
Footprint name:
Diode_Bridge_MBF



MBF bridge footprint.

Diodes MBS rectifier bridge footprint

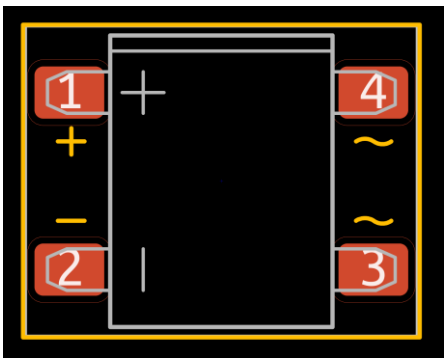
Footprint name:
Diode_Bridge_MBS



MBS bridge footprint.

Vishay DFS rectifier bridge footprint

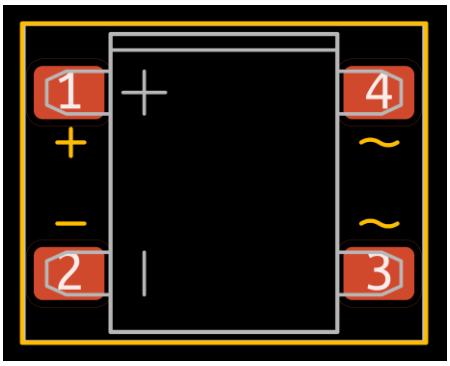
Footprint name:
Diode_Bridge_Vishay_DFS



DFS bridge footprint.

Vishay DFS-Flat low-profile rectifier bridge footprint

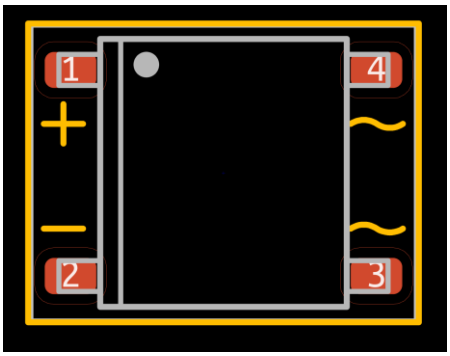
Footprint name:
Diode_Bridge_Vishay_DFSFlat



DFS-Flat bridge footprint.

Vishay MBLS rectifier bridge footprint

Footprint name:
Diode_Bridge_Vishay_MBLS



DFS-Flat bridge footprint.

3.7. THT Diode and Diode Bridge Libraries

These libraries contain footprints for:
- THT diodes
- THT diode rectifier bridges.

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Standard variant	
Folder name: **`Diode_THT_AKL`**	
Footprint count:	**444**(+35)
Double-sided variant	
Folder name: **`Diode_THT_AKL_Double`**	
Footprint count:	**444**(+35)
Total footprints:	**888**(+70)

Diode footprints come in three basic variants:
- Standard variant with a regular diode symbol on the silkscreen layer,
- Zener variant with a Zener diode symbol on the silkscreen layer,
- TVS variant with no polarity marks and a bidirectional TVS diode symbol on the silkscreen layer.

Cathode is additionally indicated by a square pad and a letter 'K' on the silkscreen (KiCad standard libraries use Kathode instead of Cathode in their naming. Letter K and footprint names are kept identical to the standard KiCad library for interoperability reasons).

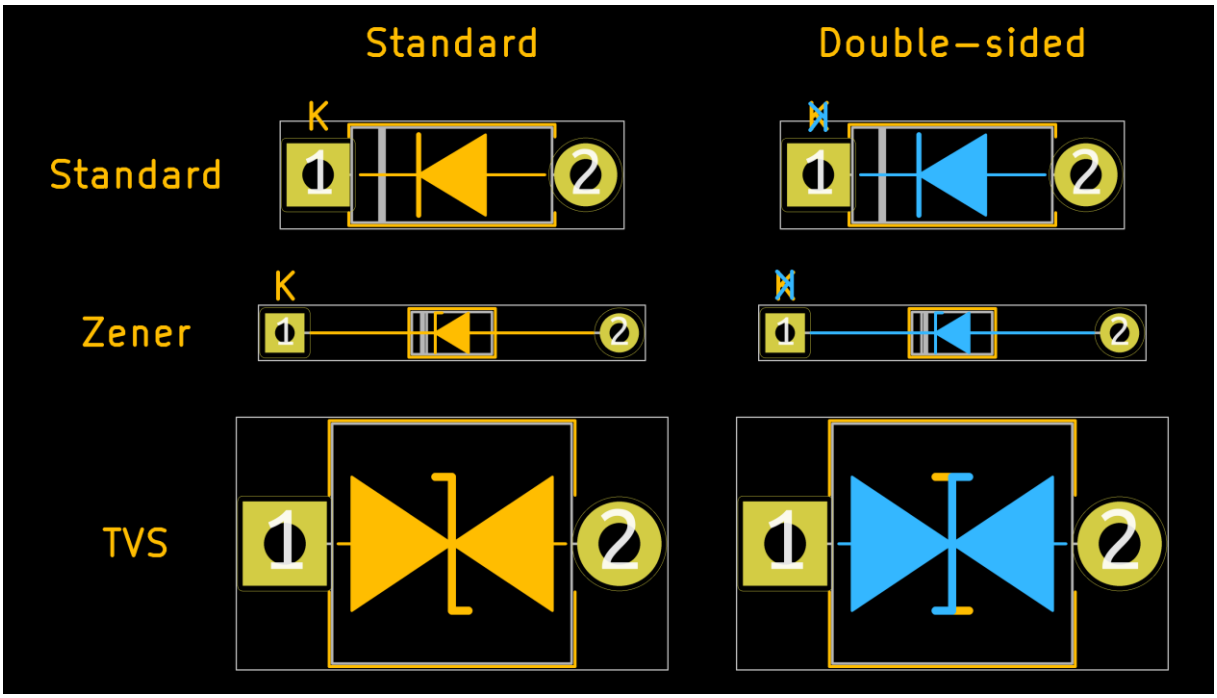


Figure 3.26. *Comparison between THT diode footprints from different library variants.*

5KPW diode footprints

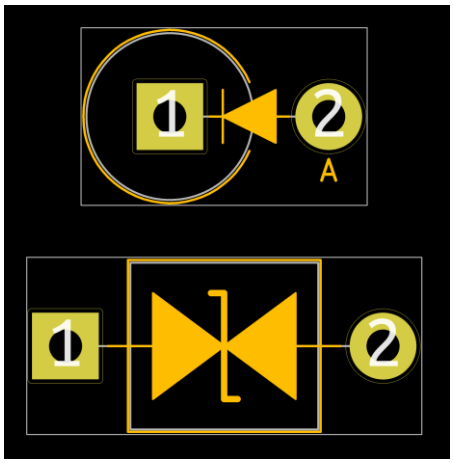
Footprint count: 17

Footprint naming convention:
D_5KPW_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

Name examples:
D_5KPW_P12.70mm_Horizontal
D_5KPW_P7.62mm_Vertical_AnodeUp
D_5KPW_P30.48mm_Horizontal_TVS



Vertical 5KPW diode standard footprint (top) and a horizontal 'TVS' footprint (bottom).

5KP diode footprints

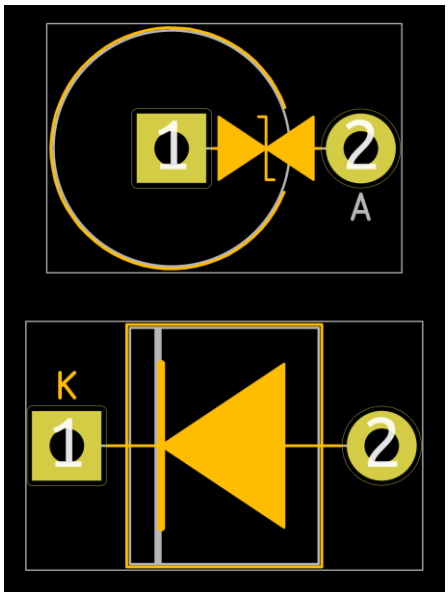
Footprint count: 19

Footprint naming convention:
D_5KP_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

Name examples:
D_5KP_P15.24mm_Horizontal
D_5KP_P7.62mm_Vertical_TVS
D_5KP_P10.16mm_Horizontal_TVS



Vertical 5KP diode 'TVS' footprint (top) and a horizontal standard' footprint (bottom).

5W / CASE-017AA diode footprints

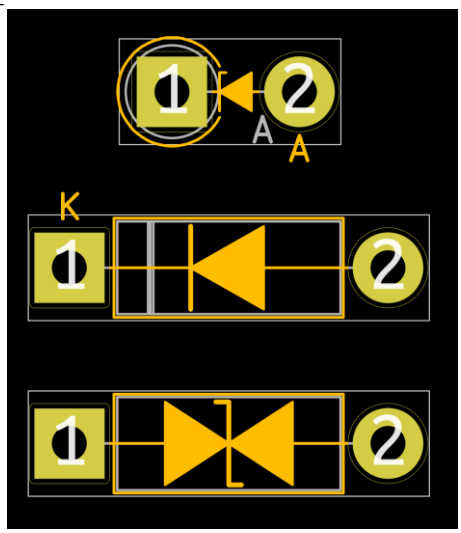
Footprint count: 23

Footprint naming convention:
D_5W_CASE-017AA_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:
D_5W_CASE-017AA_P5.08mm_Vertical_AnodeUp_Zener
D_5W_CASE-017AA_P12.70mm_Horizontal
D_5W_CASE-017AA_P5.08mm_Vertical_TVS
D_5W_CASE-017AA_P25.40mm_Horizontal_Zener
D_5W_CASE-017AA_P5.08mm_Vertical_KathodeUp
D_5W_CASE-017AA_P10.16mm_Horizontal_TVS



Vertical 5W diode 'Zener' footprint (top), a horizontal standard footprint (middle) and a horizontal 'TVS' footprint (bottom).

7.3x22mm diode footprints (new)

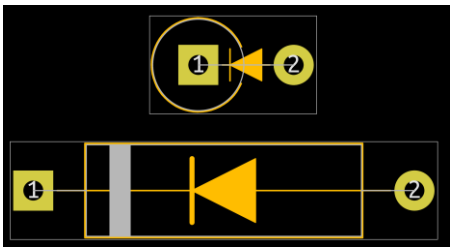
Footprint count: 6

Footprint naming convention:
D_7.3x22_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

Name examples:
D_7.3x22_P7.62mm_Vertical_KathodeUp
D_7.3x22_P25.40mm_Horizontal



Vertical 7.3x22mm diode footprint (top), and a horizontal footprint (bottom).

A-405 diode footprints

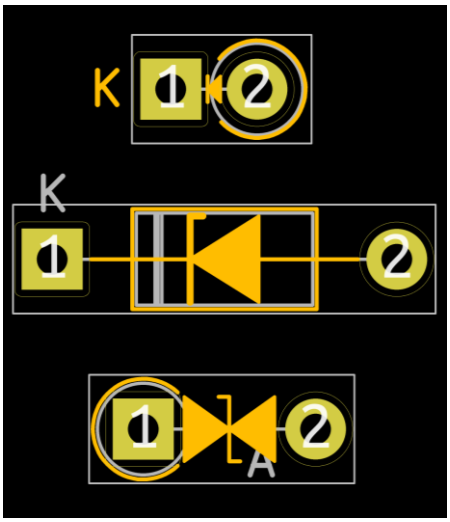
Footprint count: 23

Footprint naming convention:
D_A-405_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:
D_A-405_P2.54mm_Vertical_AnodeUp_Zener
D_A-405_P10.16mm_Horizontal
D_A-405_P5.08mm_Vertical_KathodeUp
D_A-405_P20.32mm_Horizontal_TVS
D_A-405_P2.54mm_Vertical_TVS
D_A-405_P12.70mm_Horizontal_Zener



Vertical A-405 diode standard footprint (top), a horizontal 'Zener' footprint (middle) and a vertical 'TVS' footprint (bottom).

CASE-194 diode footprints (new)

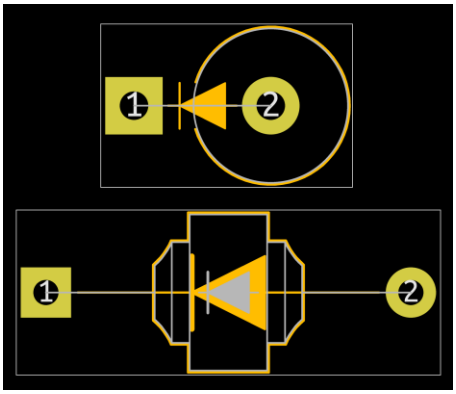
Footprint count: 7

Footprint naming convention:
D_CASE-194_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode
on the outer lead.

Name examples:
D_CASE-194_P7.62mm_Vertical_KathodeUp
D_CASE-194_P15.24mm_Horizontal



Vertical CASE-194 diode footprint (top), and a horizontal footprint (bottom).

DO-7 diode footprints (new)

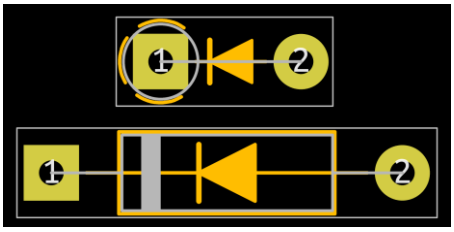
Footprint count: 10

Footprint naming convention:
D_DO-7_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

Name examples:
D_DO-7_P5.08mm_Vertical_KathodeUp
D_DO-7_P20.32mm_Horizontal



Vertical DO-7 diode footprint (top), and a horizontal footprint (bottom).

DO-15 diode footprints

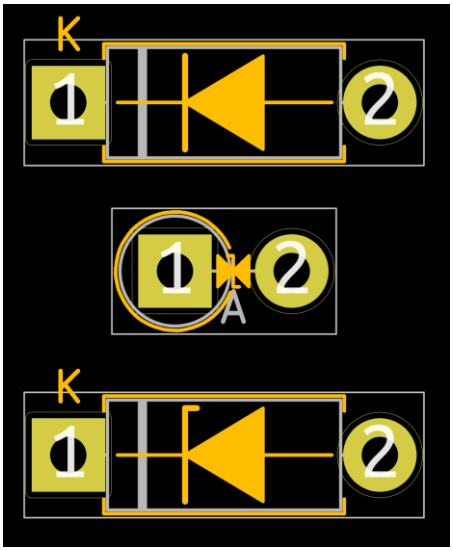
Footprint count: 30

Footprint naming convention:
D_DO-15_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:
D_DO-15_P3.81mm_Vertical_AnodeUp_Zener
D_DO-15_P25.40mm_Horizontal
D_DO-15_P5.08mm_Vertical_KathodeUp
D_DO-15_P12.70mm_Horizontal_TVS
D_DO-15_P5.08mm_Vertical_TVS
D_DO-15_P10.16mm_Horizontal_Zener



Horizontal DO-15 diode standard footprint (top), a vertical 'TVS' footprint (middle) and a horizontal 'Zener' footprint (bottom).

DO-27 diode footprints

Footprint count: **20**

Footprint naming convention:

D_DO-27_P<pitch>**mm**_<orientation>_<variant>

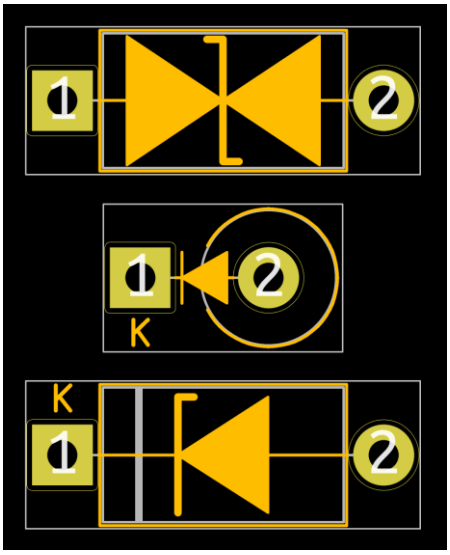
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-27_P5.08mm_Vertical_AnodeUp_Zener
D_DO-27_P10.16mm_Horizontal
D_DO-27_P5.08mm_Vertical_KathodeUp
D_DO-27_P20.32mm_Horizontal_TVS
D_DO-27_P5.08mm_Vertical_TVS
D_DO-27_P12.70mm_Horizontal_Zener



Horizontal DO-27 diode 'TVS' footprint (top), a vertical standard footprint (middle) and a horizontal 'Zener' footprint (bottom).

DO-34 / SOD-68 diode footprints

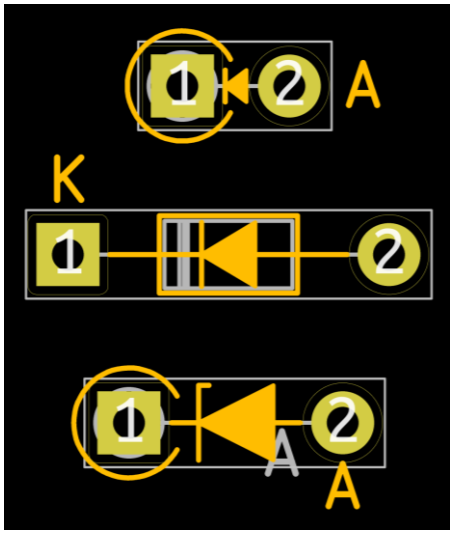
Footprint count: 20

Footprint naming convention:
D_DO-34_SOD68_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:
D_DO-34_SOD68_P2.54mm_Vertical_AnodeUp_Zener
D_DO-34_SOD68_P7.62mm_Horizontal
D_DO-34_SOD68_P5.08mm_Vertical_KathodeUp
D_DO-34_SOD68_P12.70mm_Horizontal_Zener



Vertical DO-34 diode standard footprint (top), a horizontal standard footprint (middle) and a vertical 'Zener' footprint (bottom).

DO-35 / SOD-27 diode footprints

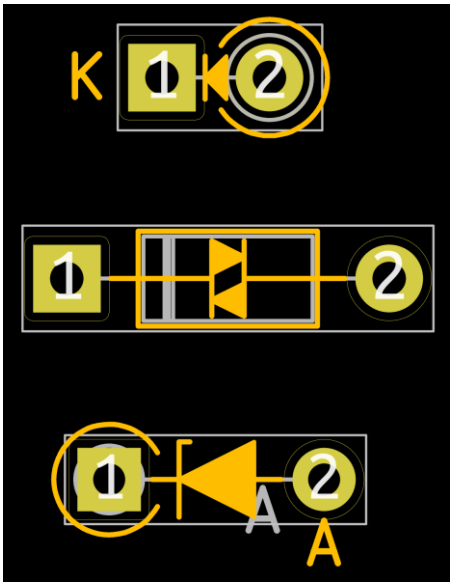
Footprint count: 32

Footprint naming convention:
D_DO-35_SOD27_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'Diac' variant with no polarity markings and a Diac symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:
D_DO-35_SOD27_P3.81mm_Vertical_AnodeUp
D_DO-35_SOD27_P10.16mm_Horizontal_Diac
D_DO-35_SOD27_P2.54mm_Vertical_KathodeUp_Zener
D_DO-35_SOD27_P12.70mm_Horizontal
D_DO-35_SOD27_P5.08mm_Vertical_Diac
D_DO-35_SOD27_P20.32mm_Horizontal_Zener



Vertical DO-35 diode standard footprint (top), a horizontal 'Diac' footprint (middle) and a vertical 'Zener' footprint (bottom).

DO-41 / SOD-81 diode footprints

Footprint count: 33

Footprint naming convention:

D_DO-41_SOD81_P<pitch>**mm**_<orientation>_<variant>

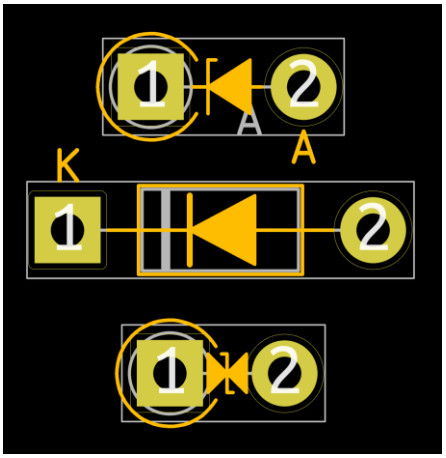
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-41_SOD81_P3.81mm_Vertical_AnodeUp
D_DO-41_SOD81_P10.16mm_Horizontal_TVS
D_DO-41_SOD81_P5.08mm_Vertical_KathodeUp_Zener
D_DO-41_SOD81_P12.70mm_Horizontal
D_DO-41_SOD81_P5.08mm_Vertical_TVS
D_DO-41_SOD81_P20.32mm_Horizontal_Zener



Vertical DO-41 diode 'Zener' footprint (top), a horizontal standard footprint (middle) and a vertical 'TVS' footprint (bottom).

DO-201AD diode footprints

Footprint count: 25

Footprint naming convention:

D_DO-201AD_P<pitch>**mm**_<orientation>_<variant>

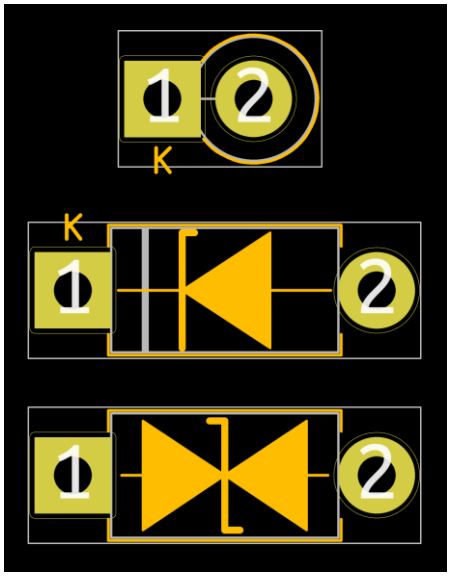
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-201AD_P3.81mm_Vertical_AnodeUp
D_DO-201AD_P12.70mm_Horizontal_TVS
D_DO-201AD_P5.08mm_Vertical_KathodeUp_Zener
D_DO-201AD_P15.24mm_Horizontal
D_DO-201AD_P5.08mm_Vertical_TVS
D_DO-201AD_P20.32mm_Horizontal_Zener



Vertical DO-201AD diode standard footprint (top), a horizontal 'Zener' footprint (middle) and a horizontal 'TVS' footprint (bottom).

DO-201AE diode footprints

Footprint count: 28

Footprint naming convention:

D_DO-201AE_P<pitch>**mm**_<orientation>_<variant>

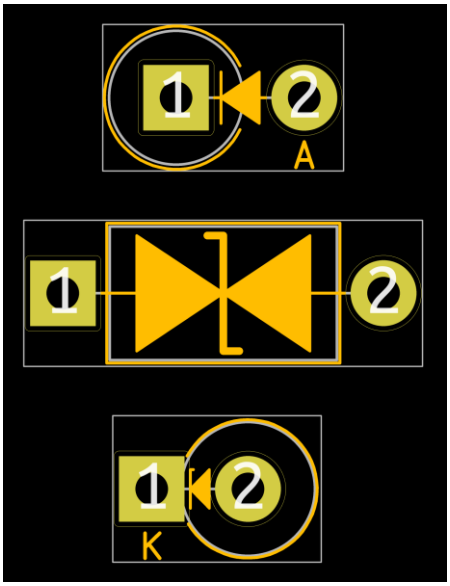
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-201AE_P3.81mm_Vertical_AnodeUp
D_DO-201AE_P12.70mm_Horizontal_TVS
D_DO-201AE_P5.08mm_Vertical_KathodeUp_Zener
D_DO-201AE_P15.24mm_Horizontal
D_DO-201AE_P3.81mm_Vertical_TVS
D_DO-201AE_P20.32mm_Horizontal_Zener



Vertical DO-201AE diode standard footprint (top), a horizontal 'TVS' footprint (middle) and a vertical 'Zener' footprint (bottom).

DO-201 diode footprints

Footprint count: 28

Footprint naming convention:

D_DO-201_P<pitch>**mm_**<orientation>_<variant>

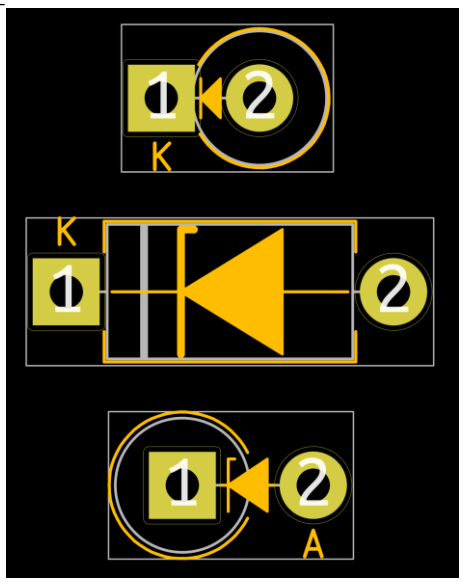
Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_DO-201_P3.81mm_Vertical_AnodeUp
D_DO-201_P12.70mm_Horizontal_TVS
D_DO-201_P5.08mm_Vertical_KathodeUp_Zener
D_DO-201_P15.24mm_Horizontal
D_DO-201_P3.81mm_Vertical_TVS
D_DO-201_P20.32mm_Horizontal_Zener



Vertical DO-201 diode standard footprint (top), a horizontal 'Zener' footprint (middle) and a vertical 'TVS' footprint (bottom).

P600 / R-6 diode footprints

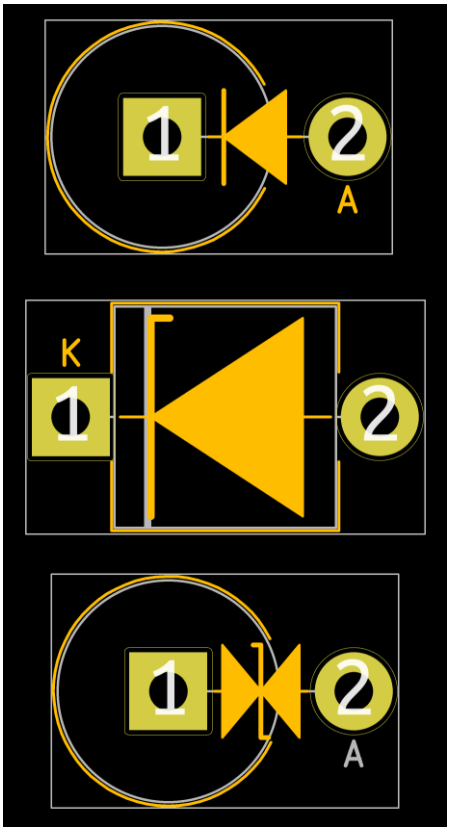
Footprint count: 25

Footprint naming convention:
D_P600_R-6_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'TVS' variant with no polarity markings and a bidirectional TVS symbol.
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:
D_P600_R-6_P7.62mm_Vertical_AnodeUp
D_P600_R-6_P12.70mm_Horizontal_TVS
D_P600_R-6_P7.62mm_Vertical_KathodeUp_Zener
D_P600_R-6_P15.24mm_Horizontal
D_P600_R-6_P7.62mm_Vertical_TVS
D_P600_R-6_P20.00mm_Horizontal_Zener

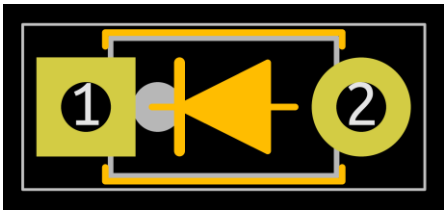


Vertical P600 diode standard footprint (top), a horizontal 'Zener' footprint (middle) and a vertical 'TVS' footprint (bottom).

SOD-23 diode footprint (new)

Footprint name:
D_SOD-23

SOD-23 (do not confuse with SOT-23) is an old plastic package for small-signal diodes.



SOD-23 footprint.

SOD-57 diode footprints

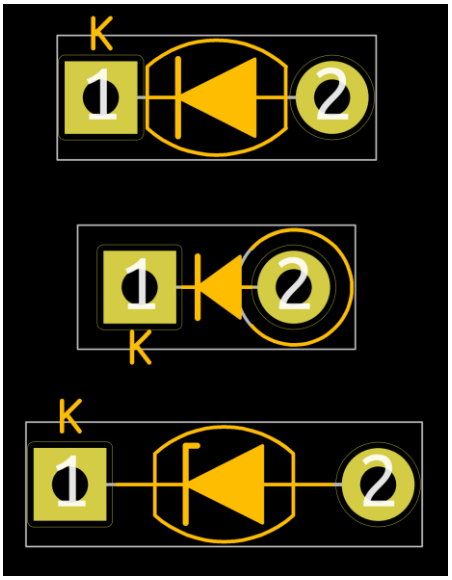
Footprint count: 18

Footprint naming convention:
D_SOD-57_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:
D_SOD-57_P5.08mm_Vertical_AnodeUp
D_SOD-57_P5.08mm_Vertical_KathodeUp_Zener
D_SOD-57_P15.24mm_Horizontal
D_SOD-57_P20.32mm_Horizontal_Zener



Vertical SOD-57 diode standard footprint (top), a horizontal standard footprint (middle) and a horizontal 'Zener' footprint (bottom).

SOD-61A diode footprints (new)

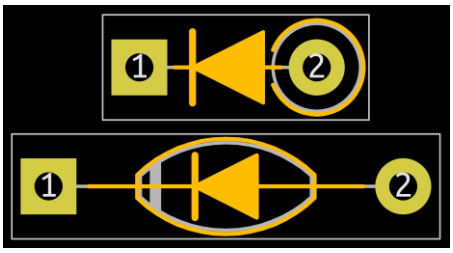
Footprint count: 8

Footprint naming convention:
D_SOD-61A_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

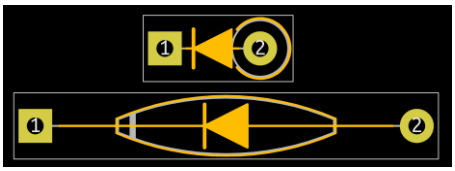
Name examples:
D_SOD-61A_P5.08mm_Vertical_AnodeUp
D_SOD-61A_P15.24mm_Horizontal



Vertical SOD-61A diode footprint (top), and a horizontal footprint (bottom).

SOD-61 diode footprints (new)

Footprint count: 6



Vertical SOD-61 diode footprint (top), and a horizontal footprint (bottom).

Footprint naming convention:

D_SOD-61_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

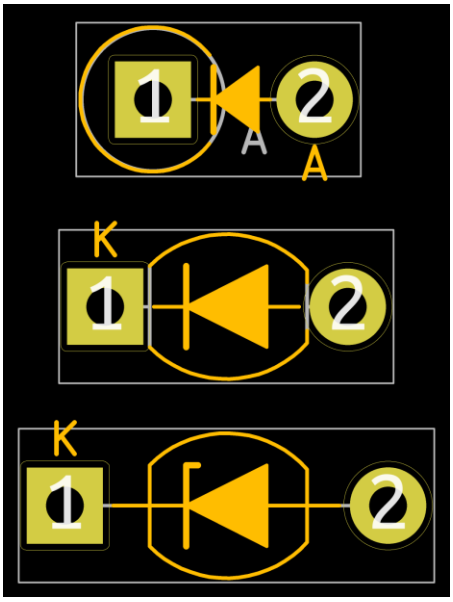
- Standard variant with a regular diode symbol
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

Name examples:

D_SOD-61_P5.08mm_Vertical_KathodeUp
D_SOD-61_P20.32mm_Horizontal

SOD-64 diode footprints

Footprint count: 18



Vertical SOD-64 diode standard footprint (top), a horizontal standard footprint (middle) and a horizontal 'Zener' footprint (bottom).

Footprint naming convention:

D_SOD-64_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:

- Standard variant with a regular diode symbol
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.
- 'AnodeUp_Zener' variant (vertical orientation only) has the anode on the outer lead and a Zener diode symbol.
- 'KathodeUp_Zener' variant (vertical orientation only) has the cathode on the outer lead and a Zener diode symbol.

Name examples:

D_SOD-64_P5.08mm_Vertical_AnodeUp
D_SOD-64_P5.08mm_Vertical_KathodeUp_Zener
D_SOD-64_P15.24mm_Horizontal
D_SOD-64_P20.32mm_Horizontal_Zener

T-1 diode footprints

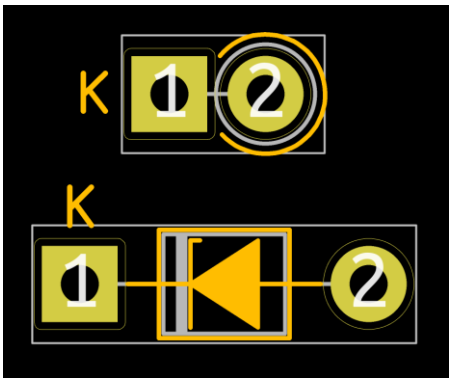
Footprint count: 16

Footprint naming convention:
D_T-1_P<pitch>**mm**_<orientation>_<variant>

Orientation can either be vertical or horizontal.

Available footprint variants:
- Standard variant with a regular diode symbol
- 'Zener' variant with a Zener diode symbol.
- 'AnodeUp' variant (vertical orientation only) has the anode on the outer lead.
- 'KathodeUp' variant (vertical orientation only) has the cathode on the outer lead.

Name examples:
D_T-1_P5.08mm_Vertical_AnodeUp
D_T-1_P15.24mm_Horizontal
D_T-1_P20.32mm_Horizontal_Zener

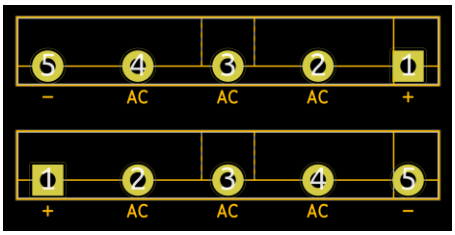


Vertical T-1 diode standard footprint (top), and a horizontal 'Zener' footprint (bottom).

3-Phase 35x25x5.5mm vertical rectifier bridge footprints

Footprint names:
Diode_Bridge_3F_35x25x5.5mm_P7.5mm
Diode_Bridge_3F_35x25x5.5mm_P7.5mm_B

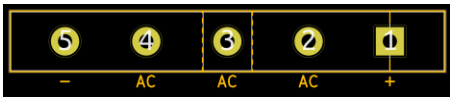
Note: B variant has different pin configuration.



Standard rectifier bridge footprint (top). 'B' variant rectifier bridge footprint (bottom)

3-Phase 40x21.5x5.4mm vertical rectifier bridge footprint

Footprint name:
Diode_Bridge_3F_40x21.5x5.4mm_P7.5mm



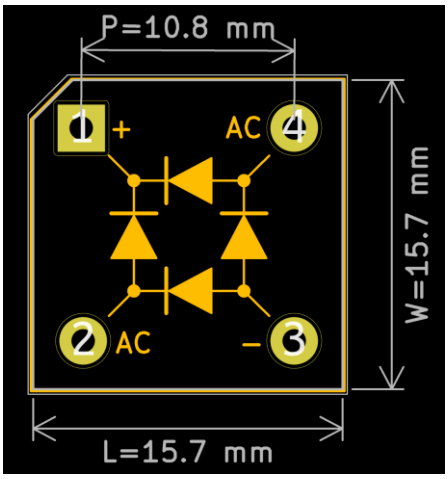
3-Phase 40x21.5x5.4mm bridge footprint.

Square rectifier bridge footprints

Footprint count: 6

Footprint naming convention:
Diode_Bridge_<width>**x**<length>**x**<height>**mm_**
P<pitch>**mm**

Footprint names:
Diode_Bridge_15.1x15.1x6.3mm_P10.9mm
Diode_Bridge_15.2x15.2x6.3mm_P10.9mm
Diode_Bridge_15.7x15.7x6.3mm_P10.8mm
Diode_Bridge_16.7x16.7x6.3mm_P10.8mm
Diode_Bridge_19.0x19.0x6.8mm_P12.7mm
Diode_Bridge_28.6x28.6x7.3mm_P11.6mm

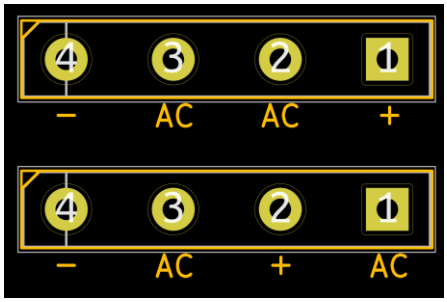


Square rectifier bridge footprint with all relevant dimensions indicated.

35x25x5.5mm vertical rectifier bridge footprints

Footprint names:
Diode_Bridge_19.0x3.5x10.0mm_P5.0mm
Diode_Bridge_19.0x3.5x10.0mm_P5.0mm_B

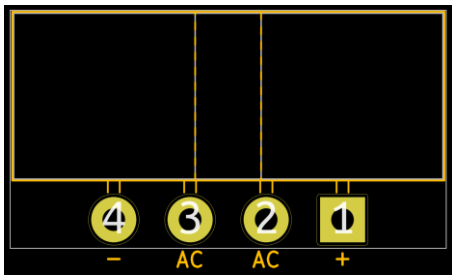
Note: B variant has different pin configuration.



Standard rectifier bridge footprint (top). 'B' variant rectifier bridge footprint (bottom)

Square 28.6x28.6x7.3mm vertical rectifier bridge footprint

Footprint name:
Diode_Bridge_28.6x28.6x7.3mm_P5.08mm_Vertical



Vertical square bridge footprint.

32.0x5.6x17.0mm vertical rectifier bridge footprint

Footprint name:
Diode_Bridge_32x5.6x17.0mm_P10.0mm_P7.50mm

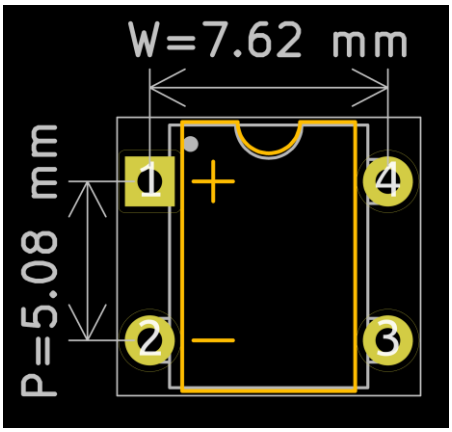
32.0x5.6x17.0mm bridge footprint.

DIP rectifier bridge footprints

Footprint count: 2

Footprint naming convention:
Diode_Bridge_DIP-<pin count>**_W**<width>**mm_**
P<pitch>**mm**

Footprint names:
Diode_Bridge_DIP-4_W5.08mm_P2.54mm
Diode_Bridge_DIP-4_W7.62mm_P5.08mm



DIP rectifier bridge footprint with all relevant dimensions indicated.

GBJ rectifier bridge footprint

Footprint name:
Diode_Bridge_GBJ

GBJ bridge footprint.

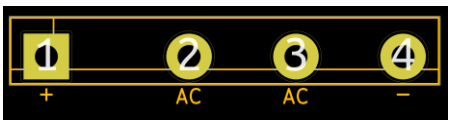
GBJL rectifier bridge footprint

Footprint name:
Diode_Bridge_GBJL

GBJL bridge footprint.

GBJS rectifier bridge footprint

Footprint name:
Diode_Bridge_GBJS



GBJS bridge footprint.

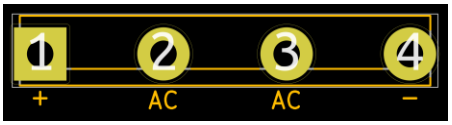
KBJ rectifier bridge footprint

Footprint name:
Diode_Bridge_KBJ

KBJ bridge footprint.

KBJL rectifier bridge footprint

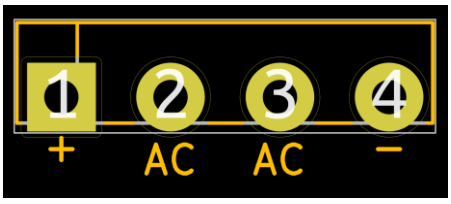
Footprint name:
Diode_Bridge_KBJL



KBJL bridge footprint.

KBP rectifier bridge footprint

Footprint name:
Diode_Bridge_KBP



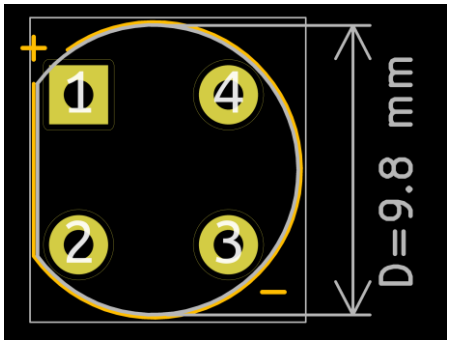
KBP bridge footprint.

Round rectifier bridge footprints

Footprint count: 3

Footprint naming convention:
Diode_Bridge_Round_D<diameter>**mm**

Footprint names:
Diode_Bridge_Round_D8.9mm
Diode_Bridge_Round_D9.0mm
Diode_Bridge_Round_D9.8mm



Round rectifier bridge footprint with its diameter indicated.

GBL rectifier bridge footprint

Footprint name:
Diode_Bridge_Vishay_GBL

GBL bridge footprint.

GBU rectifier bridge footprint

Footprint name:
Diode_Bridge_Vishay_GBU

GBU bridge footprint.

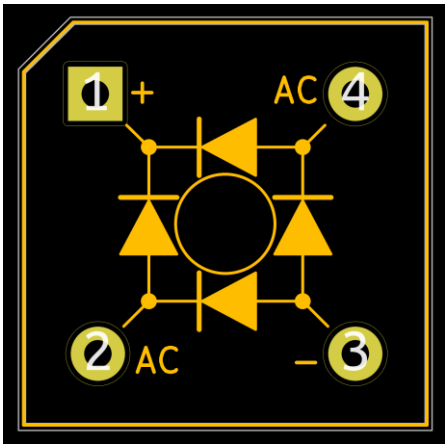
KBL rectifier bridge footprint

Footprint name:
Diode_Bridge_Vishay_KBL

KBL bridge footprint.

KBPC1 rectifier bridge footprint

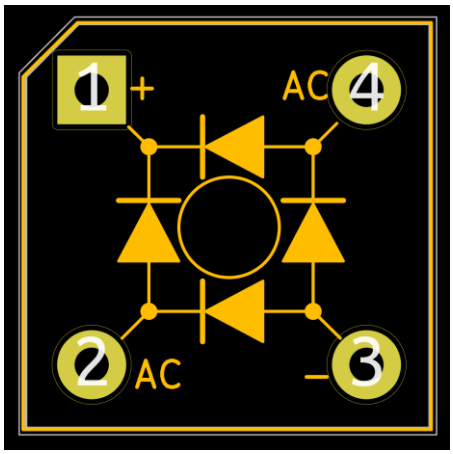
Footprint name:
Diode_Bridge_Vishay_KBPC1



KBPC1 bridge footprint.

KBPC6 rectifier bridge footprint

Footprint name:
Diode_Bridge_Vishay_KBPC6



KBPC6 bridge footprint.

KBU rectifier bridge footprint

Footprint name:
Diode_Bridge_Vishay_KBU

KBU bridge footprint.

3.8. SMD Ferrite Libraries

These libraries contain footprints for SMD ferrite beads and common-mode chokes.

Handsoldering library variant contains footprints with additional symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: **`Ferrite_SMD_AKL`**	
Footprint count:	**29**
Handsoldering variant	
Folder name: **`Ferrite_SMD_Handsoldering_AKL`**	
Footprint count:	**29**
Total footprints:	**58**

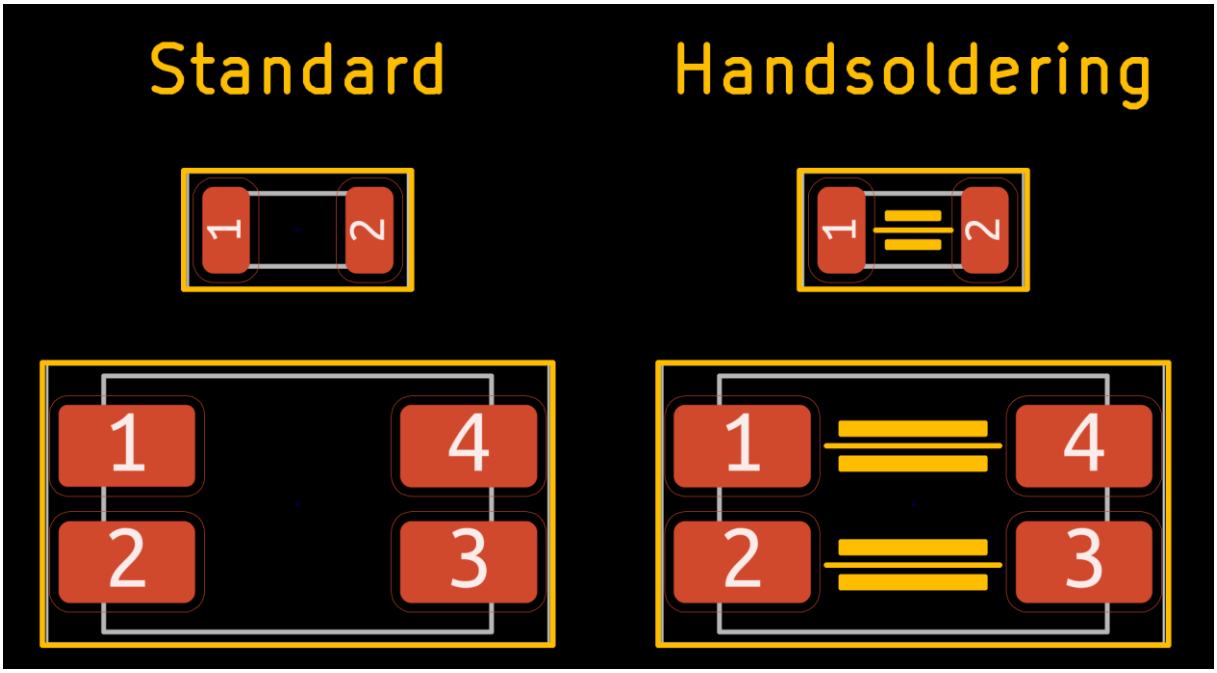


Figure 3.27. *Comparison between SMD ferrite footprints from different library variants.*

SMD Ferrite bead footprints

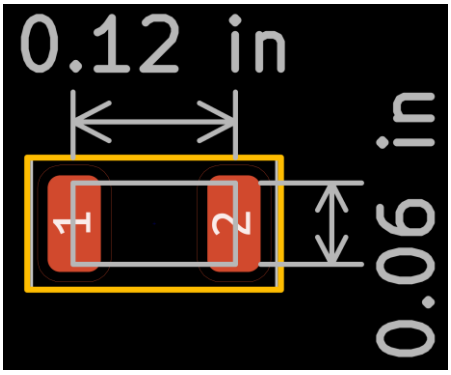
Footprint count: 28

Footprint naming convention:
Ferrite_<imp. size code>_<metric size code>**Metric**
(optional: _**Pad**<pad width>**x**<pad length>**mm_BigPads)**

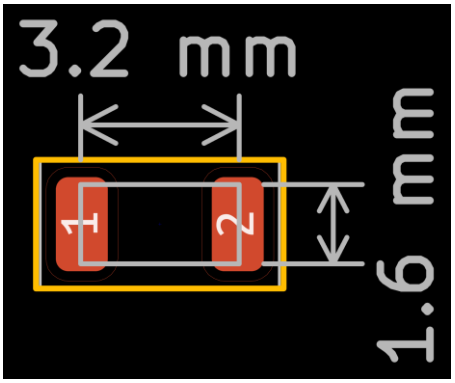
Name examples:
Ferrite_0805_2012Metric
Ferrite_0603_1608Metric_Pad1.05x095mm_BigPads

Imperial size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.01 in. Example: 0805 size code means package length of 0.08 in and width of 0.05 in.

Metric size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.1 mm. Example: 2012 metric size code means package length of 2 mm and width of 1.2 mm.



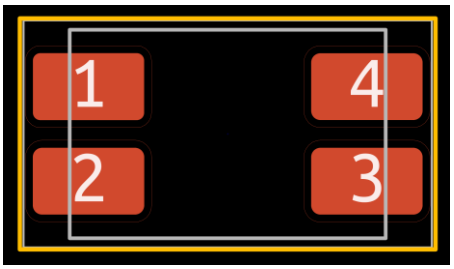
Ferrite with 1206 imperial size code with length and width of the package indicated.



Ferrite with 3216 metric size code with length and width of the package indicated.

Delevan 4222 common-mode ferrite filter footprint

Footprint name:
Ferrite_CommonMode_Delevan_4222



Delevan 4222 footprint.

3.9. THT Ferrite Libraries

These libraries contain footprints for THT ferrite beads and filters

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Standard variant	
Folder name: **`Ferrite_THT_AKL`**	
Footprint count:	**208**
Double-sided variant	
Folder name: **`Ferrite_THT_AKL_Double`**	
Footprint count:	**198**
Total footprints:	**406**

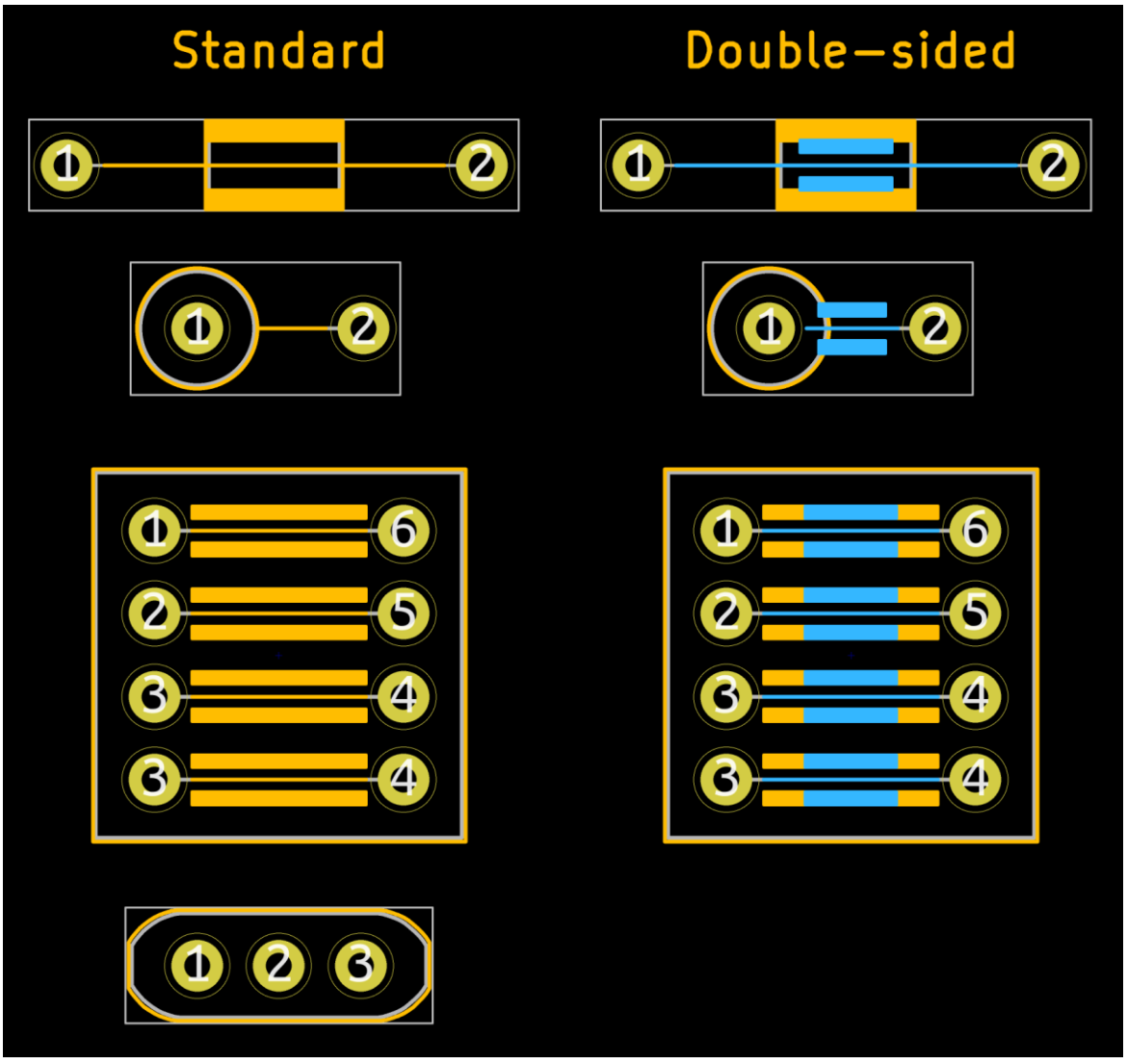


Figure 3.28. *Comparison between THT ferrite bead and filter footprints from different library variants.*

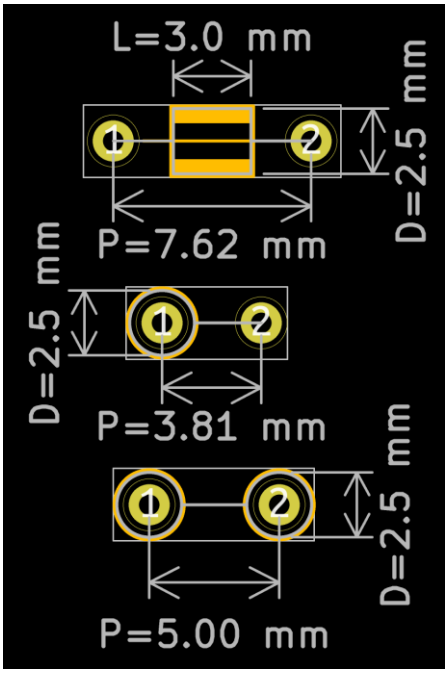
Axial ferrite bead footprints

Footprint count: 192

Footprint naming convention:
Ferrite_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_**
<optional: variant>

Available footprint variants:
- 'Vertical' variant allows the part do be installed in vertical orientation.
- 'Vertical_Dual' variant is meant for parts with two beads meant for installation in vertical orientation.

Name examples:
Ferrite_L6.7mm_D3.5mm_P10.16mm
Ferrite_L5.0mm_D3.6mm_P3.81mm_Vertical
Ferrite_L4.0mm_D2.5mm_P5mm_Vertical_Dual



Horizontal ferrite bead footprint (top), vertical footprint (middle), vertical 'Dual' footprint (bottom) with all relevant dimensions indicated.

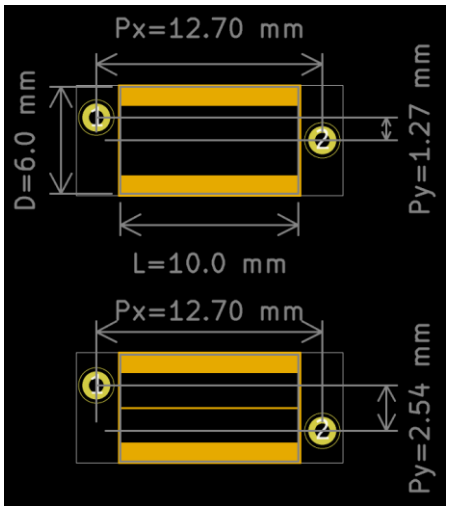
Horizontal ferrite choke footprints

Footprint count: 6

Footprint naming convention:
Ferrite_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_**
<optional: variant>

Available footprint variants:
- 'Wide' variant offers a different vertical pin pitch.

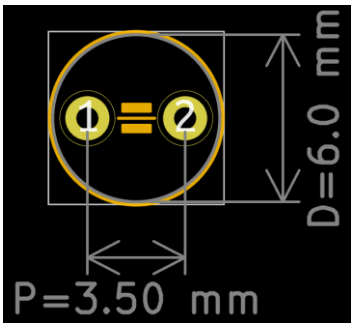
Name examples:
Ferrite_L10.0mm_D6.0mm_P12.70mm
Ferrite_L10.0mm_D6.0mm_P20.32mm_Wide



Horizontal ferrite choke standard footprint (top), 'Wide' footprint (bottom).

10.0x6.0mm Radial ferrite choke footprint

Footprint name:
Ferrite_L10.0mm_D6mm_P3.5mm_Radial



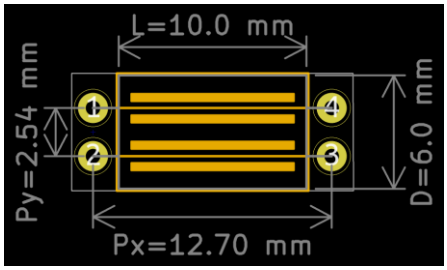
Radial ferrite choke footprint.

Dual ferrite choke footprints

Footprint count: 3

Footprint naming convention:
Ferrite_Dual_L<length>**mm_D**<diameter>**mm_**
P<pitch>**mm**

Footprint Names:
Ferrite_L10.0mm_D6.0mm_P12.70mm
Ferrite_L10.0mm_D6.0mm_P15.24mm
Ferrite_L10.0mm_D6.0mm_P20.32mm



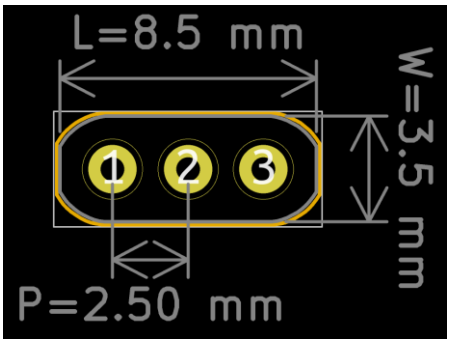
Dual ferrite choke footprint with all relevant dimensions indicated.

Ferrite LCL filter footprints

Footprint count: 3

Footprint naming convention:
Ferrite_Filter_L<length>**mm_W**<width>**mm_**
H<height>**mm_P**<pitch>**mm**

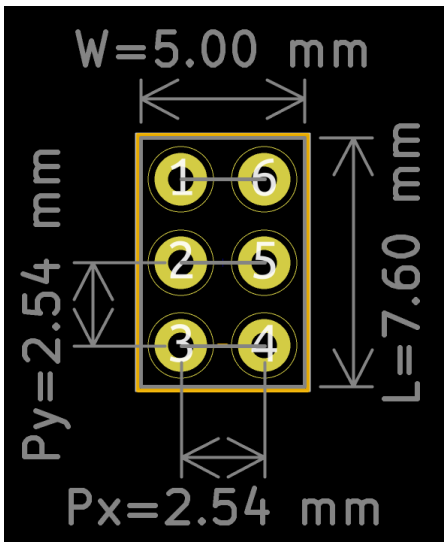
Footprint Names:
Ferrite_Filter_L8.5mm_W3.5mm_H7.5mm_P2.5mm
Ferrite_Filter_L8mm_W2.54mm_H10.5mm_P2.5mm
Ferrite_Filter_L9mm_W3.2mm_H8mm_P2.5mm



Ferrite LCL filter footprint with all relevant dimensions indicated.

Triple ferrite bead footprint

Footprint name:
Ferrite_Triple_L7.6mm_W5mm_P2.54mm



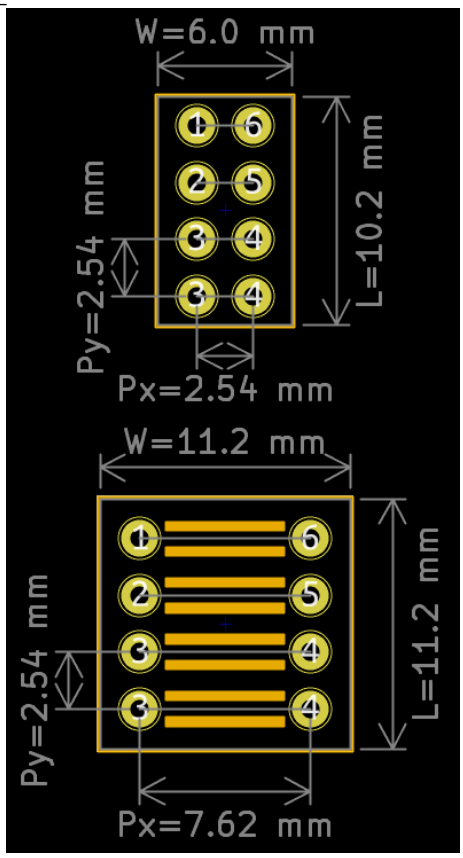
Triple ferrite footprint with all relevant dimensions indicated.

Quad ferrite bead footprints

Footprint count: 2

Footprint naming convention:
Ferrite_Quad_L<length>**mm_W**<width>**mm_P**<pitch>**mm**

Footprint Names:
Ferrite_Quad_L10.2mm_W6mm_P2.54mm
Ferrite_Quad_L11.2mm_W11.2mm_P2.54mm



Quad ferrite bead footprints with all relevant dimensions indicated.

3.10. Fuse Libraries

These libraries contain footprints for:
- THT fuses and fuse holders
- SMD fuses and fuse holders

Double-sided library variant contains THT footprints with both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Handsoldering library variant contains SMD footprints with additional symbols on the silkscreen layer placed under the part.

US symbol library variants use the US - style fuse symbol instead of the European one on the silkscreen.

Standard variant	
Folder name: **`Fuse_AKL`**	
Footprint count:	**104**
Double-sided variant	
Folder name: **`Fuse_AKL_Double`**	
Footprint count:	**61**
Handsoldering variant	
Folder name: **`Fuse_Handsoldering_AKL`**	
Footprint count:	**41**
Standard variant (US Symbol)	
Folder name: **`Fuse_US_AKL`**	
Footprint count:	**104**
Double-sided variant (US Symbol)	
Folder name: **`Fuse_US_AKL_Double`**	
Footprint count:	**61**
Handsoldering variant (US Symbol)	
Folder name: **`Fuse_US_Handsoldering_AKL`**	
Footprint count:	**41**
Total footprints:	**412**

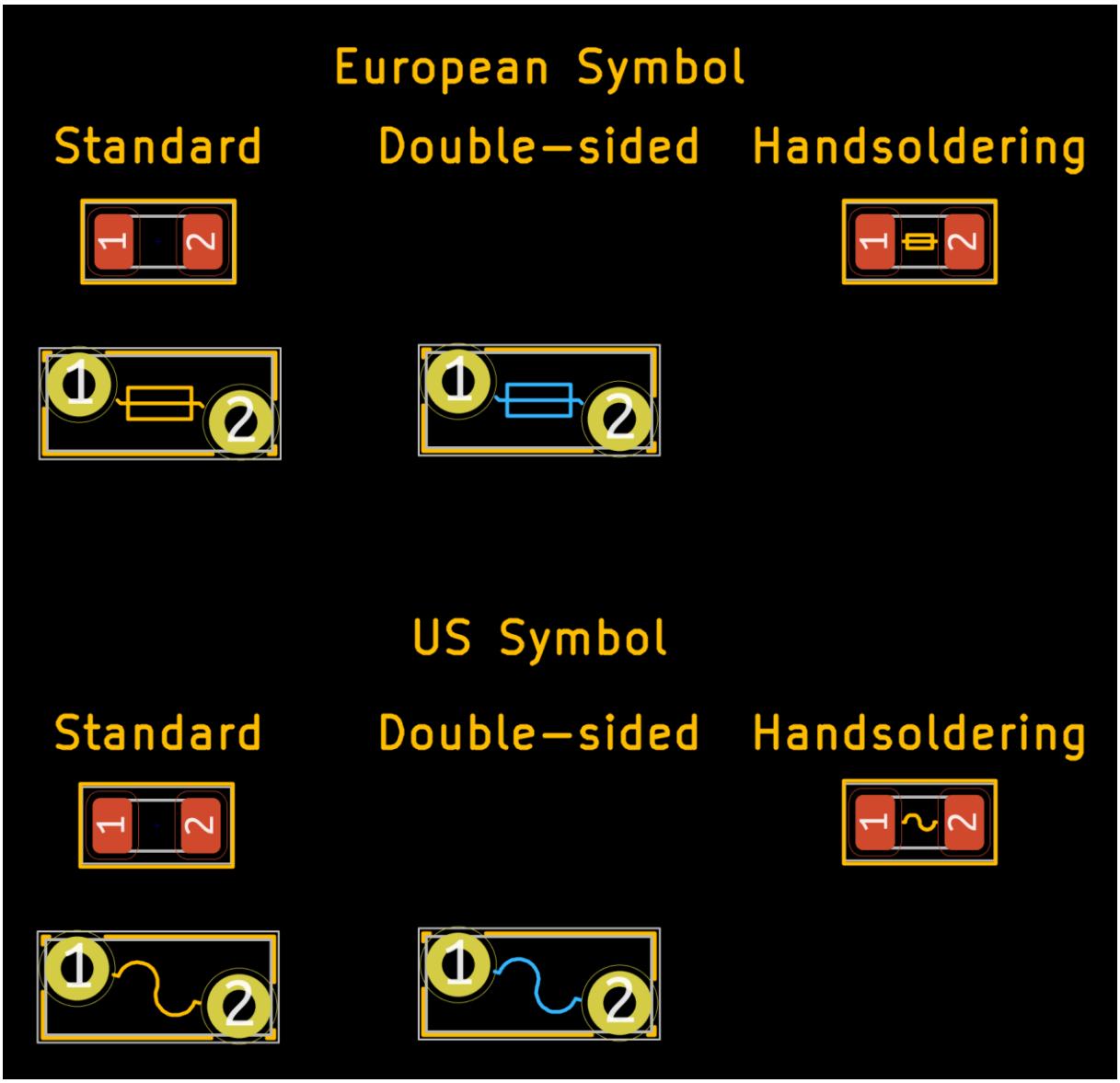


Figure 3.29. *Comparison between fuse and fuse holder footprints from different library variants.*

SMD chip fuse footprints

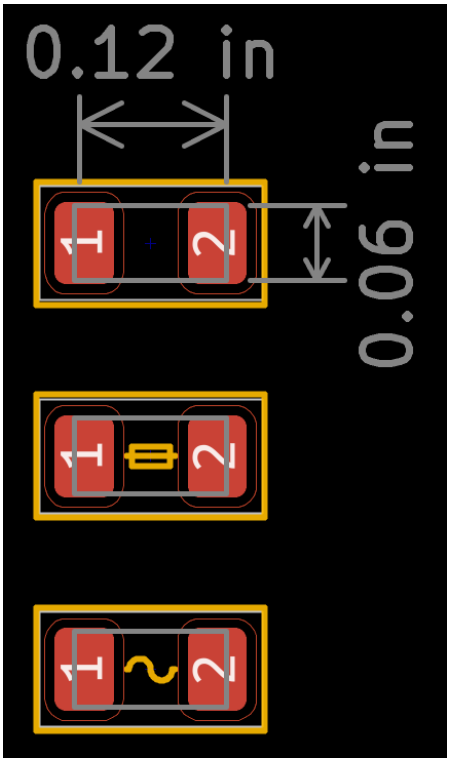
Footprint count: 33

Footprint naming convention:
Fuse_<imp. size code>_<metric size code>**Metric**_<variant>

Name examples:
Fuse_1206_3216Metric
Fuse_2512_6332Metric_Castellated
Fuse_0805_2012Metric_Pad1.15x1.40mm_BigPads

Available variants:
- Castellated – pad size optimized for castellated pads.
- BigPads– variant name states the pad size, useful for manual soldering.

Imperial size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.01 in. Example: 0805 size code means package length of 0.08 in and width of 0.05 in.

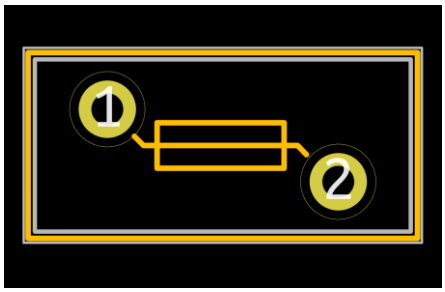


1206 Fuse standard footprint with its dimensions indicated (top), footprint from 'Handsoldering' library (middle) and a footprint from the 'US Handsoldering' library (bottom).

Metric size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.1 mm. Example: 2012 metric size code means package length of 2 mm and width of 1.2 mm.

BelFuse 0ZRE0005FF PTC fuse footprint

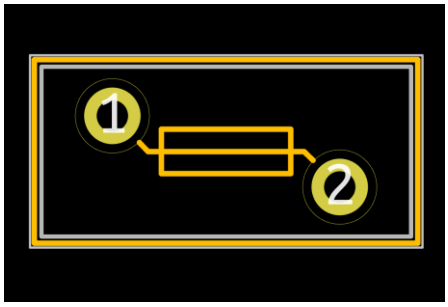
Footprint name:
Fuse_BelFuse_0ZRE0005FF_L8.3mm_W3.8mm



0ZRE0005FF PTC fuse footprint.

BelFuse 0ZRE0008FF PTC fuse footprint

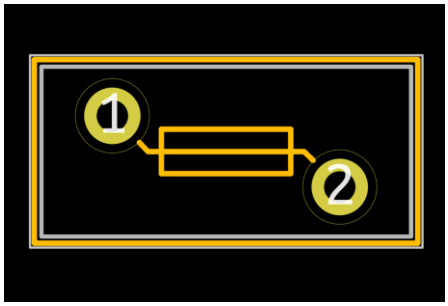
Footprint name:
Fuse_BelFuse_0ZRE0008FF_L8.3mm_W3.8mm



0ZRE0008FF PTC fuse footprint.

BelFuse 0ZRE0012FF PTC fuse footprint

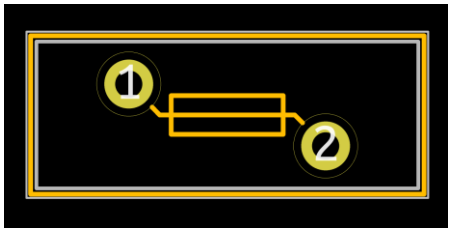
Footprint name:
Fuse_BelFuse_0ZRE0012FF_L8.3mm_W3.8mm



0ZRE0012FF PTC fuse footprint.

BelFuse 0ZRE0016FF PTC fuse footprint

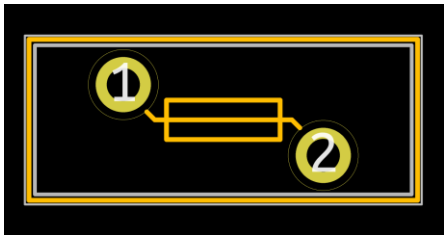
Footprint name:
Fuse_BelFuse_0ZRE0016FF_L9.9mm_W3.8mm



0ZRE0016FF PTC fuse footprint.

BelFuse 0ZRE0025FF PTC fuse footprint

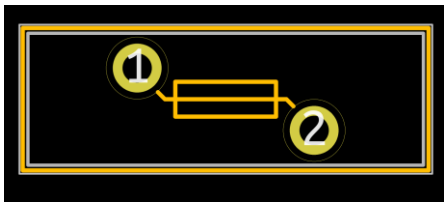
Footprint name:
Fuse_BelFuse_0ZRE0025FF_L9.6mm_W3.8mm



0ZRE0025FF PTC fuse footprint.

BelFuse 0ZRE0033FF PTC fuse footprint

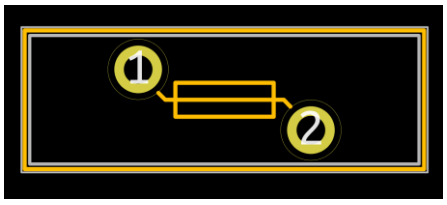
Footprint name:
Fuse_BelFuse_0ZRE0033FF_L11.4mm_W3.8mm



0ZRE0033FF PTC fuse footprint.

BelFuse 0ZRE0040FF PTC fuse footprint

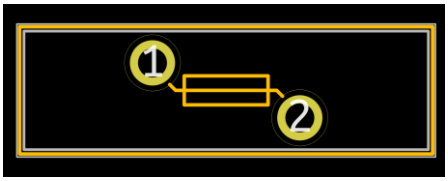
Footprint name:
Fuse_BelFuse_0ZRE0040FF_L11.5mm_W3.8mm



0ZRE0040FF PTC fuse footprint.

BelFuse 0ZRE0055FF PTC fuse footprint

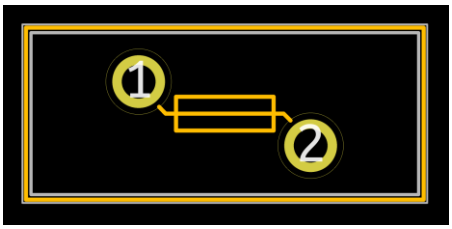
Footprint name:
Fuse_BelFuse_0ZRE0055FF_L14.0mm_W4.1mm



0ZRE0055FF PTC fuse footprint.

BelFuse 0ZRE0075FF PTC fuse footprint

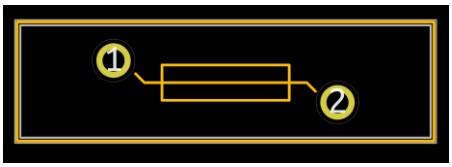
Footprint name:
Fuse_BelFuse_0ZRE0075FF_L11.5mm_W4.8mm



0ZRE0075FF PTC fuse footprint.

BelFuse 0ZRE0100FF PTC fuse footprint

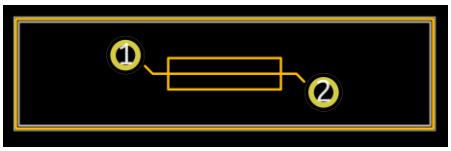
Footprint name:
Fuse_BelFuse_0ZRE0100FF_L18.7mm_W5.1mm



0ZRE0100FF PTC fuse footprint.

BelFuse 0ZRE0125FF PTC fuse footprint

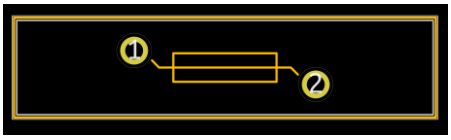
Footprint name:
Fuse_BelFuse_0ZRE0125FF_L21.2mm_W5.3mm



0ZRE0125FF PTC fuse footprint.

BelFuse 0ZRE0150FF PTC fuse footprint

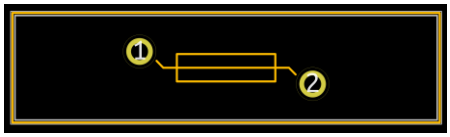
Footprint name:
Fuse_BelFuse_0ZRE0150FF_L23.4mm_W5.3mm



0ZRE0150FF PTC fuse footprint.

BelFuse 0ZRE0200FF PTC fuse footprint

Footprint name:
Fuse_BelFuse_0ZRE0200FF_L24.9mm_W6.1mm



0ZRE0200FF PTC fuse footprint.

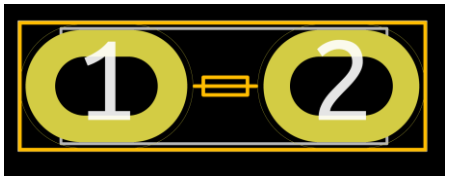
Automotive blade fuse footprint

Footprint name:
Fuse_Blade_ATO_directSolder

Blade fuse footprint.

Automotive blade mini fuse footprint

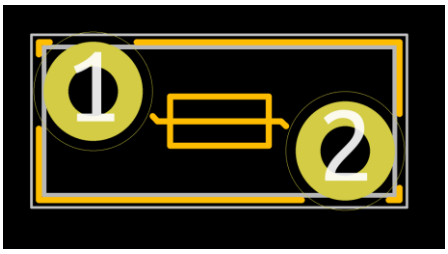
Footprint name:
Fuse_Blade_Mini_directSolder



Blade mini fuse footprint.

Bourns MF-RG300 PTC fuse footprint

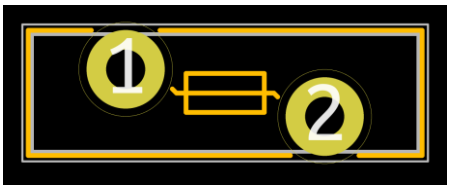
Footprint name:
Fuse_Bourns_MF-RG300



MF-RG300 fuse footprint.

Bourns MF-RG400 PTC fuse footprint

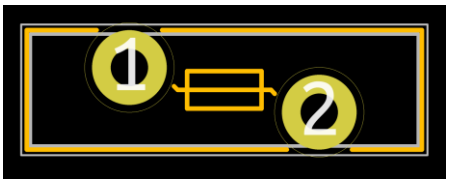
Footprint name:
Fuse_Bourns_MF-RG400



MF-RG400 fuse footprint.

Bourns MF-RG500 PTC fuse footprint

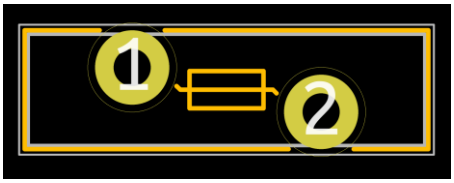
Footprint name:
Fuse_Bourns_MF-RG500



MF-RG500 fuse footprint.

Bourns MF-RG600 PTC fuse footprint

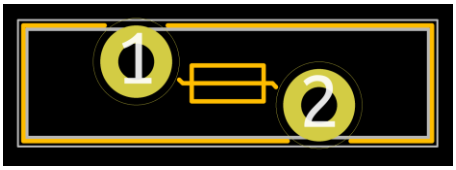
Footprint name:
Fuse_Bourns_MF-RG600



MF-RG600 fuse footprint.

Bourns MF-RG650 PTC fuse footprint

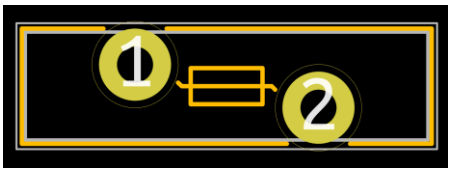
Footprint name:
Fuse_Bourns_MF-RG650



MF-RG650 fuse footprint.

Bourns MF-RG700 PTC fuse footprint

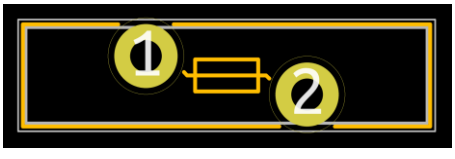
Footprint name:
Fuse_Bourns_MF-RG700



MF-RG700 fuse footprint.

Bourns MF-RG800 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RG800



MF-RG800 fuse footprint.

Bourns MF-RG900 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RG900

MF-RG900 fuse footprint.

Bourns MF-RG1000 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RG1000

MF-RG1000 fuse footprint.

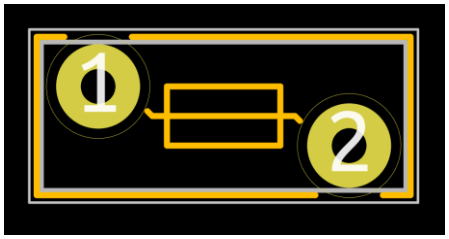
Bourns MF-RG1100 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RG1100

MF-RG1100 fuse footprint.

Bourns MF-RHT050 PTC fuse footprint

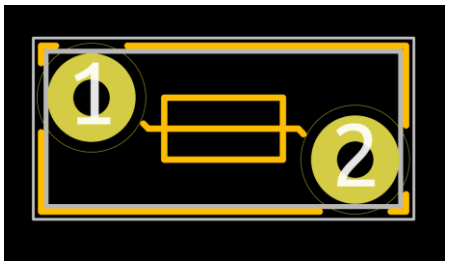
Footprint name:
Fuse_Bourns_MF-RHT050



MF-RHT050 fuse footprint.

Bourns MF-RHT070 PTC fuse footprint

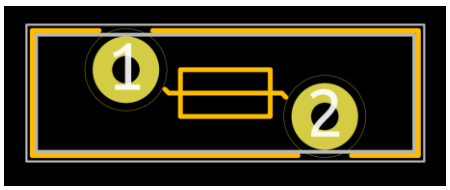
Footprint name:
Fuse_Bourns_MF-RHT070



MF-RHT070 fuse footprint.

Bourns MF-RHT100 PTC fuse footprint

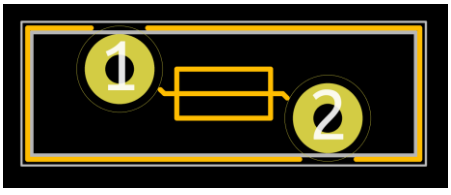
Footprint name:
Fuse_Bourns_MF-RHT100



MF-RHT100 fuse footprint.

Bourns MF-RHT200 PTC fuse footprint

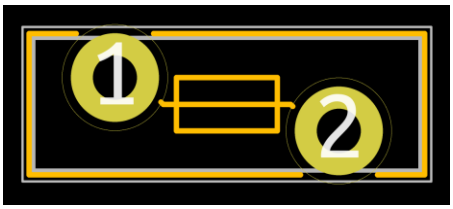
Footprint name:
Fuse_Bourns_MF-RHT200



MF-RHT200 fuse footprint.

Bourns MF-RHT300 PTC fuse footprint

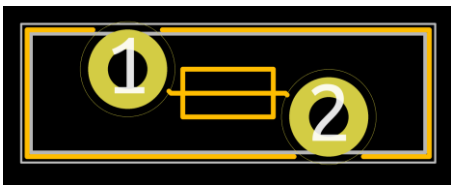
Footprint name:
Fuse_Bourns_MF-RHT300



MF-RHT300 fuse footprint.

Bourns MF-RHT400 PTC fuse footprint

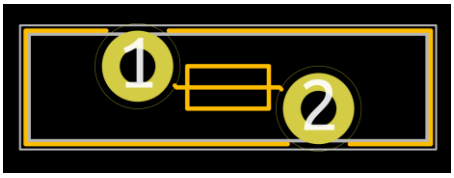
Footprint name:
Fuse_Bourns_MF-RHT400



MF-RHT400 fuse footprint.

Bourns MF-RHT500 PTC fuse footprint

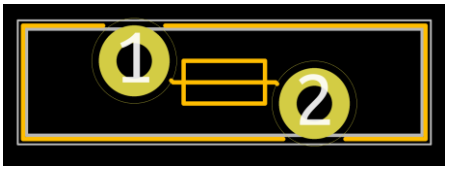
Footprint name:
Fuse_Bourns_MF-RHT500



MF-RHT500 fuse footprint.

Bourns MF-RHT550 PTC fuse footprint

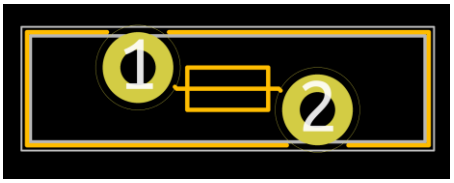
Footprint name:
Fuse_Bourns_MF-RHT550



MF-RHT550 fuse footprint.

Bourns MF-RHT600 PTC fuse footprint

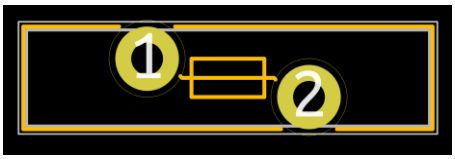
Footprint name:
Fuse_Bourns_MF-RHT600



MF-RHT600 fuse footprint.

Bourns MF-RHT650 PTC fuse footprint

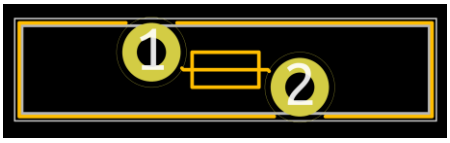
Footprint name:
Fuse_Bourns_MF-RHT650



MF-RHT650 fuse footprint.

Bourns MF-RHT700 PTC fuse footprint

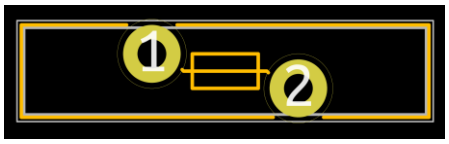
Footprint name:
Fuse_Bourns_MF-RHT700



MF-RHT700 fuse footprint.

Bourns MF-RHT750 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RHT750



MF-RHT750 fuse footprint.

Bourns MF-RHT800 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RHT800

MF-RHT800 fuse footprint.

Bourns MF-RHT900 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RHT900

MF-RHT900 fuse footprint.

Bourns MF-RHT1000 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RHT1000

MF-RHT1000 fuse footprint.

Bourns MF-RHT1100 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RHT1100

MF-RHT1100 fuse footprint.

Bourns MF-RHT1300 PTC fuse footprint

Footprint name:
Fuse_Bourns_MF-RHT1300

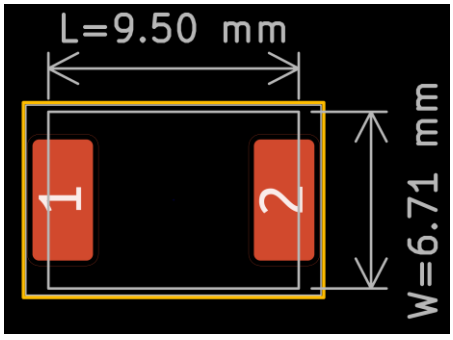
MF-RHT1300 fuse footprint.

Bourns MF-SM Series fuse footprints

Footprint count: 2

Footprint naming convention:
Fuse_Bourns_MF-SM_<length>**x**<width>**mm**

Footprint names:
Fuse_Bourns_MF-SM_7.98x5.44mm
Fuse_Bourns_MF-SM_9.5x6.71mm



MF-SM Series SMD fuse footprint with its dimensions indicated.

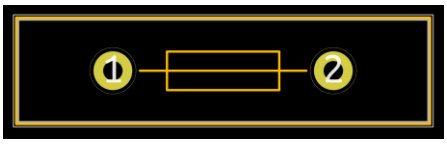
Littelfuse LVR100 PTC fuse footprint

Footprint name:
Fuse_Littelfuse-LVR100

LVR100 fuse footprint.

Littelfuse LVR125 PTC fuse footprint

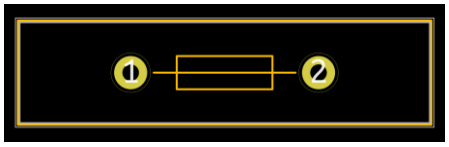
Footprint name:
Fuse_Littelfuse-LVR125



LVR125 fuse footprint.

Littelfuse LVR200 PTC fuse footprint

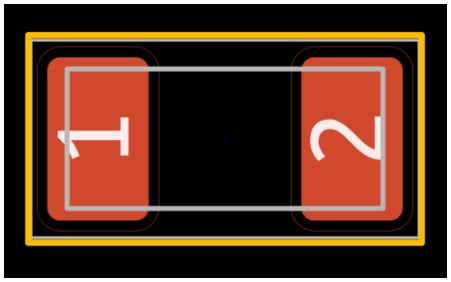
Footprint name:
Fuse_Littelfuse-LVR200



LVR200 fuse footprint.

Littelfuse NANO2 451/453 SMD fuse footprint

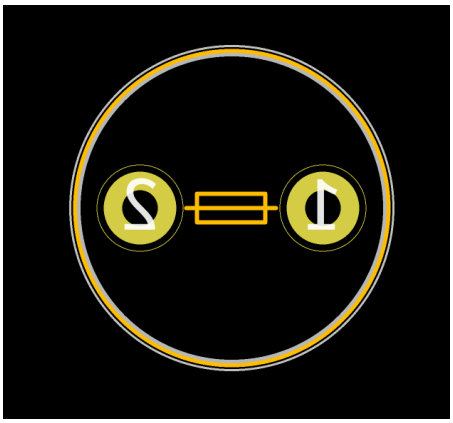
Footprint name:
Fuse_Littelfuse-NANO2-451_453



NANO2 451/453 fuse footprint.

Littelfuse 372 series fuse footprint

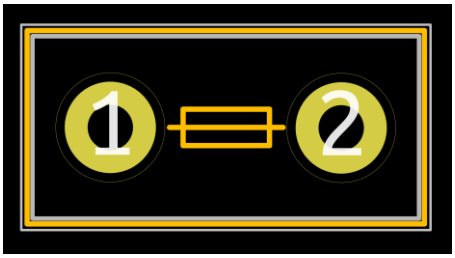
Footprint name:
Fuse_Littelfuse_372_D8.50mm



372 series fuse footprint.

Littelfuse 395 series fuse footprint

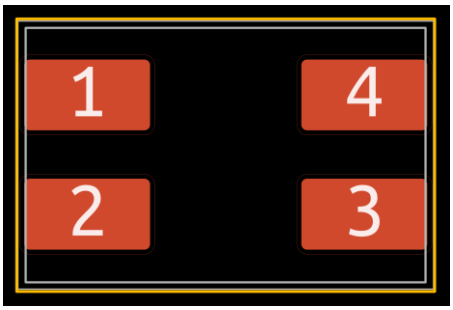
Footprint name:
Fuse_Littelfuse_395Series



395 series fuse footprint.

Littelfuse TSM600 series fuse footprint

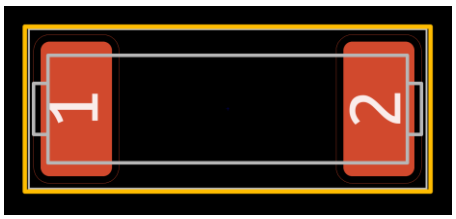
Footprint name:
Fuse_Littelfuse_TSM600



TSM600 fuse footprint.

Schurter UMT250 series fuse footprint

Footprint name:
Fuse_Schurter_UMT250



UMT250 fuse footprint.

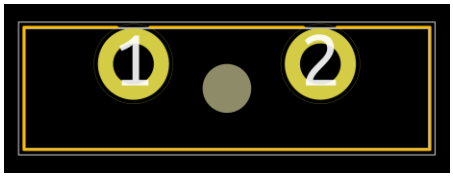
SunFuse 6HP series fuse footprint

Footprint name:
Fuse_SunFuse-6HP

6HP fuse footprint.

Littelfuse Pudenz 2-pin blade fuse holder footprint

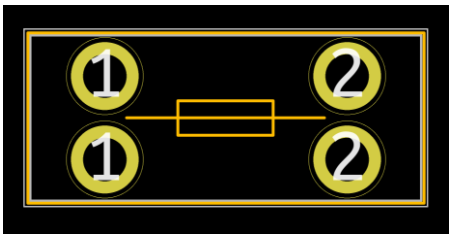
Footprint name:
Fuseholder_Blade_ATO_Littelfuse_Pudenz_2_Pin



Blade fuse holder footprint.

Keystone 3568 mini blade fuse holder footprint

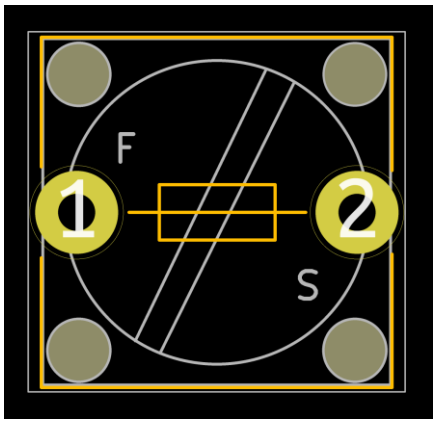
Footprint name:
Fuseholder_Blade_Mini_Keystone_3568



Mini blade fuse holder footprint.

Bulgin FX0456 fuse holder footprint

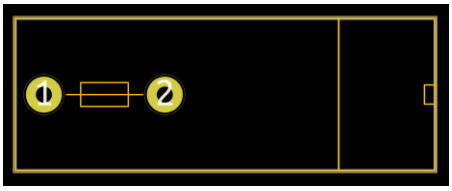
Footprint name:
Fuseholder_Cylinder-5x20mm_Bulgin_FX0456_Vertical_Closed



FX0456 fuse holder footprint.

Bulgin FX0457 fuse holder footprint

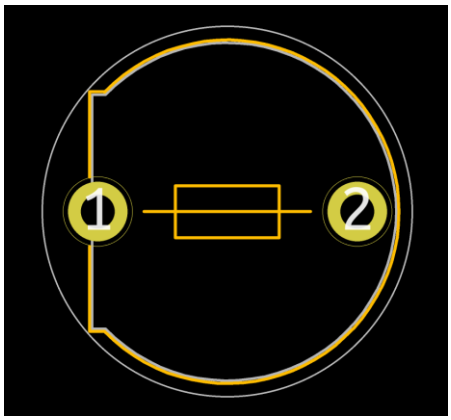
Footprint name:
Fuseholder_Cylinder-5x20mm_Bulgin_FX0457_Horizontal_Closed



FX0457 fuse holder footprint.

EATON H15-V-1 fuse holder footprint

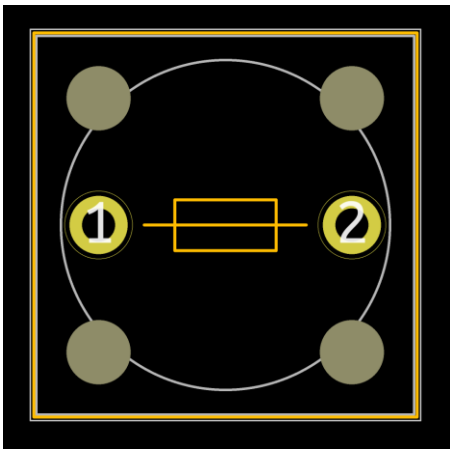
Footprint name:
Fuseholder_Cylinder-5x20mm_EATON_H15-V-1_Vertical_Closed



H15-V-1 fuse holder footprint.

EATON HBV fuse holder footprint

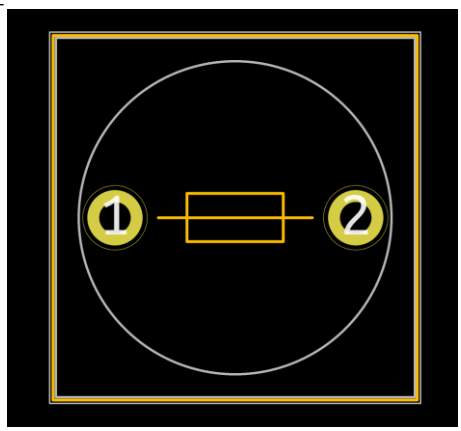
Footprint name:
Fuseholder_Cylinder-5x20mm_EATON_HBV_Vertical_Closed



HBV fuse holder footprint.

EATON HBW fuse holder footprint

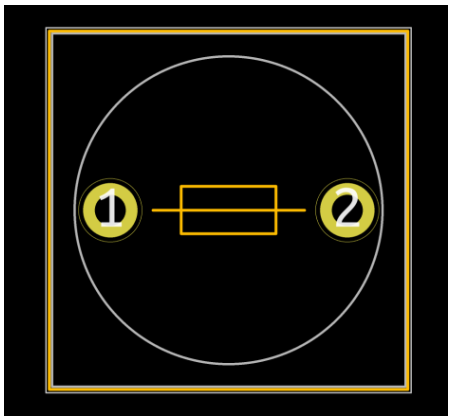
Footprint name:
Fuseholder_Cylinder-5x20mm_EATON_HBW_Vertical_Closed



HBW fuse holder footprint.

EATON HBW fuse holder footprint

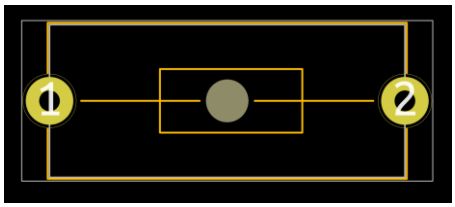
Footprint name:
Fuseholder_Cylinder-5x20mm_EATON_HBW_Vertical_Closed



HBW fuse holder footprint.

Schurter 0031.8201 fuse holder footprint

Footprint name:
Fuseholder_Cylinder-5x20mm_Schurter_0031_8201_Horizontal_Open



0031.8201 fuse holder footprint.

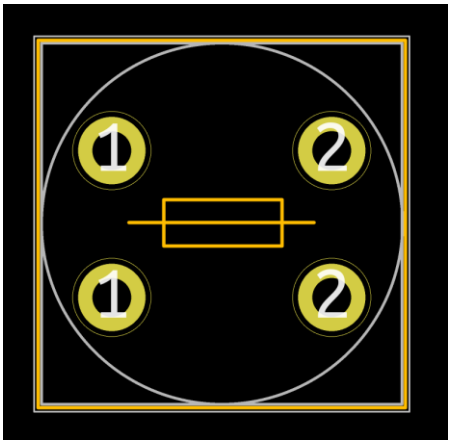
Schurter FAB fuse holder footprint

Footprint name:
Fuseholder_Cylinder-5x20mm_Schurter_FAB_0031-355x_Horizontal_Closed

FAB fuse holder footprint.

Schurter FPG4 fuse holder footprint

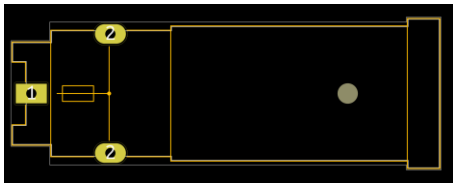
Footprint name:
Fuseholder_Cylinder-5x20mm_Schurter_FPG4_Vertical_Closed



FPG4 fuse holder footprint.

Schurter 0031.2510 fuse holder footprint

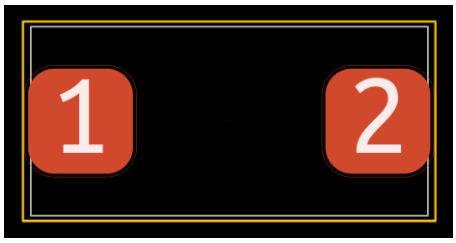
Footprint name:
Fuseholder_Cylinder-5x20mm_Schurter_FUP_0031.2510_Horizontal_Closed



0031.2510 fuse holder footprint.

Schurter OGN SMD fuse holder footprint

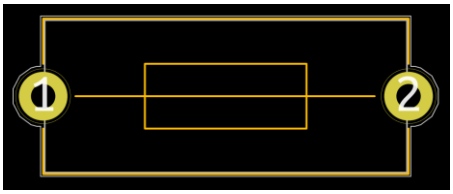
Footprint name:
Fuseholder_Cylinder-5x20mm_Schurter_OGN-SMD_Horizontal_Closed



OGN fuse holder footprint.

Stelvio-Kontek PTF78 fuse holder footprint

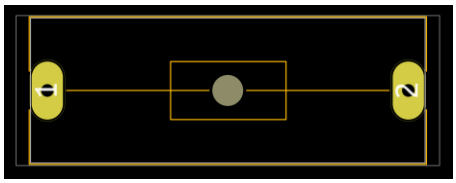
Footprint name:
Fuseholder_Cylinder-5x20mm_SStelvio-Kontek_PTF78_Horizontal_Open



PTF78 fuse holder footprint.

Schurter 0031.8002 fuse holder footprint

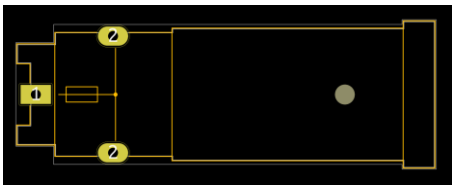
Footprint name:
Fuseholder_Cylinder-6.3x32mm_Schurter_0031-8002_Horizontal_Open



0031.8002 fuse holder footprint.

Schurter 0031.2520 fuse holder footprint

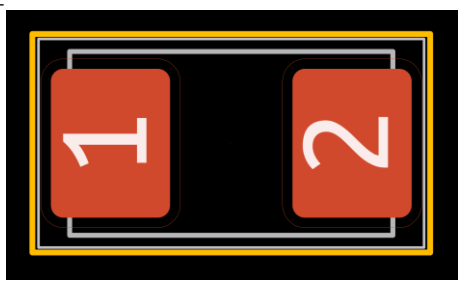
Footprint name:
Fuseholder_Cylinder-6.3x32mm_Schurter_FUP_0031.2520_Horizontal_Open



0031.2520 fuse holder footprint.

Littelfuse NANO2 157 series fuse holder footprint

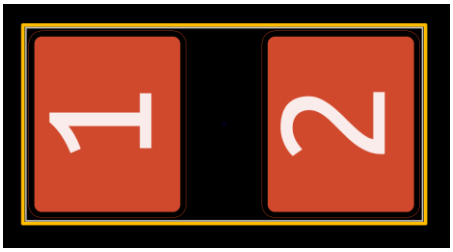
Footprint name:
Fuseholder_Littelfuse_Nano2_157x



157 series fuse holder footprint.

Schurter OMH-125 fuse holder footprint

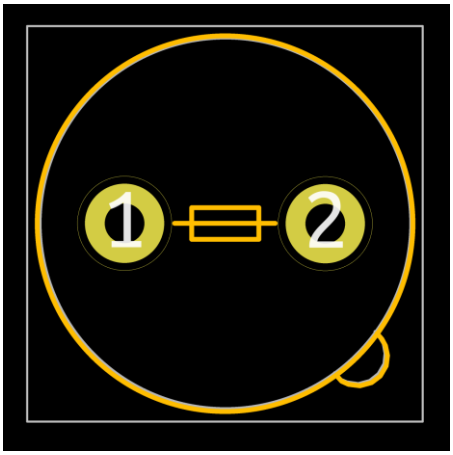
Footprint name:
Fuseholder_OMH-125_Schurter_6x12mm



OMH-125 fuse holder footprint.

Littelfuse TR5 fuse holder footprint

Footprint name:
Fuseholder_TR5_Littelfuse_No560_No460



TR5 fuse holder footprint.

3.11. SMD Inductor Library

These libraries contain footprints for SMD inductors and common-mode chokes.

Handsoldering library variant contains footprints with additional symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: `Inductor_SMD_AKL`	
Footprint count:	**214**
Handsoldering variant	
Folder name: `Inductor_SMD_Handsoldering_AKL`	
Footprint count:	**214**
Total footprints:	**428**

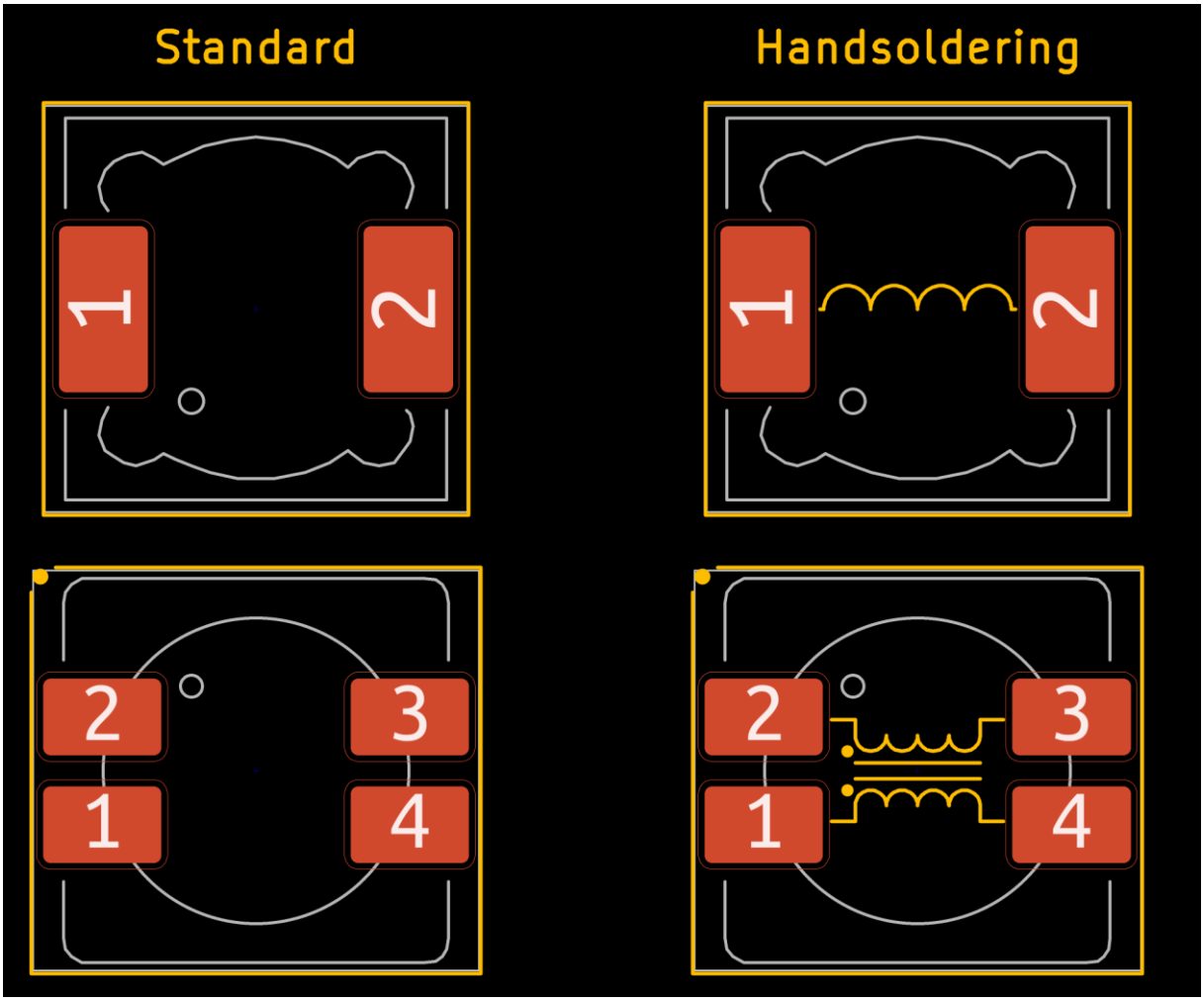
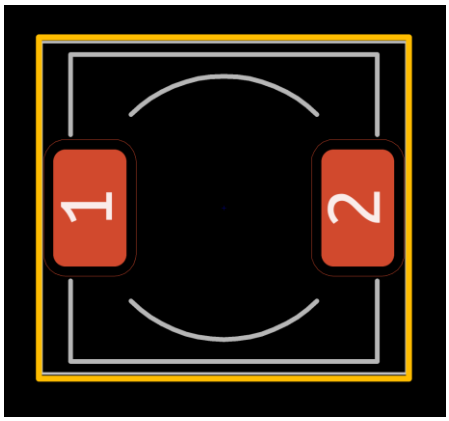


Figure 3.30. *Comparison between footprints form Standard and Handsoldering SMD inductor libraries.*

6.3x6.3mm inductor footprint

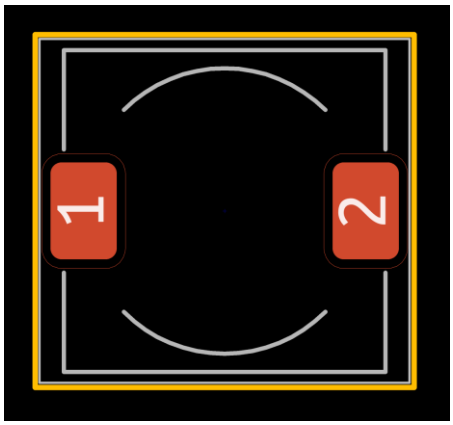
Footprint name:
L_6.3x6.3_H3



6.3x6.3mm inductor footprint.

7.3x7.3mm inductor footprints

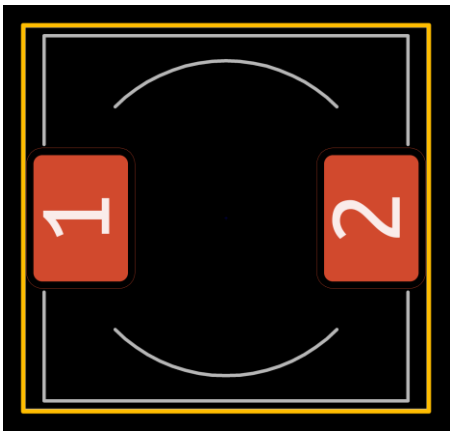
Footprint names:
L_7.3x7.3_H3.5
L_7.3x7.3_H4.5



7.3x7.3mm inductor footprint.

10.4x10.4mm inductor footprint

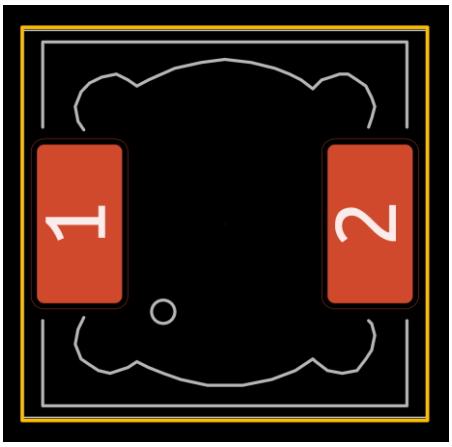
Footprint name:
L_10.4x10.4_H4.8



10.4x10.4mm inductor footprint.

12x12mm inductor footprints

Footprint names:
L_12x12mm_H4.5mm
L_12x12mm_H6mm
L_12x12mm_H8mm



12x12mm inductor footprint.

SMD Inductor bead footprints

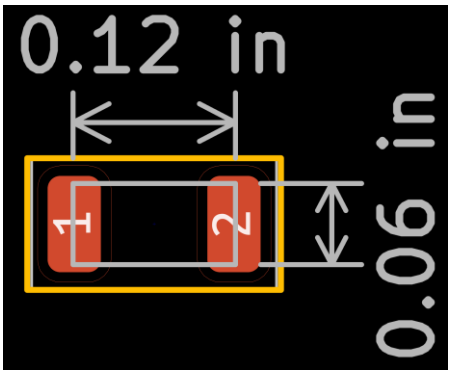
Footprint count: **28**

Footprint naming convention:
L_<imp. size code>_<metric size code>**Metric**
(optional: _**Pad**<pad width>**x**<pad length>**mm)**

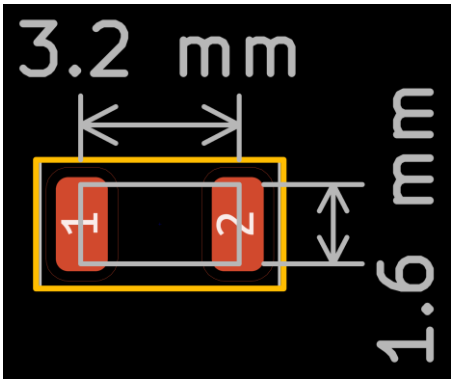
Name examples:
L_0805_2012Metric
L_0603_1608Metric_Pad1.05x095mm

Imperial size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.01 in. Example: 0805 size code means package length of 0.08 in and width of 0.05 in.

Metric size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.1 mm. Example: 2012 metric size code means package length of 2 mm and width of 1.2 mm.



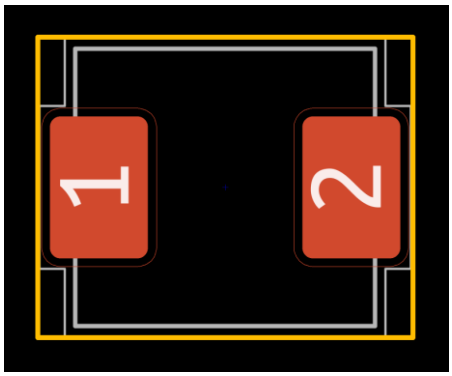
Inductor with 1206 imperial size code with length and width of the package indicated.



Inductor with 3216 metric size code with length and width of the package indicated.

Abracon ASPI-0630LR inductor footprint

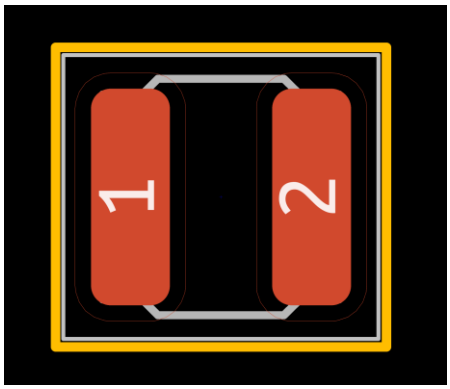
Footprint name:
L_Abracon_ASPI-0630LR



ASPI-0630LR inductor footprint.

Abracon ASPI-3012S inductor footprint

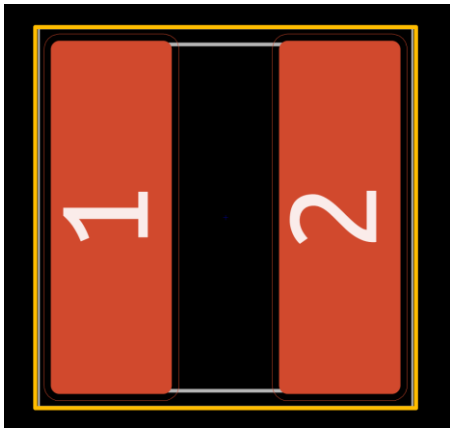
Footprint name:
L_Abracon_ASPI-3012S



ASPI-3012S inductor footprint.

Bourns SRN1060 inductor footprint

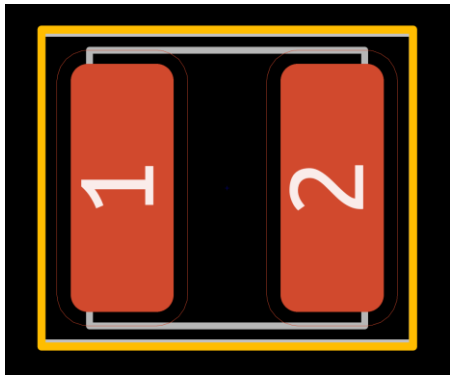
Footprint name:
L_Bourns-SRN1060



SRN1060 inductor footprint.

Bourns SRN4018 inductor footprint

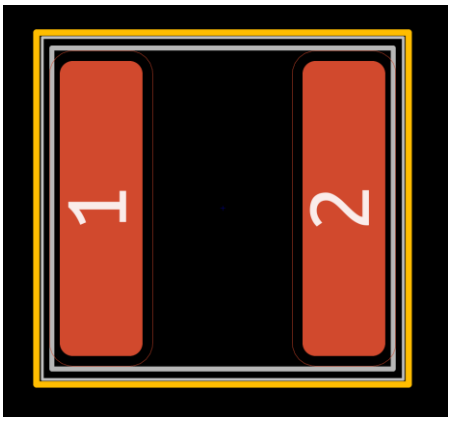
Footprint name:
L_Bourns-SRN4018



SRN4018 inductor footprint.

Bourns SRN6028 inductor footprint

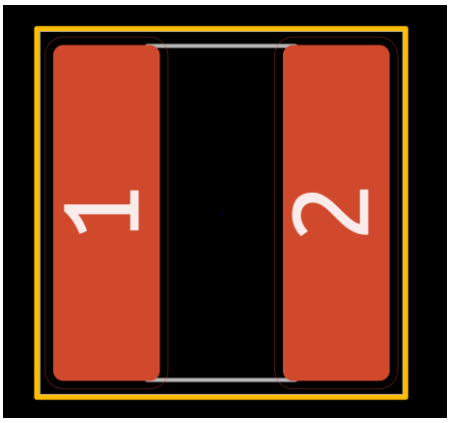
Footprint name:
L_Bourns-SRN6028



SRN6028 inductor footprint.

Bourns SRN8040 inductor footprint

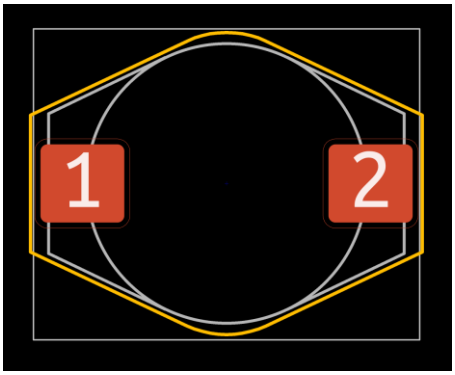
Footprint name:
L_Bourns-SRN8040_8x8.15mm



SRN8040 inductor footprint.

Bourns SRR1005 inductor footprint

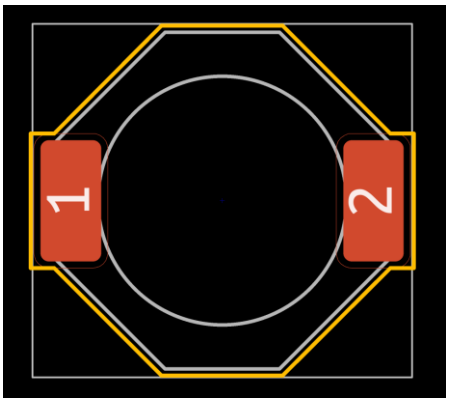
Footprint name:
L_Bourns-SRR1005



SRR1005 inductor footprint.

Bourns SRU1028 inductor footprint

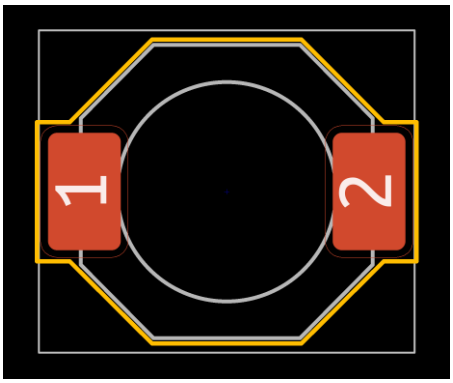
Footprint name:
L_Bourns-SRU1028_10.0x10.0mm



SRU1028 inductor footprint.

Bourns SRU8028 inductor footprint

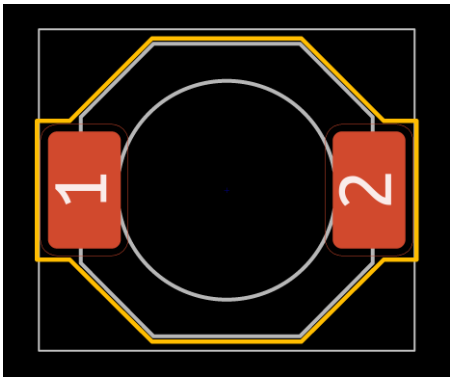
Footprint name:
L_Bourns-SRU8028_8.0x8.0mm



SRU8028 inductor footprint.

Bourns SRU8043 inductor footprint

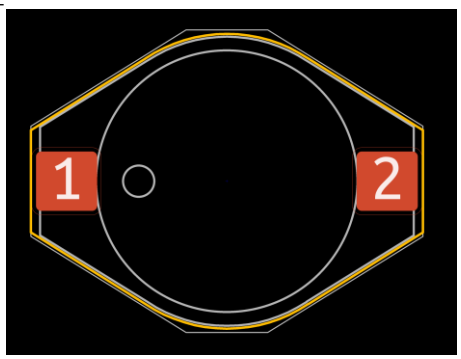
Footprint name:
L_Bourns-SRU8043



SRU8043 inductor footprint.

Bourns SDR1806 inductor footprint

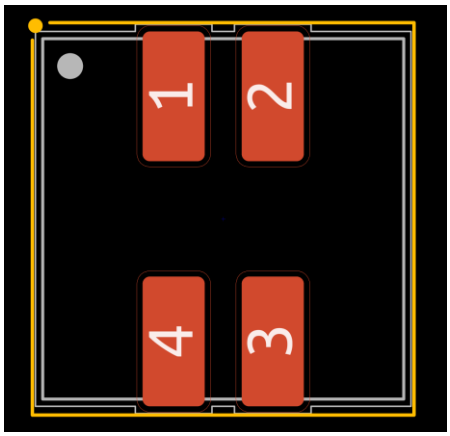
Footprint name:
L_Bourns-SDR1806



SDR1806 inductor footprint.

Bourns SRF1260 inductor footprint

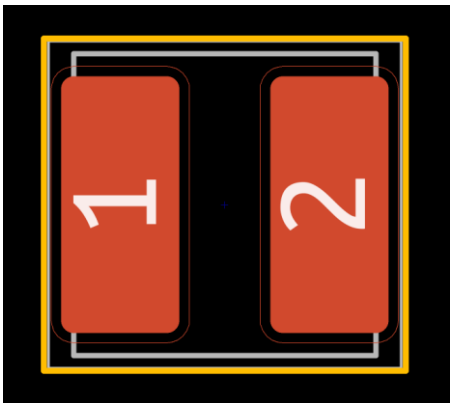
Footprint name:
L_Bourns-SRF1260



SRF1260 inductor footprint.

Bourns SRN6045TA inductor footprint

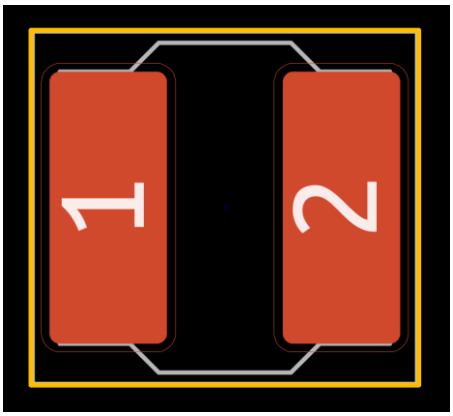
Footprint name:
L_Bourns-SRN6045TA



SRN6045TA inductor footprint.

Bourns SRN8040TA inductor footprint

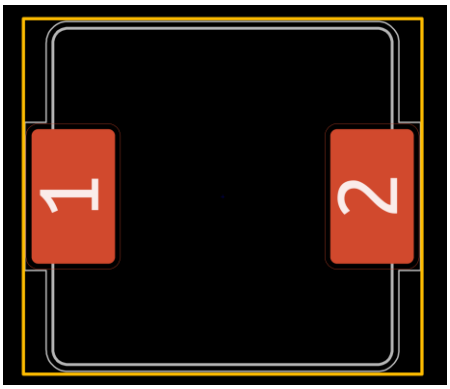
Footprint name:
L_Bourns-SRN8040TA



SRN8040TA inductor footprint.

Bourns SRP1245A inductor footprint

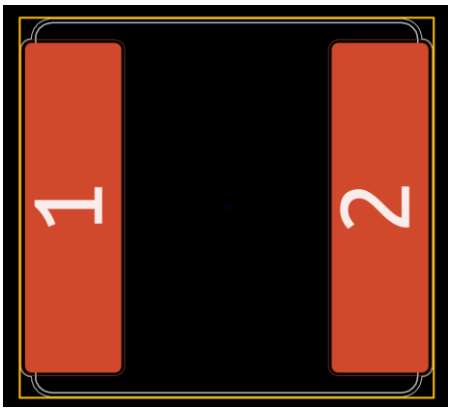
Footprint name:
L_Bourns-SRP1245A



SRP1245A inductor footprint.

Bourns SRP2313AA inductor footprint

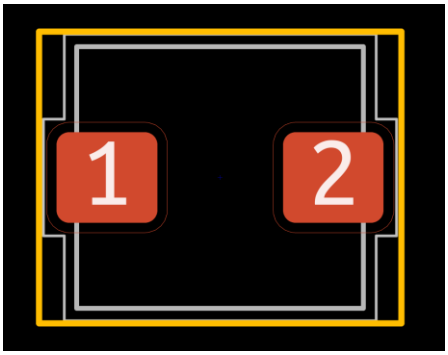
Footprint name:
L_Bourns-SRP2313AA



SRP2313AA inductor footprint.

Bourns SRP5030T inductor footprint

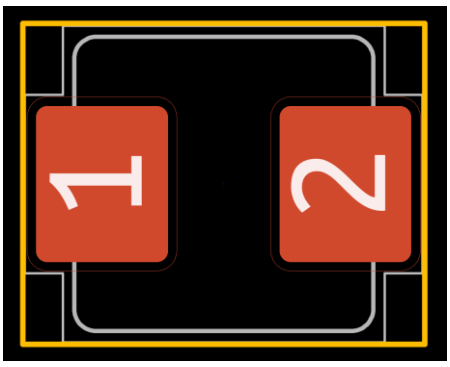
Footprint name:
L_Bourns-SRP5030T



SRP5030T inductor footprint.

Bourns SRP7028A inductor footprint

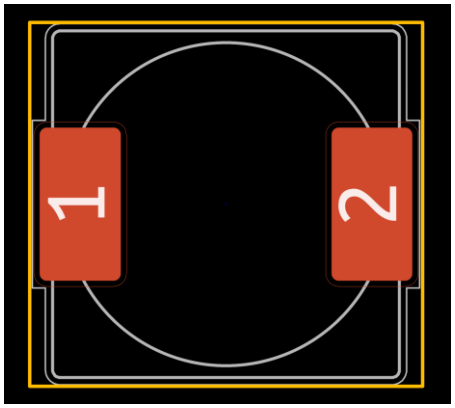
Footprint name:
L_Bourns-SRP7028A_7.3x6.56mm



SRP7028A inductor footprint.

Bourns SRR1210A inductor footprint

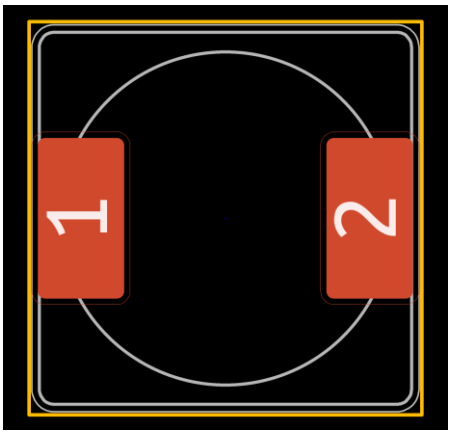
Footprint name:
L_Bourns-SRR1210A



SRR1210A inductor footprint.

Bourns SRR1260 inductor footprint

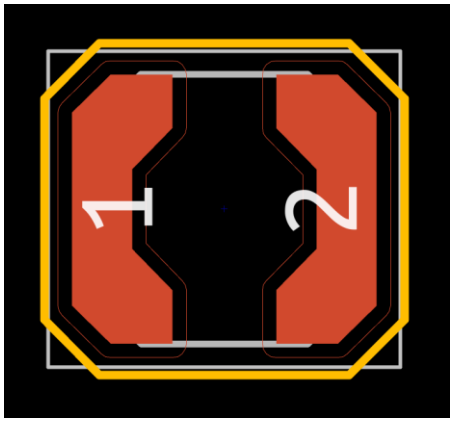
Footprint name:
L_Bourns-SRR1260



SRR1260 inductor footprint.

Coilcraft LPS4018 inductor footprint

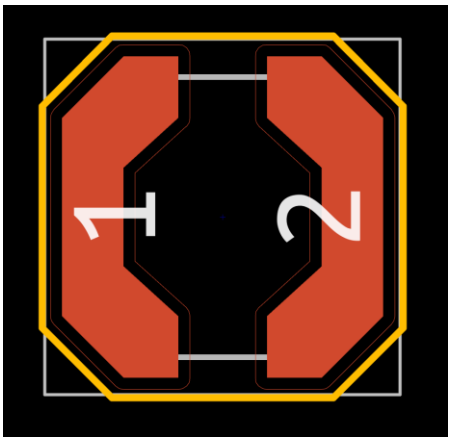
Footprint name:
L_Coilcraft_LPS4018



LPS4018 inductor footprint.

Coilcraft LPS5030 inductor footprint

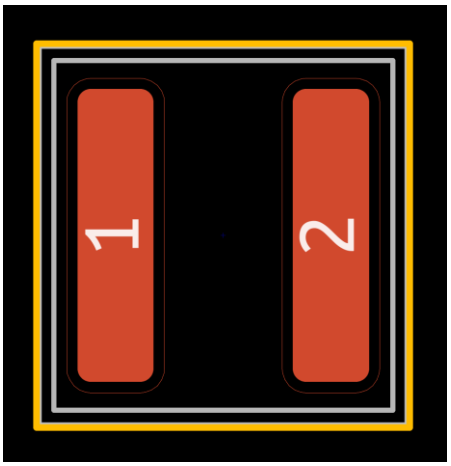
Footprint name:
L_Coilcraft_LPS5030



LPS5030 inductor footprint.

Coilcraft XAL60xx inductor footprint

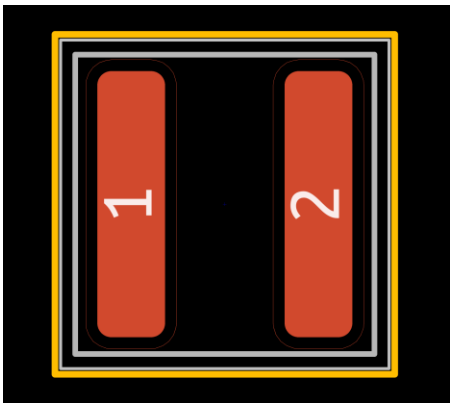
Footprint name:
L_Coilcraft_XAL60xx_6.36x6.56mm



XAL60xx inductor footprint.

Coilcraft XAL5030 inductor footprint

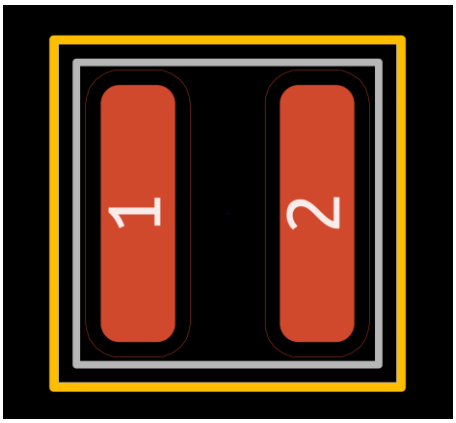
Footprint name:
L_Coilcraft_XAL5030



XAL5030 inductor footprint.

Coilcraft XxL4020 inductor footprint

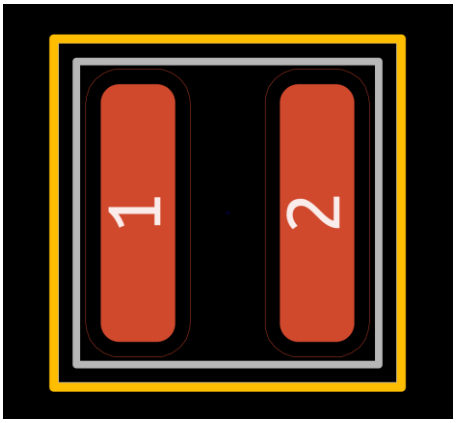
Footprint name:
L_Coilcraft_XxL4020



XxL4020 inductor footprint.

Coilcraft XxL4030 inductor footprint

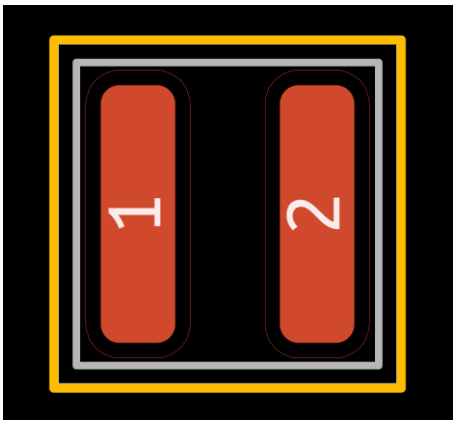
Footprint name:
L_Coilcraft_XxL4030



XxL4030 inductor footprint.

Coilcraft XxL4040 inductor footprint

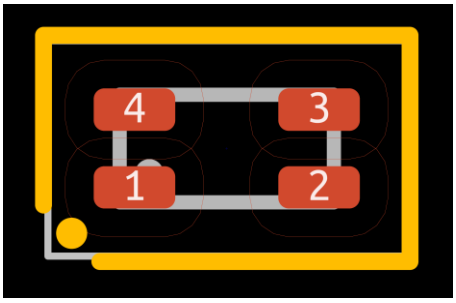
Footprint name:
L_Coilcraft_XxL4040



XxL4040 inductor footprint.

Coilcraft 0603USB common-mode choke footprint

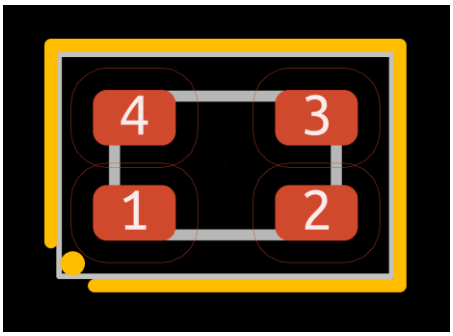
Footprint name:
L_CommonModeChoke_Coilcraft_0603USB



0603USB common-mode choke footprint.

Coilcraft 0805USB common-mode choke footprint

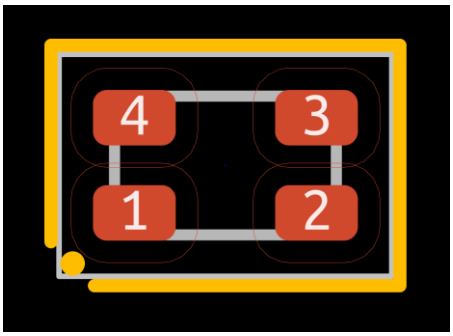
Footprint name:
L_CommonModeChoke_Coilcraft_0805USB



0805USB common-mode choke footprint.

Coilcraft 1812CAN common-mode choke footprint

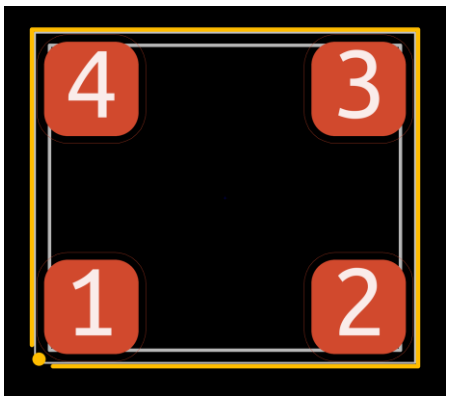
Footprint name:
L_CommonModeChoke_Coilcraft_1812CAN



1812CAN common-mode choke footprint.

Würth WE-SL5 common-mode choke footprint

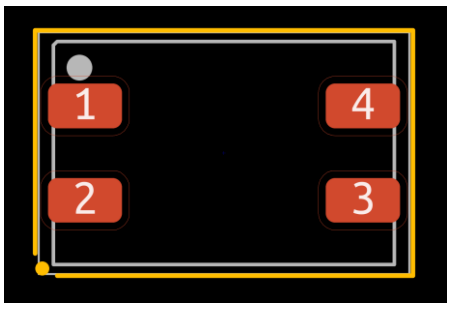
Footprint name:
L_CommonModeChoke_Wuerth_WE-SL5



WE-SL5 common-mode choke footprint.

Würth WE-SL2 common-mode choke footprint

Footprint name:
L_CommonMode_Wuerth_WE-SL2

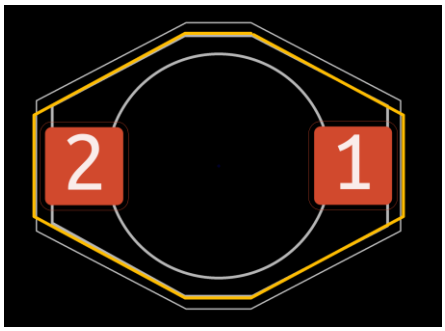


WE-SL2 common-mode choke footprint.

Fastron PISN inductor footprints

Footprint names:
Fastron_PISN
Fastron_PISN_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

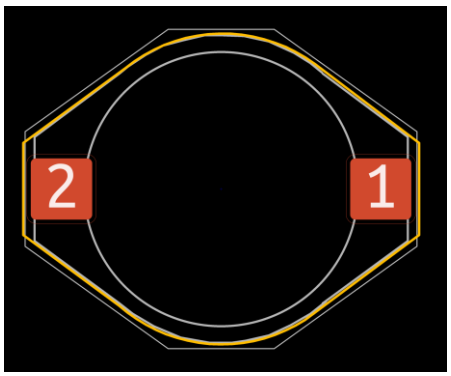


PISN inductor footprint.

Fastron PISR inductor footprints

Footprint names:
Fastron_PISR
Fastron_PISR_BigPads

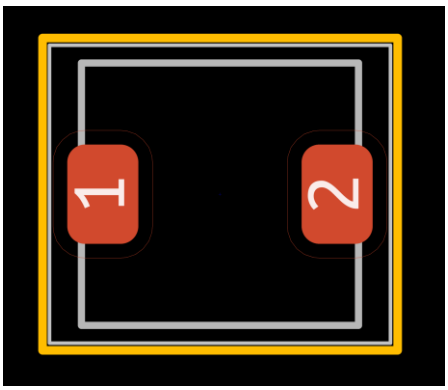
Note: BigPads suffix denotes a footprint with enlarged pads.



PISR inductor footprint.

Murata DEM35xxC inductor footprint

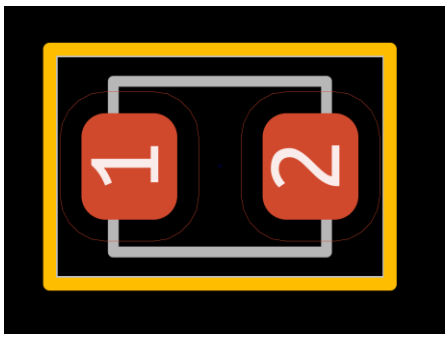
Footprint name:
L_Murata_DEM35xxC



DEM35xxC inductor footprint.

Murata LQH2MCNxxxx02 series inductor footprint

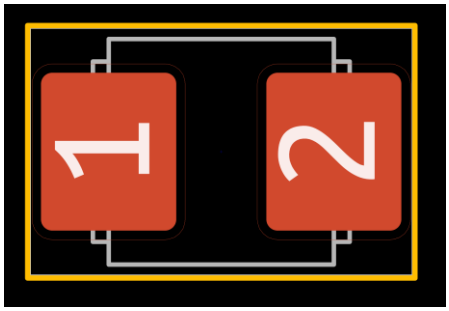
Footprint name:
L_Murata_LQH2MCNxxxx02_2.0x1.6mm



LQH2MCNxxxx02 inductor footprint.

Murata LQH55DN inductor footprint

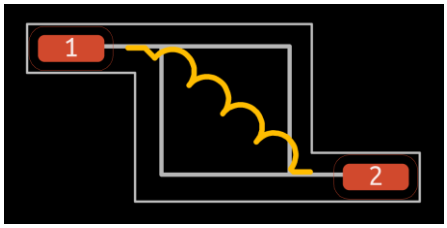
Footprint name:
L_Murata_LQH55DN_5.7x5.0mm



LQH55DN inductor footprint.

Neosid HDM0131A inductor footprint

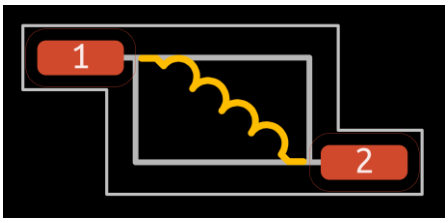
Footprint name:
L_Neosid_Air-Coil_SML_1turn_HDM0131A



HDM0131A inductor footprint.

Neosid HAM0231A inductor footprint

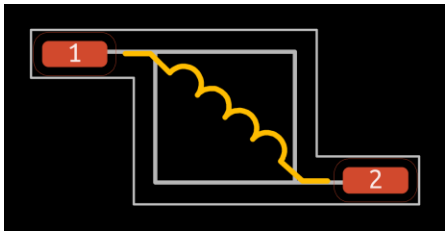
Footprint name:
L_Neosid_Air-Coil_SML_2turn_HAM0231A



HAM0231A inductor footprint.

Neosid HDM0231A inductor footprint

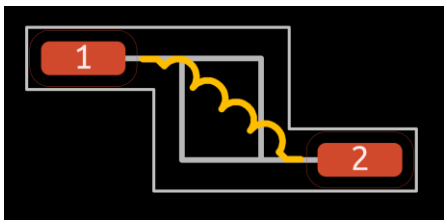
Footprint name:
L_Neosid_Air-Coil_SML_2turn_HDM0231A



HDM0231A inductor footprint.

Neosid HAM0331A inductor footprint

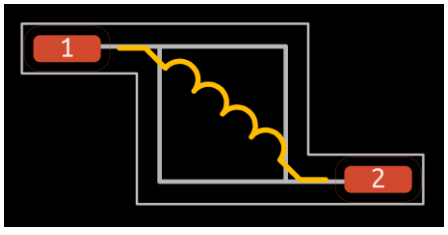
Footprint name:
L_Neosid_Air-Coil_SML_3turn_HAM0331A



HAM0331A inductor footprint.

Neosid HDM0331A inductor footprint

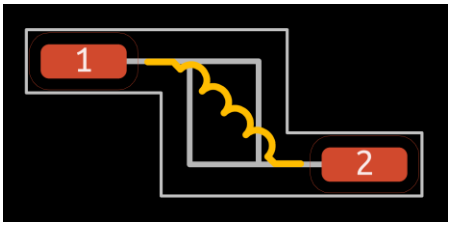
Footprint name:
L_Neosid_Air-Coil_SML_3turn_HDM0331A



HDM0331A inductor footprint.

Neosid HAM0431A inductor footprint

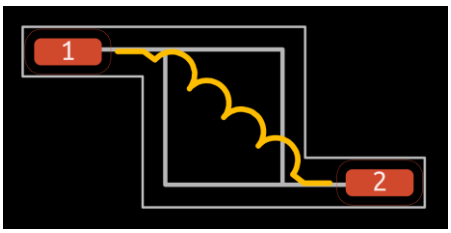
Footprint name:
L_Neosid_Air-Coil_SML_4turn_HAM0431A



HAM0431A inductor footprint.

Neosid HDM0431A inductor footprint

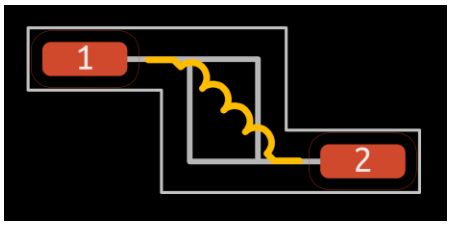
Footprint name:
L_Neosid_Air-Coil_SML_4turn_HDM0431A



HDM0431A inductor footprint.

Neosid HAM0531A inductor footprint

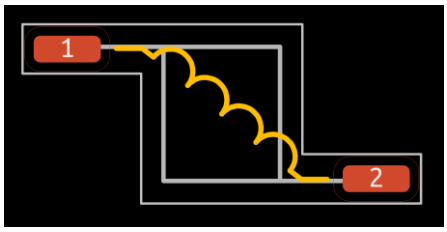
Footprint name:
L_Neosid_Air-Coil_SML_5turn_HAM0531A



HAM0531A inductor footprint.

Neosid HDM0531A inductor footprint

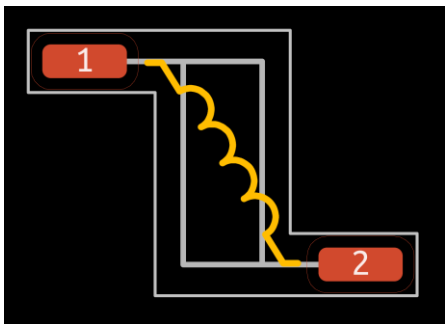
Footprint name:
L_Neosid_Air-Coil_SML_5turn_HDM0531A



HDM0531A inductor footprint.

Neosid HAM0631A inductor footprint

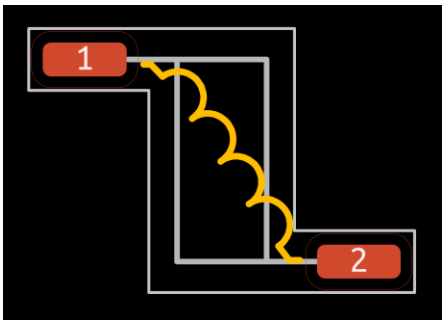
Footprint name:
L_Neosid_Air-Coil_SML_6turn_HAM0631A



HAM0631A inductor footprint.

Neosid HAM0631A-HAM1031A compatible inductor footprint

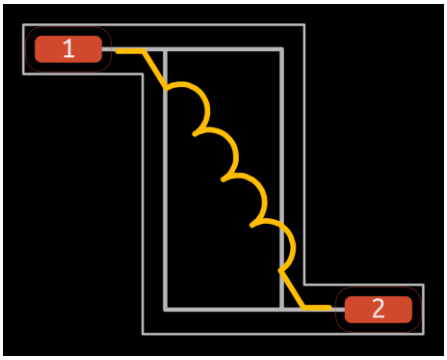
Footprint name:
L_Neosid_Air-Coil_SML_6-10turn_HAM0631A-HAM1031A



HAM0631A-HAM1031A compatible inductor footprint.

Neosid HDM0431A-HDM1031A compatible inductor footprint

Footprint name:
L_Neosid_Air-Coil_SML_6-10turn_HDM0431A-HDM1031A



HDM0431A-HDM1031A compatible inductor footprint.

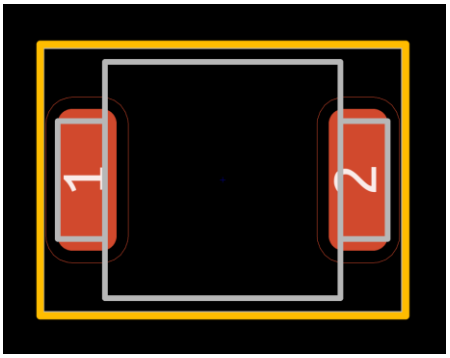
Neosid Ms36-L inductor footprint

Footprint name:
L_Neosid_MicroCoil_Ms36-L

Ms36-L inductor footprint.

Neosid Ms42 inductor footprint

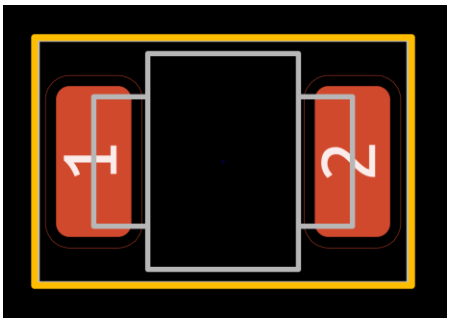
Footprint name:
L_Neosid_Ms42



Ms42 inductor footprint.

Neosid Ms50 inductor footprint

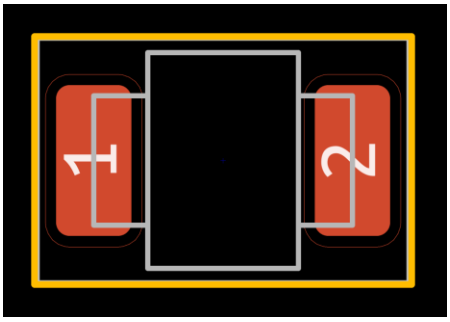
Footprint name:
L_Neosid_Ms50



Ms50 inductor footprint.

Neosid Ms50T inductor footprint

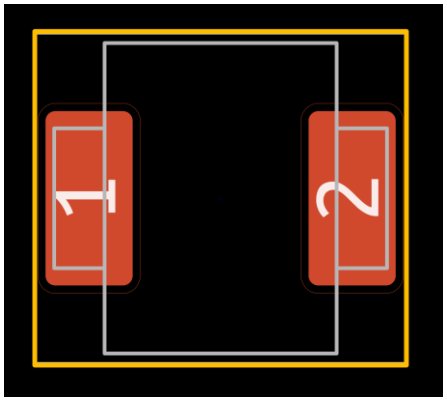
Footprint name:
L_Neosid_Ms50T



Ms50T inductor footprint.

Neosid Ms85 inductor footprint

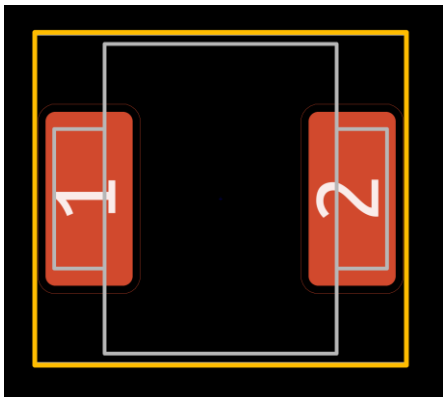
Footprint name:
L_Neosid_Ms85



Ms85 inductor footprint.

Neosid Ms85T inductor footprint

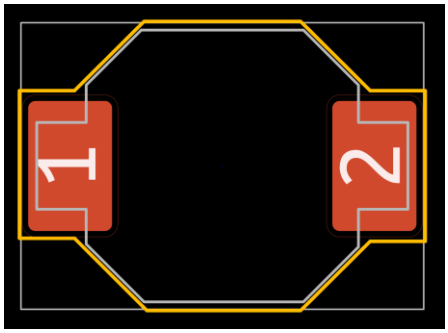
Footprint name:
L_Neosid_Ms85T



Ms85T inductor footprint.

Neosid Ms95 inductor footprint

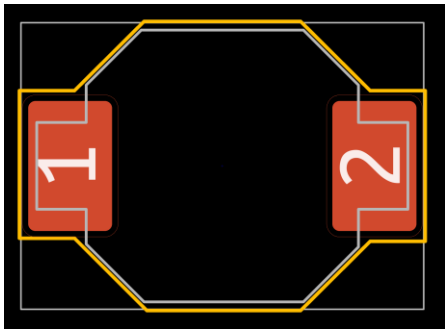
Footprint name:
L_Neosid_Ms95



Ms95 inductor footprint.

Neosid Ms95T inductor footprint

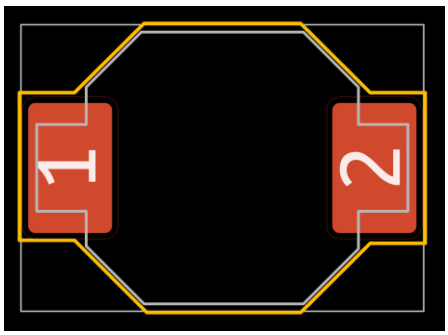
Footprint name:
L_Neosid_Ms95T



Ms95T inductor footprint.

Neosid Ms95a inductor footprint

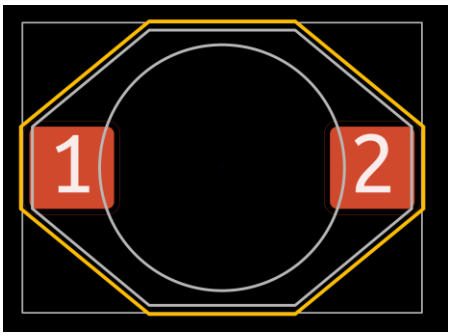
Footprint name:
L_Neosid_Ms95a



Ms95a inductor footprint.

Neosid SM-NE95H inductor footprint

Footprint name:
L_Neosid_SM-NE95H

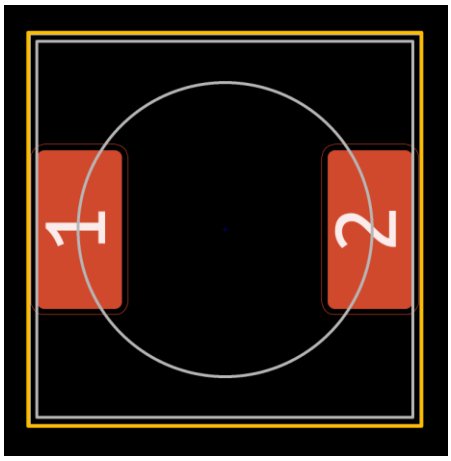


SM-NE95H inductor footprint.

Neosid SM-NE127 inductor footprints

Footprint names:
Neosid_SM-NE127
Neosid_SM-NE127_BigPads

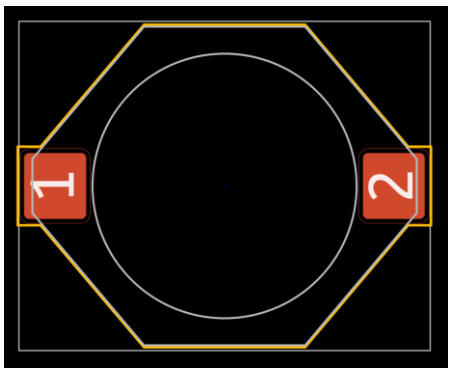
Note: BigPads suffix denotes a footprint with enlarged pads.



SM-NE127 inductor footprint.

Neosid SM-NE150 inductor footprint

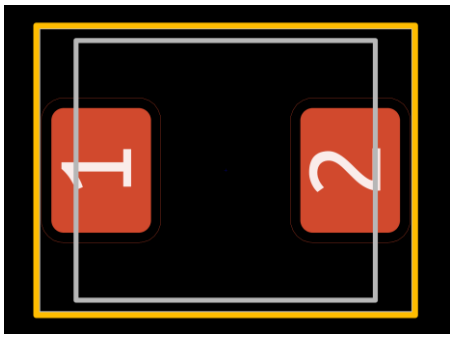
Footprint name:
L_Neosid_SM-NE150



SM-NE150 inductor footprint.

Neosid SM-PIC0512H inductor footprint

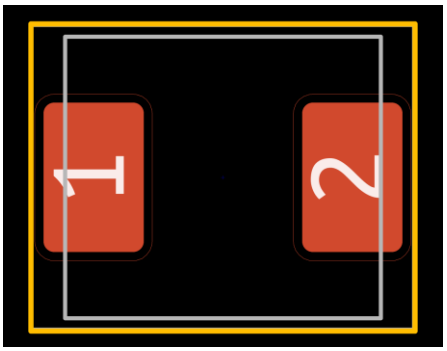
Footprint name:
L_Neosid_SM-PIC0512H



SM-PIC0512H inductor footprint.

Neosid SM-PIC0602H inductor footprint

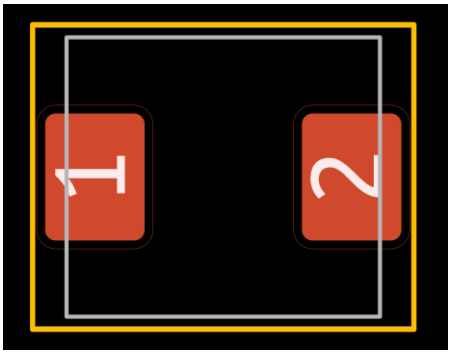
Footprint name:
L_Neosid_SM-PIC0602H



SM-PIC0602H inductor footprint.

Neosid SM-PIC0612H inductor footprint

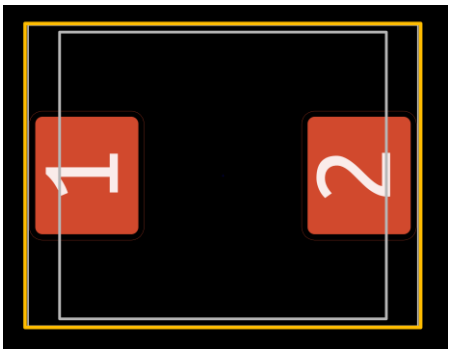
Footprint name:
L_Neosid_SM-PIC0612H



SM-PIC0612H inductor footprint.

Neosid SM-PIC1004H inductor footprint

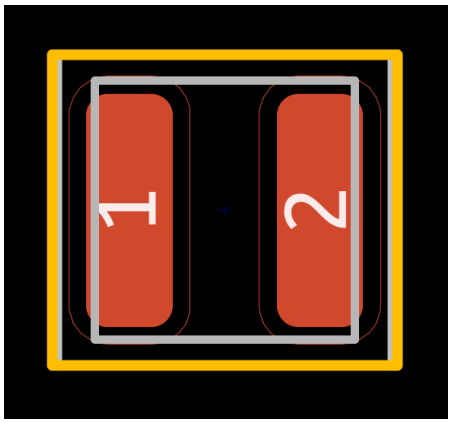
Footprint name:
L_Neosid_SM-PIC1004H



SM-PIC1004H inductor footprint.

Neosid SMS-ME3010 inductor footprint

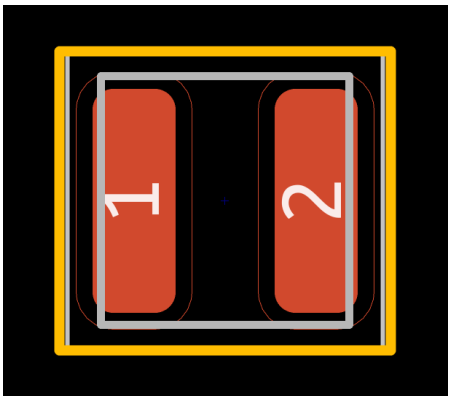
Footprint name:
L_Neosid_SMS-ME3010



SMS-ME3010 inductor footprint.

Neosid SMS-ME3015 inductor footprint

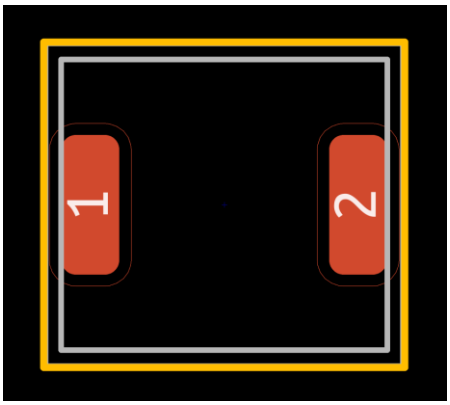
Footprint name:
L_Neosid_SMS-ME3015



SMS-ME3015 inductor footprint.

Neosid SMs42 inductor footprint

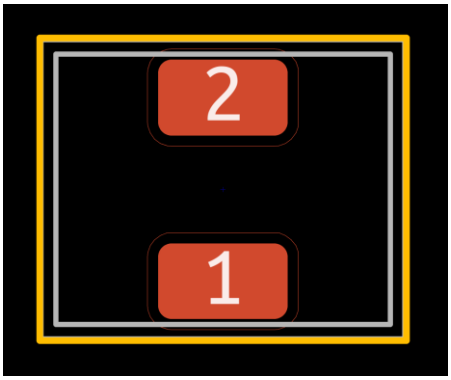
Footprint name:
L_Neosid_SMs42



SMs42 inductor footprint.

Neosid SMs50 inductor footprint

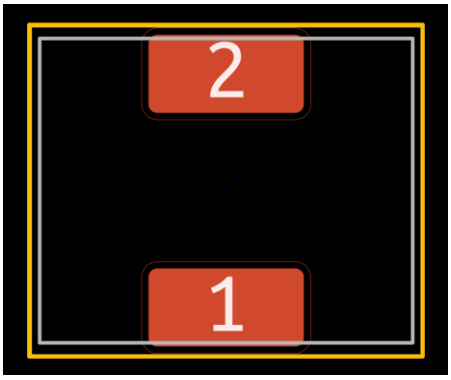
Footprint name:
L_Neosid_SMs50



SMs50 inductor footprint.

Neosid SMs85 inductor footprint

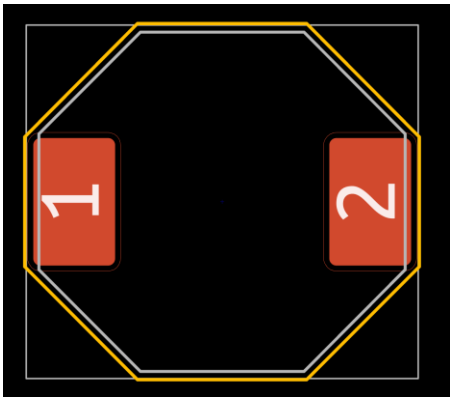
Footprint name:
L_Neosid_SMs85



SMs85 inductor footprint.

Neosid SMs95/SMs95p inductor footprint

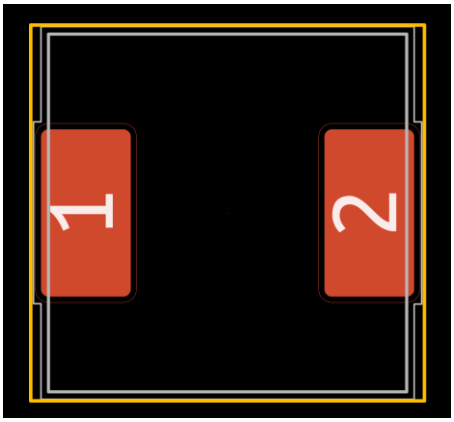
Footprint name:
L_Neosid_SMs95_SMs95p



SMs95/SMs95p inductor footprint.

Pulse PA4320 inductor footprint

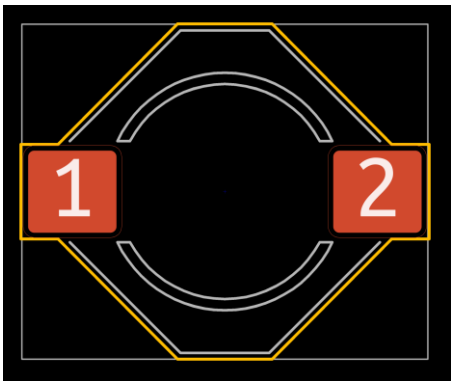
Footprint name:
L_Pulse_PA4320



PA4320 inductor footprint.

Sagami CER1242B inductor footprint

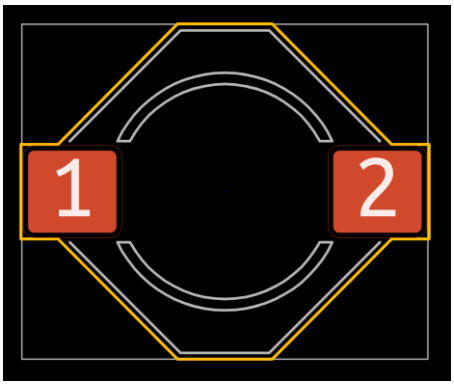
Footprint name:
L_Sagami_CER1242B



CER1242B inductor footprint.

Sagami CER1257B inductor footprint

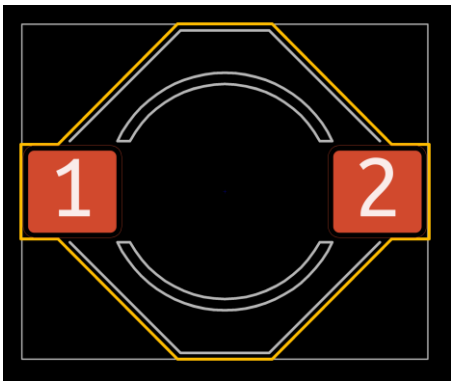
Footprint name:
L_Sagami_CER1257B



CER1257B inductor footprint.

Sagami CER1277B inductor footprint

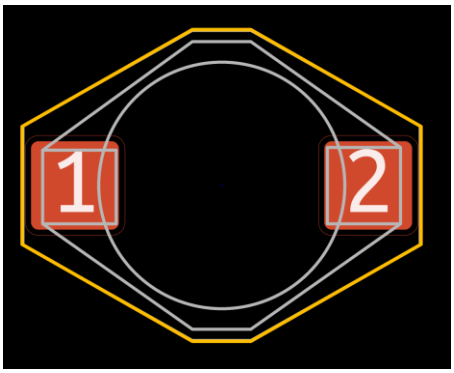
Footprint name:
L_Sagami_CER1277B



CER1277B inductor footprint.

SigTra SC3316F inductor footprint

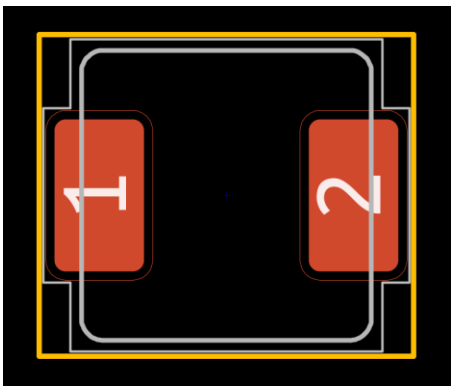
Footprint name:
L_SigTra_SC3316F



SC3316F inductor footprint.

Sumida CDMC6D28 inductor footprint

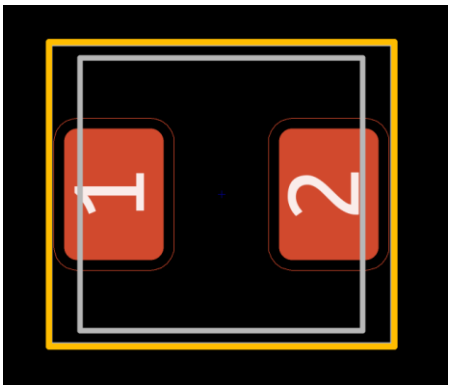
Footprint name:
L_Sumida_CDMC6D28_7.25x6.5mm



CDMC6D28 inductor footprint.

Sunlord MWSA0518 inductor footprint

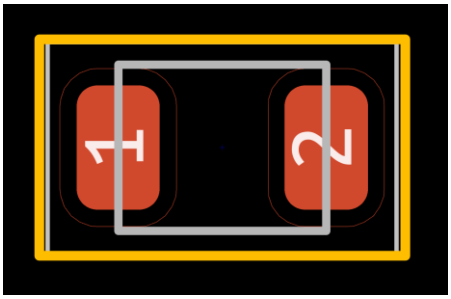
Footprint name:
L_Sunlord_MWSA0518_5.4x5.2mm



MWSA0518 inductor footprint.

TDK NLV25 inductor footprint

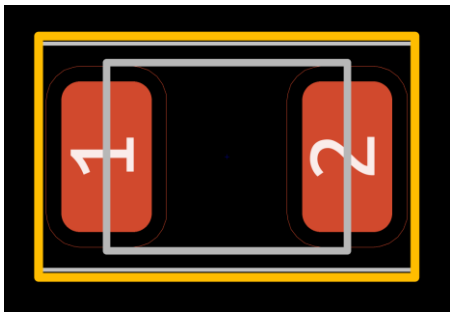
Footprint name:
L_TDK_NLV25_2.5x2.0mm



NLV25 inductor footprint.

TDK NLV32 inductor footprint

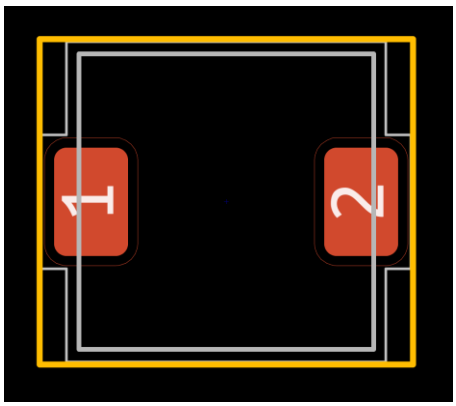
Footprint name:
L_TDK_NLV32_3.2x2.0mm



NLV32 inductor footprint.

TDK SLF6025 inductor footprint

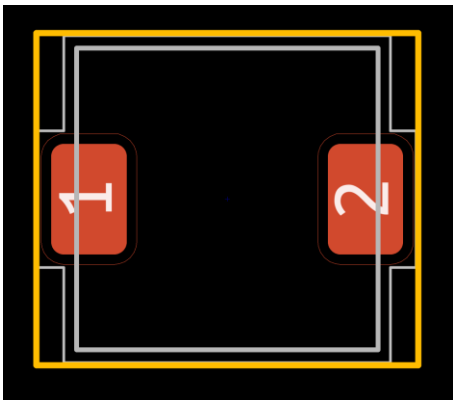
Footprint name:
L_TDK_SLF6025



SLF6025 inductor footprint.

TDK SLF6028 inductor footprint

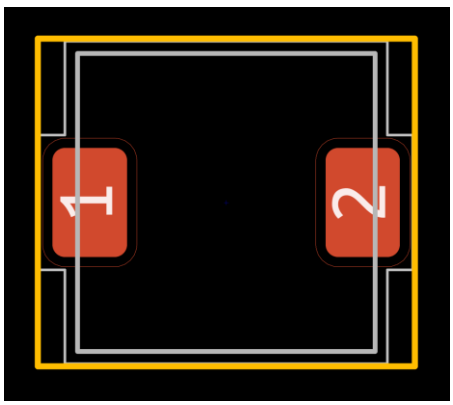
Footprint name:
L_TDK_SLF6028



SLF6028 inductor footprint.

TDK SLF6045 inductor footprint

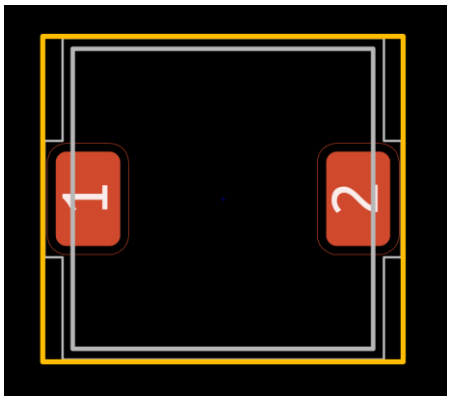
Footprint name:
L_TDK_SLF6045



SLF6045 inductor footprint.

TDK SLF7032 inductor footprint

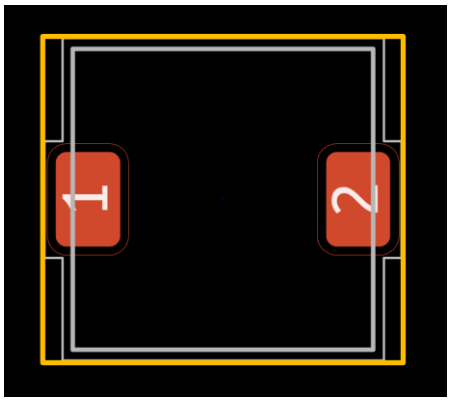
Footprint name:
L_TDK_SLF7032



SLF7032 inductor footprint.

TDK SLF7045 inductor footprint

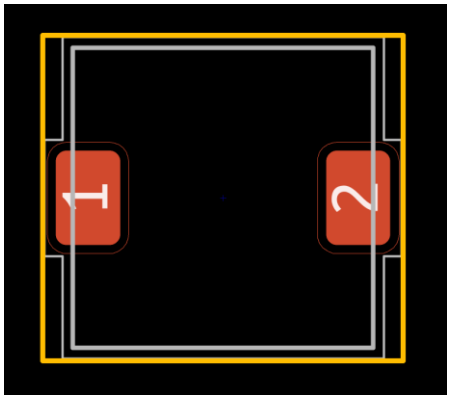
Footprint name:
L_TDK_SLF7045



SLF7045 inductor footprint.

TDK SLF7055 inductor footprint

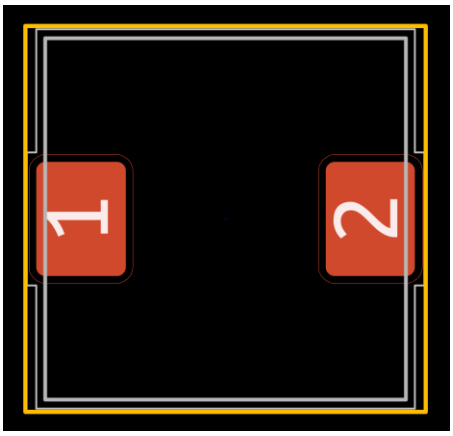
Footprint name:
L_TDK_SLF7055



SLF7055 inductor footprint.

TDK SLF10145 inductor footprint

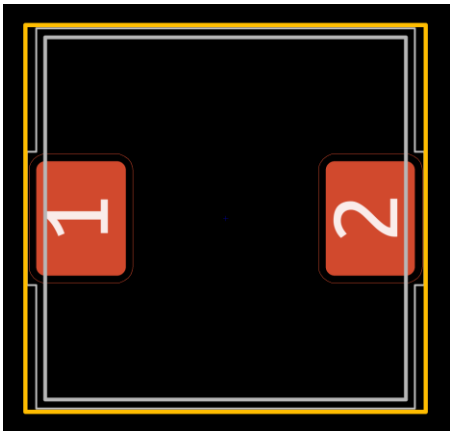
Footprint name:
L_TDK_SLF10145



SLF10145 inductor footprint.

TDK SLF10165 inductor footprint

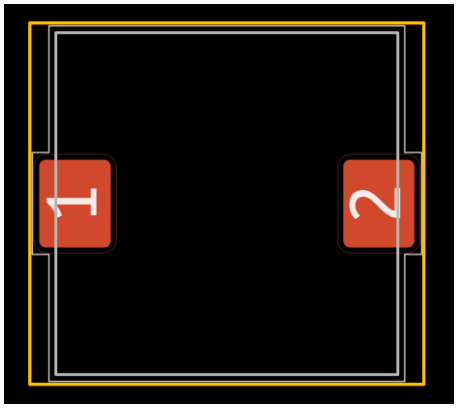
Footprint name:
L_TDK_SLF10165



SLF10165 inductor footprint.

TDK SLF12555 inductor footprint

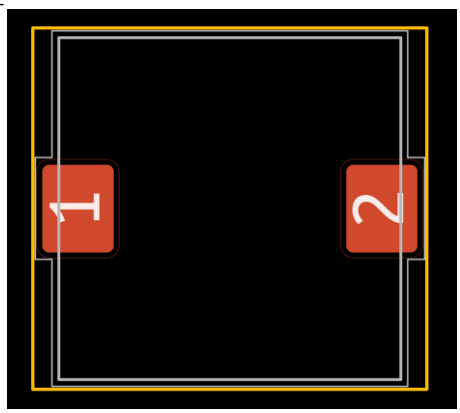
Footprint name:
L_TDK_SLF12555



SLF12555 inductor footprint.

TDK SLF12565 inductor footprint

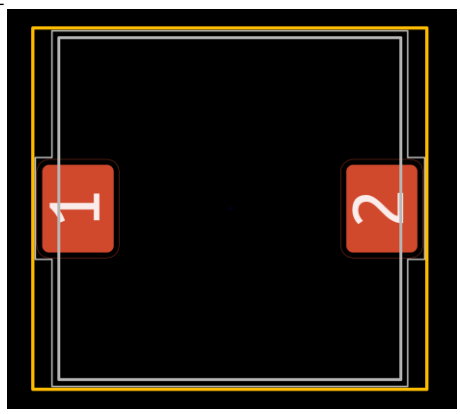
Footprint name:
L_TDK_SLF12565



SLF12565 inductor footprint.

TDK SLF12575 inductor footprint

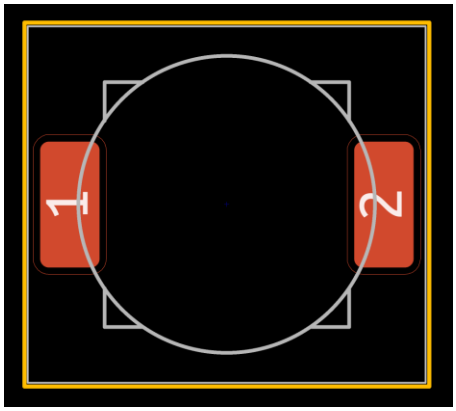
Footprint name:
L_TDK_SLF12575



SLF12575 inductor footprint.

TDK VLF10040 inductor footprint

Footprint name:
L_TDK_VLF10040



SLF10040 inductor footprint.

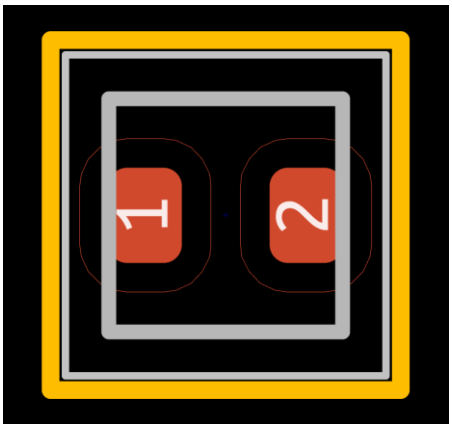
TDK VLP8040 inductor footprint

Footprint name:
L_TDK_VLP8040

SLP8040 inductor footprint.

Taiyo-Yuden MD-1616 inductor footprint

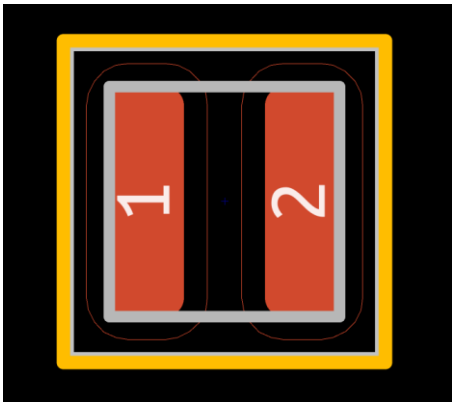
Footprint name:
L_Taiyo-Yuden_MD-1616



MD-1616 inductor footprint.

Taiyo-Yuden MD-2020 inductor footprint

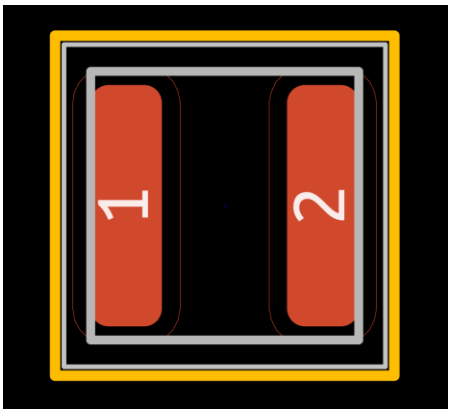
Footprint name:
L_Taiyo-Yuden_MD-2020



MD-2020 inductor footprint.

Taiyo-Yuden MD-3030 inductor footprint

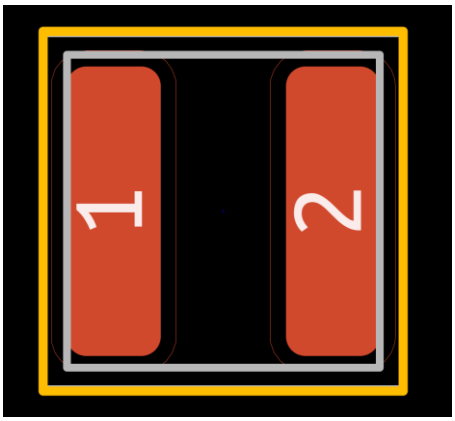
Footprint name:
L_Taiyo-Yuden_MD-3030



MD-3030 inductor footprint.

Taiyo-Yuden MD-4040 inductor footprint

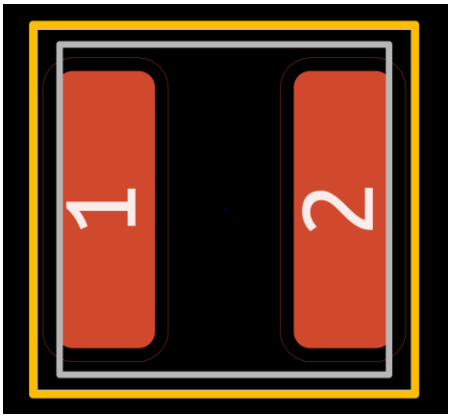
Footprint name:
L_Taiyo-Yuden_MD-4040



MD-4040 inductor footprint.

Taiyo-Yuden MD-5050 inductor footprint

Footprint name:
L_Taiyo-Yuden_MD-5050

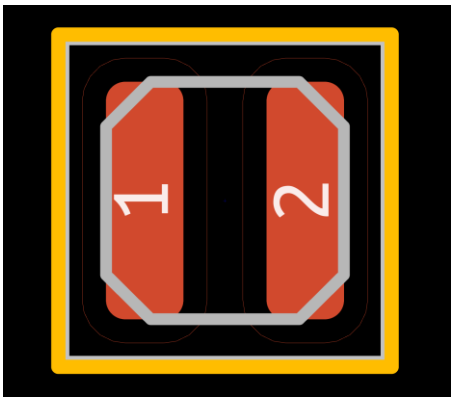


MD-5050 inductor footprint.

Taiyo-Yuden NR20xx series inductor footprints

Footprint names:
L_Taiyo-Yuden_NR-20xx
L_Taiyo-Yuden_NR-20xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

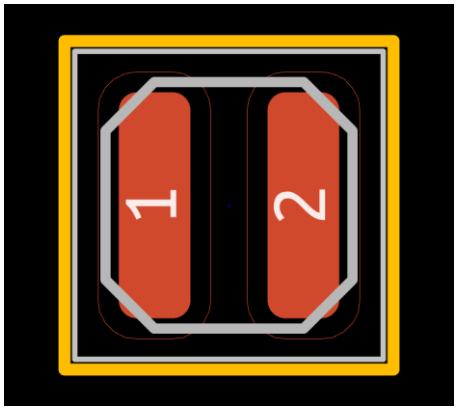


NR20xx inductor footprint.

Taiyo-Yuden NR24xx series inductor footprints

Footprint names:
L_Taiyo-Yuden_NR-24xx
L_Taiyo-Yuden_NR-24xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

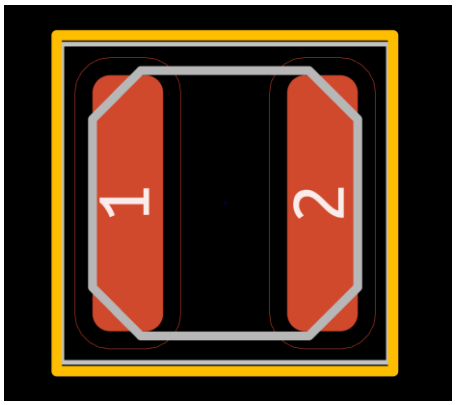


NR24xx inductor footprint.

Taiyo-Yuden NR30xx series inductor footprints

Footprint names:
L_Taiyo-Yuden_NR-30xx
L_Taiyo-Yuden_NR-30xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

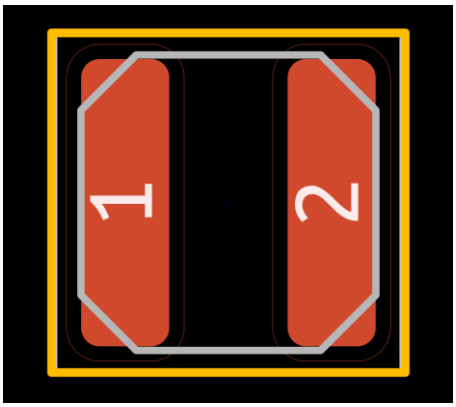


NR30xx inductor footprint.

Taiyo-Yuden NR40xx series inductor footprints

Footprint names:
L_Taiyo-Yuden_NR-40xx
L_Taiyo-Yuden_NR-40xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

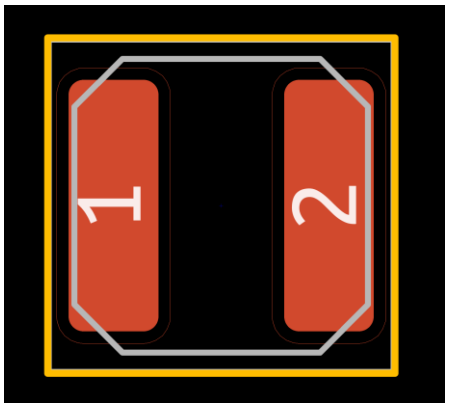


NR40xx inductor footprint.

Taiyo-Yuden NR50xx series inductor footprints

Footprint names:
L_Taiyo-Yuden_NR-50xx
L_Taiyo-Yuden_NR-50xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

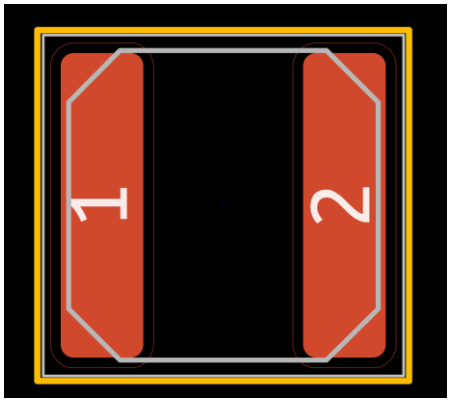


NR50xx inductor footprint.

Taiyo-Yuden NR60xx series inductor footprints

Footprint names:
L_Taiyo-Yuden_NR-60xx
L_Taiyo-Yuden_NR-60xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

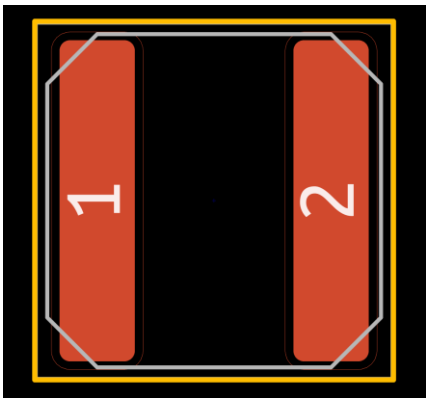


NR60xx inductor footprint.

Taiyo-Yuden NR80xx series inductor footprints

Footprint names:
L_Taiyo-Yuden_NR-80xx
L_Taiyo-Yuden_NR-80xx_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

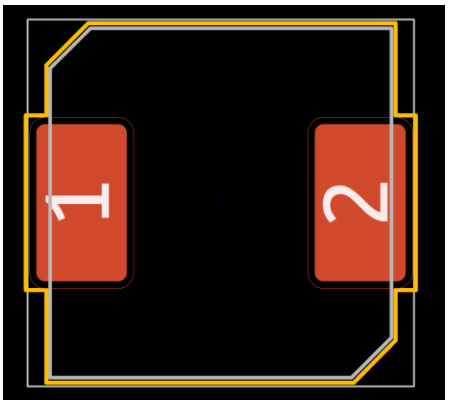


NR80xx inductor footprint.

Taiyo-Yuden NR-10050 inductor footprints

Footprint names:
L_Taiyo-Yuden_NR-10050_9.8x10.0mm
L_Taiyo-Yuden_NR-10050_9.8x10.0mm_BigPads

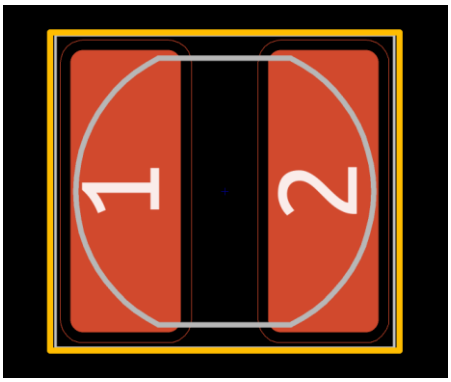
Note: BigPads suffix denotes a footprint with enlarged pads.



NR-10050 inductor footprint.

Traco Power TCK-047 inductor footprint

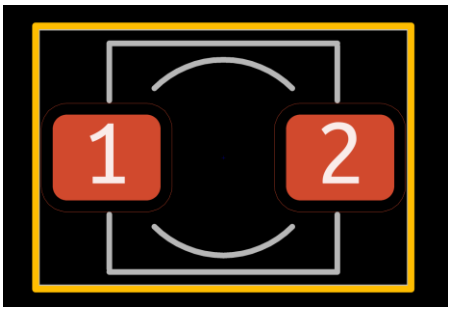
Footprint name:
L_TracoPower_TCK-047_5.2x5.8mm



TCK-047 inductor footprint.

Traco Power TCK-141 inductor footprint

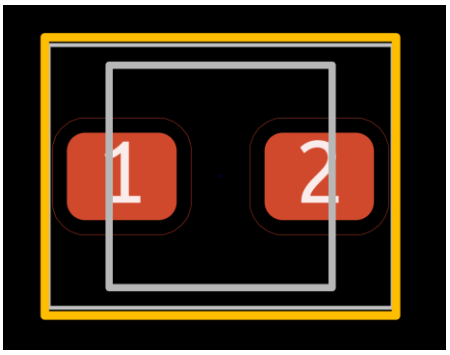
Footprint name:
L_TracoPower_TCK-141



TCK-141 inductor footprint.

Vishay IHLP-1212 inductor footprint

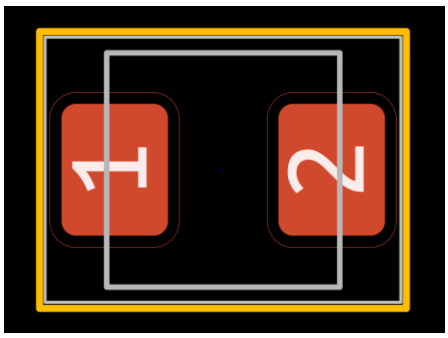
Footprint name:
L_Vishay_IHLP-1212



IHLP-1212 inductor footprint.

Vishay IHLP-1616 inductor footprint

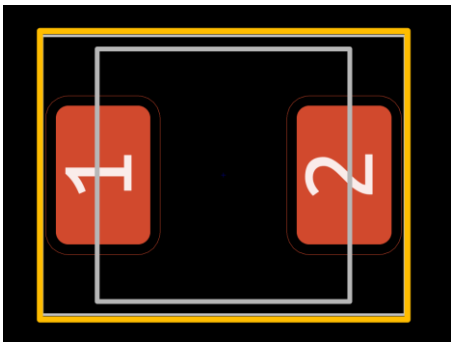
Footprint name:
L_Vishay_IHLP-1616



IHLP-1616 inductor footprint.

Vishay IHLP-2020 inductor footprint

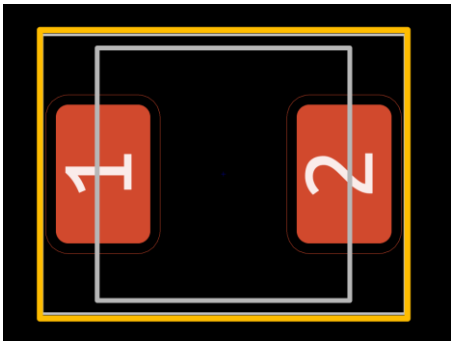
Footprint name:
L_Vishay_IHLP-2020



IHLP-2020 inductor footprint.

Vishay IHLP-2525 inductor footprint

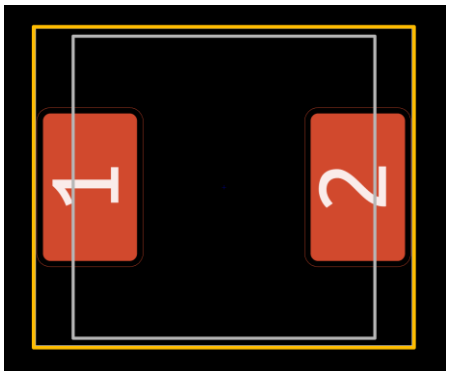
Footprint name:
L_Vishay_IHLP-2525



IHLP-2525 inductor footprint.

Vishay IHLP-4040 inductor footprint

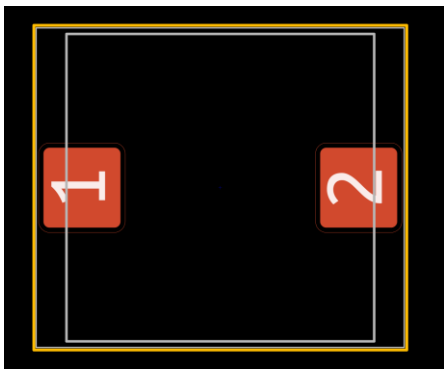
Footprint name:
L_Vishay_IHLP-4040



IHLP-4040 inductor footprint.

Vishay IHLP-5050 inductor footprint

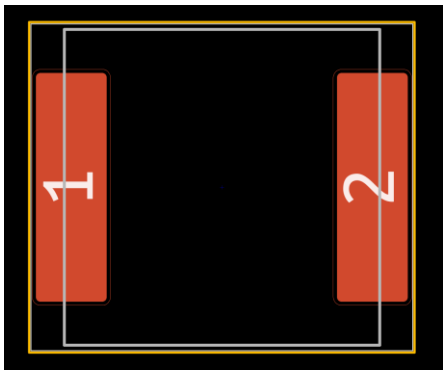
Footprint name:
L_Vishay_IHLP-5050



IHLP-5050 inductor footprint.

Vishay IHLP-6767 inductor footprint

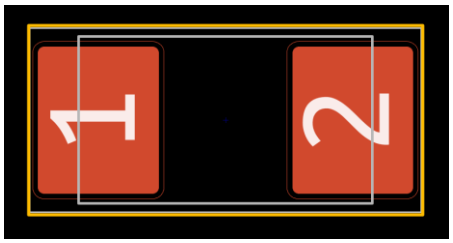
Footprint name:
L_Vishay_IHLP-6767



IHLP-6767 inductor footprint.

Vishay IHSM-3825 inductor footprint

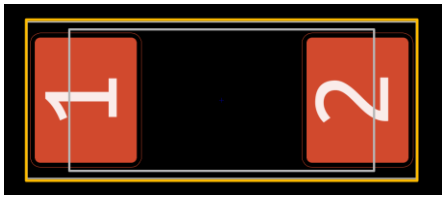
Footprint name:
L_Vishay_IHSM-3825



IHSM-3825 inductor footprint.

Vishay IHSM-4825 inductor footprint

Footprint name:
L_Vishay_IHSM-4825



IHSM-4825 inductor footprint.

Vishay IHSM-5832 inductor footprint

Footprint name:
L_Vishay_IHSM-5832

IHSM-5832 inductor footprint.

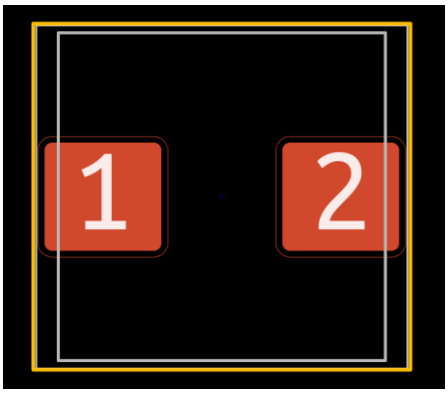
Vishay IHSM-7832 inductor footprint

Footprint name:
L_Vishay_IHSM-7832

IHSM-7832 inductor footprint.

Würth HCI-1030 inductor footprint

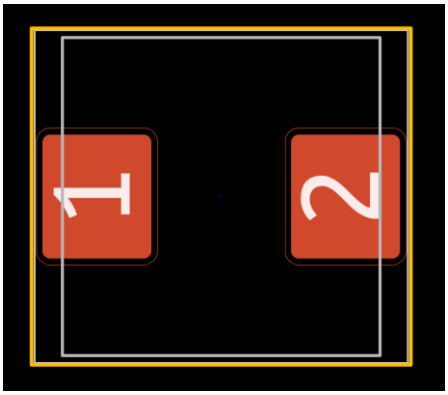
Footprint name:
L_Wuerth_HCI-1030



HCI-1030 inductor footprint.

Würth HCI-1040 inductor footprint

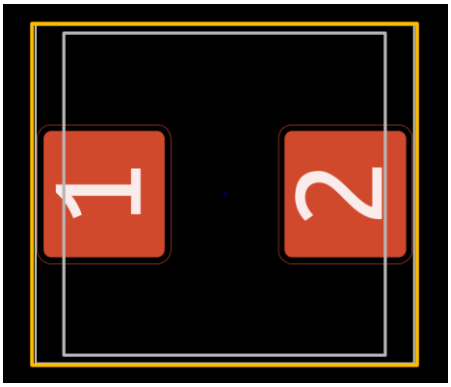
Footprint name:
L_Wuerth_HCI-1040



HCI-1040 inductor footprint.

Würth HCI-1050 inductor footprint

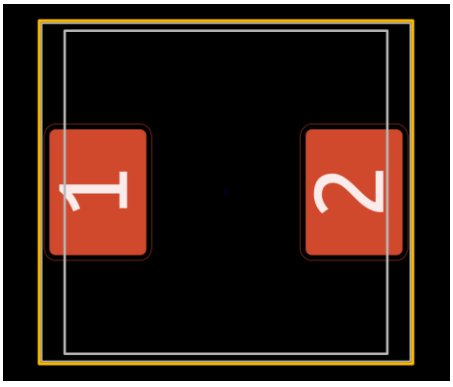
Footprint name:
L_Wuerth_HCI-1050



HCI-1050 inductor footprint.

Würth HCI-1335 inductor footprint

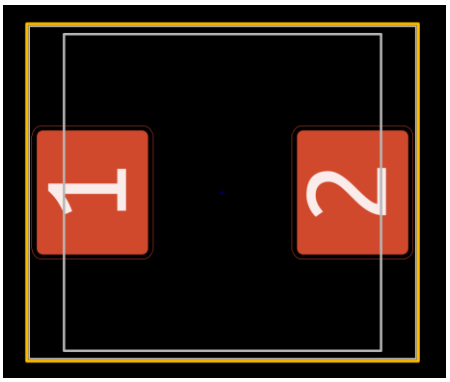
Footprint name:
L_Wuerth_HCI-1335



HCI-1335 inductor footprint.

Würth HCI-1350 inductor footprint

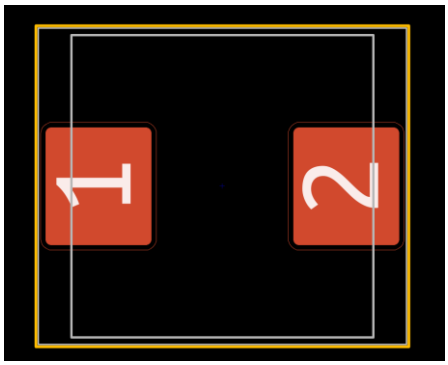
Footprint name:
L_Wuerth_HCI-1350



HCI-1350 inductor footprint.

Würth HCI-1365 inductor footprint

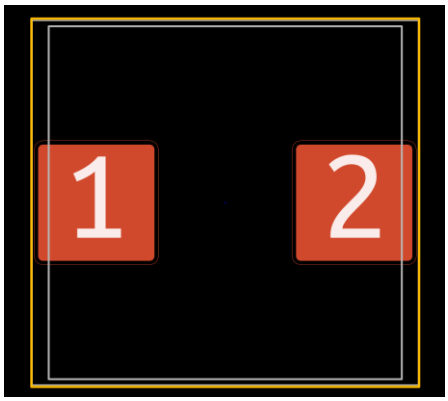
Footprint name:
L_Wuerth_HCI-1365



HCI-1365 inductor footprint.

Würth HCI-1890 inductor footprint

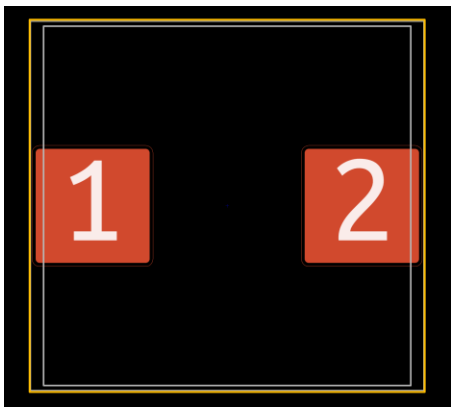
Footprint name:
L_Wuerth_HCI-1890



HCI-1890 inductor footprint.

Würth HCI-2212 inductor footprint

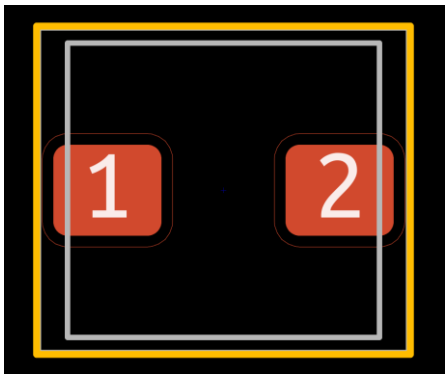
Footprint name:
L_Wuerth_HCI-2212



HCI-2212 inductor footprint.

Würth HCI-5040 inductor footprint

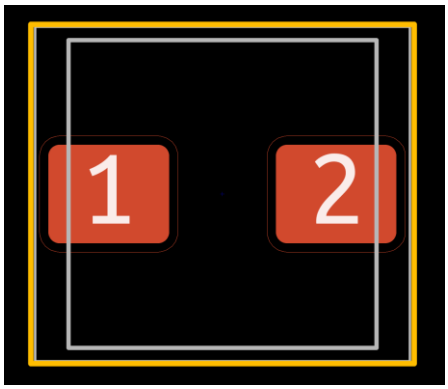
Footprint name:
L_Wuerth_HCI-5040



HCI-5040 inductor footprint.

Würth HCI-7030 inductor footprint

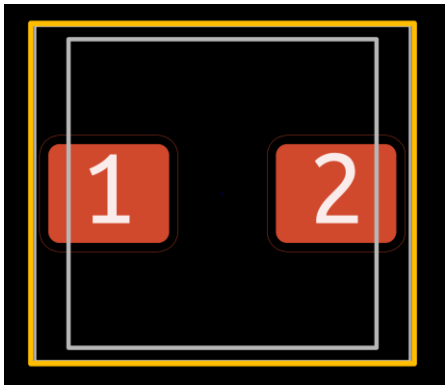
Footprint name:
L_Wuerth_HCI-7030



HCI-7030 inductor footprint.

Würth HCI-7040 inductor footprint

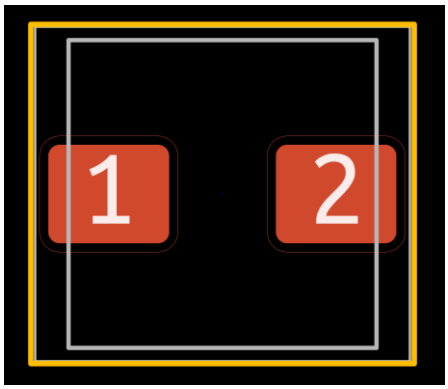
Footprint name:
L_Wuerth_HCI-7040



HCI-7040 inductor footprint.

Würth HCI-7050 inductor footprint

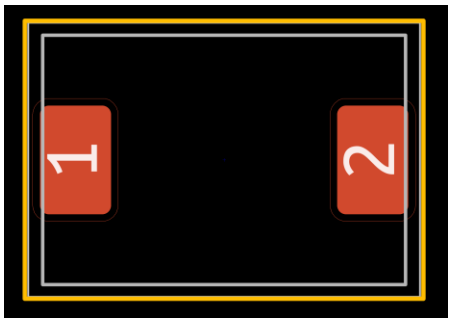
Footprint name:
L_Wuerth_HCI-7050



HCI-7050 inductor footprint.

Würth HCM-1050 inductor footprint

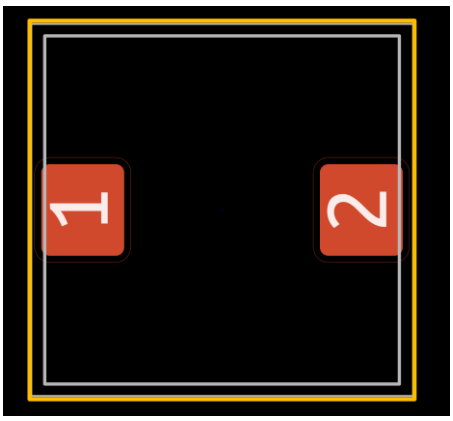
Footprint name:
L_Wuerth_HCM-1050



HCM-1050 inductor footprint.

Würth HCM-1052 inductor footprint

Footprint name:
L_Wuerth_HCM-1052



HCM-1052 inductor footprint.

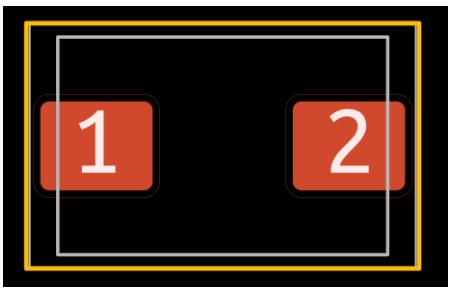
Würth HCM-1070 inductor footprint

Footprint name:
L_Wuerth_HCM-1070

HCM-1070 inductor footprint.

Würth HCM-1078 inductor footprint

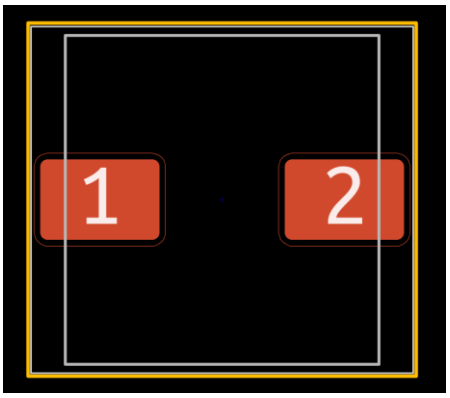
Footprint name:
L_Wuerth_HCM-1078



HCM-1078 inductor footprint.

Würth HCM-1190 inductor footprint

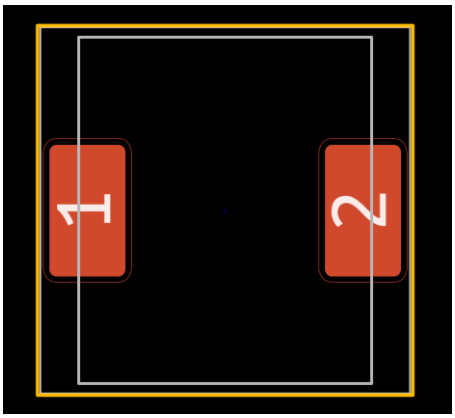
Footprint name:
L_Wuerth_HCM-1190



HCM-1190 inductor footprint.

Würth HCM-1240 inductor footprint

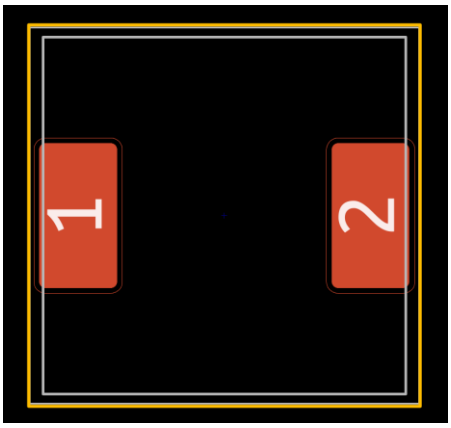
Footprint name:
L_Wuerth_HCM-1240



HCM-1240 inductor footprint.

Würth HCM-1350 inductor footprint

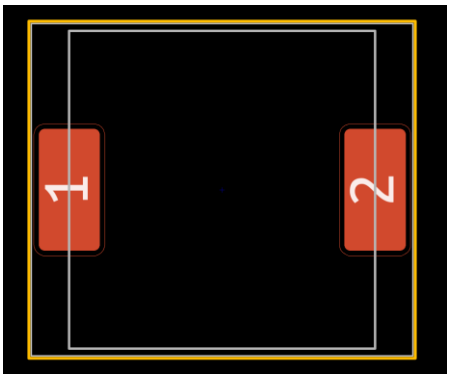
Footprint name:
L_Wuerth_HCM-1350



HCM-1350 inductor footprint.

Würth HCM-1390 inductor footprint

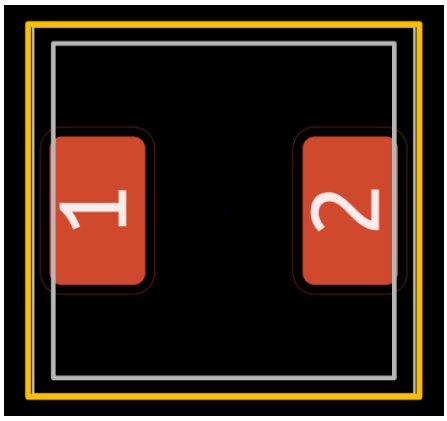
Footprint name:
L_Wuerth_HCM-1390



HCM-1390 inductor footprint.

Würth HCM-7050 inductor footprint

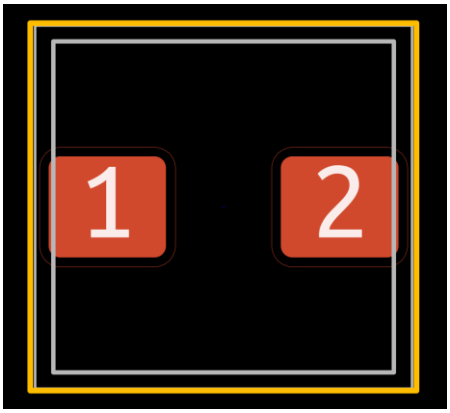
Footprint name:
L_Wuerth_HCM-7050



HCM-7050 inductor footprint.

Würth HCM-7070 inductor footprint

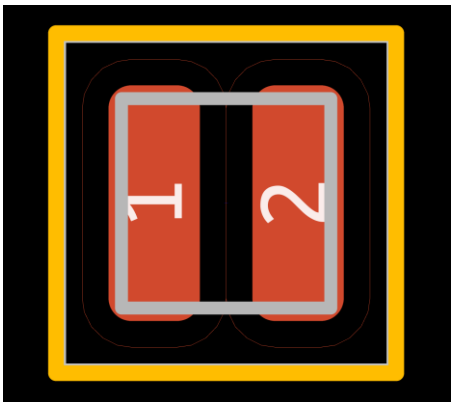
Footprint name:
L_Wuerth_HCM-7070



HCM-7070 inductor footprint.

Würth MAPI-1610 inductor footprint

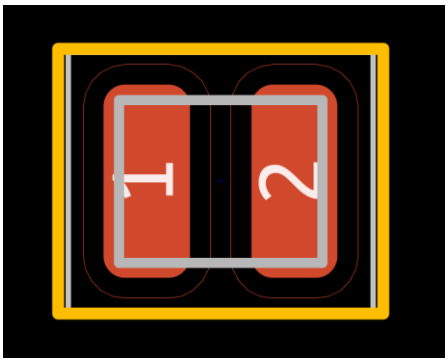
Footprint name:
L_Wuerth_MAPI-1610



MAPI-1610 inductor footprint.

Würth MAPI-2010 inductor footprint

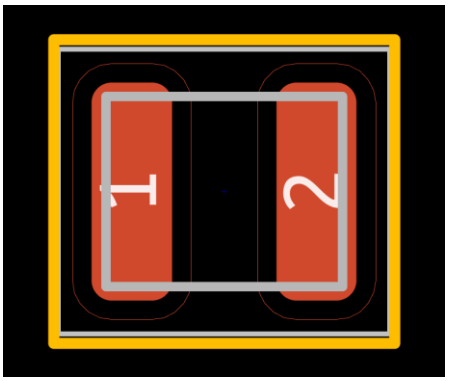
Footprint name:
L_Wuerth_MAPI-2010



MAPI-2010 inductor footprint.

Würth MAPI-2506 inductor footprint

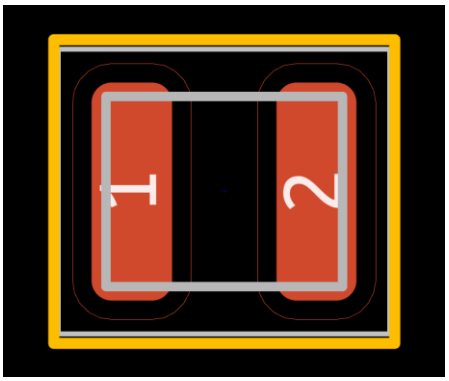
Footprint name:
L_Wuerth_MAPI-2506



MAPI-2506 inductor footprint.

Würth MAPI-2508 inductor footprint

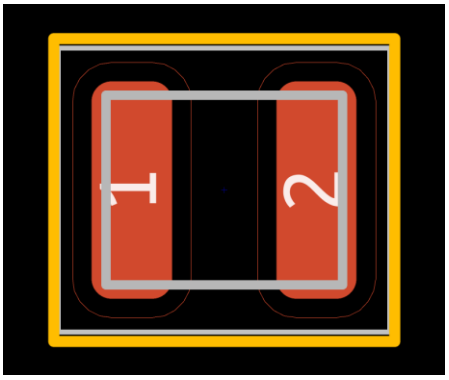
Footprint name:
L_Wuerth_MAPI-2508



MAPI-2508 inductor footprint.

Würth MAPI-2510 inductor footprint

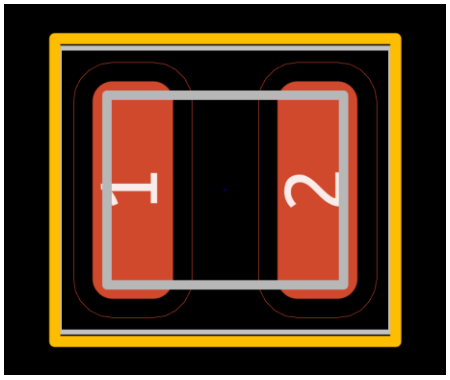
Footprint name:
L_Wuerth_MAPI-2510



MAPI-2510 inductor footprint.

Würth MAPI-2512 inductor footprint

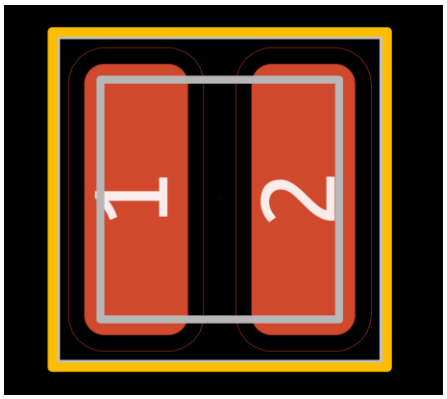
Footprint name:
L_Wuerth_MAPI-2512



MAPI-2512 inductor footprint.

Würth MAPI-3010 inductor footprint

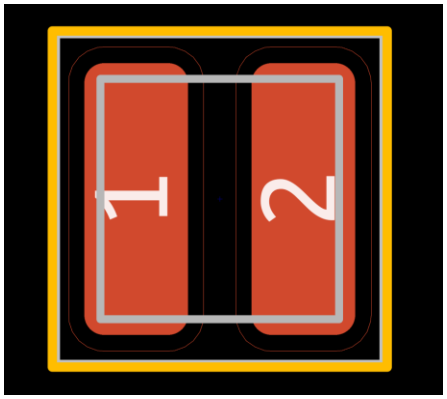
Footprint name:
L_Wuerth_MAPI-3010



MAPI-3010 inductor footprint.

Würth MAPI-3012 inductor footprint

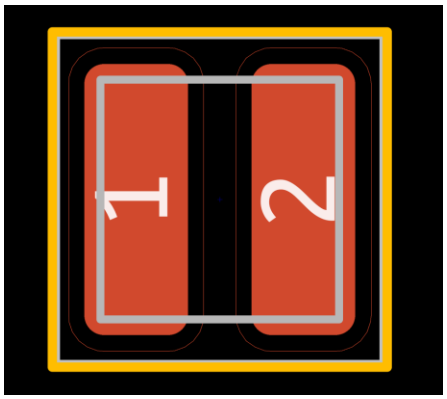
Footprint name:
L_Wuerth_MAPI-3012



MAPI-3012 inductor footprint.

Würth MAPI-3015 inductor footprint

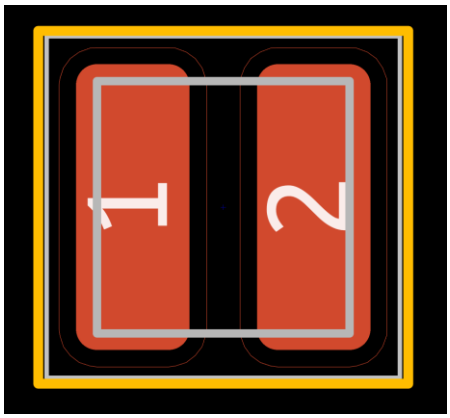
Footprint name:
L_Wuerth_MAPI-3015



MAPI-3015 inductor footprint.

Würth MAPI-3020 inductor footprint

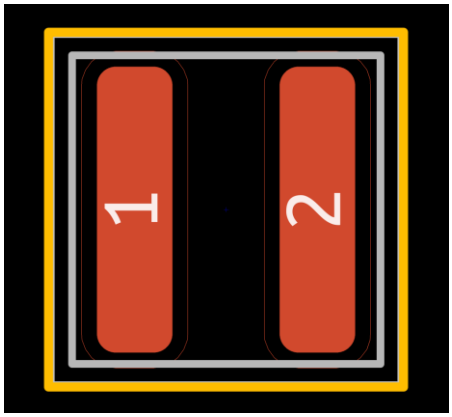
Footprint name:
L_Wuerth_MAPI-3020



MAPI-3020 inductor footprint.

Würth MAPI-4020 inductor footprint

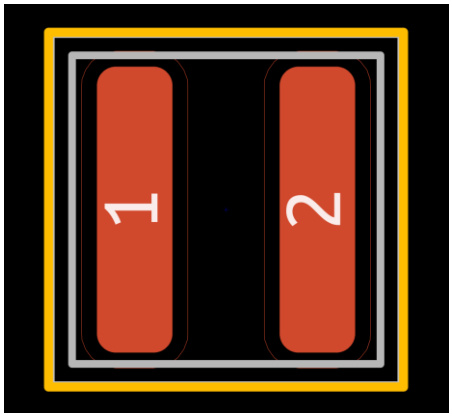
Footprint name:
L_Wuerth_MAPI-4020



MAPI-4020 inductor footprint.

Würth MAPI-4030 inductor footprint

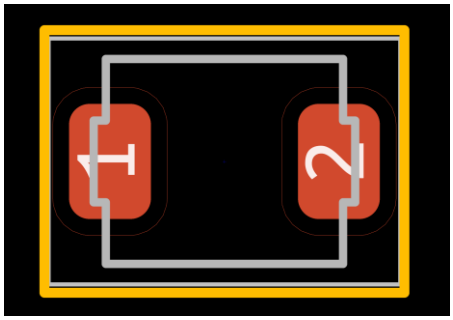
Footprint name:
L_Wuerth_MAPI-4030



MAPI-4030 inductor footprint.

Würth WE-GF-1210 inductor footprint

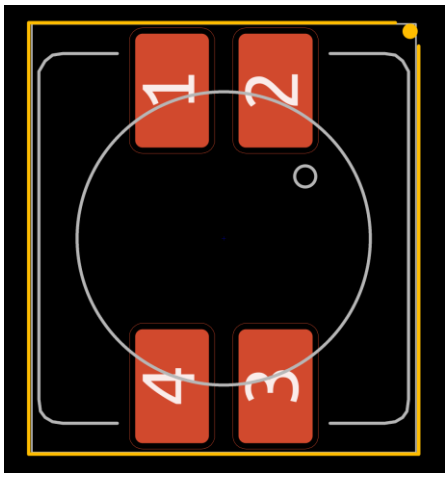
Footprint name:
L_Wuerth_WE-GF-1210



WE-GF-1210 inductor footprint.

Würth WE-DD L/XL/XXL series common-mode choke footprint

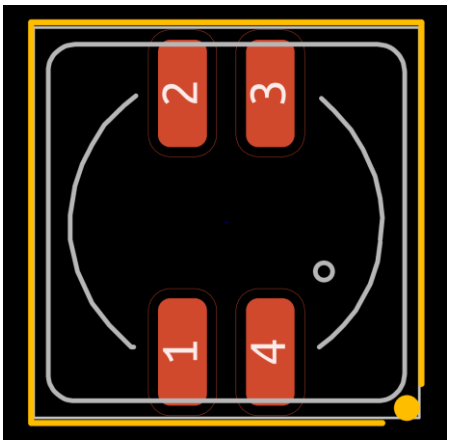
Footprint name:
L_Wuerth_WE-DD-Typ-L-Typ-XL-Typ-XXL



WE-DD L/XL/XXL common-mode choke footprint.

Würth WE-DD M/S series common-mode choke footprint

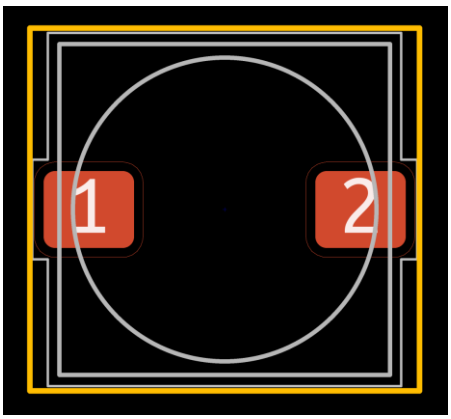
Footprint name:
L_Wuerth_WE-DD-Typ-M-Typ-S



WE-DD M/S common-mode choke footprint.

Würth WE-PD 7345 inductor footprint

Footprint name:
L_Wuerth_WE-PD-Typ-7345

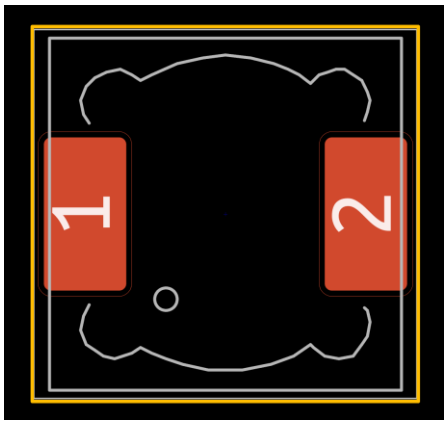


WE-PD 7345 inductor footprint.

Würth WE-PD LS series inductor footprints

Footprint names:
L_Wuerth_WE-PD-Typ-LS
L_Wuerth_WE-PD-Typ-LS_BigPads

Note: BigPads suffix denotes a footprint with enlarged pads.

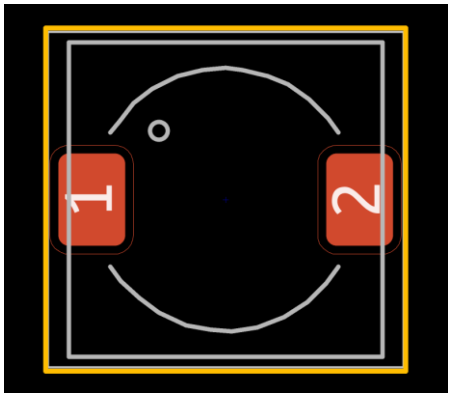


WE-PD LS inductor footprint.

Würth WE-PD M/S series inductor footprints

Footprint names:
L_Wuerth_WE-PD-Typ-M-Typ-S
L_Wuerth_WE-PD-Typ-M-Typ-S_BigPads

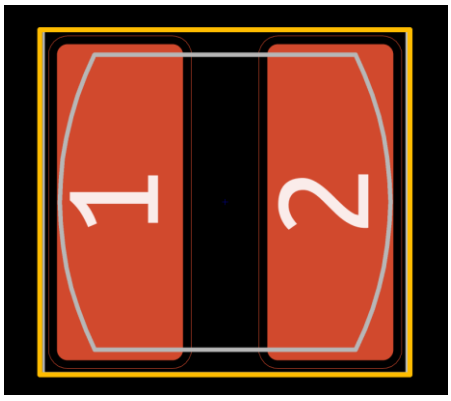
Note: BigPads suffix denotes a footprint with enlarged pads.



WE-PD M/S inductor footprint.

Würth WE-PD2 L inductor footprint

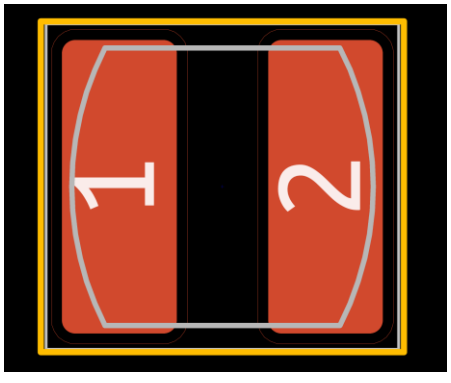
Footprint name:
L_Wuerth_WE-PD2-Typ-L



WE-PD2 L inductor footprint.

Würth WE-PD2 MS inductor footprint

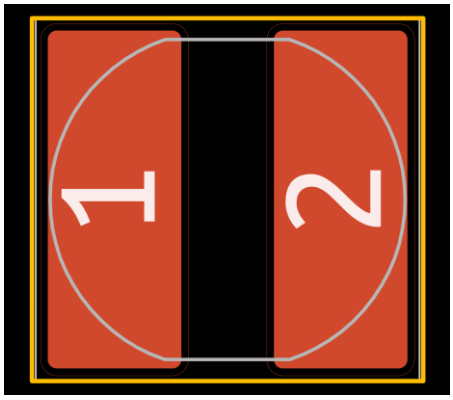
Footprint name:
L_Wuerth_WE-PD2-Typ-MS



WE-PD2 MS inductor footprint.

Würth WE-PD2 XL inductor footprint

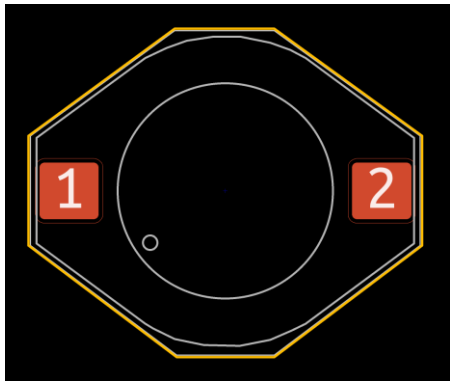
Footprint name:
L_Wuerth_WE-PD2-Typ-XL



WE-PD2 XL inductor footprint.

Würth WE-PD4 X inductor footprint

Footprint name:
L_Wuerth_WE-PD4-Typ-X

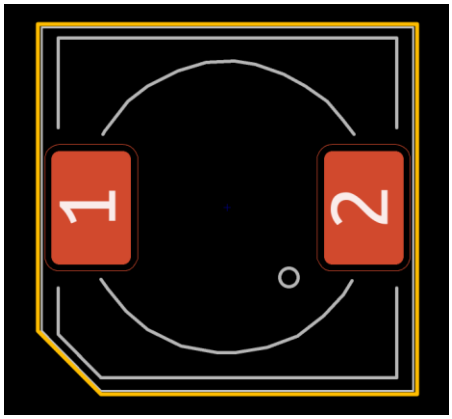


WE-PD4 X inductor footprint.

Würth WE-PDF inductor footprints

Footprint names:
L_Wuerth_WE-PDF
L_Wuerth_WE-PDF_BigPads

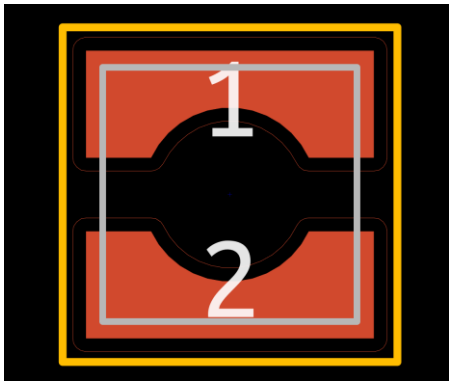
Note: BigPads suffix denotes a footprint with enlarged pads.



WE-PD M/S inductor footprint.

Würth WE-TPC 3816 inductor footprint

Footprint name:
L_Wuerth_WE-TPC 3816



WE-TPC 3816 inductor footprint.

3.12. THT Inductor Library

These libraries contain footprints for THT inductors and common-mode chokes.

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

Standard variant	
Folder name: `Inductor_THT_AKL`	
Footprint count:	**252**
Double-sided variant	
Folder name: `Inductor_THT_AKL_Double`	
Footprint count:	**245**
Total footprints:	**497**

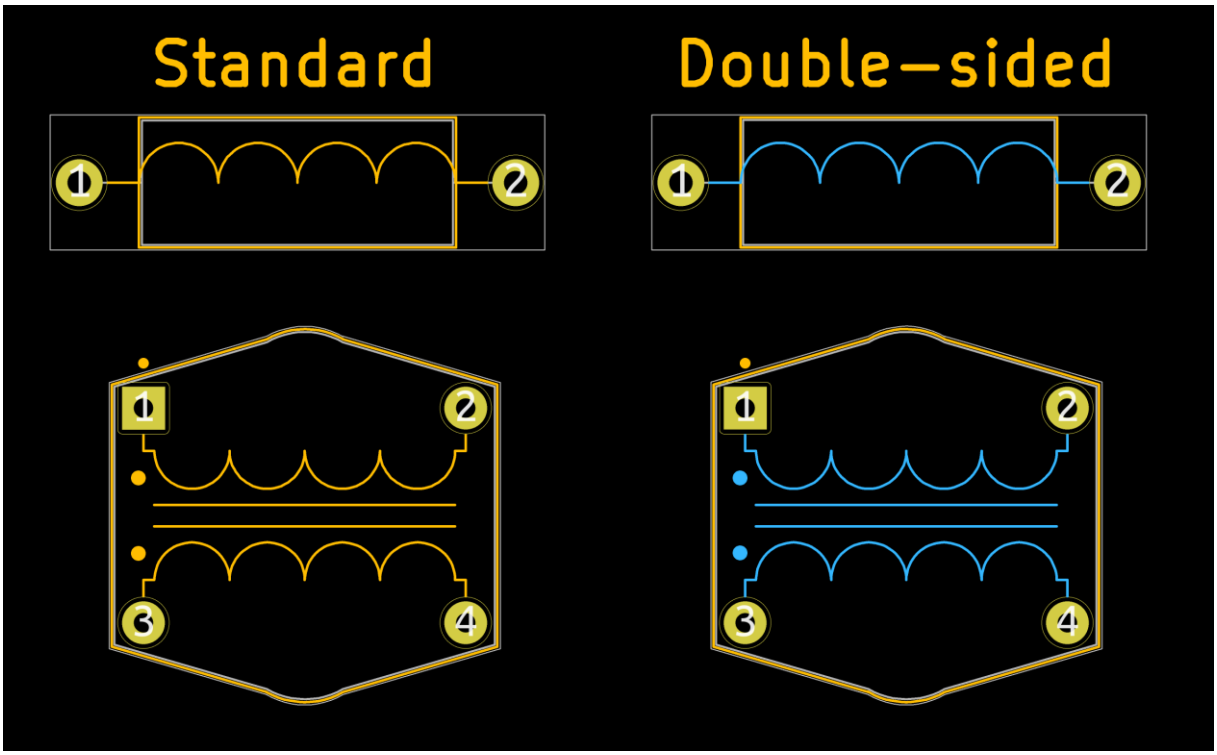
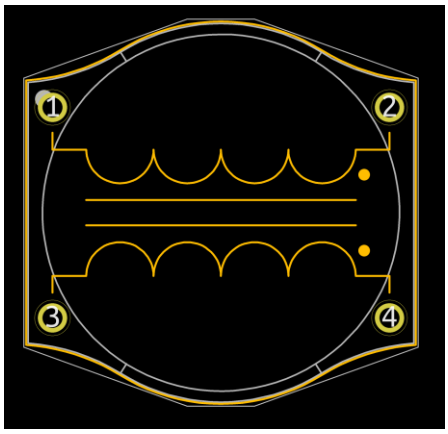


Figure 3.31. *Comparison between THT inductor footprints from standard and double-sided libraries.*

EPCOS B82722A common-mode choke footprint

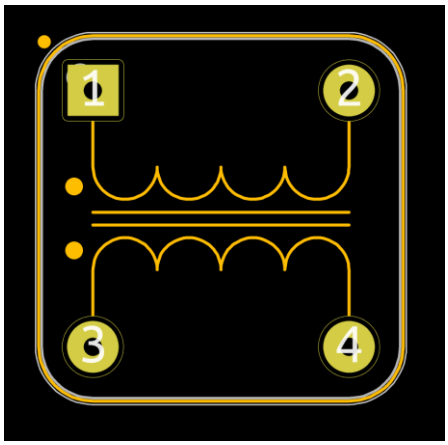
Footprint name:
Choke_EPCOS_B82722A



EPCOS B82722A common-mode choke footprint.

Schaffner RN102-04 common-mode choke footprint

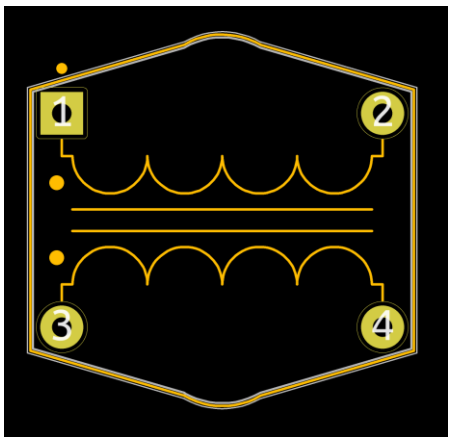
Footprint name:
Choke_Schaffner_RN102-04-14.0x14.0mm



RN102-04 common-mode choke footprint.

Schaffner RN112-04 common-mode choke footprint

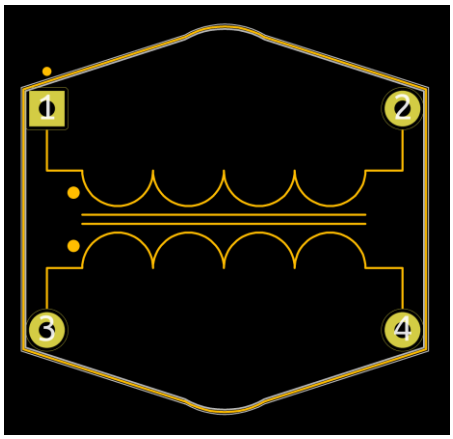
Footprint name:
Choke_Schaffner_RN112-04-17.7x17.7mm



RN112-04 common-mode choke footprint.

Schaffner RN114-04 common-mode choke footprint

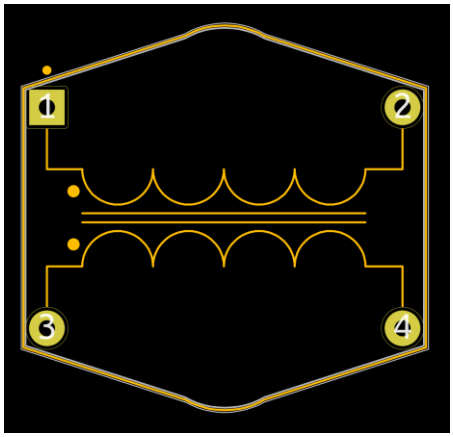
Footprint name:
Choke_Schaffner_RN114-04-22.5x21.5mm



RN114-04 common-mode choke footprint.

Schaffner RN116-04 common-mode choke footprint

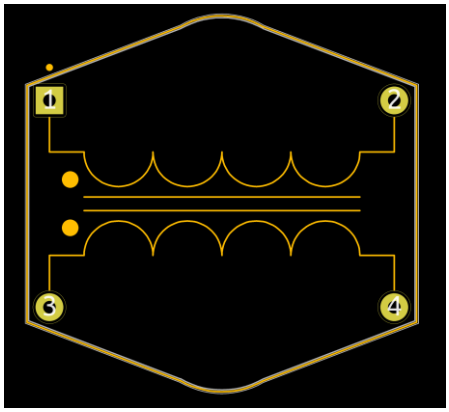
Footprint name:
Choke_Schaffner_RN116-04-22.5x21.5mm



RN116-04 common-mode choke footprint.

Schaffner RN122-04 common-mode choke footprint

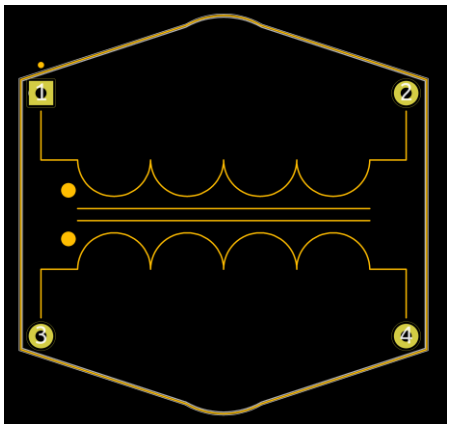
Footprint name:
Choke_Schaffner_RN122-04-22.5x21.5mm



RN122-04 common-mode choke footprint.

Schaffner RN142-04 common-mode choke footprint

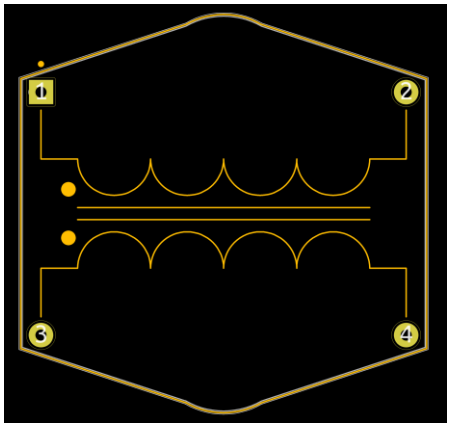
Footprint name:
Choke_Schaffner_RN142-04-33.1x32.5mm



RN142-04 common-mode choke footprint.

Schaffner RN143-04 common-mode choke footprint

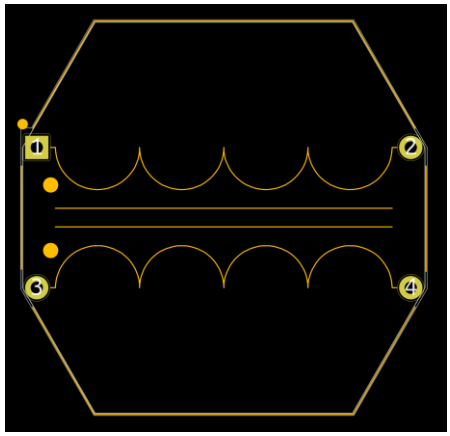
Footprint name:
Choke_Schaffner_RN143-04-33.1x32.5mm



RN143-04 common-mode choke footprint.

Schaffner RN152-04 common-mode choke footprint

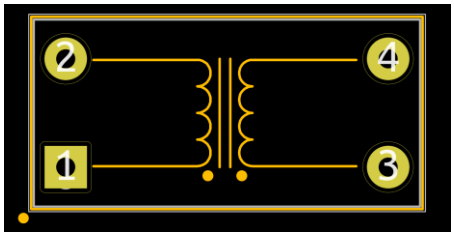
Footprint name:
Choke_Schaffner_RN152-04-43.0x41.8mm



RN152-04 common-mode choke footprint.

Schaffner RN202-04 common-mode choke footprint

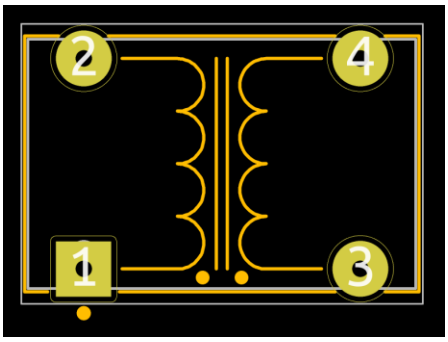
Footprint name:
Choke_Schaffner_RN202-04-8.8x18.2mm



RN202-04 common-mode choke footprint.

Schaffner RN204-04 common-mode choke footprint

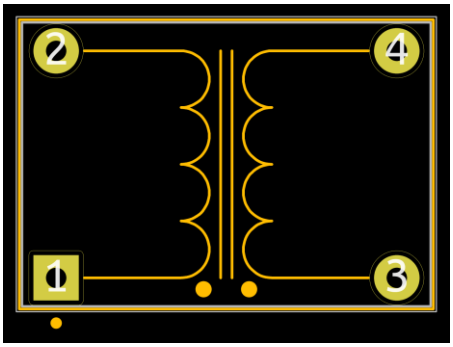
Footprint name:
Choke_Schaffner_RN204-04-9.0x14.0mm



RN204-04 common-mode choke footprint.

Schaffner RN212-04 common-mode choke footprint

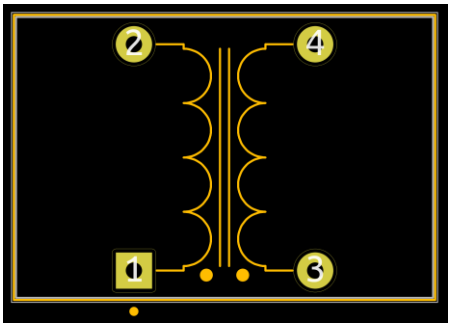
Footprint name:
Choke_Schaffner_RN212-04-12.5x18.0mm



RN212-04 common-mode choke footprint.

Schaffner RN214-04 common-mode choke footprint

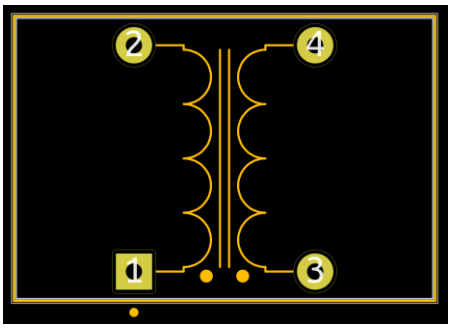
Footprint name:
Choke_Schaffner_RN214-04-15.5x23.0mm



RN214-04 common-mode choke footprint.

Schaffner RN216-04 common-mode choke footprint

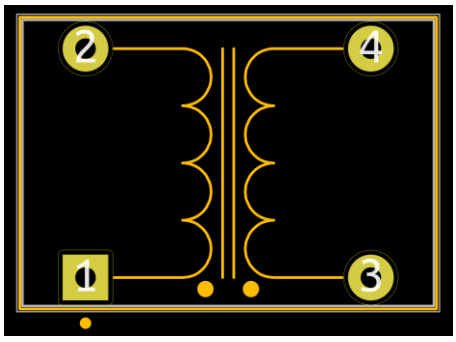
Footprint name:
Choke_Schaffner_RN216-04-15.5x123.0mm



RN216-04 common-mode choke footprint.

Schaffner RN218-04 common-mode choke footprint

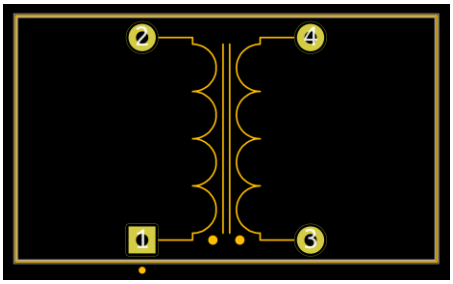
Footprint name:
Choke_Schaffner_RN218-04-12.5x18.0mm



RN218-04 common-mode choke footprint.

Schaffner RN222-04 common-mode choke footprint

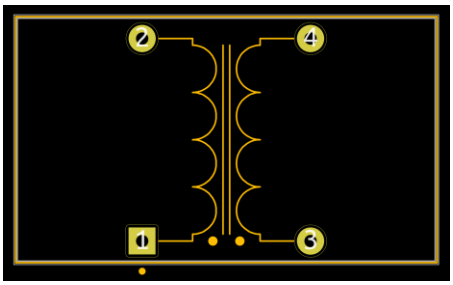
Footprint name:
Choke_Schaffner_RN222-04-18.0x31.0mm



RN222-04 common-mode choke footprint.

Schaffner RN232-04 common-mode choke footprint

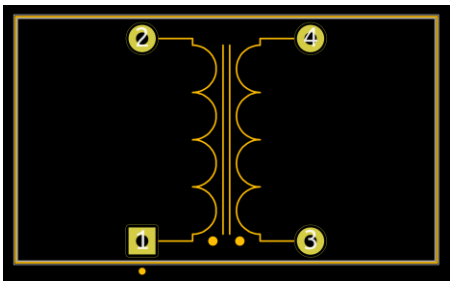
Footprint name:
Choke_Schaffner_RN232-04-18.0x31.0mm



RN232-04 common-mode choke footprint.

Schaffner RN242-04 common-mode choke footprint

Footprint name:
Choke_Schaffner_RN242-04-18.0x31.0mm



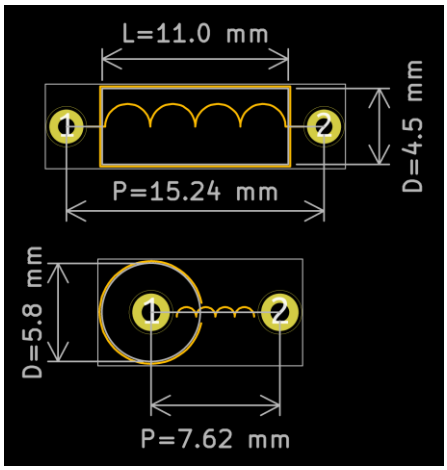
RN242-04 common-mode choke footprint.

Axial inductor footprints

Footprint count: 78

Footprint naming convention:
L_Axial_L<length>**mm_D**<diameter>**mm_P**<pitch>**mm_**<orientation>_<optional: manufacturer_series>

Name examples:
L_Axial_L5.3mm_D2.2mm_P2.54mm_Vertical_Vishay_IM-1
L_Axial_L20.0mm_D8.0mm_P25.40mm_Horizontal



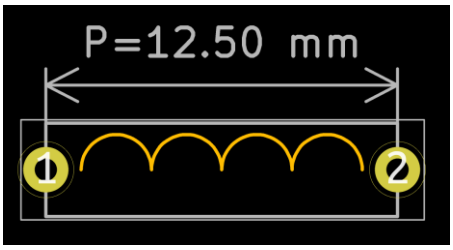
Axial horizontal inductor footprint (top) and vertical inductor footprint (bottom) with all relevant dimensions indicated.

Generic air core inductor footprints

Footprint count: 9

Footprint naming convention:
L_Axial_P<pitch>**mm_Air**

Name examples:
L_Axial_P2.5mm_Air
L_Axial_P15mm_Air



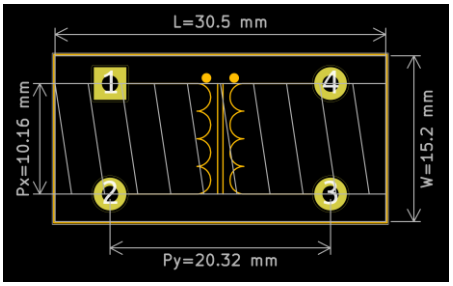
Axial air-core inductor footprint with its pin pitch indicated.

Vertical toroidal common-mode choke footprints

Footprint count: 10

Footprint naming convention:
L_CommonMode_Toroid_Vertical_L<length>**mm_W**<width>**mm_Px**<pitch in x direction>**mm_Py**<pitch in y direction>**mm**_<optional: manufacturer_series>

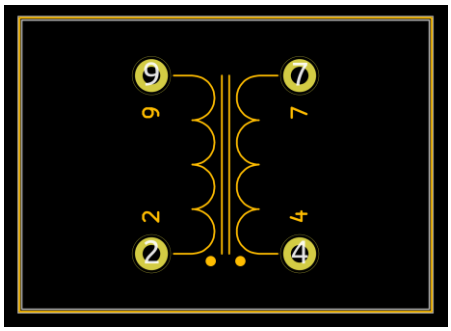
Name examples:
L_CommonMode_Toroid_Vertical_L19.3mm_W10.8mm_Px6.35mm_Py15.24mm_Bourns_8100
L_CommonMode_Toroid_Vertical_24.0mm_W16.3mm_Px10.16mm_Py20.32mm_muRATA_5200



Vertical toroidal common-mode choke footprint with all dimensions indicated.

Würth WE-CMB-L common-mode choke footprint

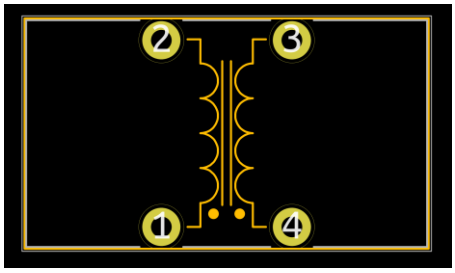
Footprint name:
L_CommonMode_Wuerth_WE-CMB-L



WE-CMB-L common-mode choke footprint.

Würth WE-CMB-M common-mode choke footprint

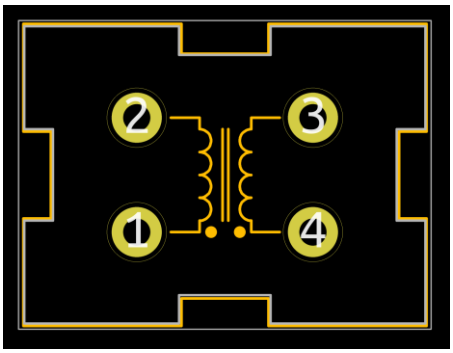
Footprint name:
L_CommonMode_Wuerth_WE-CMB-M



WE-CMB-M common-mode choke footprint.

Würth WE-CMB-S common-mode choke footprint

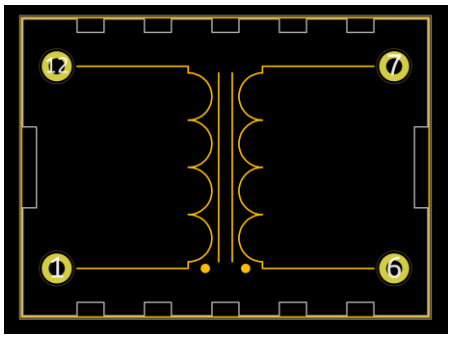
Footprint name:
L_CommonMode_Wuerth_WE-CMB-S



WE-CMB-S common-mode choke footprint.

Würth WE-CMB-XL common-mode choke footprint

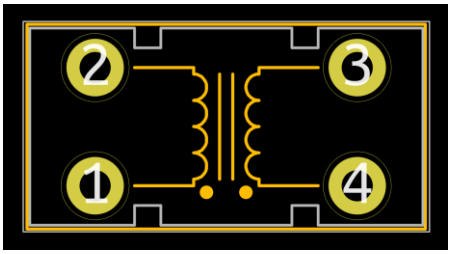
Footprint name:
L_CommonMode_Wuerth_WE-CMB-XL



WE-CMB-XL common-mode choke footprint.

Würth WE-CMB-XS common-mode choke footprint

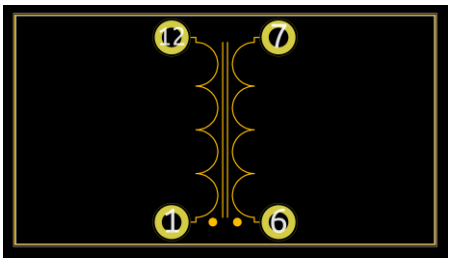
Footprint name:
L_CommonMode_Wuerth_WE-CMB-XS



WE-CMB-XS common-mode choke footprint.

Würth WE-CMB-XXL common-mode choke footprint

Footprint name:
L_CommonMode_Wuerth_WE-CMB-XXL



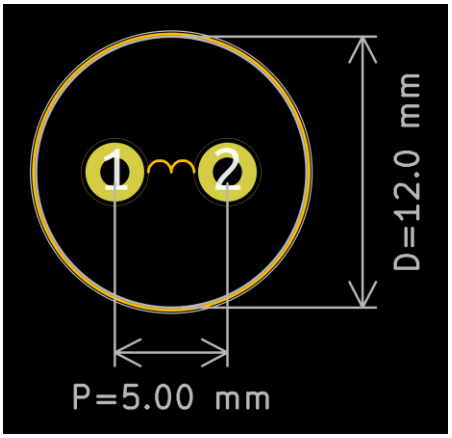
WE-CMB-XXL common-mode choke footprint.

Radial inductor footprints

Footprint count: **69**

Footprint naming convention:
L_Radial_D<diameter>**mm_P**<pitch>**mm_**
<optional: manufacturer_series>

Name examples:
L_Radial_D7.0mm_P3.00mm
L_Radial_D14.2mm_P10.00mm_Neosid_SD14



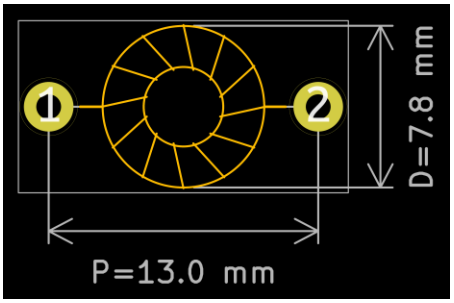
Radial inductor footprint with its dimensions indicated.

Horizontal toroidal inductor footprints

Footprint count: **28**

Footprint naming convention:
L_Toroid_Horizontal_D<diameter>**mm_P**<pitch>**mm_**
<optional: manufacturer_series>_<optional: BigPads>

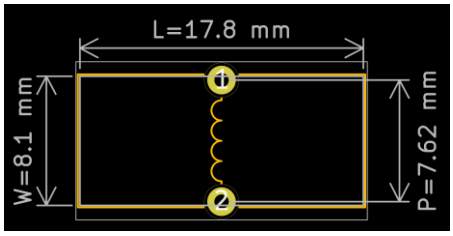
Name examples:
L_Toroid_Horizontal_D26.0mm_P5.08mm
L_Toroid_Horizontal_D17.3mm_P15.24mm_Bourns_2000



Horizontal toroidal inductor footprint with its dimensions indicated.

Vertical toroidal inductor footprints

Footprint count: **34**



Vertical toroidal inductor footprint with its dimensions indicated.

Footprint naming convention:

L_Toroid_Vertical_L<diameter>**mm_W**<diameter>**mm**
P<pitch>**mm**<optional: manufacturer_series>
_<optional: BigPads>

Name examples:

L_Toroid_Vertical_L10.0mm_W5.0mm_P5.08mm
L_Toroid_Vertical_L16.3mm_W7.1mm_P7.11mm_Pulse_H
L_Toroid_Vertical_25.4mm_W14.7mm_P12.20mm_Vishay_TJ5_BigPads

3.13. Jumper Libraries

These libraries contain footprints for wire jumpers.

Double-sided library variant contains both the top and bottom silkscreen layer.

Standard variant	
Folder name: **`Jumper_THT_AKL`**	
Footprint count:	**20**
Double-sided variant	
Folder name: **`Jumper_THT_AKL_Double`**	
Footprint count:	**20**
Total footprints:	**40**

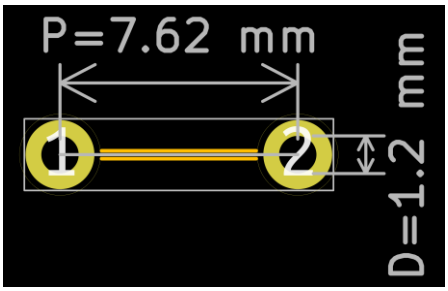
Figure 3.32. *Comparison between jumper footprints from standard and double-sided libraries.*

THT jumper footprints

Footprint count: **20**

Footprint naming convention:
Jumper_P<pitch>**mm_D**<hole diameter>**mm**

Name examples:
Jumper_P2.54mm_D0.7mm
Jumper_P17.78mm_D1.2mm



Jumper footprint with its dimensions indicated.

3.14. SMD Light Emitting Diode Library

These libraries contain footprints for SMD Light Emitting Diodes and arrays including RGB diodes.

Handsoldering library variant contains footprints with additional symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: **`LED_SMD_AKL`**	
Footprint count:	**78**
Handsoldering variant	
Folder name: **`LED_SMD_Handsoldering_AKL`**	
Footprint count:	**12**
Total footprints:	**90**

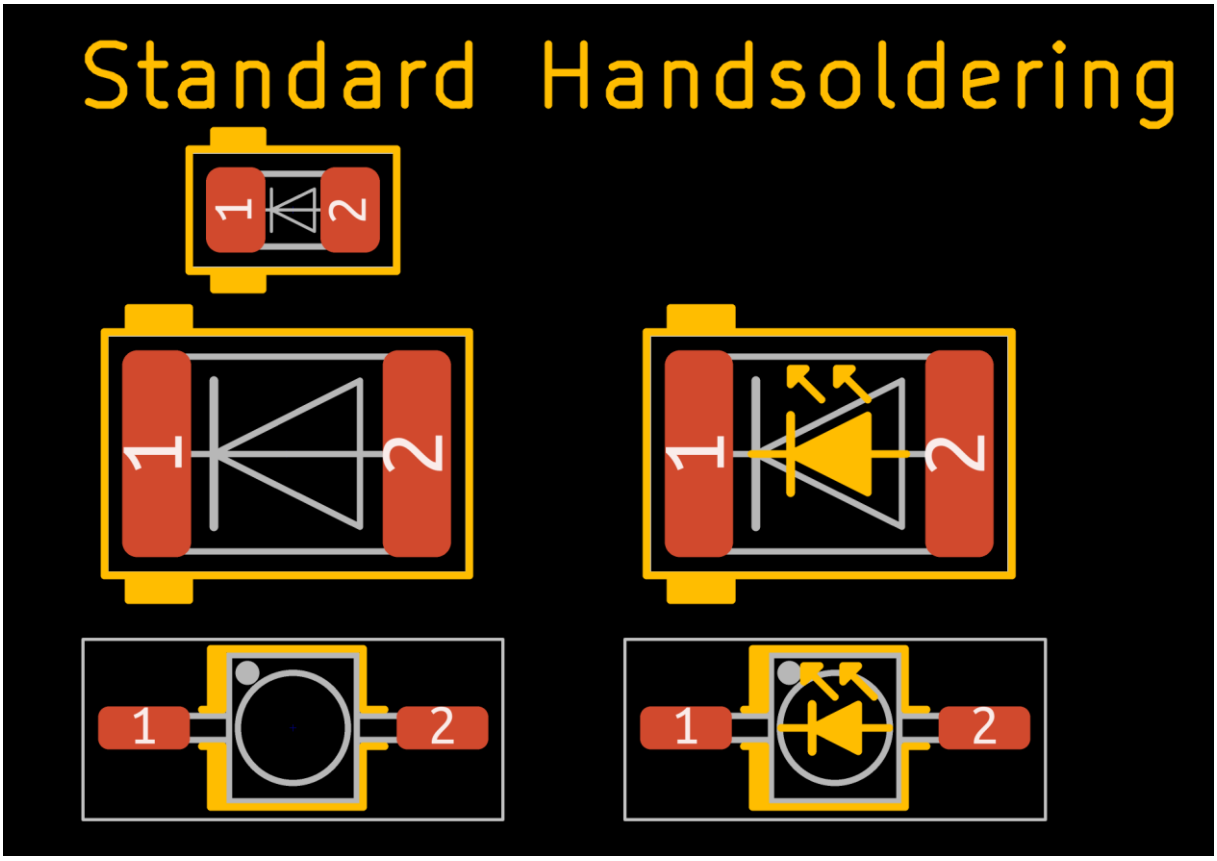
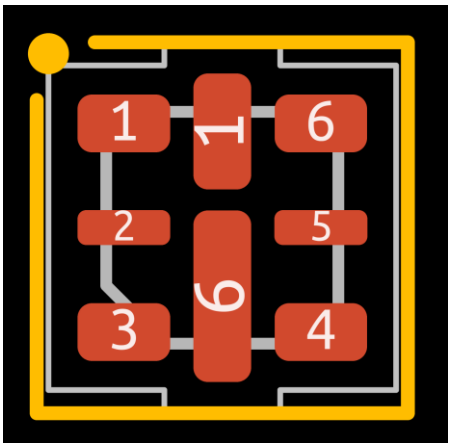


Figure 3.33. *Comparison between footprints form Standard and Handsoldering SMD LED libraries.*

APA102-2020 LED footprint

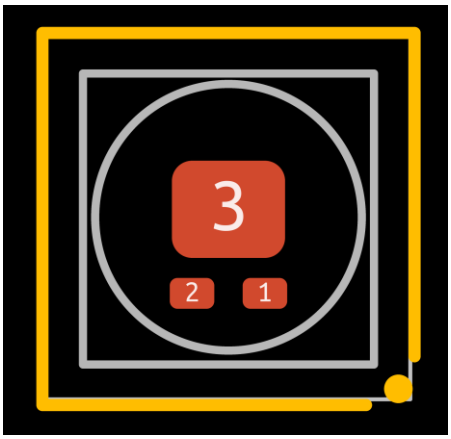
Footprint name:
LED-APA102-2020



APA102-2020 LED footprint.

Lumileds L1T2 LED footprint

Footprint name:
LED-L1T2_LUMILEDS

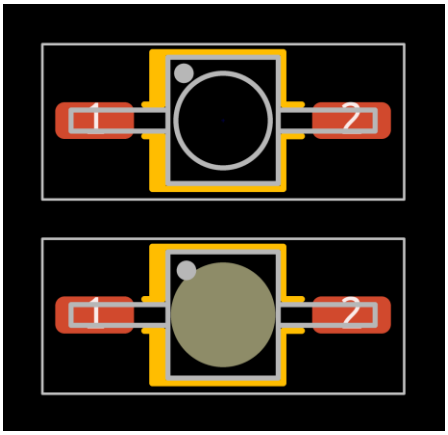


L1T2 LED footprint.

1.8mm Gull Wing LED footprint

Footprint names:
LED_1.8mm_GullWing
LED_1.8mm_GullWing_ReverseMount

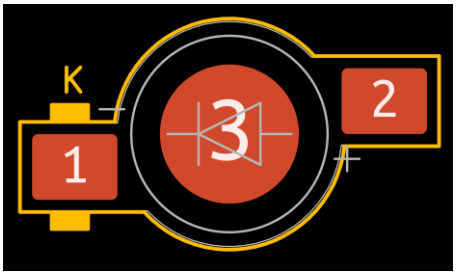
"ReverseMount" denotes a footprint for an LED with backwards-bent pins, so that the lens comes through the PCB and shines on the other side.



Standard 1.8mm SMD LED footprint (top) and a reverse mount footprint (bottom).

1W/3W SMD Power LED footprint

Footprint name:
LED_1W_3W_R8



SMD Power LED footprint.

SMD LED footprints

Footprint count: 19

Footprint naming convention:
LED_<imp. size code>_<metric size code>**Metric**
(optional: _**Pad**<pad width>**x**<pad length>**mm** or
_**ReverseMount_Hole**<hole size hor.>**x**<hole size ver.>)

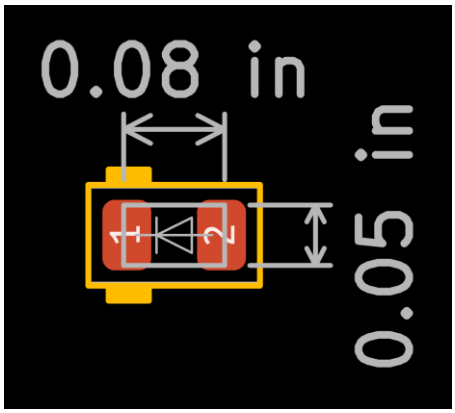
Name examples:
LED_0805_2012Metric
LED_0603_1608Metric_Pad1.05x095mm

Imperial size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.01 in. Example: 0805 size code means package length of 0.08 in and width of 0.05 in.

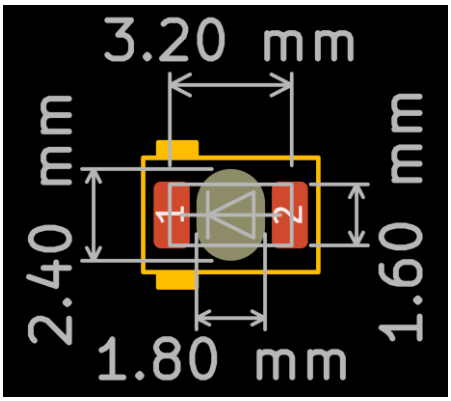
Metric size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.1 mm. Example: 2012 metric size code means package length of 2 mm and width of 1.2 mm.

Footprints with pad size in their name or a "BigPads" keyword indicate a variant with enlarged pads meant for hand-soldering.

"ReverseMount" indicates a footprint for a device meant to shine through a PCB and includes a hole for the lens.



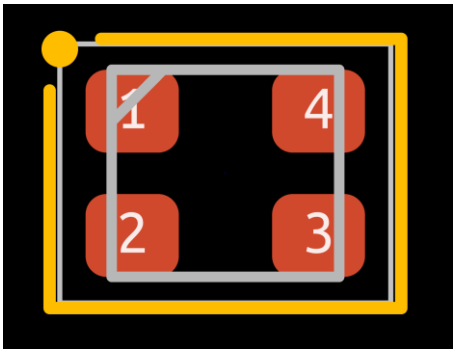
SMD LED footprint with 0805 imperial size code, length and width of the package indicated.



SMD LED "ReverseMount" footprint with 3216 metric size code, length and width of the package and hole size indicated.

ASMB-KTF0-0A306 LED footprint

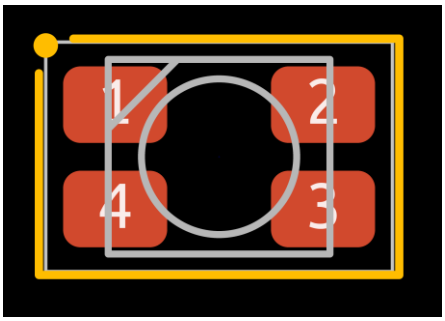
Footprint name:
LED_ASMB-KTF0-0A306



ASMB-KTF0-0A306 LED footprint.

Avago PLCC4 3.2x2.8mm LED footprint

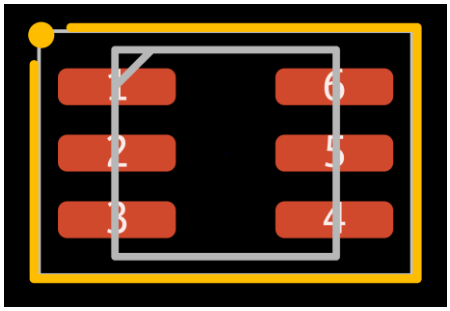
Footprint name:
LED_Avago_PLCC4_3.2x2.8mm_CW



Avago PLCC4 3.2x2.8mm LED footprint.

Avago PLCC6 3x2.8mm LED footprint

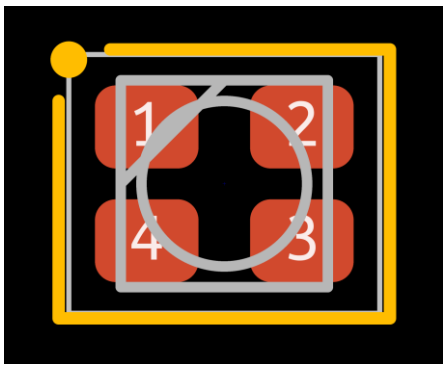
Footprint name:
LED_Avago_PLCC6_3x2.8mm



Avago PLCC6 3x2.8mm LED footprint.

Cree PLCC4 2x2mm LED footprint

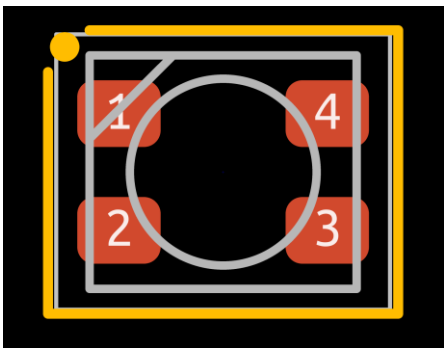
Footprint name:
LED_Cree_PLCC4_2x2mm_CW



Cree PLCC4 2x2mm LED footprint.

Cree PLCC4 3.2x2.8mm LED footprint

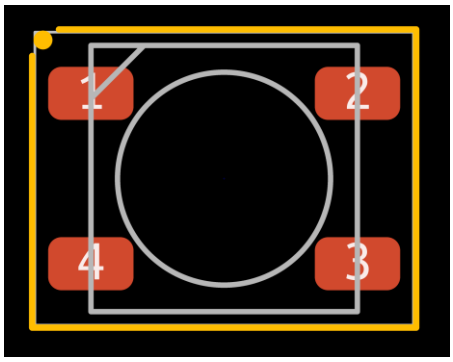
Footprint name:
LED_Cree_PLCC4_3.2x2.8mm_CCW



Cree PLCC4 3.2x2.8mm LED footprint.

Cree PLCC4 5x5mm LED footprint

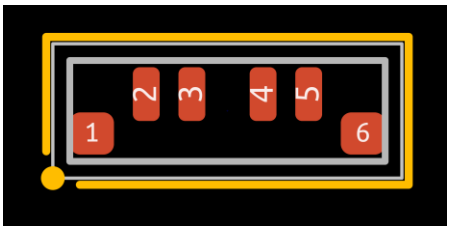
Footprint name:
LED_Cree_PLCC4_5x5mm_CW



Cree PLCC4 5x5mm LED footprint.

Cree PLCC6 4.7x1.5mm LED footprint

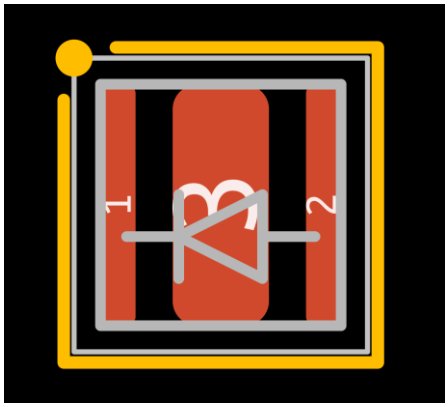
Footprint name:
LED_Cree_PLCC6_4.7x1.5mm



Cree PLCC6 4.7x1.5mm LED footprint.

Cree XB power LED footprint

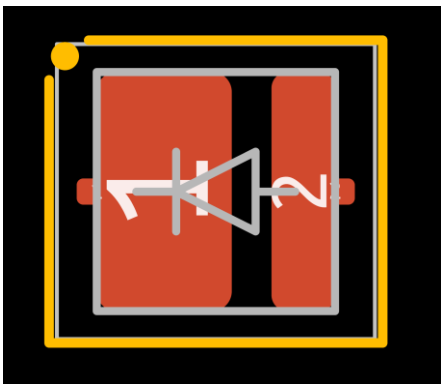
Footprint name:
LED_Cree-XB



Cree XB power LED footprint.

Cree XH power LED footprint

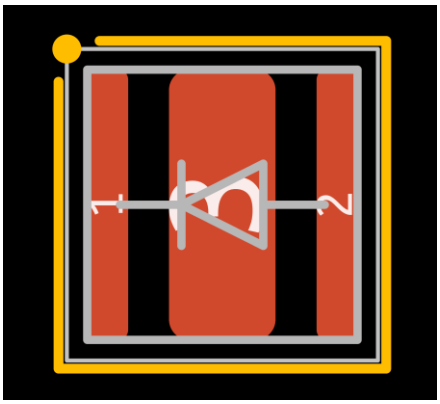
Footprint name:
LED_Cree-XH



Cree XH power LED footprint.

Cree XHP35 power LED footprint

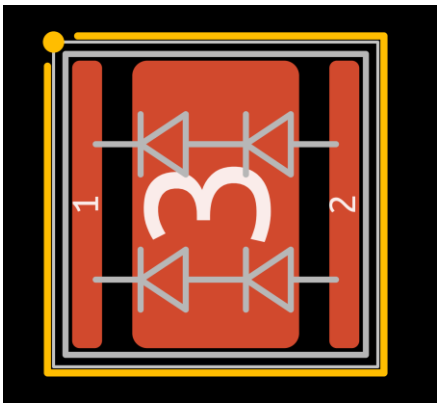
Footprint name:
LED_Cree-XHP35



Cree XHP35 power LED footprint.

Cree XHP50 6V power LED footprint

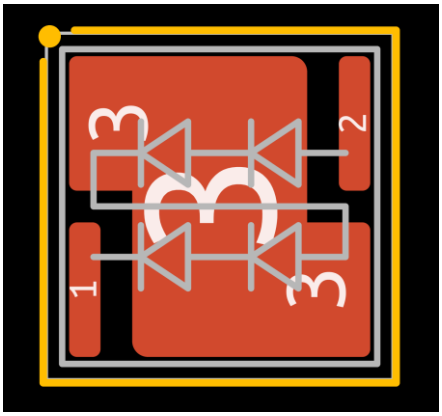
Footprint name:
LED_Cree-XHP50_6V



Cree XHP50 6V power LED footprint.

Cree XHP50 12V power LED footprint

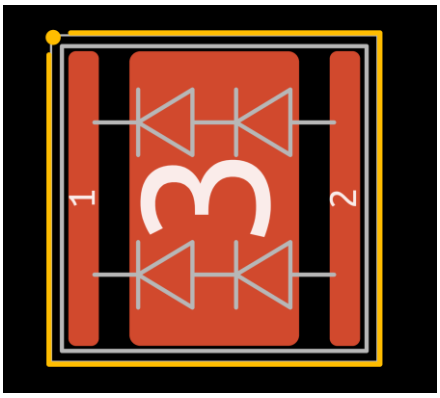
Footprint name:
LED_Cree-XHP50_12V



Cree XHP50 12V power LED footprint.

Cree XHP70 6V power LED footprint

Footprint name:
LED_Cree-XHP70_6V



Cree XHP70 6V power LED footprint.

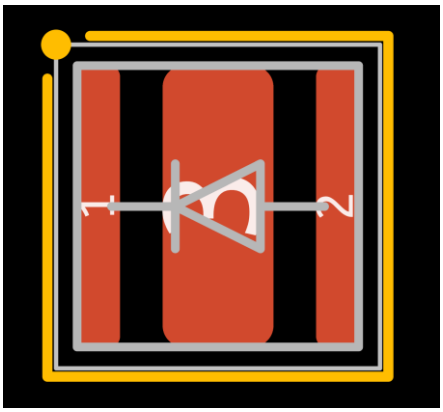
Cree XHP70 12V power LED footprint

Footprint name:
LED_Cree-XHP70_12V

Cree XHP70 12V power LED footprint.

Cree XP power LED footprint

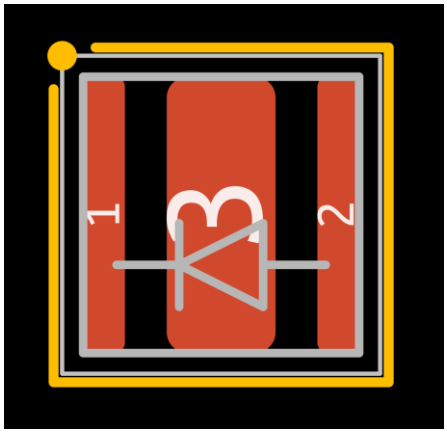
Footprint name:
LED_Cree-XP



Cree XP power LED footprint.

Cree XP-G power LED footprint

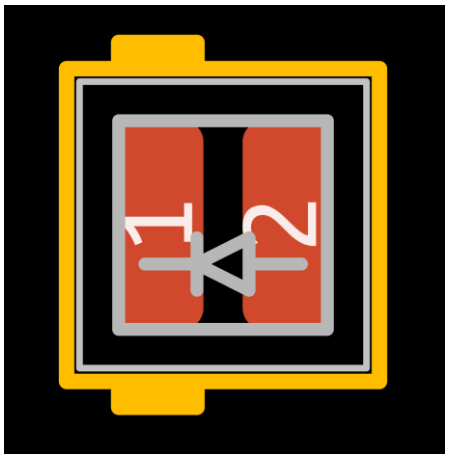
Footprint name:
LED_Cree-XP-G



Cree XP-G power LED footprint.

Cree XQ power LED footprints

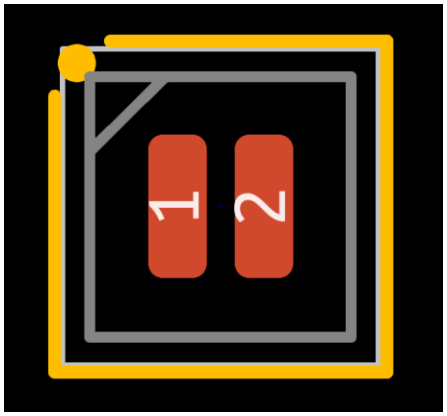
Footprint names:
LED_Cree-XQ
LED_Cree-XQ_BigPads



Cree XQ power LED footprint.

Samsung CSP LH181B LED footprint

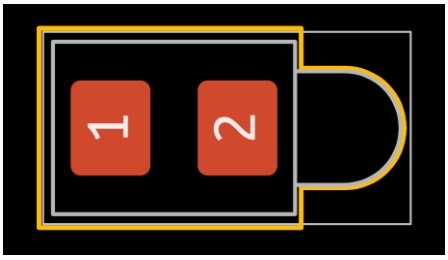
Footprint name:
LED_CSP_Samsung_LH181B_2.36x2.36mm



Samsung CSP LH181B footprint.

Dialight 591 LED indicator footprint

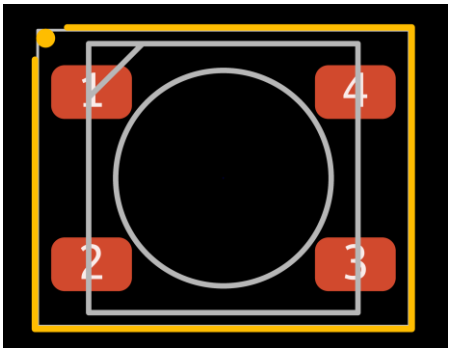
Footprint name:
LED_Dialight_591



Dialight 591 LED indicator footprint.

Inolux IN-PI554FCH RGB LED footprint

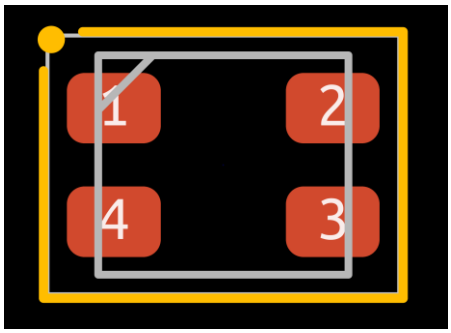
Footprint name:
LED_Inolux_IN-PI554FCH_PLCC4_5.0x5.0mm_P3.2mm



Inolux IN-PI554FCH RGB LED footprint.

Kingbright AAA3528ESGCT LED footprint

Footprint name:
LED_Kingbright_AAA3528ESGCT



Kingbright AAA3528ESGCT LED footprint.

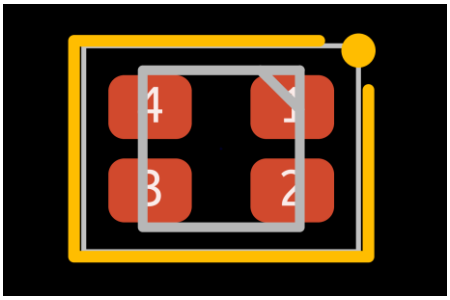
Kingbright APFA3010 LED footprint

Footprint name:
LED_Kingbright_APFA3010_3x1.5mm_Horizontal

Kingbright APFA3010 LED footprint.

LiteOn LTST-C19HE1WT LED footprint

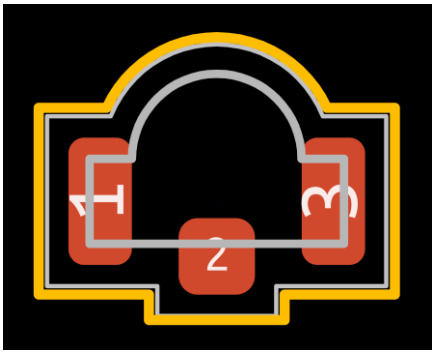
Footprint name:
LED_LiteOn_LTST-C19HE1WT



LiteOn LTST-C19HE1WT LED footprint.

LiteOn LTST-S326 LED footprint

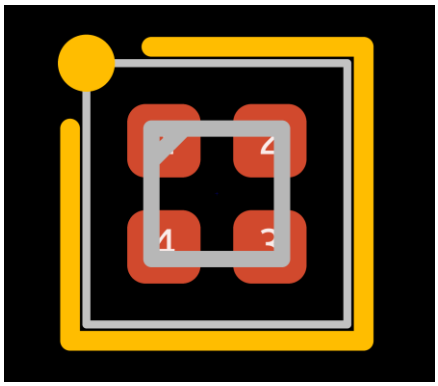
Footprint name:
LED_LiteOn_LTST-S326



LiteOn LTST-S326 LED footprint.

Lumex SML-LX0303SIUPGUSB LED footprint

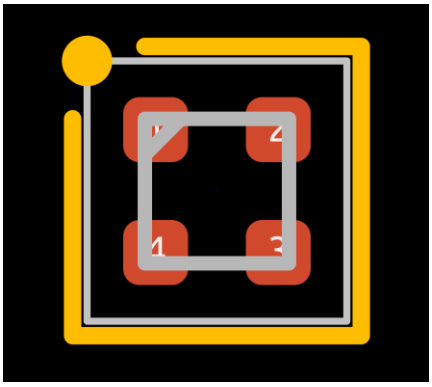
Footprint name:
LED_Lumex_SML-LX0303SIUPGUSB



Lumex SML-LX0303SIUPGUSB LED footprint.

Lumex SML-LX0404SIUPGUSB LED footprint

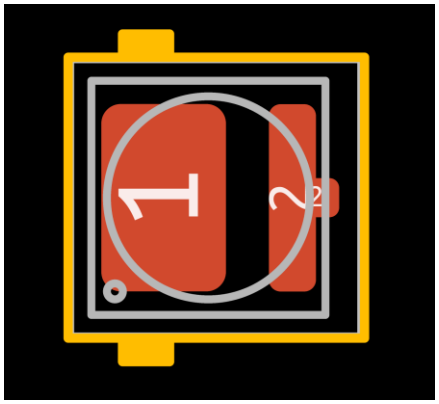
Footprint name:
LED_Lumex_SML-LX0404SIUPGUSB



Lumex SML-LX0404SIUPGUSB LED footprint.

Luminus MP-3030-1100 LED footprint

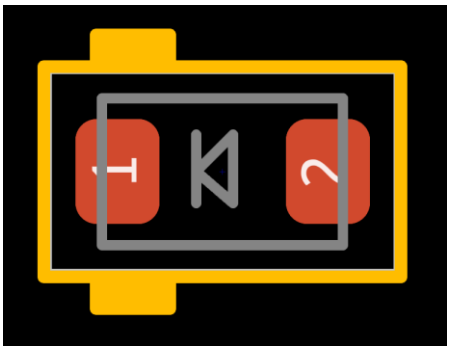
Footprint name:
LED_Luminus_MP-3030-1100_3.0x3.0mm



Luminus MP-3030-1100 LED footprint.

MiniPLCC-2 2.3x1.5mm LED footprints

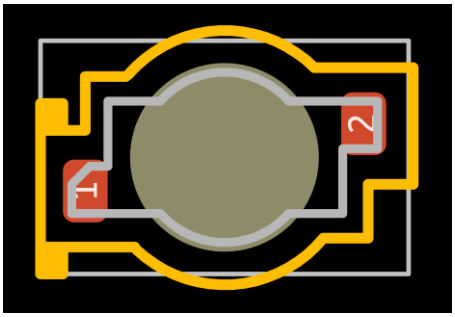
Footprint names:
LED_miniPLCC_2315
LED_miniPLCC_2315_BigPads



MiniPLCC-2 2.3x1.5mm LED footprint.

Osram P47F series LED footprints

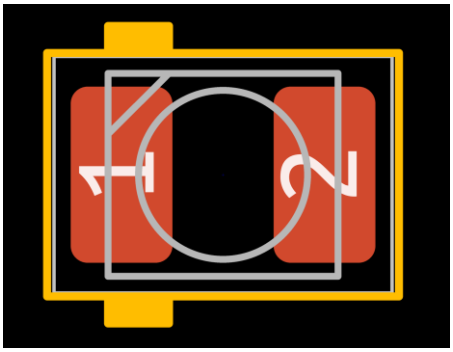
Footprint names:
LED_Osram_Lx_P47F_D2mm
LED_Osram_Lx_P47F_D2mm_ReverseMount



Osram P47F series reverse-mount LED footprint.

PLCC-2 3.4x3.0mm LED footprint

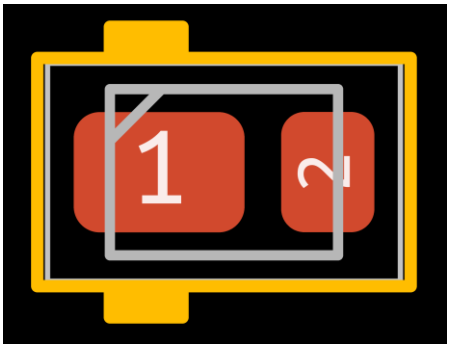
Footprint name:
LED_PLCC-2



PLCC-2 LED footprint.

PLCC-2 2.2x1.6mm LED footprint

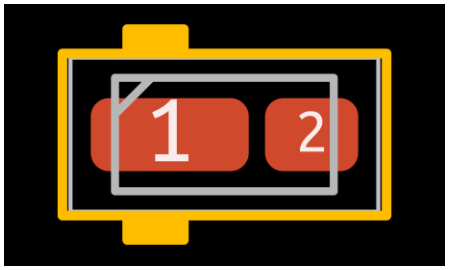
Footprint name:
LED_PLCC-2_2216



PLCC-2 2216 LED footprint.

PLCC-2 3.0x1.4mm LED footprint

Footprint name:
LED_PLCC-2_3014

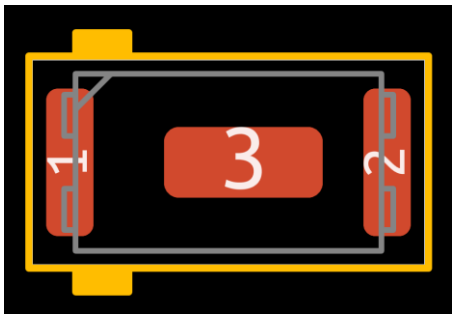


PLCC-2 3014 LED footprint.

PLCC-4 5.6x3mm Power LED footprint

Footprint name:
LED_PLCC-4_5.6x3mm_1EP_2.6x1.15mm

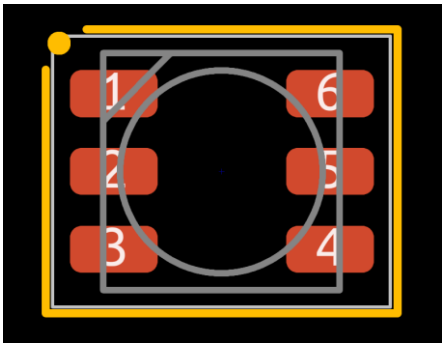
Package has 2 pins per pad – that's why it's called PLCC4 despite having just 2 electrical pads.



PLCC-4 5.6x3mm LED footprint.

PLCC-6 3.5x3.5mm LED footprint

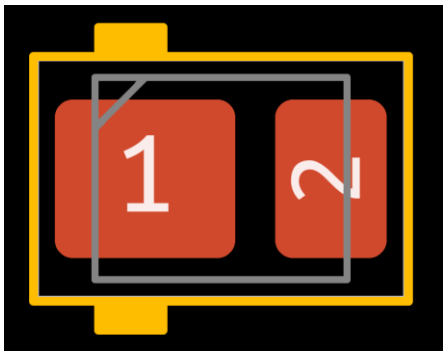
Footprint name:
LED_PLCC-6_3.5x3.5mm



PLCC-6 3.5x3.5mm LED footprint.

PLCC-2 3.5x2.8mm LED footprints

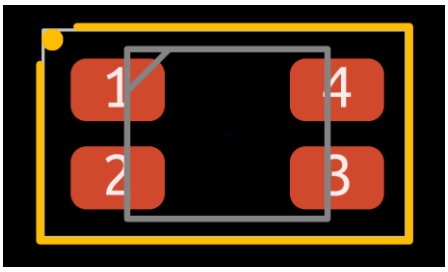
Footprint names:
LED_PLCC_2835
LED_PLCC_2835_BigPads



PLCC-2 2835 LED footprint.

RGB 1210 LED footprint

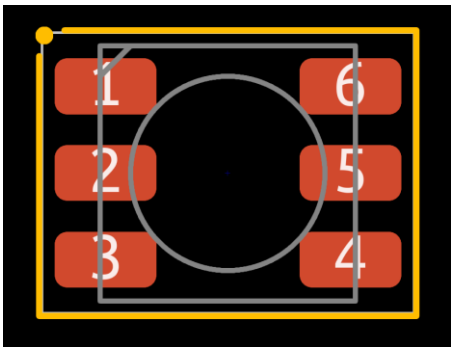
Footprint name:
LED_RGB_1210



1210 RGB LED footprint.

5.0x5.0mm RGB LED footprint

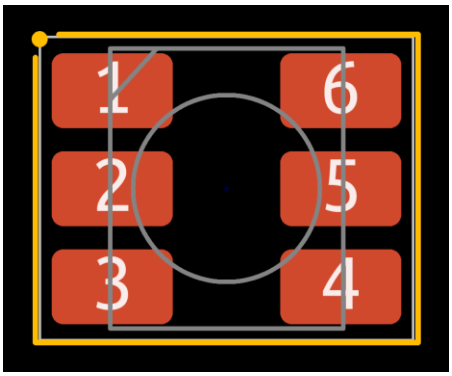
Footprint name:
LED_RGB_5050-6



5.0x5.0mm RGB LED footprint.

Cree PLCC-6 6x5mm RGB LED footprint

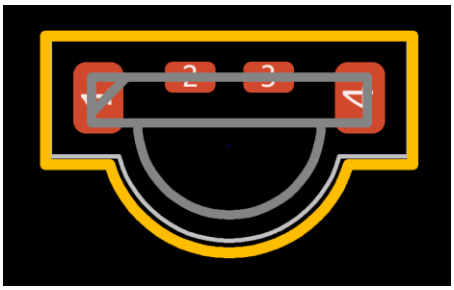
Footprint name:
LED_RGB_Cree-PLCC-6_6x5mm_P2.1mm



Cree PLCC-6 RGB LED footprint.

Everlight EASV3015RGBA0 RGB LED footprint

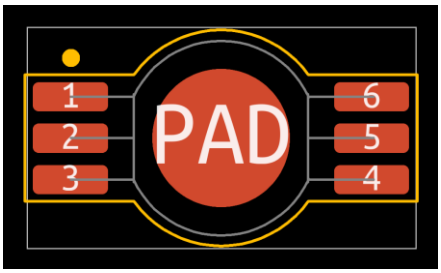
Footprint name:
LED_RGB_Everlight_EASV3015RGBA0_Horizontal



Everlight EASV3015RGBA0 RGB LED footprint.

Getain GT-P6PRGB4303 RGB LED footprint

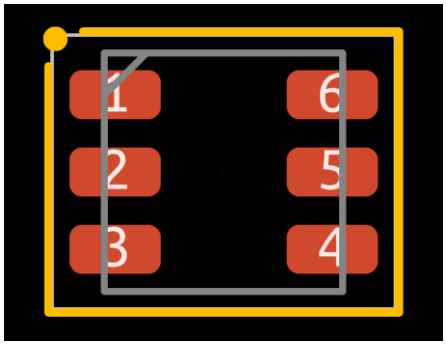
Footprint name:
LED_RGB_Getain_GT-P6PRGB4303



Getain GT-P6PRGB4303 RGB LED footprint.

3.4x3.4mm PLCC-6 RGB LED footprint

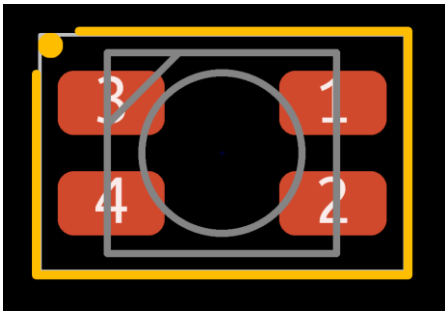
Footprint name:
LED_RGB_PLCC-6



3.4x3.4mm PLCC-6 RGB LED footprint.

Würth PLCC-4 3.2x2.8mm RGB LED footprint

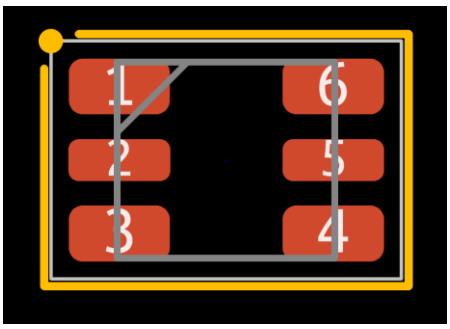
Footprint name:
LED_RGB_Wuerth-PLCC4_3.2x2.8mm_150141M173100



Würth 3.2x2.8mm PLCC-4 RGB LED footprint.

ROHM SMLVN6 LED footprint

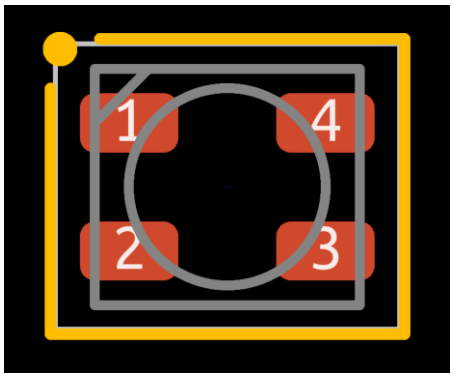
Footprint name:
LED_ROHM_SMLVN6



ROHM SMLVN6 LED footprint.

SK6805 PLCC-4 2.4x2.7mm LED footprint

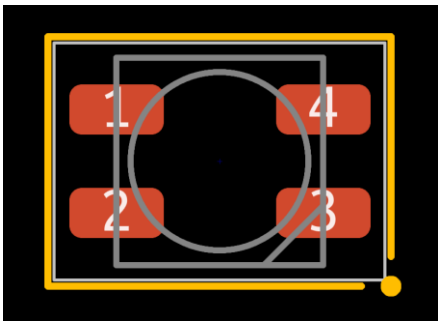
Footprint name:
LED_SK6805_PLCC4_2.4x2.7mm_P1.3mm



SK6805 LED footprint.

SK6812 MiniPLCC-4 3.5x3.5mm LED footprint

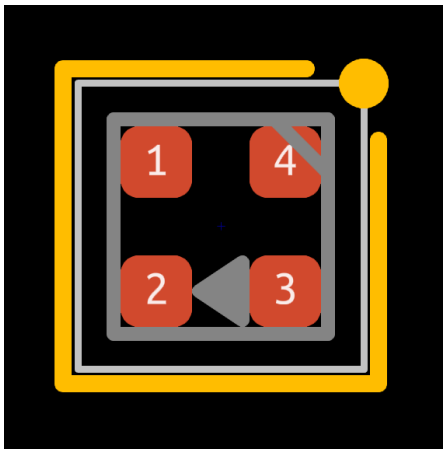
Footprint name:
LED_SK6812MINI_PLCC4_3.5x3.5mm_P1.75mm



SK6812 MiniPLCC-4 LED footprint.

SK6812 EC15 1.5x1.5mm LED footprint

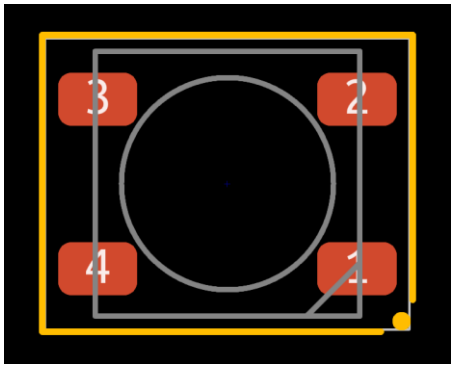
Footprint name:
LED_SK6812_EC15_1.5x1.5mm



SK6812 EC15 LED footprint.

SK6812 PLCC-4 5.0x5.0mm LED footprint

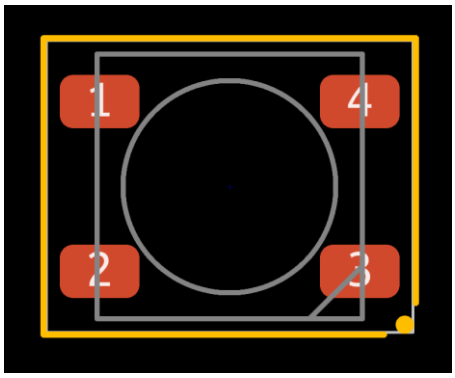
Footprint name:
LED_SK6812_PLCC4_5.0x5.0mm_P3.2mm



SK6812 PLCC-4 LED footprint.

WS2812B PLCC-4 5.0x5.0mm LED footprint

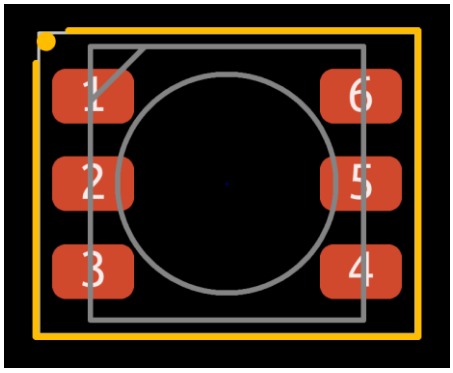
Footprint name:
LED_WS2812B_PLCC4_5.0x5.0mm_P3.2mm



WS2812B PLCC-4 LED footprint.

WS2812 PLCC-6 5.0x5.0mm LED footprint

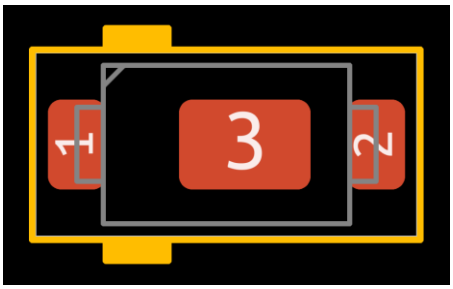
Footprint name:
LED_WS2812_PLCC6_5.0x5.0mm_P1.6mm



WS2812 PLCC-6 LED footprint.

Yuji 5730 LED footprint

Footprint name:
LED_Yuji_5730



Yuji 5730 LED footprint.

3.15. THT Light Emitting Diode Library

These libraries contain footprints for THT Light Emitting Diodes and arrays including RGB diodes.

Double-sided library variant contains both the top and bottom silkscreen layer.

Standard variant	
Folder name: **LED_THT_AKL**	
Footprint count:	**213**
Double-sided variant	
Folder name: **LED_THT_AKL_Double**	
Footprint count:	**205**
Total footprints:	**418**

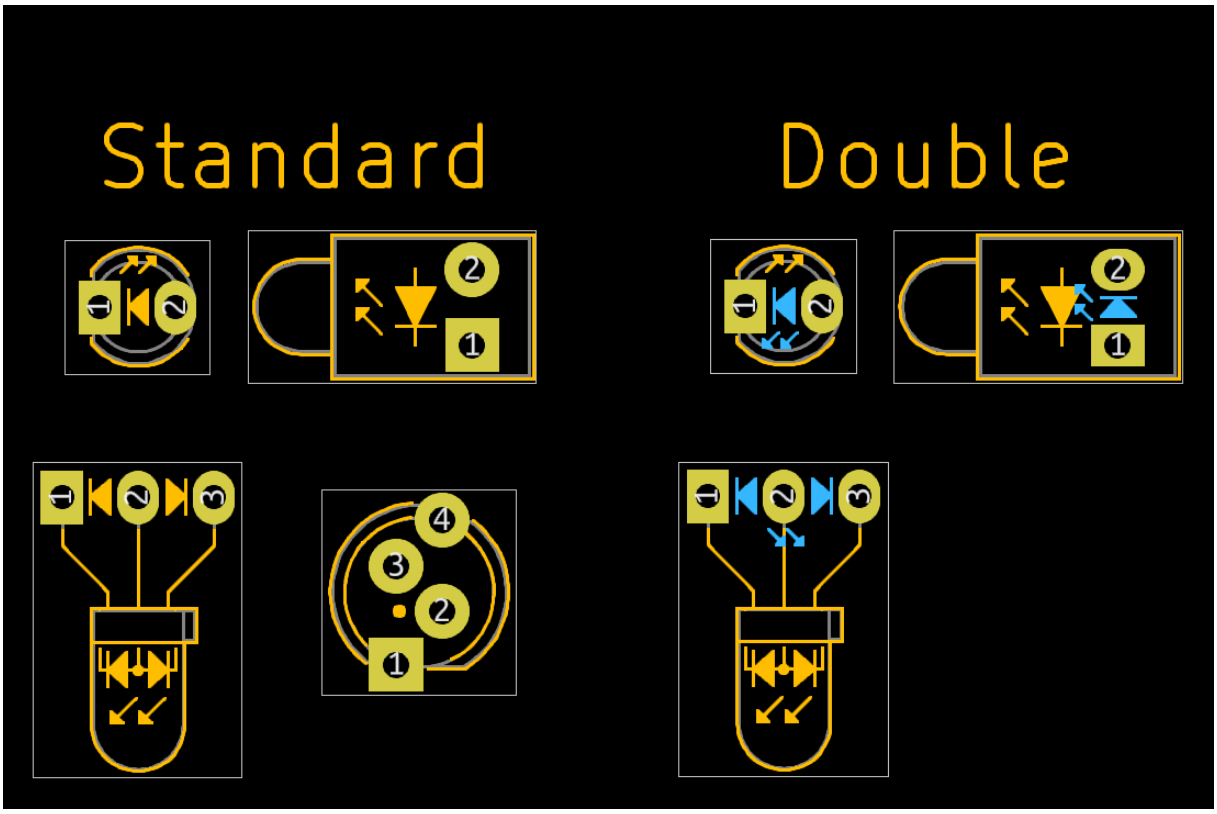
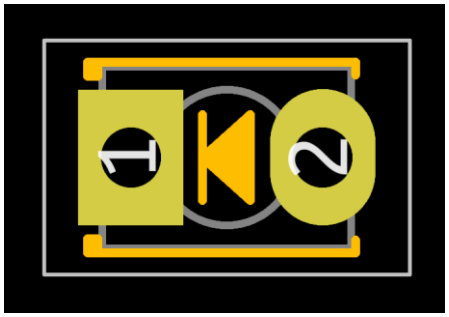


Figure 3.34. *Comparison between LED footprints from standard and double-sided libraries.*

1.8mm Vertical LED footprint

Footprint name:
LED_D1.8mm_W3.3mm_H2.4mm



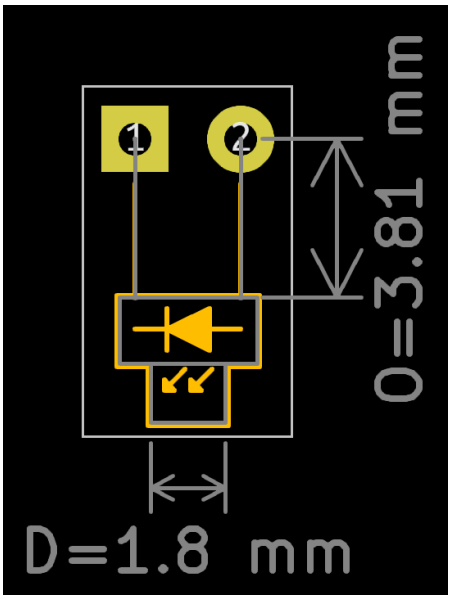
1.8mm vertical LED footprint.

1.8mm Horizontal LED footprints

Footprint count: **9**

Footprint naming convention:
LED_D1.8mm_W<base width>**mm_H**<base height>**mm**
_Horizontal_O<lead bend>**mm_Z**<3D model height>**mm**

Name examples:
LED_D1.8mm_W1.8mm_H2.4mm_Horizontal_
O1.27mm_Z1.6mm
LED_D1.8mm_W1.8mm_H2.4mm_Horizontal_
O6.35mm_Z4.9mm



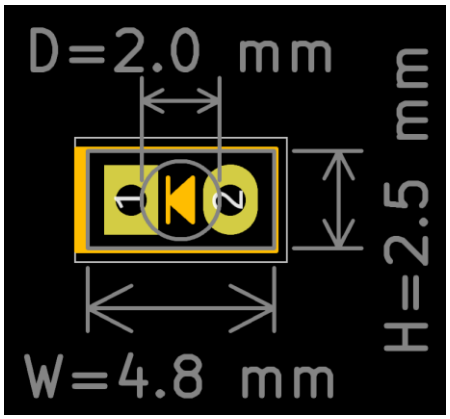
Horizontal 1.8mm LED footprint with its diameter and lead bend distance indicated

2mm Vertical LED footprints

Footprint count: **2**

Footprint naming convention:
LED_D2.0mm_W<base width>**mm_H**<base height>**mm**
_FlatTop

Footprint names:
LED_D2.0mm_W4.0mm_H2.8mm_FlatTop
LED_D2.0mm_W4.8mm_H2.5mm_FlatTop



Vertical 2mm LED footprint with its dimensions indicated

3mm Vertical LED footprints

Footprint count: 9

Footprint naming convention:
LED_D3.0mm_<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode
BiDir – bidirectional
Clear – attatched 3D model has a clear lens
Clear_BiDir – Bidirectional variant of the clear LED
FlatTop – attatched 3D model has a flat-top lens
IRBlack – attatched 3D model has a black lens
IRGrey – attatched 3D model has a gray lens

Name examples:
LED_D3.0mm
LED_D3.0mm-3_CC
LED_D3.0mm_Clear_BiDir
LED_D3.0mm_IRBlack

Vertical standard 3mm LED (top) and a common-anode 3mm LED (bottom)

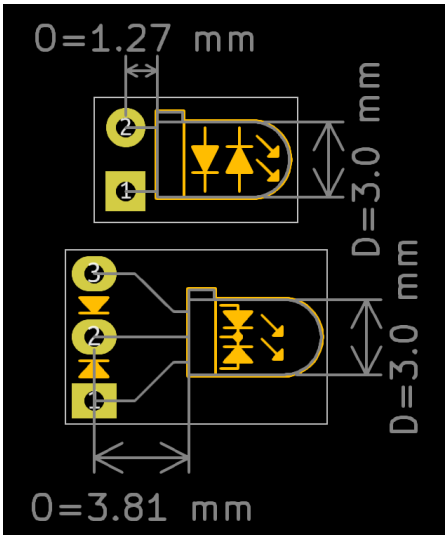
3mm Horizontal LED footprints

Footprint count: 34

Footprint naming convention:
LED_D3.0mm _Horizontal_O<lead bend>**mm_Z**<3D model height>**mm_**<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode
BiDir – bidirectional
Clear – attatched 3D model has a clear lens
Clear_BiDir – Bidirectional variant of the clear LED
FlatTop – attatched 3D model has a flat-top lens
IRBlack – attatched 3D model has a black lens
IRGrey – attatched 3D model has a gray lens

Name examples:
LED_D3.0mm_Horizontal_O1.27mm_Z2.0mm_Clear
LED_D3.0mm_Horizontal_O3.81mm_Z6.0mm_CA
LED_D3.0mm_Horizontal_O6.35mm_Z10.0mm_BiDir



Horizontal bidirectional 3mm LED footprint (top) and a common-cathode 3mm LED footprint (bottom) with LED diameter and lead bend distance indicated

4mm Vertical LED footprint

Footprint name:
LED_D4.0mm

4mm vertical LED footprint.

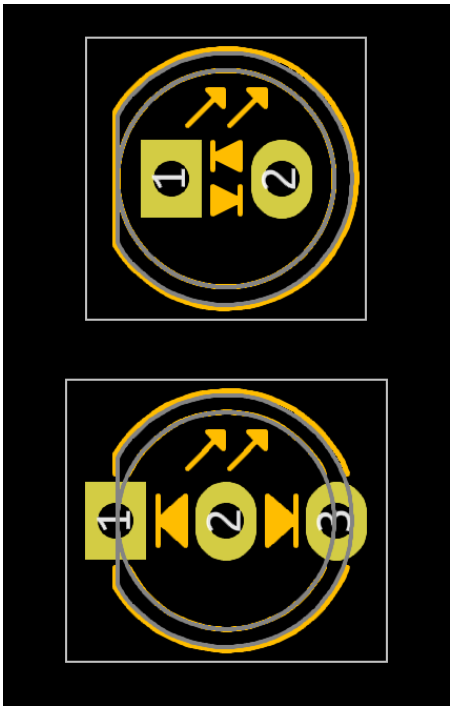
5mm Vertical LED footprints

Footprint count: **9**

Footprint naming convention:
LED_D5.0mm_<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode
BiDir – bidirectional
Clear – attatched 3D model has a clear lens
Clear_BiDir – Bidirectional variant of the clear LED
FlatTop – attatched 3D model has a flat-top lens
IRBlack – attatched 3D model has a black lens
IRGrey – attatched 3D model has a gray lens

Name examples:
LED_D5.0mm
LED_D5.0mm-3_CA
LED_D5.0mm_Clear_BiDir
LED_D5.0mm_FlatTop



Vertical bi-directional 5mm LED (top) and a common-anode 5mm LED (bottom)

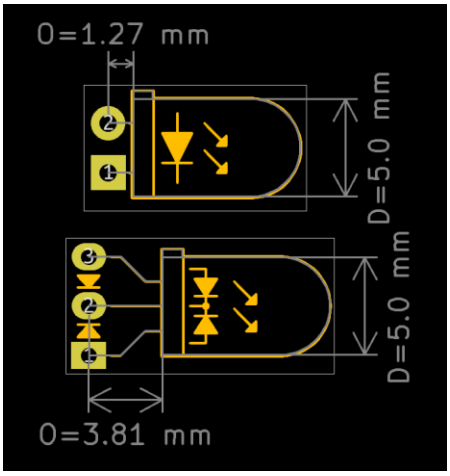
5mm Horizontal LED footprints

Footprint count: 34

Footprint naming convention:
LED_D5.0mm _Horizontal_O<lead bend>**mm_Z**<3D model height>**mm_**<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode
BiDir – bidirectional
Clear – attatched 3D model has a clear lens
Clear_BiDir – Bidirectional variant of the clear LED
FlatTop – attatched 3D model has a flat-top lens
IRBlack – attatched 3D model has a black lens
IRGrey – attatched 3D model has a gray lens

Name examples:
LED_D5.0mm_Horizontal_O1.27mm_Z2.0mm_Clear
LED_D5.0mm_Horizontal_O3.81mm_Z6.0mm_CA
LED_D5.0mm_Horizontal_O6.35mm_Z10.0mm_BiDir



Horizontal standard 5mm LED footprint (top) and a common-cathode 5mm LED footprint (bottom) with LED diameter and lead bend distance indicated

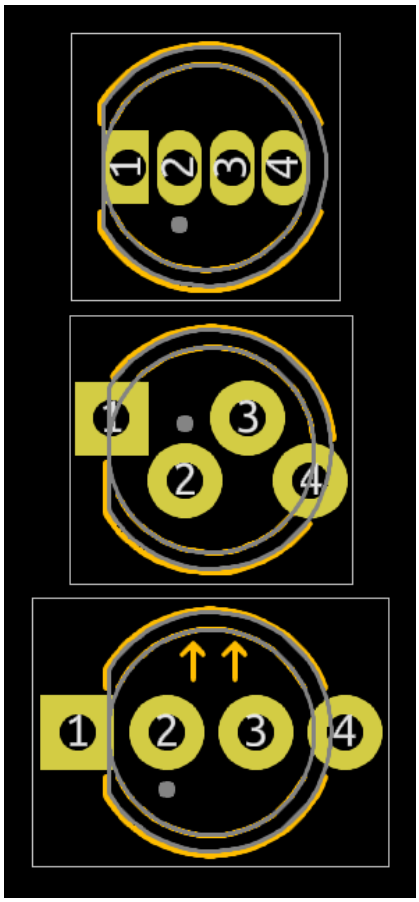
5mm Vertical RGB LED footprints

Footprint count: 3

Footprint naming convention:
LED_D5.0mm-4_Horizontal_RGB<optional: variant>

Available footprint variants:
Staggered_Pins – staggered pad layout for easier soldering
Wide_Pins – wide pad layout (2.159mm pitch)

Footprint names:
LED_D5.0mm-4_RGB
LED_D5.0mm-4_RGB_Staggered_Pins
LED_D5.0mm-4_RGB_Wide_Pins



5mm RGB LED footprints: standard (top), staggered (middle) and wide (bottom)

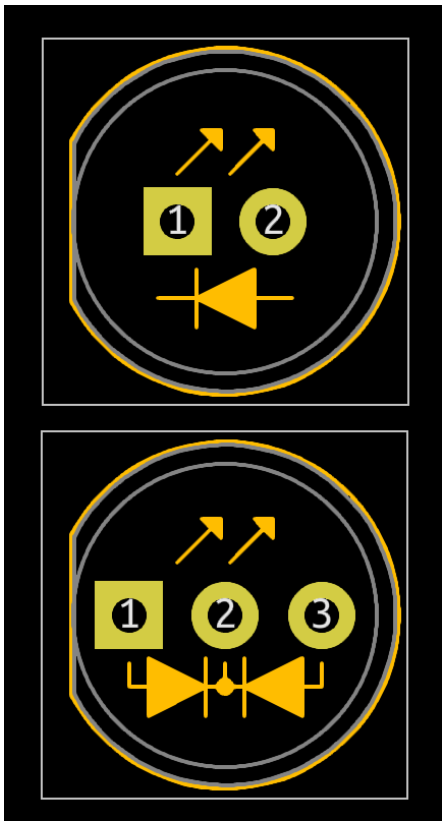
8mm Vertical LED footprints

Footprint count: 4

Footprint naming convention:
LED_D8.0mm_<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode
BiDir – bidirectional

Footprint names:
LED_D8.0mm
LED_D8.0mm-3_CA
LED_D8.0mm-3_CC
LED_D8.0mm_BiDir



Vertical standard 8mm LED (top) and a common-cathode 8mm LED (bottom)

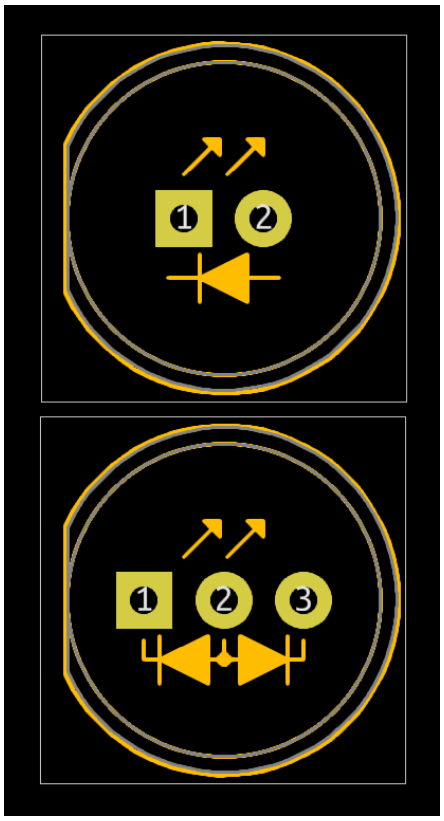
10mm Vertical LED footprints

Footprint count: 3

Footprint naming convention:
LED_D10.0mm_<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode

Footprint names:
LED_D10.0mm
LED_D10.0mm-3_CA
LED_D10.0mm-3_CC



Vertical standard 10mm LED (top) and a common-cathode 10mm LED (bottom)

20mm Vertical LED footprint

Footprint name:
LED_D20.0mm

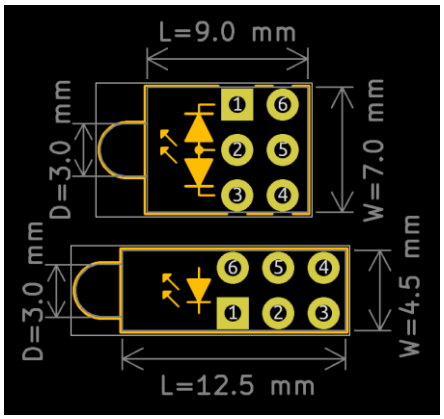
20mm vertical LED footprint.

PCB LED indicator footprints

Footprint count: **14**

Footprint naming convention:
LED_Indicator_<optional: dual/triple/quad>_<optional: Acom/Kcom>_**D**<LED lens diameter>**mm_W**<housing width>**mm_L**<housing length>**mm**

Name examples:
LED_Indicator_Acom_D5.0mm_W7.5mm_L9.5mm
LED_Indicator_D3.0mm_W4.6mm_L6.5mm
LED_Indicator_Dual_D5.0mm_W6.1mm_L11.0mm
LED_Indicator_Quad_D3.0mm_W4.6mm_L10.7mm



Dual common anode indicator footprint (top) and a triple indicator footprint (bottom) with all dimensions indicated.

5.2x3.8mm Oval LED footprint

Footprint name:
LED_Oval_W5.2mm_H3.8mm

5.2x3.8mm Oval LED footprint.

3.0x2.0mm Vertical LED footprint

Footprint name:
LED_Rectangular_W3.0mm_H2.0mm

3.0x2.0mm rectangular LED footprint.

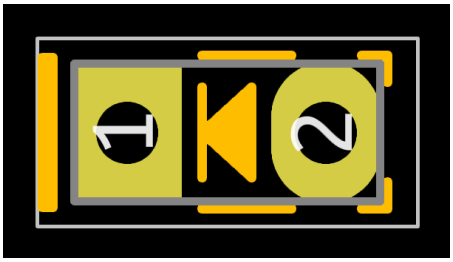
3.9x1.8mm Vertical LED footprints

Footprint count: 2

Footprint naming convention:
LED_Rectangular_W3.9mmm_H1.8mm_<optional: variant>

Available footprint variants:
FlatTop – attatched 3D model has a flat-top lens

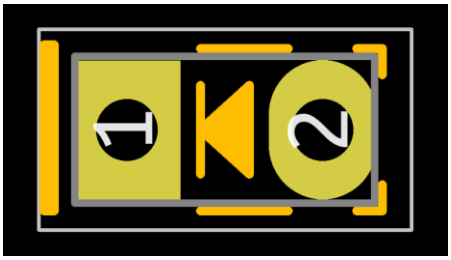
Footprint names:
LED_Rectangular_W3.9mm_H1.8mm
LED_Rectangular_W3.9mm_H1.8mm_FlatTop



Vertical standard 10mm LED (top) and a common-cathode 10mm LED (bottom)

3.9x1.9mm Vertical LED footprint

Footprint name:
LED_Rectangular_W3.9mm_H1.9mm



3.9x1.9mm rectangular LED footprint.

5.0x2.0mm Vertical LED footprints

Footprint count: 4

Footprint naming convention:
LED_W5.0mm_H2.0mm_<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode
BiDir – bidirectional

Footprint names:
LED_Rectangular_W5.0mm_H2.0mm
LED_Rectangular_W5.0mm_H2.0mm-CA
LED_Rectangular_W5.0mm_H2.0mm-CC
LED_Rectangular_W5.0mm_H2.0mm_BiDir

Vertical rectangular 5x2mm LED (top) and a common-cathode 5x2mm LED (bottom)

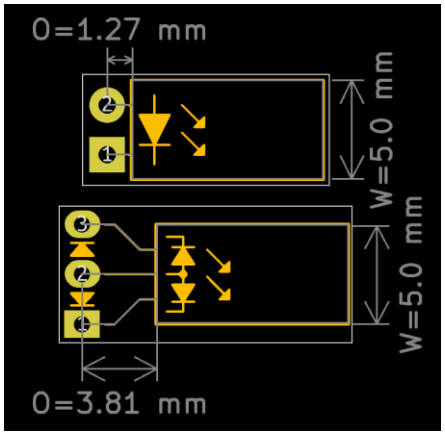
5.0x2.0mm Horizontal LED footprints

Footprint count: 30

Footprint naming convention:
LED_Rectangular_W5.0mm_H2.0mm_O<lead bend>**mm_Z**<3D model height>**mm_**<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode
BiDir – bidirectional

Name examples:
LED_Rectangular_W5.0mm_H2.0mm_Horizontal_O1.27mm_Z1.0mm
LED_Rectangular_W5.0mm_H2.0mm_Horizontal_O1.27mm_Z5.0mm_BiDir
LED_Rectangular_W5.0mm_H2.0mm_Horizontal_O3.81mm_Z3.0mm_CA
LED_Rectangular_W5.0mm_H2.0mm_Horizontal_O6.35mm_Z1.0mm_CC



Horizontal rectangular 5x2mm LED footprint (top) and a common-anode 5x2mm LED footprint (bottom) with LED width and lead bend distance indicated

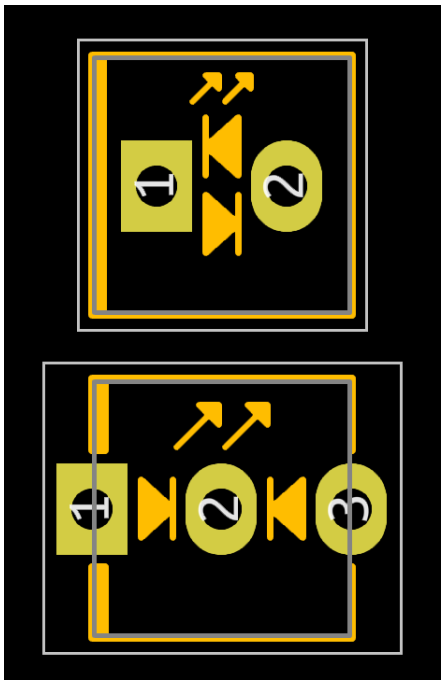
5.0x5.0mm Vertical LED footprints

Footprint count: 4

Footprint naming convention:
LED_W5.0mm_H5.0mm_<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode
BiDir – bidirectional

Footprint names:
LED_Rectangular_W5.0mm_H5.0mm
LED_Rectangular_W5.0mm_H5.0mm-CA
LED_Rectangular_W5.0mm_H5.0mm-CC
LED_Rectangular_W5.0mm_H5.0mm_BiDir



Vertical bidirectional 5x5mm LED (top) and a common-cathode 5x5mm LED (bottom)

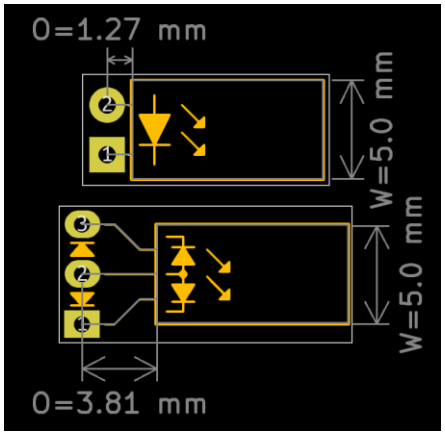
5.0x5.0mm Horizontal LED footprints

Footprint count: 30

Footprint naming convention:
LED_Rectangular_W5.0mm_H5.0mm_O<lead bend>**mm_Z**<3D model height>**mm_**<optional: variant>

Available footprint variants:
3_CA – dual common anode
3_CC – dual common cathode
BiDir – bidirectional

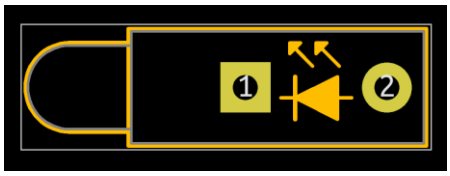
Name examples:
LED_Rectangular_W5.0mm_H5.0mm_Horizontal_O1.27mm_Z1.0mm
LED_Rectangular_W5.0mm_H5.0mm_Horizontal_O1.27mm_Z5.0mm_BiDir
LED_Rectangular_W5.0mm_H5.0mm_Horizontal_O3.81mm_Z3.0mm_CA
LED_Rectangular_W5.0mm_H5.0mm_Horizontal_O6.35mm_Z1.0mm_CC



Horizontal rectangular 5x5mm LED footprint (top) and a common-anode 5x5mm LED footprint (bottom) with LED width and lead bend distance indicated

Schurter PBL LED indicator footprint

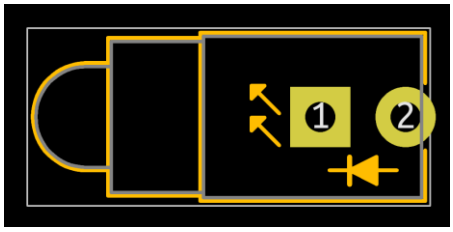
Footprint name:
LED_Schurter_PBL



Schurter PBL LED indicator footprint.

Schurter SRL 3mm angled LED indicator footprint

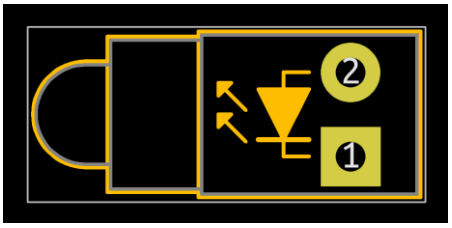
Footprint name:
LED_Schurter_SRL_3mm_Angled



Schurter SRL 3mm angled LED indicator footprint.

Schurter SRL 3mm angled with parallel leads LED indicator footprint

Footprint name:
LED_Schurter_SRL_3mm_Angled_Parallel



Schurter SRL 3mm angled LED indicator footprint with parallel leads.

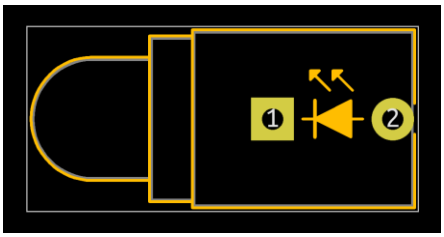
Schurter SRL 3mm straight LED indicator footprint

Footprint name:
LED_Schurter_SRL_3mm_Straight

Schurter SRL 3mm straight LED indicator footprint.

Schurter SRL 5mm angled LED indicator footprint

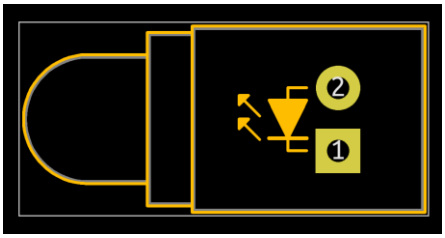
Footprint name:
LED_Schurter_SRL_5mm_Angled



Schurter SRL 5mm angled LED indicator footprint.

Schurter SRL 5mm angled with parallel leads LED indicator footprint

Footprint name:
LED_Schurter_SRL_5mm_Angled_Parallel



Schurter SRL 5mm angled LED indicator footprint with parallel leads.

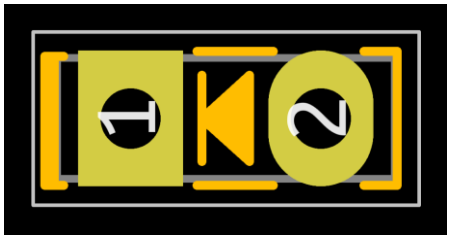
Schurter SRL 5mm straight LED indicator footprint

Footprint name:
LED_Schurter_SRL_5mm_Straight

Schurter SRL 5mm straight LED indicator footprint.

4.5x1.6mm Side-emitter LED footprint

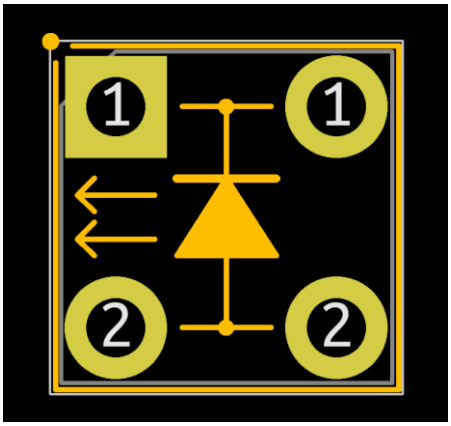
Footprint name:
LED_SideEmitter_Rectangular_W4.5mm_H1.6mm



4.5x1.6mm Side-emitter LED footprint.

Standard SuperFlux LED footprint

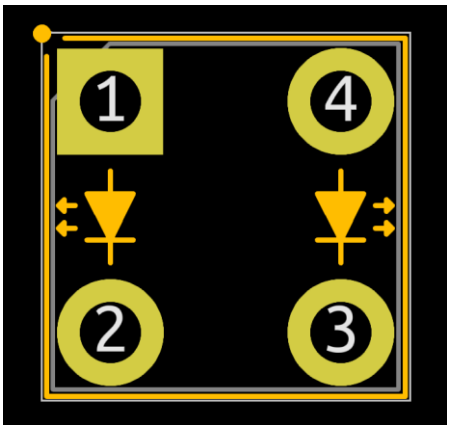
Footprint name:
LED_SuperFlux



SuperFlux standard LED footprint.

Dual SuperFlux LED footprint

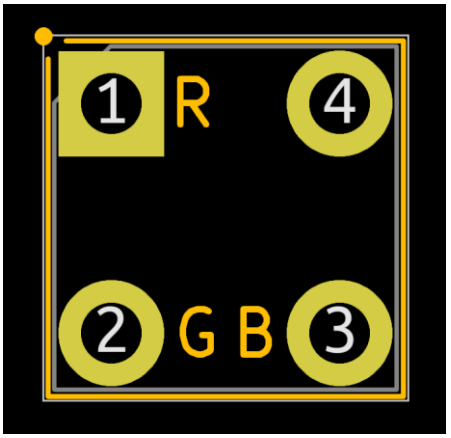
Footprint name:
LED_SuperFlux_Dual



SuperFlux dual LED footprint.

RGB SuperFlux LED footprint

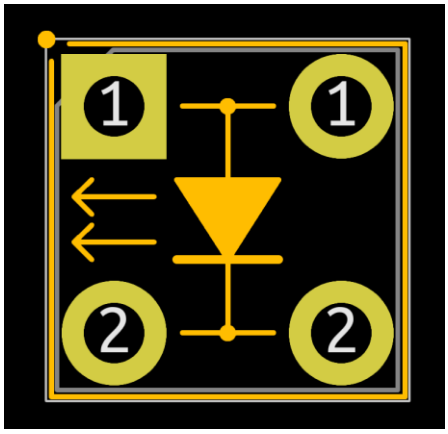
Footprint name:
LED_SuperFlux_RGB



SuperFlux RGB LED footprint.

SuperFlux Reverse LED footprint

Footprint name:
LED_SuperFlux_Reverse



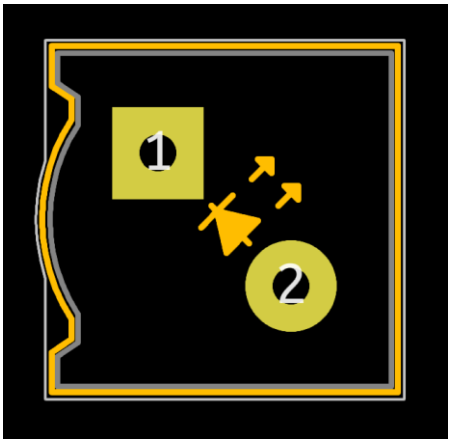
SuperFlux Reverse LED footprint.

VCCLite 5831 series LED indicator footprints

Footprint count: 4

Footprint naming convention:
LED_VCCLite_5381H<color code>**_6.35x6.35mm**

Footprint names:
LED_VCCLite_5831H1_6.35x6.35mm
LED_VCCLite_5831H3_6.35x6.35mm
LED_VCCLite_5831H5_6.35x6.35mm
LED_VCCLite_5831H7_6.35x6.35mm



VCCLite 5831 series footprint.

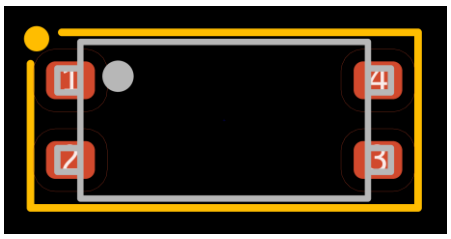
3.16. Optocoupler Library

This library contains footprints for optocouplers that otherwise don't belong in any other libraries.

Standard variant	
Folder name: `Optocoupler_THT_AKL`	
Footprint count:	7
Total footprints:	**7**

CEL PS2911 footprint

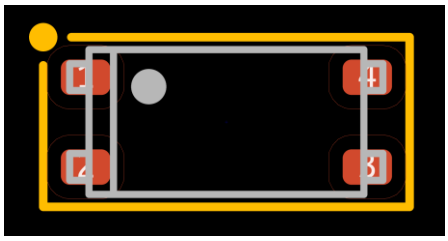
Footprint name:
CEL_PS2911



PS2911 optocoupler footprint.

Toshiba TLP3914 footprint

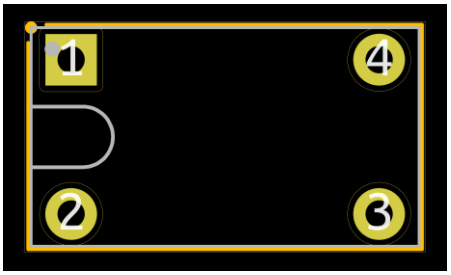
Footprint name:
Toshiba_TLP3914



TLP3914 optocoupler footprint.

Vishay CNY64 footprint

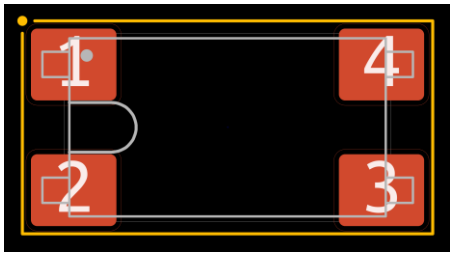
Footprint name:
Vishay_CNY64



CNY64 optocoupler footprint.

Vishay CNY64ST footprint

Footprint name:
Vishay_CNY64ST



CNY64ST optocoupler footprint.

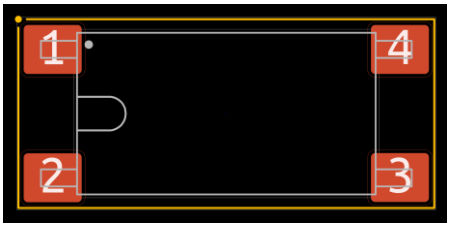
Vishay CNY65 footprint

Footprint name:
Vishay_CNY65

CNY65 optocoupler footprint.

Vishay CNY65ST footprint

Footprint name:
Vishay_CNY65ST



CNY65ST optocoupler footprint.

Vishay CNY66 footprint

Footprint name:
Vishay_CNY66

CNY66 optocoupler footprint.

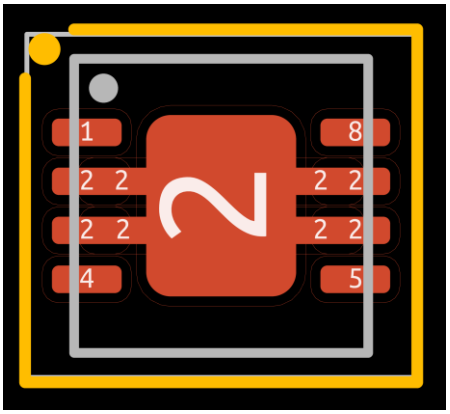
3.17. Chip Scale Package (CSP) Library

This library contains footprints for chip-scale integrated circuit packages.

Standard variant	
Folder name: **Package_CSP_AKL**	
Footprint count:	**116**(+8)
Total footprints:	**116**(+8)

Analog Devices CP-8-13 (LFCSP-8) package footprint

Footprint names:
Analog_LFCSP-8-1EP_3x3mm_P0.5mm_EP1.53x1.85mm
Analog_LFCSP-8-1EP_3x3mm_P0.5mm_EP1.53x1.85mm_ThermalVias



CP-8-13 package footprint.

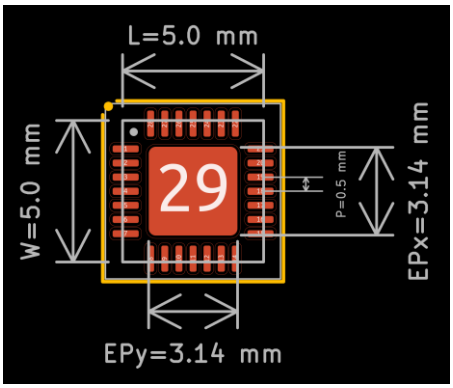
Lead Frame Chip Scale Packaging (LFCSP) footprints

Footprint count: **34**

Footprint naming convention:
LFCSP-<pin count>**-**<optional: no. of exposed pads>**EP_**<length>**x**<width>**mm_P**<pin pitch>**mm_**<optional: EP length x width mm>_<optional: ThermalVias>

"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.

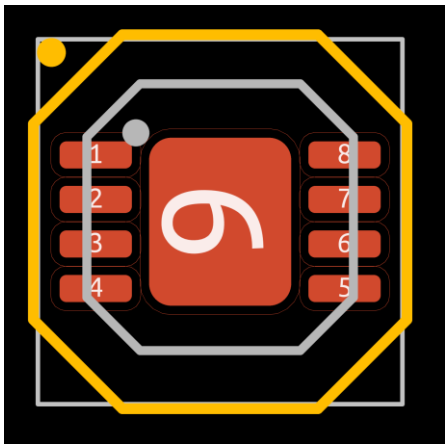
Name examples:
LFCSP-8_2x2mm_P0.5mm
LFCSP-16-1EP_3x3mm_P0.5mm_EP1.6x1.6mm
LFCSP-24-1EP_4x4mm_P0.5mm_EP2.3x2.3mm_ThermalVias



LFCSP footprint with its dimensions indicated.

LFCSP-VD-8 footprint

Footprint names:
LFCSP-VD-8-1EP_3x3mm_P0.5mm_EP1.89x1.6mm
LFCSP-VD-8-1EP_3x3mm_P0.5mm_EP1.89x1.6mm
_ThermalVias



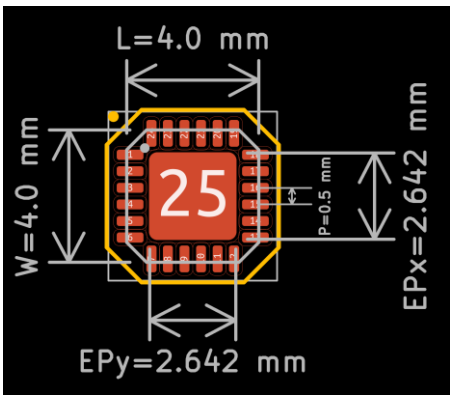
LFCSP-VD-8 package footprint.

LFCSP-VQ footprints

Footprint count: **7**

Footprint naming convention:
LFCSP-VQ-<pin count>**-**<optional: no. of exposed pads>**EP_**<length>**x**<width>**mm_P**<pin pitch>**mm_**<optional: EP length x width mm, ThermalVias/ThermalVias2>

Name examples:
LFCSP-VQ-16+4x4mm_P0.65mm
LFCSP-VQ-24-1EP_4x4mm_P0.5mm_EP2.642x2.642mm
LFCSP-VQ-48-1EP_7x7mm_P0.5mm_ThermalVias2



LFCSP-VQ footprint with its dimensions indicated.

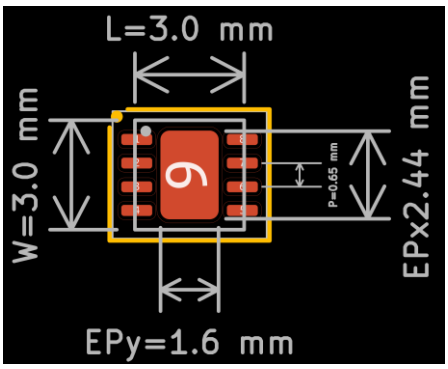
LFCSP-WD footprints

Footprint count: **6**

Footprint naming convention:
LFCSP-VD-<pin count>**-1EP_**<length>**x**<width>**mm_P**<pin pitch>**mm_EP**<exposed pad length>**x**<exposed pad width>_<optional: ThermalVias/ThermalVias2>

"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.

Name examples:
LFCSP-WD-8-1EP_3x3mm_P0.65mm_EP1.6x2.44mm
LFCSP-WD-10-1EP_3x3mm_P0.5mm_EP1.64x2.38mm
_ThermalVias2



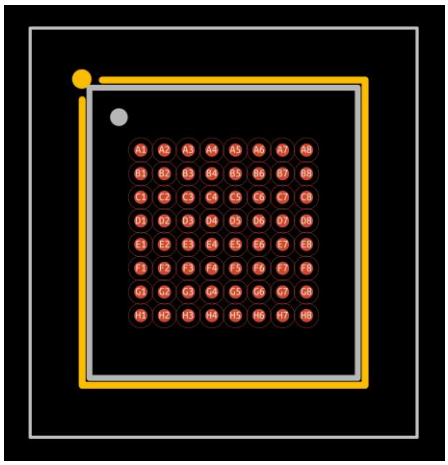
LFCSP-WD footprint with its dimensions indicated.

ST Microelectronics WLCSP footprints

Footprint count: 40

Footprint naming convention:
ST_WLCSP-<pin count>**_Die**<die number>

Name examples:
ST_WLCSP-25_Die444
ST_WLCSP-64_Die436



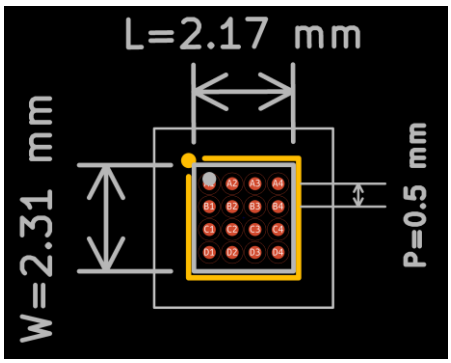
WLCSP footprint.

WLCSP footprints

Footprint count: 14

Footprint naming convention:
WLCSP-<pin count>_<length>**x**<width>**mm**
<optional: no. of rows x no. of columns>**_P**<pin pitch>

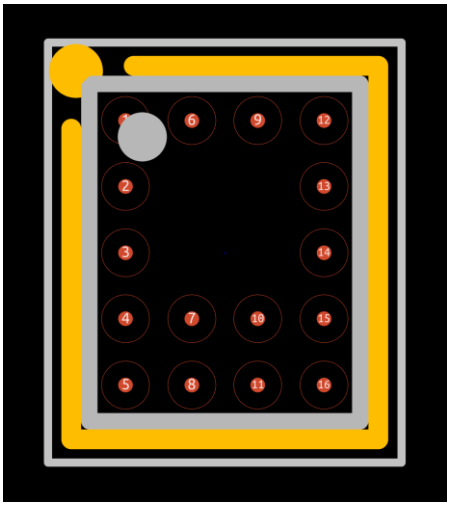
Name examples:
WLCSP-12_1.56x1.56mm_P0.4mm
WLCSP-36_2.82x2.67mm_Layout6x6_P0.4mm



WLCSP footprint with its dimensions indicated.

pSemi CSP-16 footprints

Footprint names:
pSemi_CSP-16_1.64x2.04mm_P0.4mm
pSemi_CSP-16_1.64x2.04mm_P0.4mm_Pad0.18mm



CSP-16 footprint.

3.18. DFN and QFN Package Library

This library contains footprints for Dual Flat No-lead (DFN) and Quad Flat No-lead (QFN) integrated circuit packages.

Silkscreen layer contains marks every 5 pins and corner pin numbers for some footprints.

Standard variant	
Folder name: **`Package_DFN_QFN_AKL`**	
Footprint count:	**708**(+236)
Total footprints:	**708**(+236)

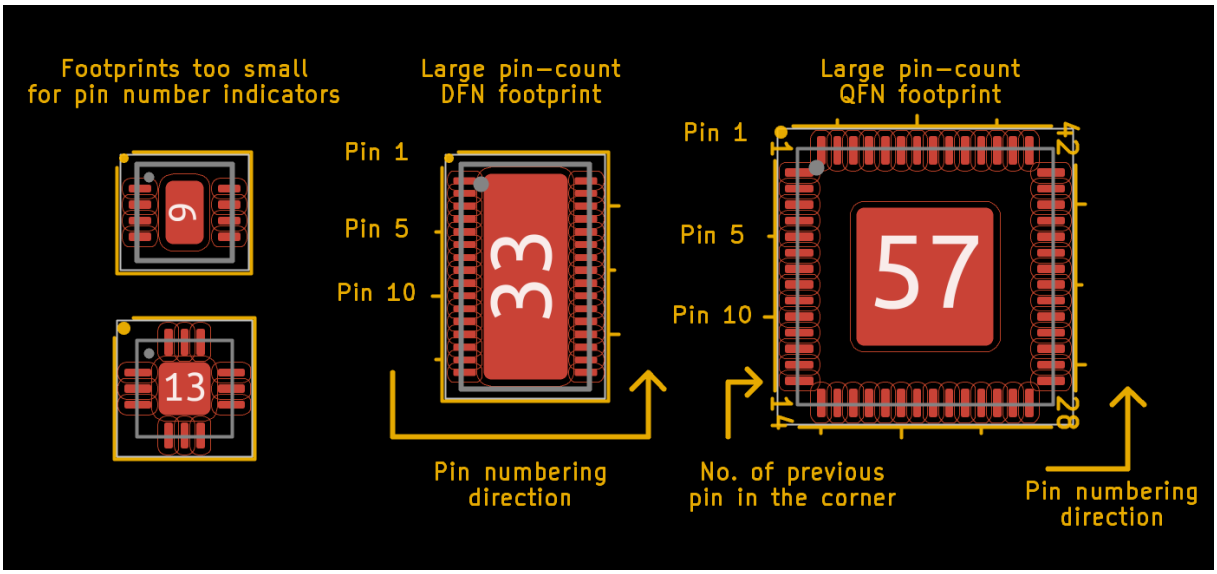
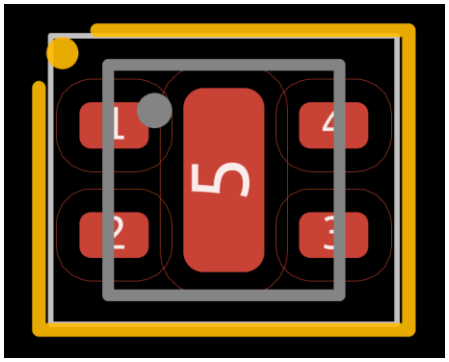


Figure 3.35. *Different DFN and QFN footprints and a guide for reading the pin numbering indicators.*

AMS UFD footprint

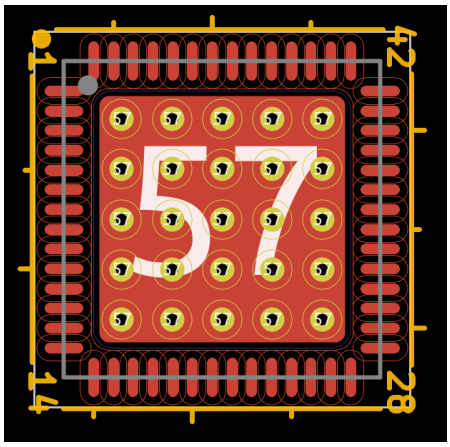
Footprint name:
AMS_QFN-4-1EP_2x2mm_P0.95mm_EP0.7x1.6mm



UFD footprint.

Cypress QFN-56 footprint

Footprint name:
Cypress_QFN-56-1EP_8x8mm_P0.5mm_
EP6.22x6.22mm_ThermalVias

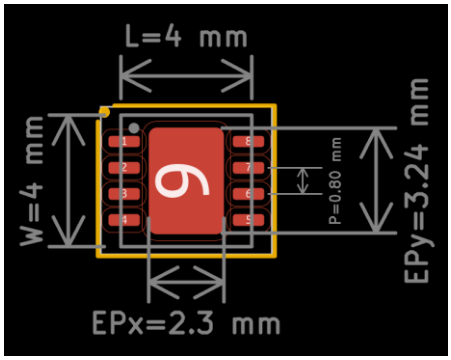


Cypress QFN-56 footprint.

Dual Flat No-lead (DFN) package footprints

Footprint count: **141**

Footprint naming convention:
DFN-<pin count>**-**<optional: exposed pad count>
_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size>_<optional: ThermalVias/ThermalVias2>

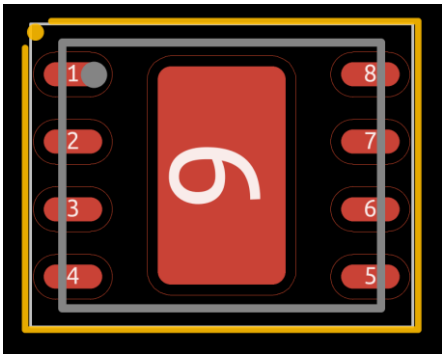


DFN footprint with its dimensions indicated.

Name examples:
DFN-6_1.6x1.6mm_P0.5mm
DFN-12-1EP_3x4mm_P0.5mm_EP1.7x3.3mm
DFN-14-1EP_3x4.5mm_P0.65mm_EP1.65x4.25mm_ThermalVias
DFN-6-2EP_2x2mm_P0.65mm_EP1.15x0.95mm_EP0.8x0.48mm

DFN-S-8 footprint

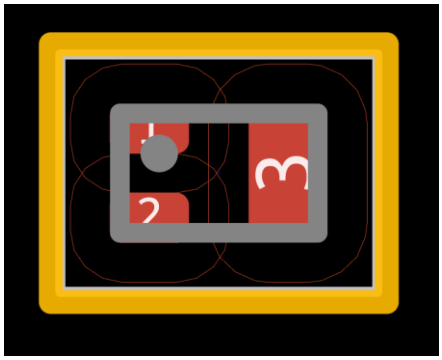
Footprint names:
DFN-S-8-1EP_6x5mm_P1.27mm
DFN-S-8-1EP_6x5mm_P1.27mm_ThermalVias
DFN-S-8-1EP_6x5mm_P1.27mm_ThermalVias2



DFN-S-8 footprint.

DIODES DFN1006-3 footprint

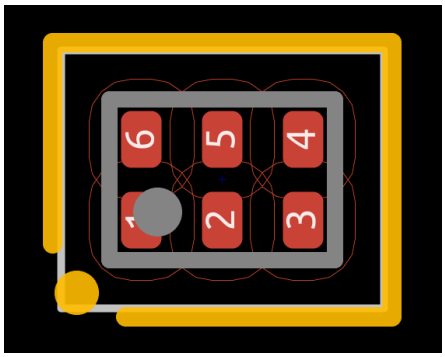
Footprint name:
Diodes_DFN1006-3



DFN1006-3 footprint.

DIODES X2-DFN1410-6 footprint

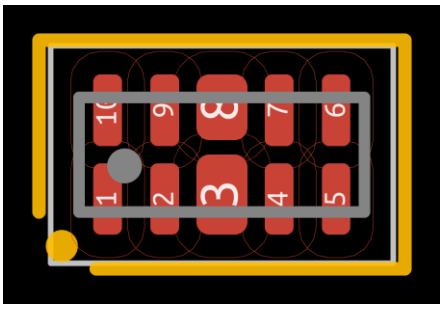
Footprint name:
Diodes_UDFN-6_1.4x1.0mm_P0.5mm



X2-DFN1410-6 footprint.

DIODES U-DFN2510-10 footprint

Footprint name:
Diodes_UDFN-10_1.0x2.5mm_P0.5mm



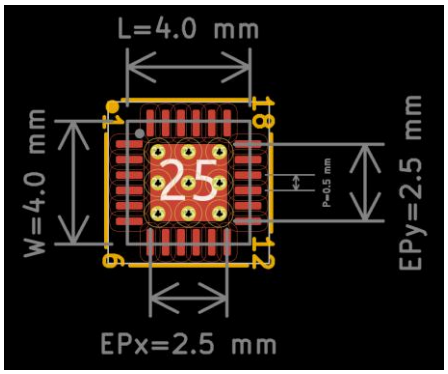
U-DFN2510-10 footprint.

Heatsink Very thin Quad Flat No-lead (HVQFN) package footprints

Footprint count: 6

Footprint naming convention:
HVQFN-24-1EP_4x4mm_P0.5mm_EP<exposed pad size>_<optional: ThermalVias/ThermalVias2>

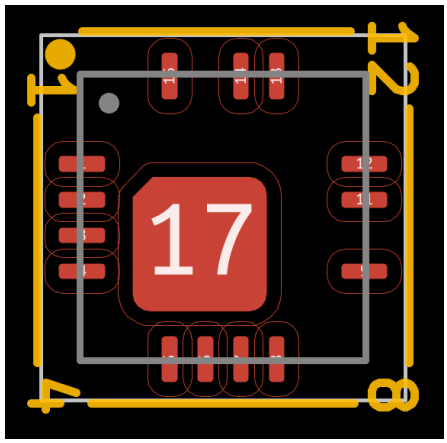
Name examples:
HVQFN-24-1EP_4x4mm_P0.5mm_EP2.5x2.5mm
HVQFN-24-1EP_4x4mm_P0.5mm_EP2.6x2.6mm_ThermalVias2



HVQFN "ThermalVias" footprint with its dimensions indicated.

Infineon MPLQ-14 footprint

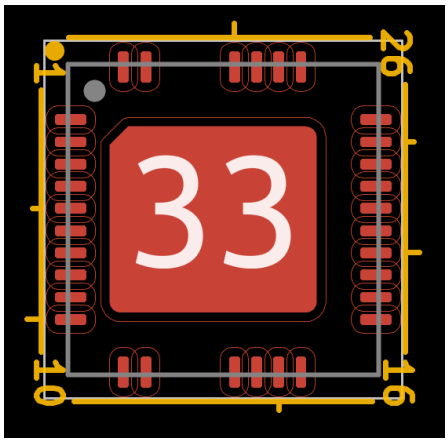
Footprint names:
Infineon_MPLQ-16-14-1EP_4x4mm_P0.5mm
Infineon_MPLQ-16-14-1EP_4x4mm_P0.5mm_ThermalVias
Infineon_MPLQ-16-14-1EP_4x4mm_P0.5mm_ThermalVias2



MPLQ-14 footprint.

Infineon MPLQ-32 footprint

Footprint names:
Infineon_MPLQ-40-32-1EP_7x7mm_P0.5mm
Infineon_MPLQ-40-32-1EP_7x7mm_P0.5mm_ThermalVias
Infineon_MPLQ-40-32-1EP_7x7mm_P0.5mm_ThermalVias2



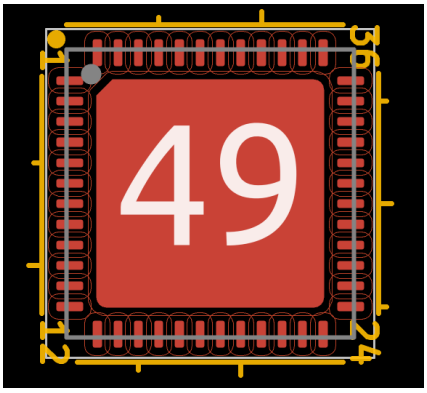
MPLQ-32 footprint.

Infineon MLPQ-48 Footprints

Footprint count: 7

Footprint names:

Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_EP5.55x5.55mm
Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_PAD5.15x5.15mm
Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_PAD5.15x5.15mm_ThermalVias
Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_PAD5.15x5.15mm_ThermalVias2
Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_PAD5.55x5.55mm
Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_PAD5.55x5.55mm_ThermalVias
Infineon_MPLQ-48-1EP_7x7mm_P0.5mm_PAD5.55x5.55mm_ThermalVias2

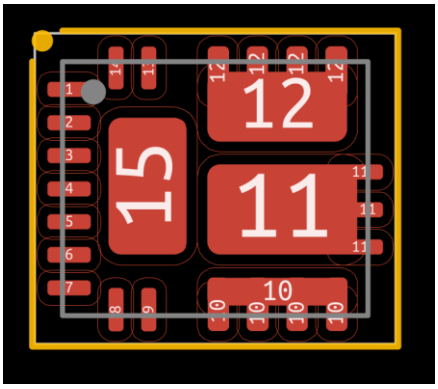


MLPQ-48 footprint.

Infineon PQFN-22 footprint

Footprint name:

Infineon_PQFN-22-15-4EP_6x5mm_P0.65mm

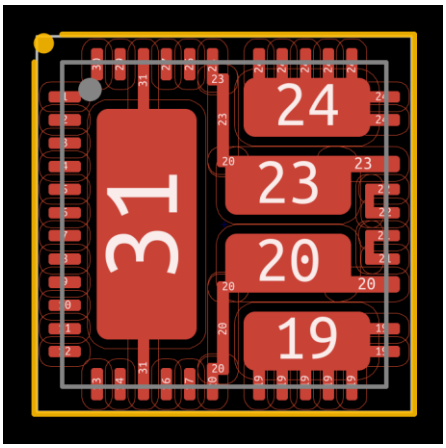


PQFN-22 footprint.

Infineon PQFN-44 footprint

Footprint name:

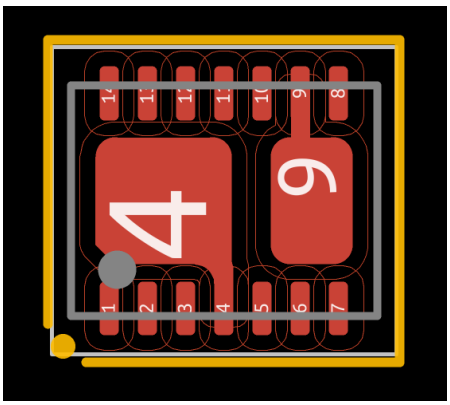
Infineon_PQFN-44-31-5EP_7x7mm_P0.5mm



PQFN-44 footprint.

Linear Technology DE14MA footprint

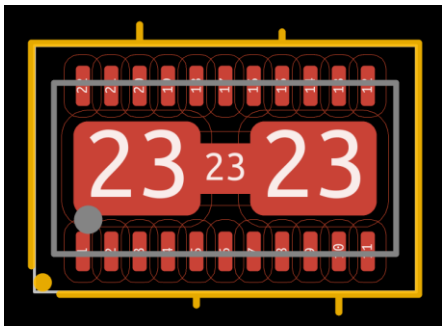
Footprint name:
Linear_DE14MA



DE14MA footprint.

Linear Technology DJC footprint

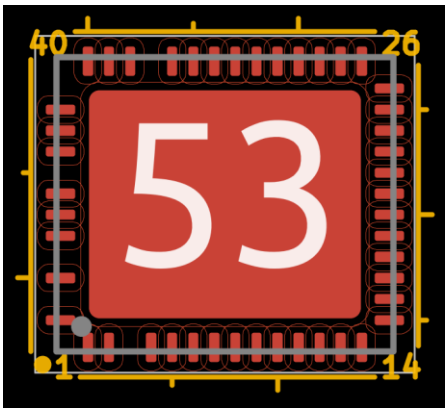
Footprint names:
Linear_DJC_DFN22_6x3mm
Linear_DJC_DFN22_6x3mm_ThermalVias
Linear_DJC_DFN22_6x3mm_ThermalVias2



DJC footprint.

Linear Technology UGK52 footprint

Footprint names:
Linear_UGK52_QFN46-52
Linear_UGK52_QFN46-52_ThermalVias
Linear_UGK52_QFN46-52_ThermalVias2



UGK52 footprint.

Micro Lead Frame (MLF) package footprints

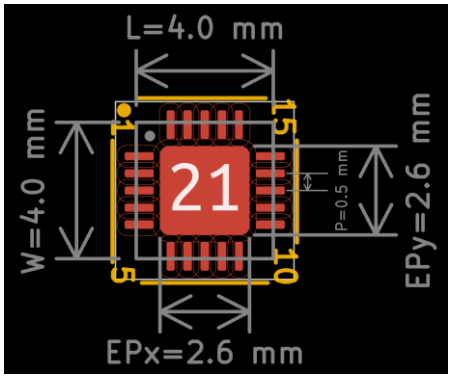
Footprint count: 7

Footprint naming convention:

MLF-<pin count>**-**<exposed pad count>**EP**
_<length>**x**<width>**mm_P**<pin pitch>**mm**_<exposed pad size>_<optional: ThermalVias/ThermalVias2>

Name examples:

MLF-6-1EP_1.6x1.6mm_P0.5mm_EP0.5x1.26mm
MLF-20-1EP_4x4mm_P0.5mm_EP2.6x2.6mm_ThermalVias

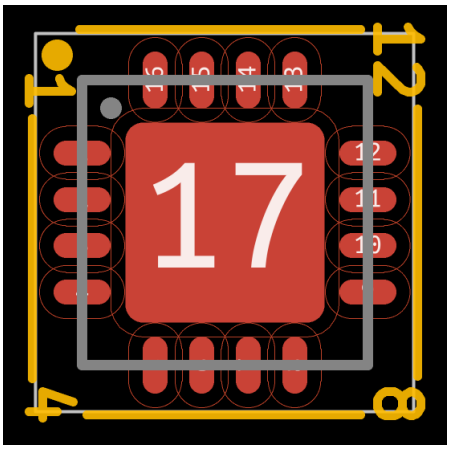


MLF-20 footprint with its dimensions indicated.

MLPQ-16 footprint

Footprint name:

MLPQ-16-1EP_4x4mm_P0.65mm_EP2.8x2.8mm



MLPQ-16 footprint.

Micrel MLF-8 footprint

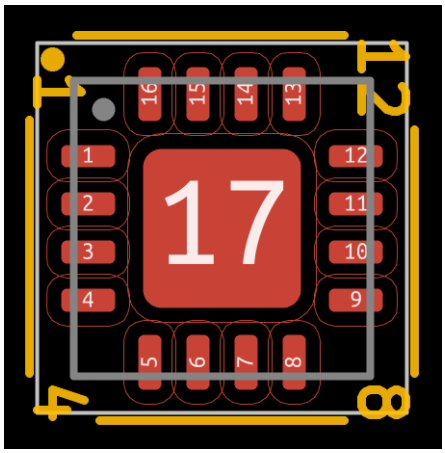
Footprint name:

Micrel_MLF-8-1EP_2x2mm_P0.5mm_EP0.8x1.3mm
_ThermalVias

MLF-8 footprint.

Microchip 8E-16 footprint

Footprint name:
Microchip_8E-16



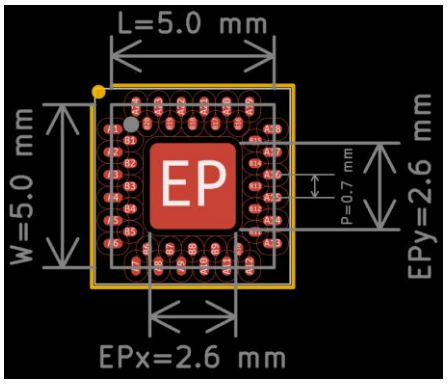
8E-16 footprint.

Microchip Dual Row Quad Flat No-lead (DRQFN) package footprints

Footprint count: **4**

Footprint naming convention:
Microchip_DRQFN-<pin count>**-**<exposed pad count>**EP**_<length>**x**<width>**mm_P**<pin pitch>**mm**_<exposed pad size>_<optional: ThermalVias>

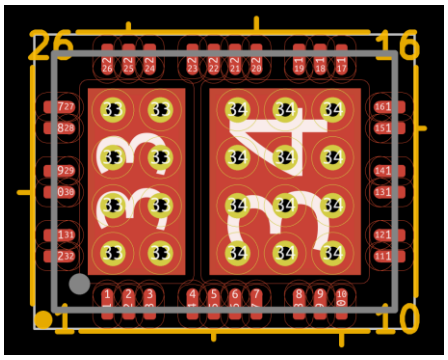
Name examples:
Microchip_DRQFN-44-1EP_5x5mm_P0.7mm_EP2.65x2.65mm_ThermalVias



DRQFN-44 footprint with its dimensions indicated.

Microsemi QFN-32 footprint

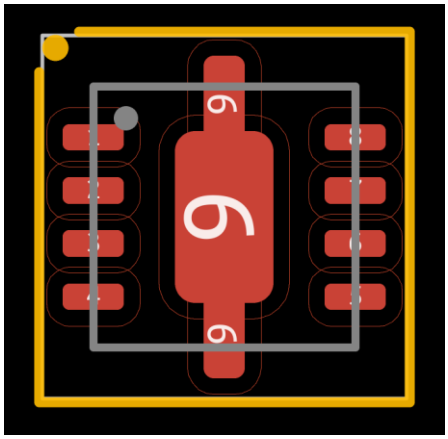
Footprint name:
Microsemi_QFN-40-32-2EP_6x8mm_P0.5mm



QFN-32 footprint.

Mini Circuits DL805 footprint

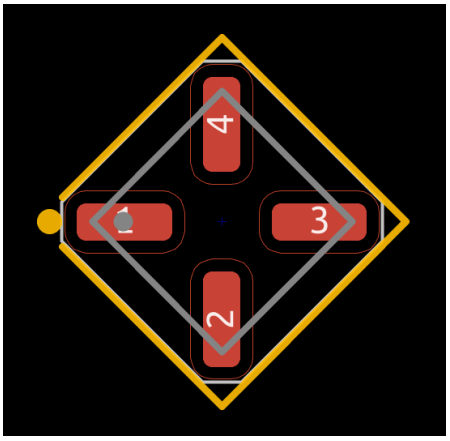
Footprint name:
Mini-Circuits_DL805



DL805 footprint.

Mini Circuits FG873-4 footprint

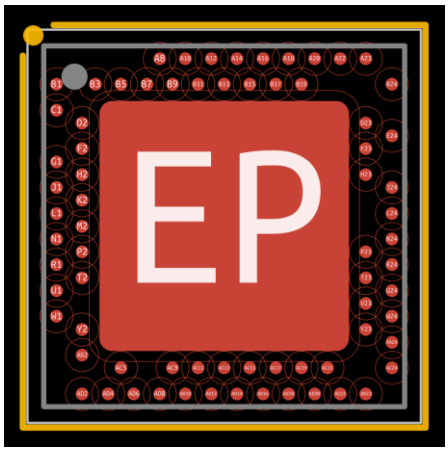
Footprint name:
Mini-Circuits_FG873-4_3x3mm



FG873-4 footprint.

Nordic Semiconductor AQFN-73 footprint

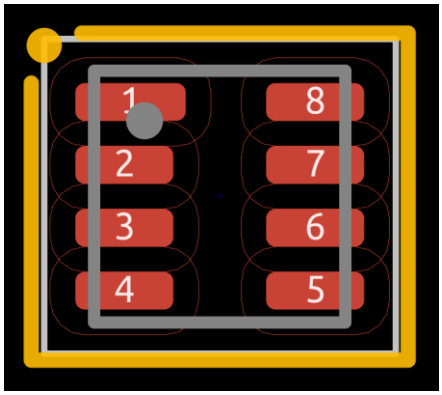
Footprint name:
Nordic_AQFN-73-1EP_7x7mm_P0.5mm



AQFN-73 footprint.

OnSemi WDFN8 footprint

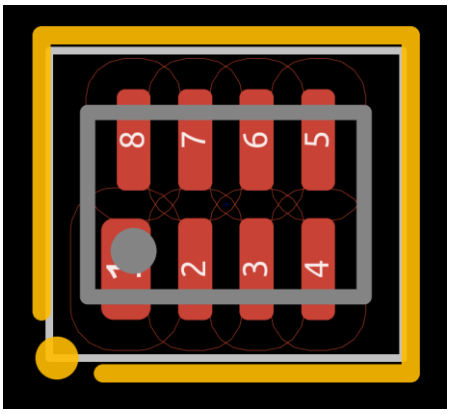
Footprint name:
OnSemi_DFN-8_2x2mm_P0.5mm



WDFN8 footprint.

OnSemi UDFN8 footprint

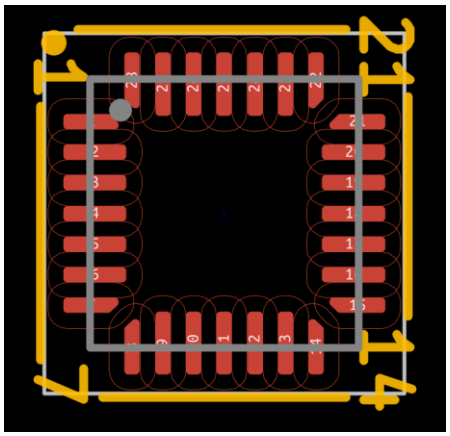
Footprint name:
OnSemi_UDFN-8_1.2x1.8mm_P0.4mm



UDFN8 footprint.

OnSemi VCT-28 footprint

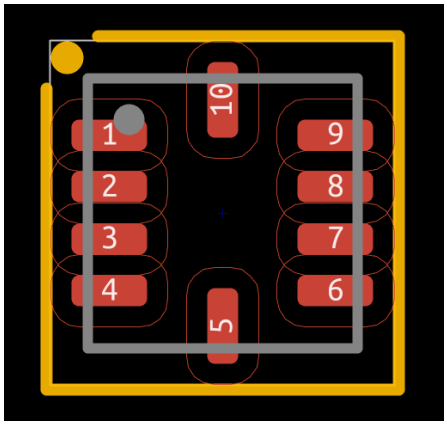
Footprint name:
OnSemi_VCT-28_3.5x3.5mm_P0.4mm



VCT-28 footprint.

OnSemi WQFN-10 footprint

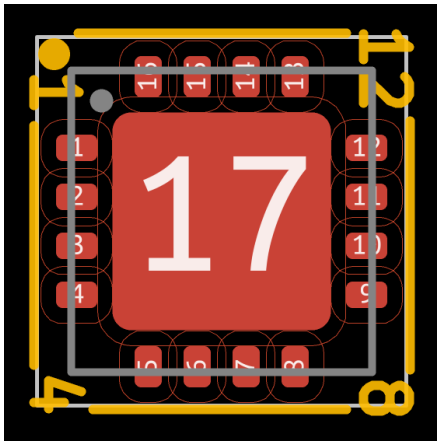
Footprint name:
OnSemi_WQFN-10_2.6x2.6mm_P0.5mm



WQFN-10 footprint.

Panasonic HQFN-16 footprint

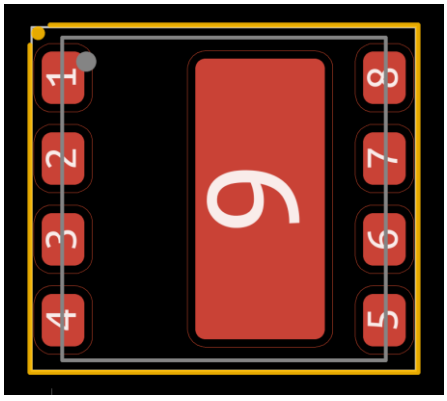
Footprint names:
Panasonic_HQFN-16-1EP_4x4mm_P0.65mm_EP2.9x2.9mm
Panasonic_HQFN-16-1EP_4x4mm_P0.65mm_EP2.9x2.9mm_ThermalVias
Panasonic_HQFN-16-1EP_4x4mm_P0.65mm_EP2.9x2.9mm_ThermalVias2



HQFN-16 footprint.

Panasonic HSON-8 footprint

Footprint names:
Panasonic_HSON-8_8x8mm_P2.00mm
Panasonic_HSON-8_8x8mm_P2.00mm_ThermalVias
Panasonic_HSON-8_8x8mm_P2.00mm_ThermalVias2



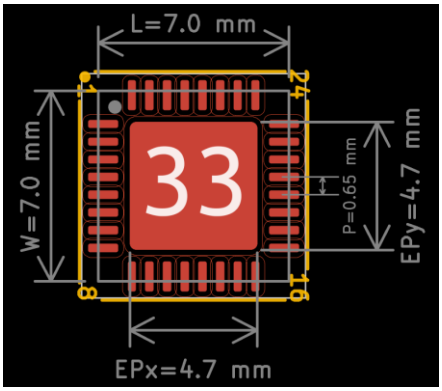
HSON-8 footprint.

Quad Flat No-lead (QFN) package footprints

Footprint count: **288**

Footprint naming convention:
QFN-<pin count>**-**<optional: exposed pad count>_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size>_<optional: ThermalVias/ThermalVias2>

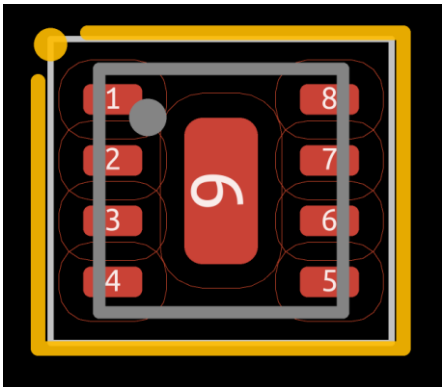
Name examples:
QFN-28_4x4mm_P0.5mm
QFN-40-1EP_5x5mm_P0.4mm_EP3.8x3.8mm
QFN-64-1EP_9x9mm_P0.5mm_EP4.7x4.7mm_ThermalVias



QFN footprint with its dimensions indicated.

Qorvo DFN-8 footprint

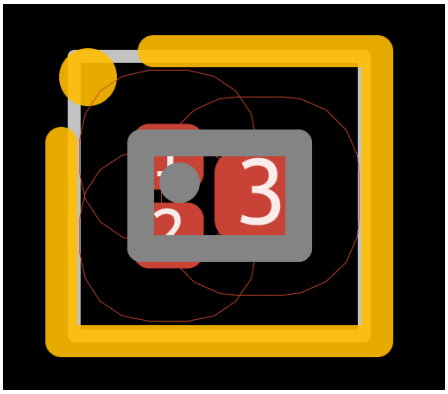
Footprint name:
Qorvo_DFN-8-1EP_2x2mm_P0.5mm



DFN-8 footprint.

ROHM Semiconductor DFN0604-3 footprint

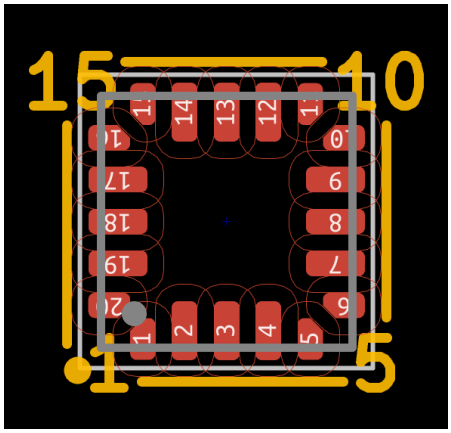
Footprint name:
ROHM_DFN0604-3



DFN0604-3 footprint.

ST Microelectronics UFQFPN-20 footprint

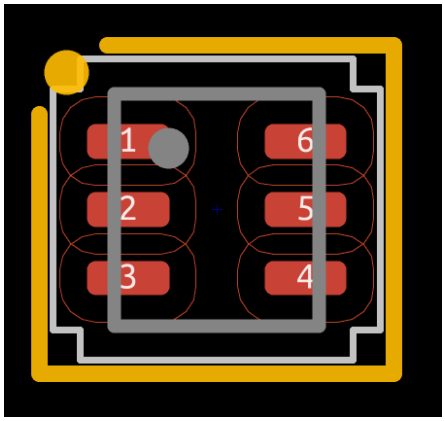
Footprint name:
ST_UFQFPN-20_3x3mm_P0.5mm



UFQFPN-20 footprint.

ST Microelectronics UQFN-6L footprint

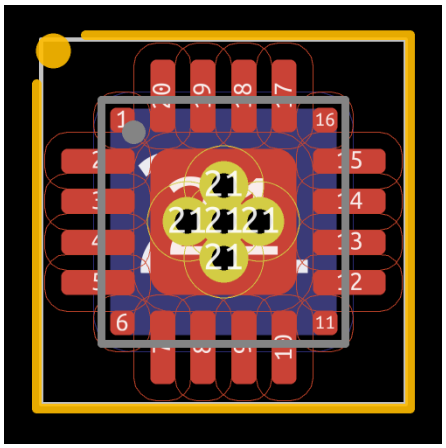
Footprint name:
ST_UQFN-6L_1.5x1.7mm_Pitch0.5mm



UQFN-6L footprint.

Silicon Labs QFN-20 footprints

Footprint names:
SiliconLabs_QFN-20-1EP_3x3mm_P0.5mm
SiliconLabs_QFN-20-1EP_3x3mm_P0.5mm_EP1.8x1.8mm
SiliconLabs_QFN-20-1EP_3x3mm_P0.5mm_EP1.8x1.8mm
_ThermalVias
SiliconLabs_QFN-20-1EP_3x3mm_P0.5mm_ThermalVias

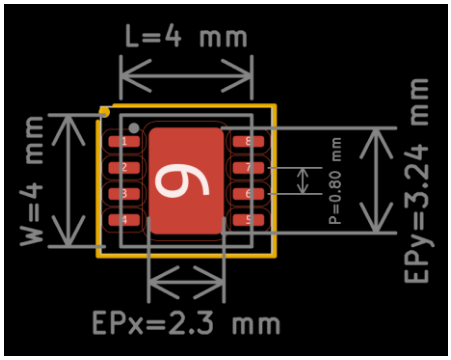


Thin Dual Flat No-lead (TDFN) package footprints

Footprint count: 8

Footprint naming convention:
TDFN-<pin count>**-**<optional: exposed pad count>_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size>_<optional: ThermalVias>

Name examples:
TDFN-12_2x3mm_P0.5mm
TDFN-6-1EP_2.5x2.5mm_P0.65mmEP1.3x2mm
TDFN-8-1EP_3x2mm_P0.5mm_EP0.9x2mm_ThermalVias



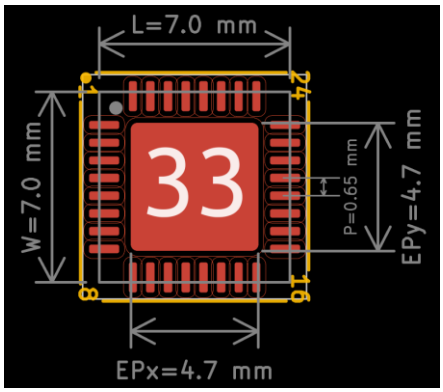
TDFN footprint with its dimensions indicated.

Thin Quad Flat No-lead (TQFN) package footprints

Footprint count: 39

Footprint naming convention:
TQFN-<pin count>**-**<optional: exposed pad count>_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size>_<optional: ThermalVias/ThermalVias2>

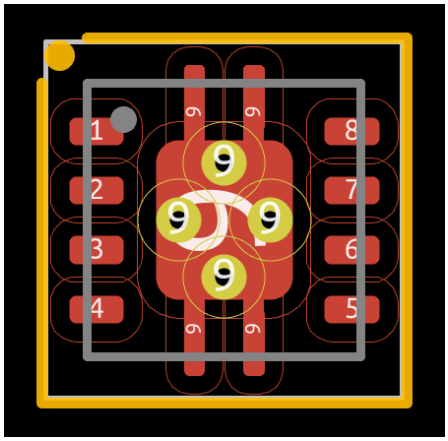
Name examples:
TQFN-16-1EP_3x3mm_P0.5mm_EP1.23x1.23mm
TQFN-32-1EP_5x5mm_P0.5mm_EP3.1x3.1mm
_ThermalVias



TQFN footprint with its dimensions indicated.

Texas Instruments DRB0008A footprint

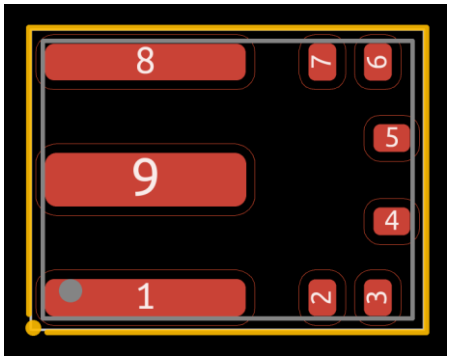
Footprint name:
Texas_DRB0008A



DRB0008A footprint.

Texas Instruments MOF0009A footprint

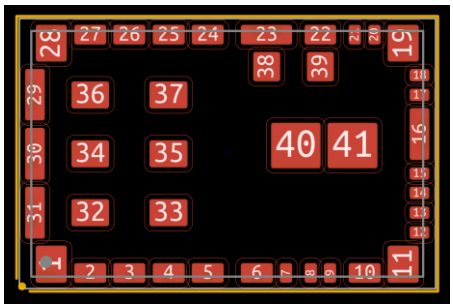
Footprint name:
Texas_MOF0009A



MOF0009A footprint.

Texas Instruments QFN-41 footprint

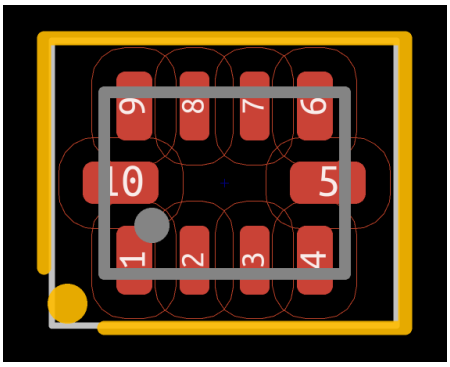
Footprint name:
Texas_QFN-41_10x16mm



MOF0009A footprint.

Texas Instruments R-PUQFN-N10 footprint

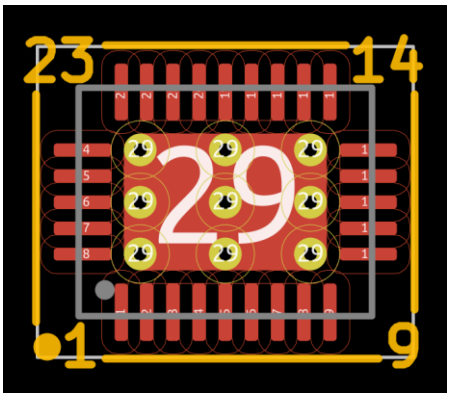
Footprint name:
Texas_R-PUQFN-N10



R-PUQFN-N10 footprint.

Texas Instruments R-PWQFN-N28 footprints

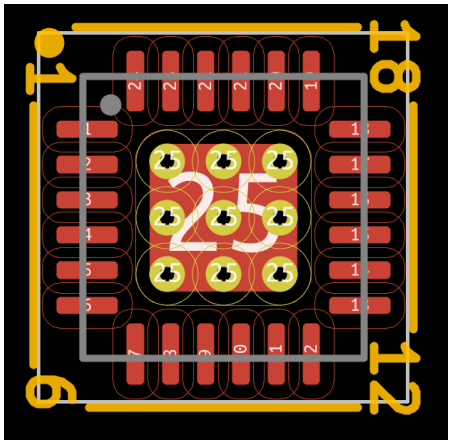
Footprint names:
Texas_R-PWQFN-N28_EP2.1x3.1mm
Texas_R-PWQFN-N28_EP2.1x3.1mm_ThermalVias
Texas_R-PWQFN-N28_EP2.1x3.1mm_ThermalVias2



R-PWQFN-N28 "ThermalVia" footprint.

Texas Instruments RGE0024C footprints

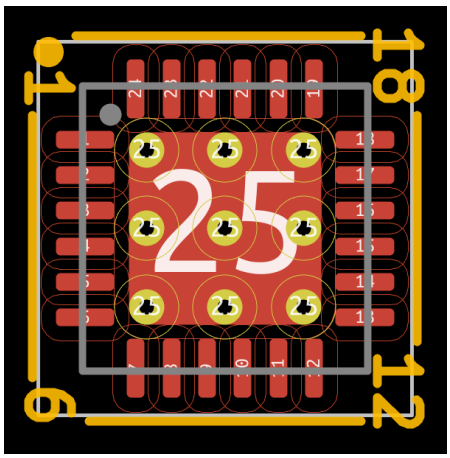
Footprint names:
Texas_RGE0024C_EP2.1x2.1mm
Texas_RGE0024C_EP2.1x2.1mm_ThermalVias



RGE0024C "ThermalVia" footprint.

Texas Instruments RGE0024H footprints

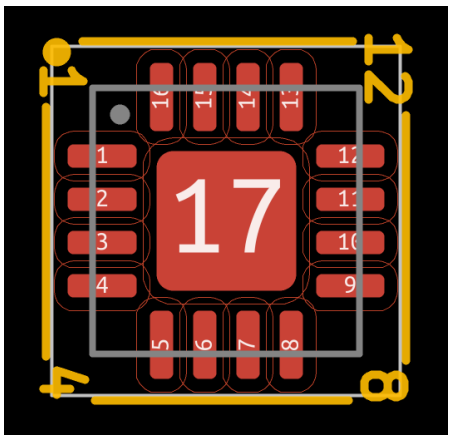
Footprint names:
Texas_RGE0024H_EP2.1x2.1mm
Texas_RGE0024H_EP2.1x2.1mm_ThermalVias



RGE0024H "ThermalVia" footprint.

Texas Instruments RGV footprints

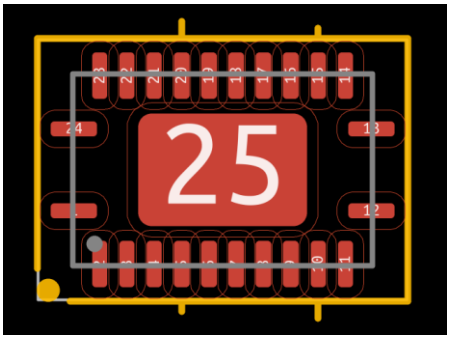
Footprint names:
Texas_RGV_S-PVQFN-N16_EP2.1x2.1mm
Texas_RGV_S-PVQFN-N16_EP2.1x2.1mm_ThermalVias



RGV footprint.

Texas Instruments RGY footprints

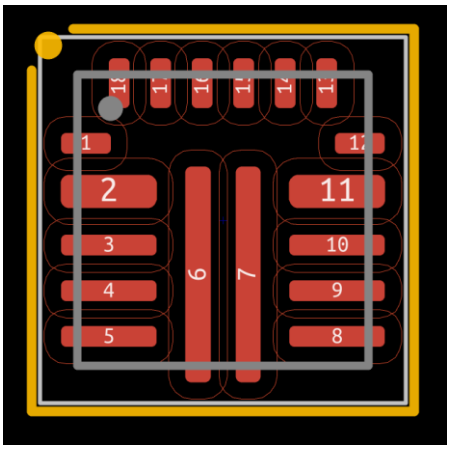
Footprint names:
Texas_RGY_R-PVQFN-N16_N24_EP2.05x3.1mm
Texas_RGY_R-PVQFN-N16_N24_EP2.05x3.1mm_ThermalVias
Texas_RGY_R-PVQFN-N16_N24_EP2.05x3.1mm_ThermalVias2



RGY footprint.

Texas Instruments RNN0018A footprint

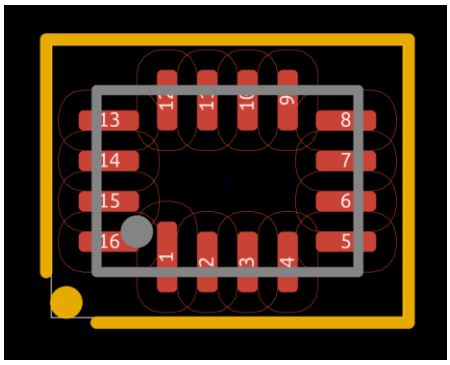
Footprint name:
Texas_RNN0018A



RNN0018A footprint.

Texas Instruments RSV footprint

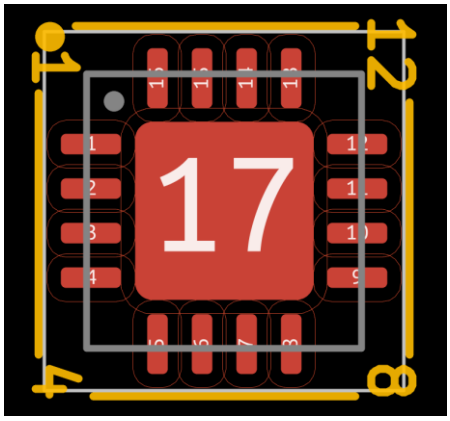
Footprint name:
Texas_RSV_UQFD16_1.8x2.6mm_P0.4mm



RSV footprint.

Texas Instruments RUM0016A footprints

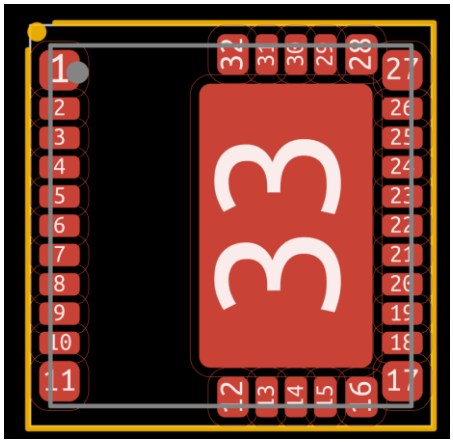
Footprint names:
Texas_RUM0016A_EP2.6x2.6mm
Texas_RUM0016A_EP2.6x2.6mm_ThermalVias
Texas_RUM0016A_EP2.6x2.6mm_ThermalVias2



RUM0016A footprint.

Texas Instruments RWH0032A footprints

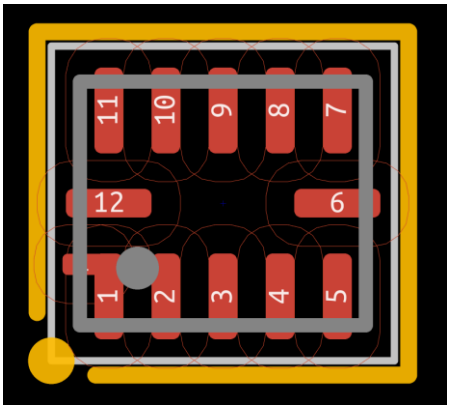
Footprint names:
Texas_RWH0032A
Texas_RWH0032A_ThermalVias



RWH0032A footprint.

Texas Instruments R_PUQFN-N12 footprint

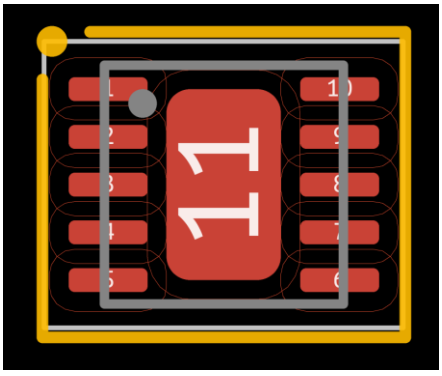
Footprint name:
Texas_R_PUQFN-N12



R_PUQFN-N12 footprint.

Texas Instruments S-PDSO-N10 footprints

Footprint names:
Texas_S-PDSO-N10_EP1.2x2mm
Texas_S-PDSO-N10_EP1.2x2mm_ThermalVias



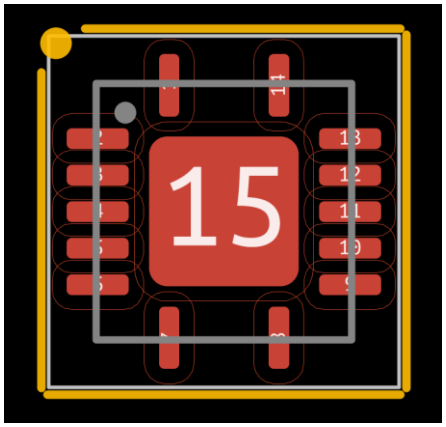
S-PDSO-N10 footprint.

Texas Instruments S-PVQFN package footprints

Footprint count: 41

Footprint naming convention:
Texas_S-PVQFN-N<pin count>_<optional: exposed pad size>_<optional: ThermalVias/ThermalVias2>

Name examples:
Texas_S-PVQFN-N14
Texas_S-PVQFN-N32_EP3.45x3.45mm
Texas_S-PVQFN-N64_EP4.25x4.25mm_ThermalVias

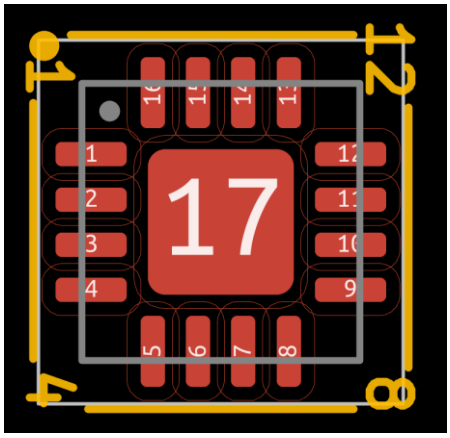


S-PVQFN-N14 footprint.

Texas Instruments S-PWQFN-N16 footprints

Footprint names:
Texas_S-PWQFN-N16_EP2.1x2.1mm
Texas_S-PWQFN-N16_EP2.1x2.1mm_ThermalVias

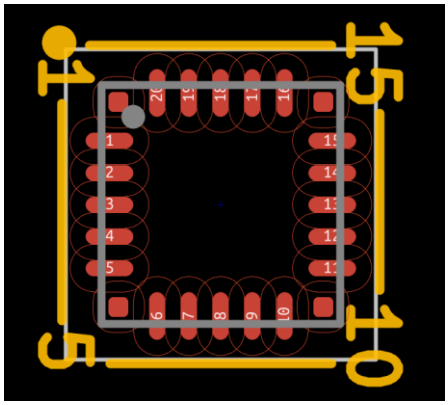
"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.



S-PWQFN-N16 footprint.

Texas Instruments S-PWQFN-N20 footprint

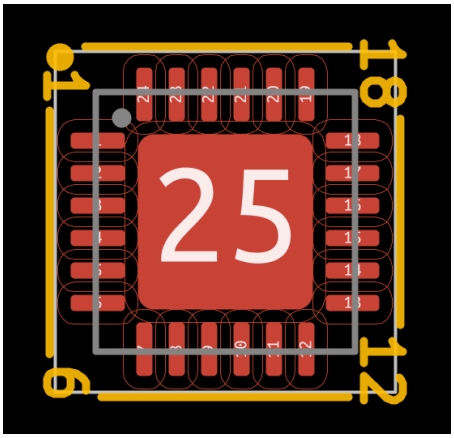
Footprint name:
Texas_S-PWQFN-N20



S-PWQFN-N20 footprint.

Texas Instruments S-PWQFN-N24 footprints

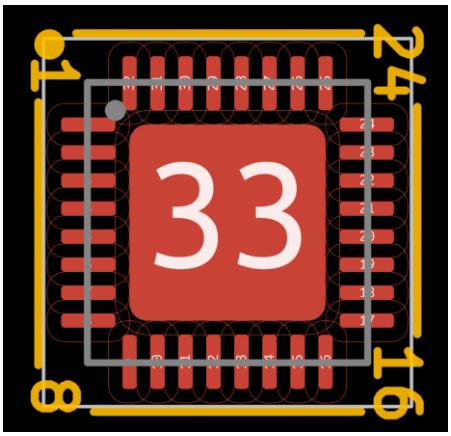
Footprint names:
Texas_S-PWQFN-N24_EP2.7x2.7mm
Texas_S-PWQFN-N24_EP2.7x2.7mm_ThermalVias
Texas_S-PWQFN-N24_EP2.7x2.7mm_ThermalVias2



S-PWQFN-N24 footprint.

Texas Instruments S-PWQFN-N32 footprints

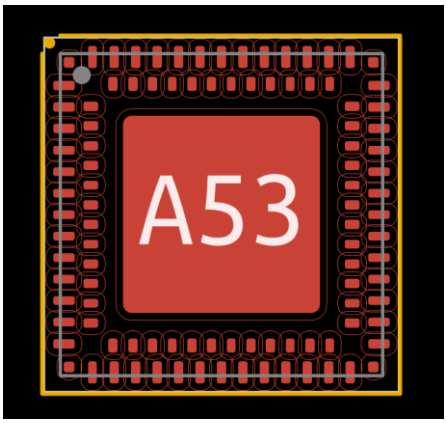
Footprint names:
Texas_S-PWQFN-N32_EP2.8x2.8mm
Texas_S-PWQFN-N32_EP2.8x2.8mm_ThermalVias
Texas_S-PWQFN-N32_EP2.8x2.8mm_ThermalVias2



S-PWQFN-N32 footprint.

Texas Instruments S-PWQFN-N100 footprints

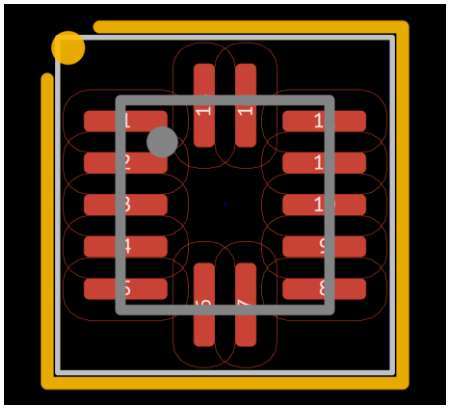
Footprint names:
Texas_S-PWQFN-N100_EP5.5x5.5mm
Texas_S-PWQFN-N100_EP5.5x5.5mm_ThermalVias



S-PWQFN-N100 footprint.

Texas Instruments S-PX2QFN footprint

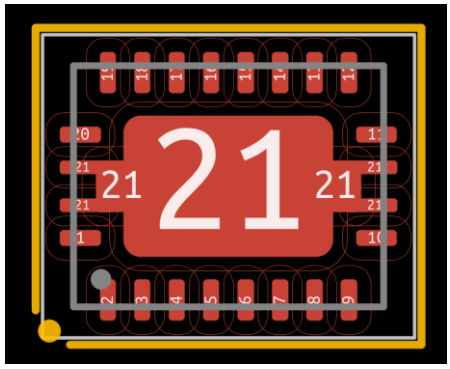
Footprint name:
Texas_S-PX2QFN-14



S-PX2QFN footprint.

Texas Instruments VQFN-RHL-20 footprints

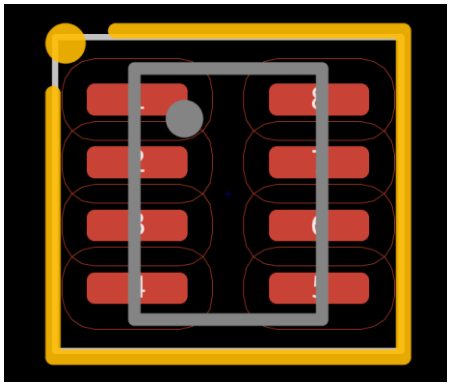
Footprint names:
Texas_VQFN-RHL-20
Texas_VQFN-RHL-20_ThermalVias
Texas_VQFN-RHL-20_ThermalVias2



VQFN-RHL-20 footprint.

Texas Instruments VSON-HR-8 footprint

Footprint name:
Texas_VSON-HR-8_1.5x2mm_P0.5mm

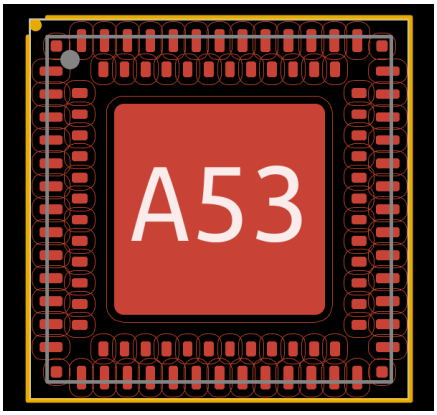


VSON-HR-8 footprint.

Texas Instruments WQFN-MR-100 footprints

Footprint names:
Texas_WQFN-MR-100_3x3-DapStencil
Texas_WQFN-MR-100_ThermalVias_3x3-DapStencil

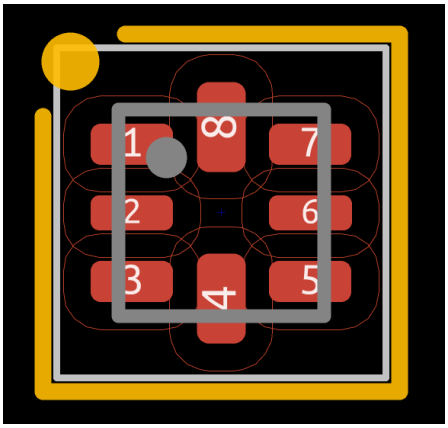
"ThermalVias" option denotes footprint with pre-placed heat-sinking vias.



WQFN-MR-100 footprint.

Texas Instruments X2QFN-8 footprint

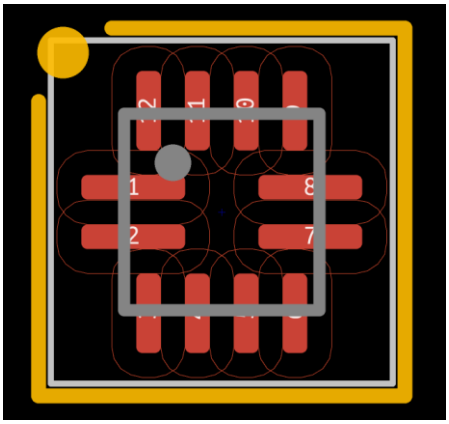
Footprint name:
Texas_X2QFN-8_1.5x1.5mm



X2QFN-8 footprint.

Texas Instruments X2QFN-12 footprint

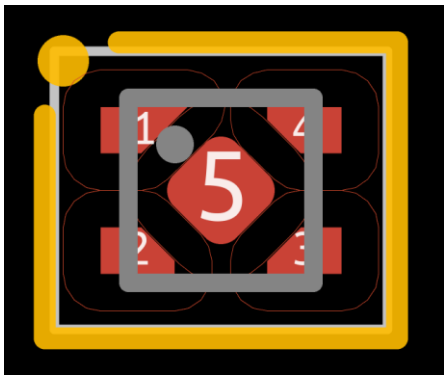
Footprint name:
Texas_X2QFN-12_1.6x1.6mm_P0.4mm



X2QFN-12 footprint.

UDFN-4 footprint

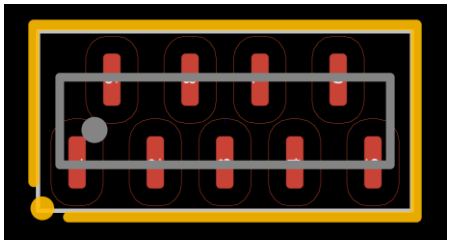
Footprint name:
UDFN-4-1EP_1x1_P0.65mm_EP0.48x0.48mm



UDFN-4 footprint.

UDFN-9 footprint

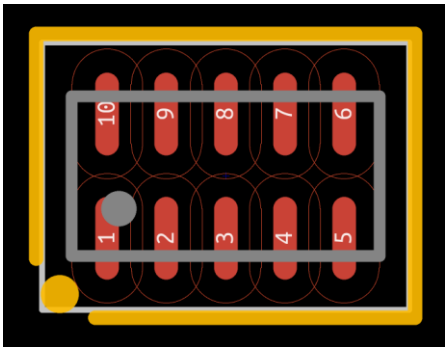
Footprint name:
UDFN-9_1.0x3.8mm_P0.5mm



UDFN-9 footprint.

UDFN-10 footprint

Footprint name:
UDFN-10_1.35x2.6mm_P0.5mm



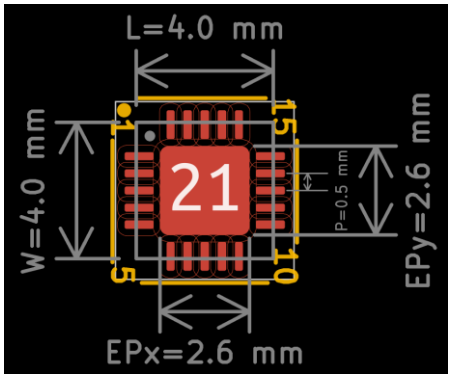
UDFN-10 footprint.

Micro Quad Flat No-lead (UQFN) package footprints

Footprint count: **28**

Footprint naming convention:
UQFN-<pin count>**-**<optional: exposed pad count>
_<length>**x**<width>**mm_P**<pin pitch>**mm**_<exposed pad size>_<optional: ThermalVias/ThermalVias2>

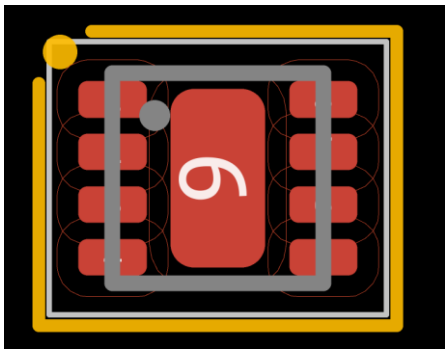
Name examples:
UQFN-10_1.3x1.8mm_P0.4mm
UQFN-16-1EP_3x3mm_P0.5mm_EP1.75x1.75mm
UQFN-20-1EP_3x3mm_P0.4mm_EP1.85x1.85mm_ThermalVias2



UQFN-20 footprint with its dimensions indicated.

VDFN-8 footprint

Footprint name:
VDFN-8-1EP_2x2mm_P0.5mm_EP0.9x1.7mm



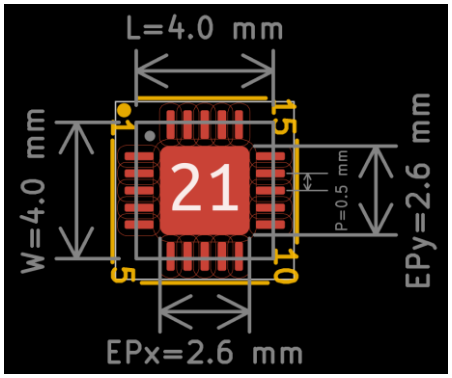
VDFN-8 footprint.

Very fine Quad Flat No-lead (VQFN) package footprints

Footprint count: 33

Footprint naming convention:
VQFN-<pin count>**-**<exposed pad count>**EP**
_<length>**x**<width>**mm_P**<pin pitch>**mm**_<exposed pad size>_<optional: ThermalVias/ThermalVias2>

Name examples:
VQFN-16-1EP_3x3mm_P0.5mm_EP1.45x1.45mm
VQFN-32-1EP_5x5mm_P0.5mm_EP3.1x3.1mm
_ThermalVias2



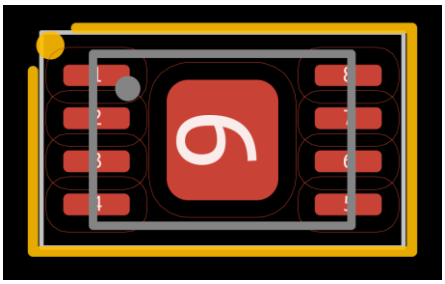
VQFN-20 footprint with its dimensions indicated.

WDFN package footprints

Footprint count: 7

Footprint naming convention:
WDFN-<pin count>**-**<exposed pad count>**EP**
_<length>**x**<width>**mm_P**<pin pitch>**mm**_<exposed pad size>_<optional: ThermalVias/ThermalVias2>

Name examples:
WDFN-8-1EP_3x2mm_P0.5mm_EP1.3x1.4mm
WDFN-12-1EP_3x3mm_P0.45mm_EP1.7x2.5mm
_ThermalVias2



WDFN-8-1EP2x2.2mm_ P0.5mm_EP1.3x1.4mm footprint.

3.19. DIP Package Library

This library contains footprints for Through-Hole and Surface Mount Dual In-line Packages (DIP) and sockets.

Some DIP packages are longer than it would seem from their pin count (DIP-14 is typically the same length as DIP-16) and AKL footprints were adjusted accordingly.

Standard variant	
Folder name: **`Package_DIP_AKL`**	
Footprint count:	**241**
Total footprints:	**241**

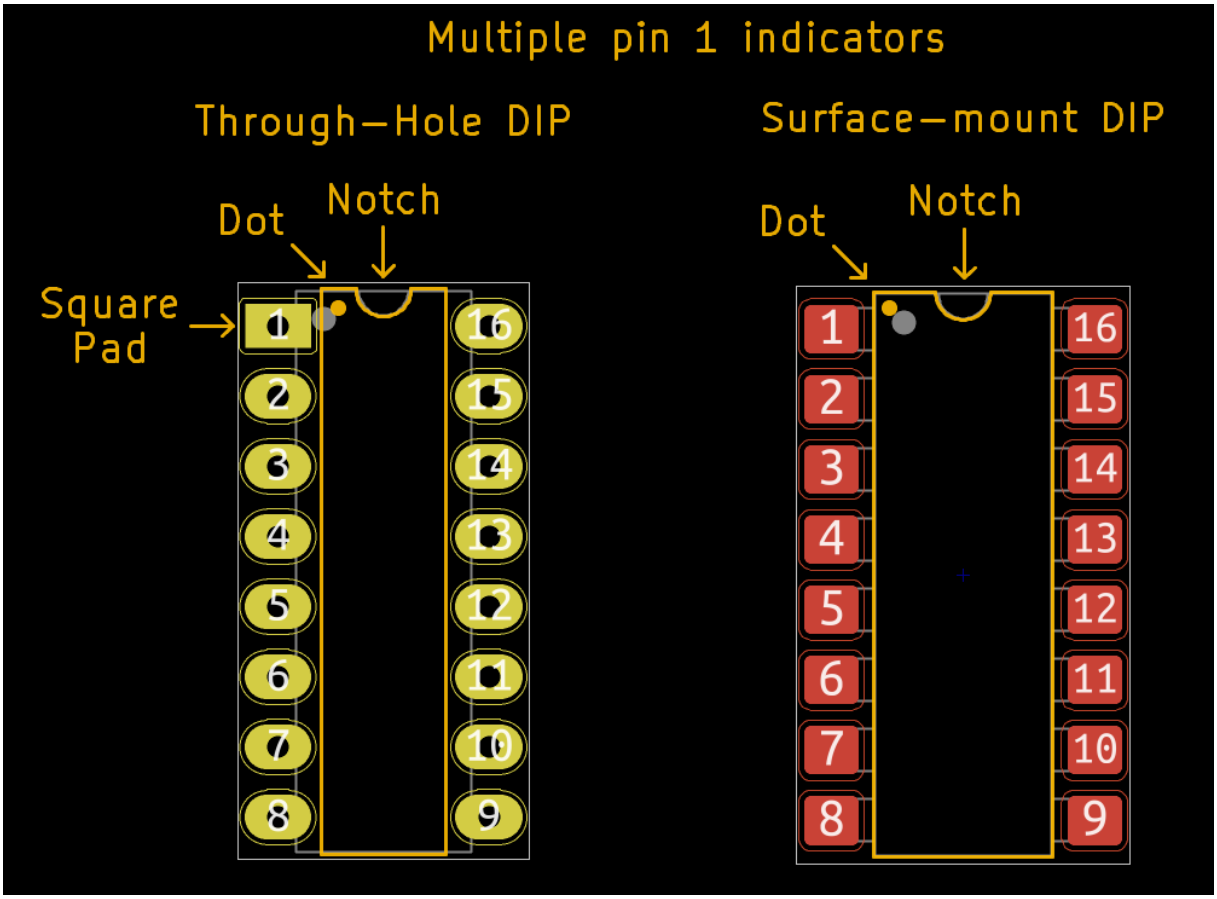


Figure 3.36. *DIP and SMDIP footprint showcase.*

Dual In-line Package (DIP) footprints

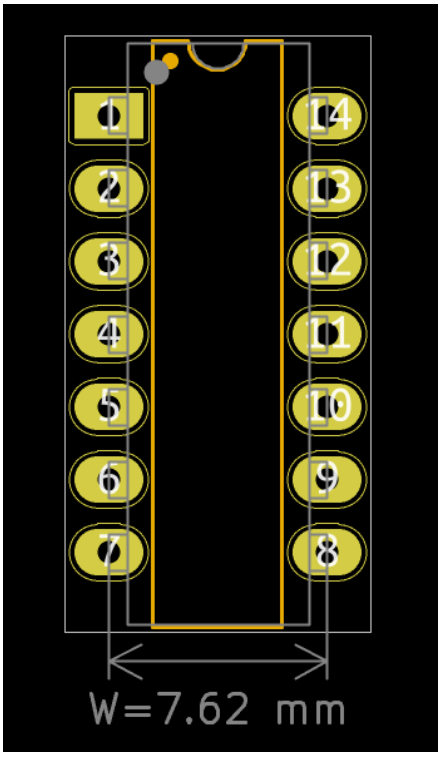
Footprint count: 73

Footprint naming convention:
DIP-<pin count>**_W**<distance between pin rows>**mm**
<optional: _LongPads>

Some footprints have missing pins, for example:
5-pin DIP package footprint is named DIP-5-6
(DIP-6 body size with 5 pins)

LongPads suffix denotes a footprint with enlarged pads suitable for single-sided PCBs without plated holes and/or help with hand-soldering. All AKL symbols of devices in DIP packages use this variant by default.

Name examples:
DIP-4_W7.62mm
DIP-22_W10.16mm_LongPads
DIP-8-16_W7.62mm (DIP-16 body size, 8 pins)



DIP-14 "LongPads" footprint with its "width" indicated.

Dual In-line Package (DIP) THT socket footprints

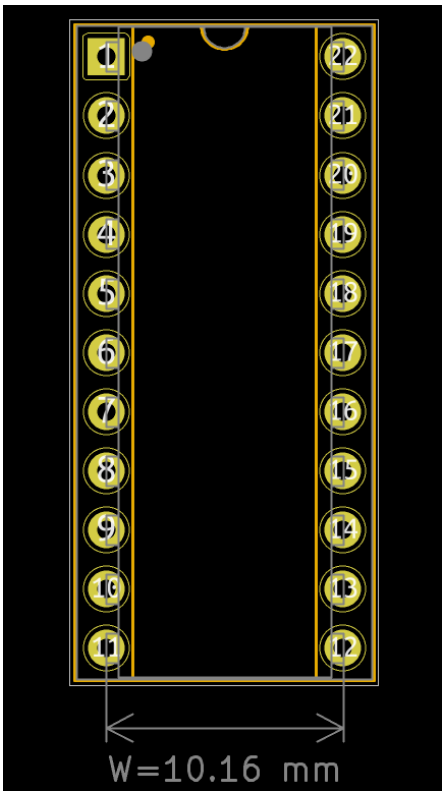
Footprint count: 52

Footprint naming convention:
DIP-<pin count>**_W**<distance between pin rows>**mm**
_Socket<optional: _LongPads>

Some footprints have missing pins, for example:
5-pin DIP package footprint is named DIP-5-6
(DIP-6 body size with 5 pins)

LongPads suffix denotes a footprint with enlarged pads suitable for single-sided PCBs without plated holes and/or help with hand-soldering.

Name examples:
DIP-14_W7.62mm_Socket
DIP-40_W25.4mm_Socket_LongPads
DIP-5-6_W7.62mm_Socket_LongPads



DIP-22 Socket footprint with its "width" indicated.

Dual In-line Package (DIP) SMD socket footprints

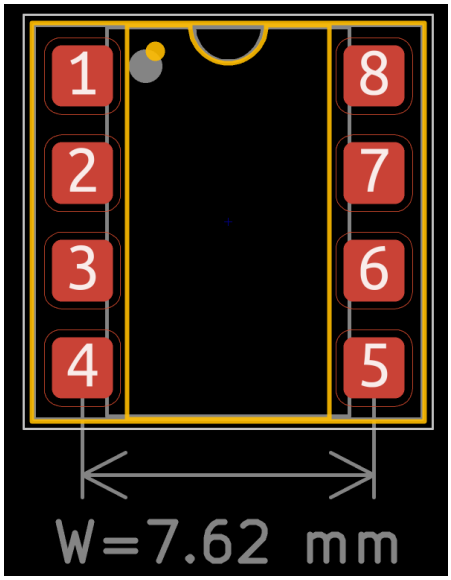
Footprint count: **50**

Footprint naming convention:
DIP-<pin count>**_W**<distance between pin rows>**mm**
SMDSocket<pad size>

Some footprints have missing pins, for example:
5-pin DIP package footprint is named DIP-5-6
(DIP-6 body size with 5 pins)

Pad size can either be small (SmallPads) or big (LongPads).

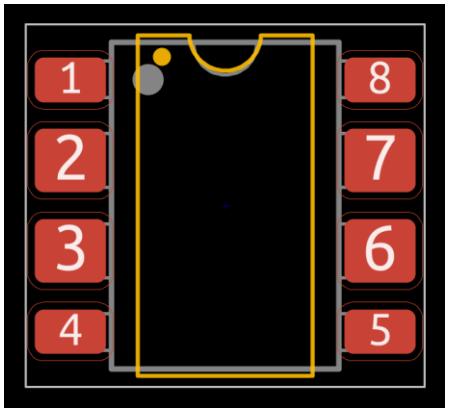
Name examples:
DIP-28_W7.62mm_SMDSocket_SmallPads
DIP-12_W8.89mm_SMDSocket_LongPads



DIP-8 SMD Socket "SmallPads" footprint with its "width" indicated.

Fairchild LSOP-8 footprint

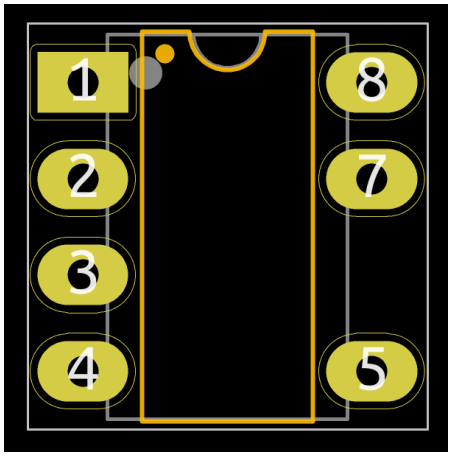
Footprint name:
Fairchild_LSOP-8



LSOP-8 footprint.

Power Integrations PDIP-8B footprint

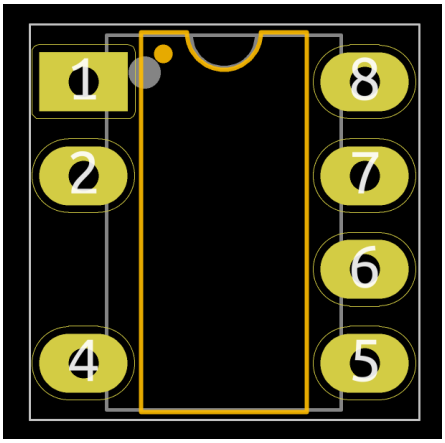
Footprint name:
PowerIntegrations_PDIP-8B



PDIP-8B footprint.

Power Integrations PDIP-8C footprint

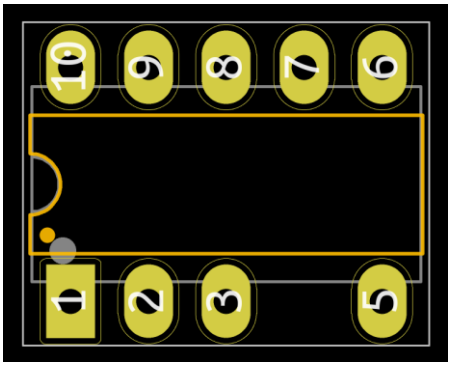
Footprint name:
PowerIntegrations_PDIP-8C



PDIP-8C footprint.

Power Integrations SDIP-10C footprint

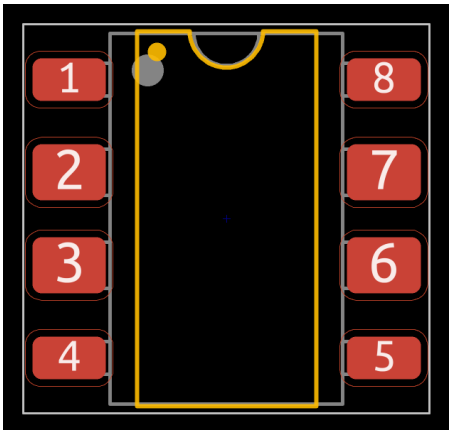
Footprint name:
PowerIntegrations_SDIP-10C



SDIP-10C footprint.

Power Integrations SMD-8 footprint

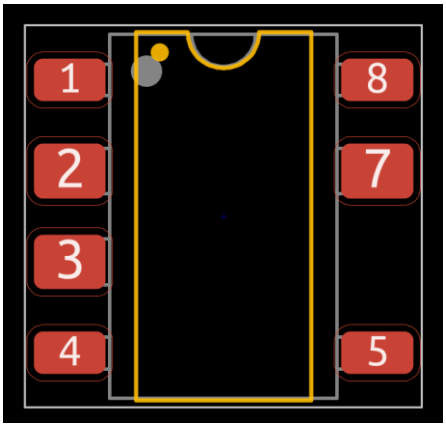
Footprint name:
PowerIntegrations_SMD-8



SMD-8 footprint.

Power Integrations SMD-8B footprint

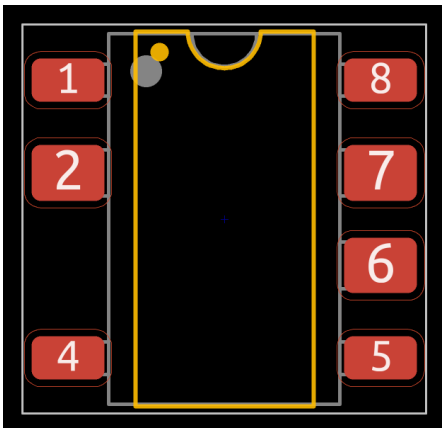
Footprint name:
PowerIntegrations_SMD-8B



SMD-8B footprint.

Power Integrations SMD-8C footprint

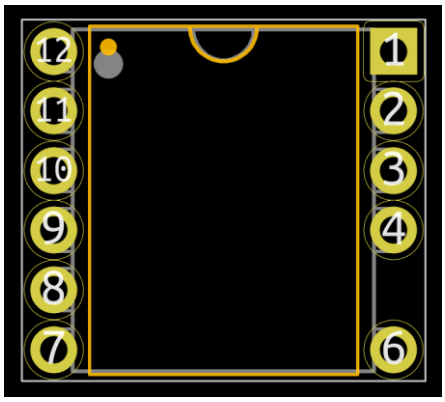
Footprint name:
PowerIntegrations_SMD-8C



SMD-8C footprint.

Power Integrations eDIP-12B footprint

Footprint name:
PowerIntegrations_eDIP-12B



eDIP-12B footprint.

Surface Mount Dual In-line Package (SMDIP) footprints

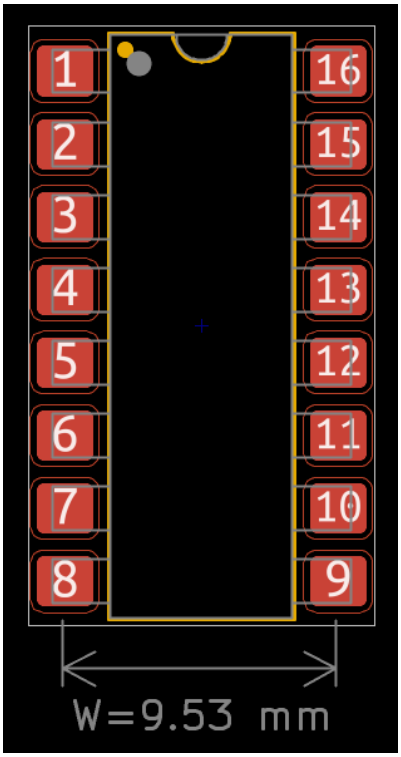
Footprint count: **56**

Footprint naming convention:
SMDIP-<pin count>**_W**<distance between pad rows>**mm**
<optional: _Clearance8mm>

Some footprints have missing pins, for example:
5-pin SMDIP package footprint is named SMDIP-5-6
(SMDIP-6 body size with 5 pins)

Clearance8mm is a variant of 9.53mm width footprint that has 8mm of clearance between the pad rows.

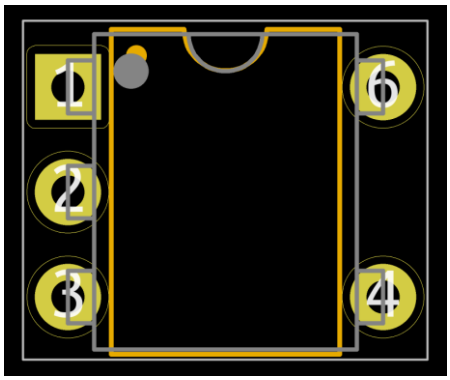
Name examples:
SMDIP-4_W7.62mm
SMDIP-8_W9.53mm
SMDIP-14_W9.53mm_Clearance8mm
SMDIP-18_W11.48mm



SMDIP-16 footprint with its "width" indicated.

Toshiba 11-7A9 footprint

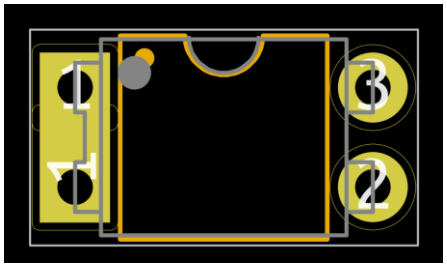
Footprint name:
Toshiba_11-7A9



11-7A9 footprint.

Vishay HVM (DIP-3) footprint

Footprint name:
Vishay_HVM-DIP-3_W7.62mm



HVM DIP-3 footprint.

3.20. PLCC Package Library

This library contains footprints for Plastic Leaded Chip Carrier (PLCC) packages and sockets. SMD PLCC socket footprint can be used to either solder a package or a socket to the PCB.

Standard variant	
Folder name: **`Package_LCC_AKL`**	
Footprint count:	**21**
Total footprints:	**21**

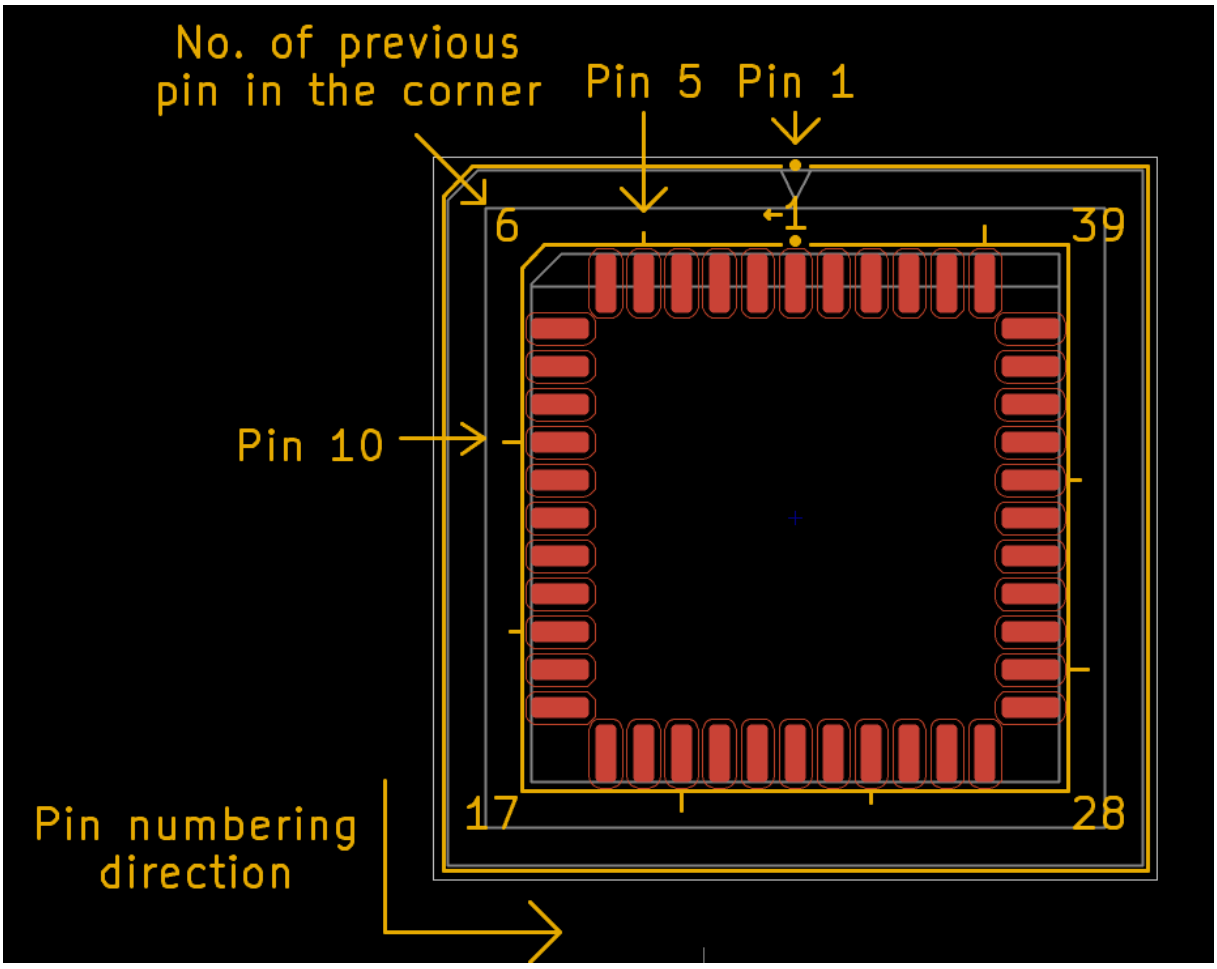


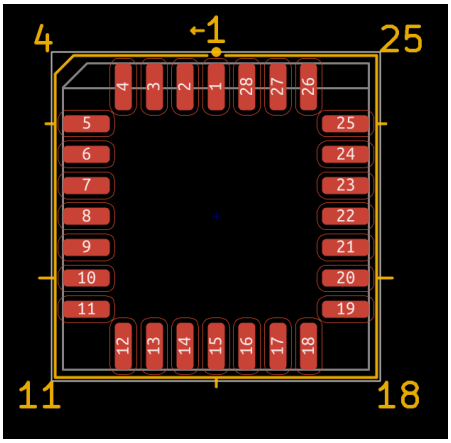
Figure 3.37. *PLCC socket footprint as an example of pin number indicators*

Plastic Leaded Chip Carrier package footprints

Footprint count: 7

Footprint naming convention:
PLCC-<pin count>

Name examples:
PLCC-20
PLCC-68



PLCC-28 footprint.

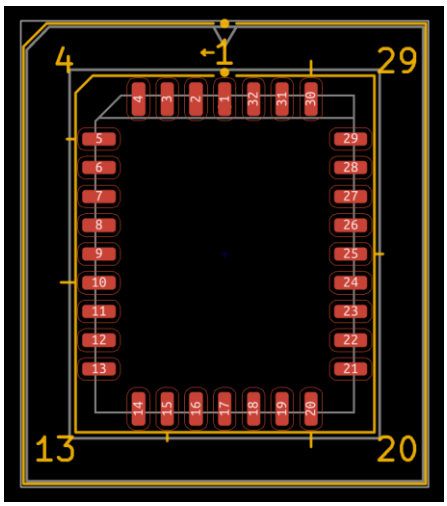
Plastic Leaded Chip Carrier SMD socket footprints

Footprint count: 7

Footprint naming convention:
PLCC-<pin count>**_SMD-Socket**

SMD PLCC socket footprints can be used both for sockets and the packages themselves. AKL symbols use PLCC SMD sockets for all PLCC parts by default.

Name examples:
PLCC-32_SMD-Socket
PLCC-44_SMD-Socket



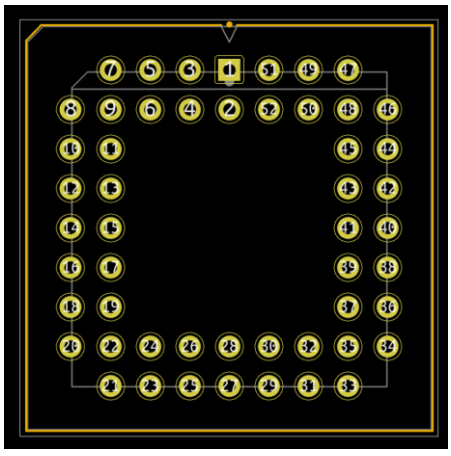
PLCC-32 SMD socket footprint.

Plastic Leaded Chip Carrier THT socket footprints

Footprint count: 7

Footprint naming convention:
PLCC-<pin count>**_THT-Socket**

Name examples:
PLCC-20_THT-Socket
PLCC-84_THT-Socket



PLCC-52 THT socket footprint.

3.21. QFP Package Library

This library contains footprints for Quad Flat Pack packages.

Large pin-count packages have additional indicators on the silkscreen layer intended to help locate a specific pin during troubleshooting.

Standard variant	
Folder name: **`Package_QFP_AKL`**	
Footprint count:	**101** (+18)
Total footprints:	**101** (+18)

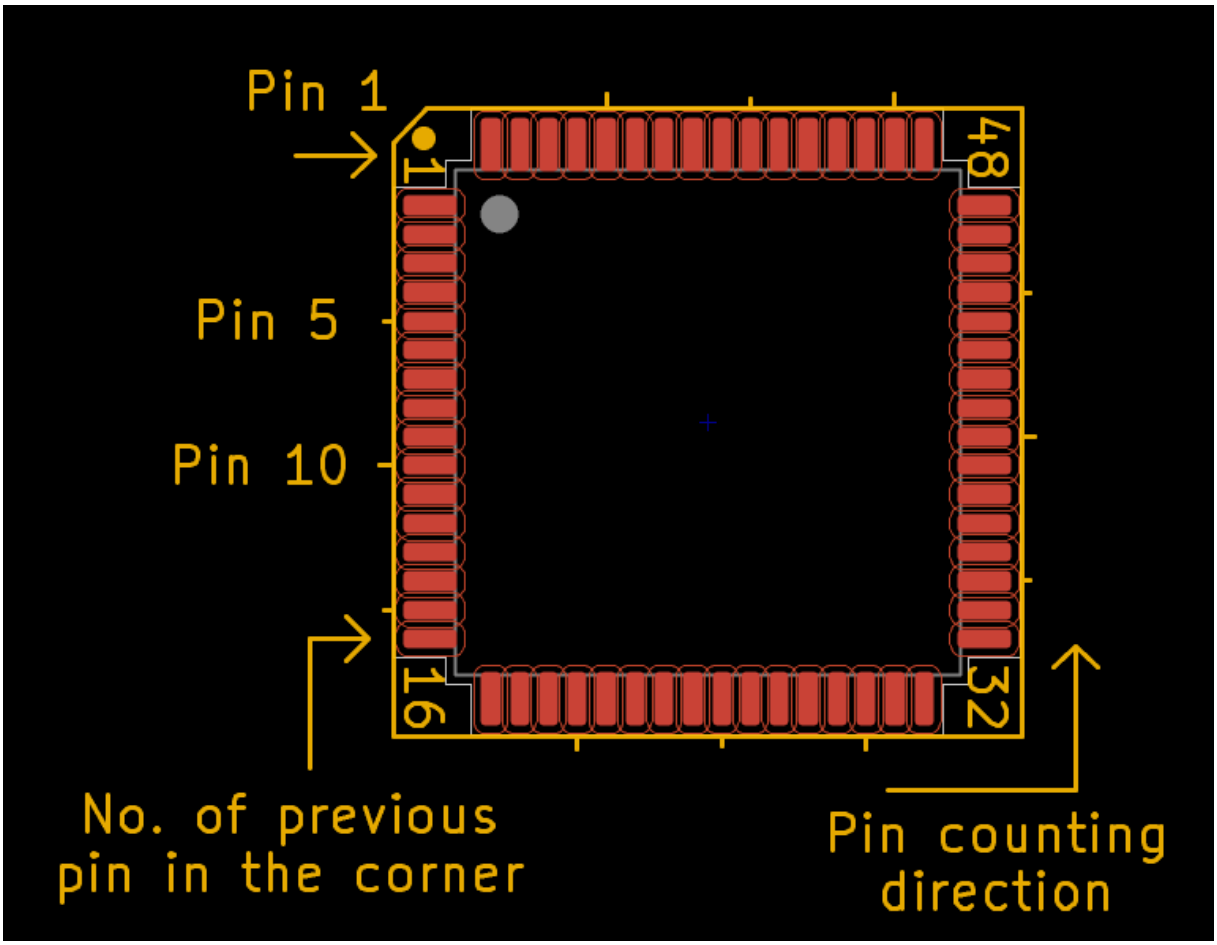


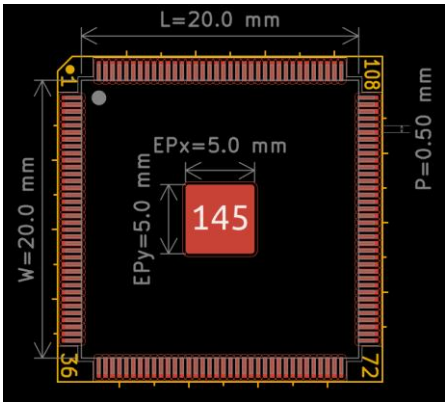
Figure 3.38. *QFP package footprint showcasing the pin number indicators.*

Exposed-pad Quad Flat Pack (EQFP) footprints

Footprint count: 15

Footprint naming convention:
EQFP-<pin count>**-EP**<exposed pad count>_<length>**x**<width>**mm_P**<pin pitch>**mm_EP**<exposed pad size>**mm**<optional: _ThermalVias/ThermalVias2>

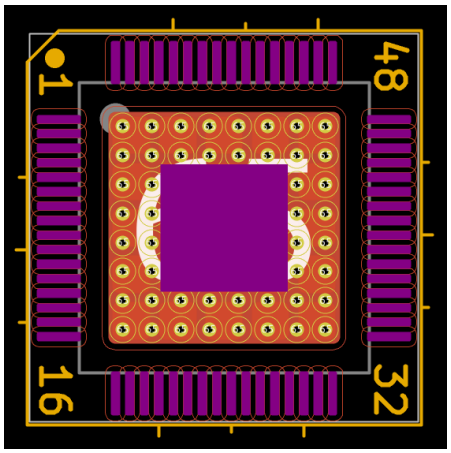
Name examples:
EQFP-144-1EP_20x20mm_P0.5mm_EP6.61x5.615mm
EQFP-144-1EP_20x20mm_P0.5mm_EP4x4mm
_ThermalVias2



EQFP-144 footprint with its dimensions indicated.

HTQFP-64 footprints

Footprint names:
HTQFP-64-1EP_10x10mm_P0.5mm_EP8x8mm
HTQFP-64-1EP_10x10mm_P0.5mm_EP8x8mm
_Mask4.4x4.4mm_ThermalVias
HTQFP-64-1EP_10x10mm_P0.5mm_EP8x8mm
_ThermalVias
HTQFP-64-1EP_10x10mm_P0.5mm_EP8x8mm
_ThermalVias2



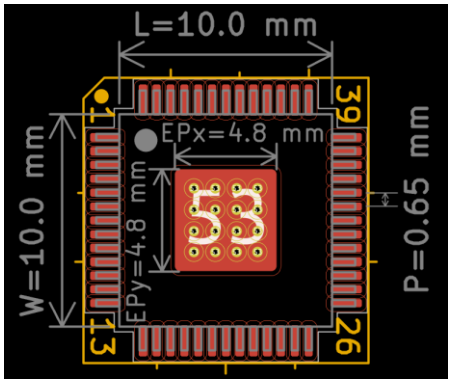
HTQFP-64 footprint with 4.4x4.4mm soldermask window visible.

Low-profile Quad Flat Pack (LQFP) footprints

Footprint count: 34

Footprint naming convention:
LQFP-<pin count>**-**<optional: exposed pad count>_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size>_<optional: ThermalVias/ThermalVias2>

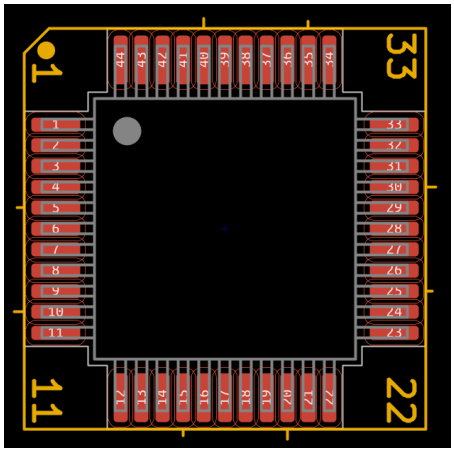
Name examples:
LQFP-80_14x14mm_P0.65mm
LQFP-64-1EP_10x10mm_P0.5mm_EP5x5mm
LQFP-52-1EP_10x10mm_P0.65mm_EP4.8x4.8mm_ThermalVias



LQFP-64-1EP "ThermalVias" footprint with its dimensions indicated.

MQFP-44 footprint

Footprint name:
MQFP-44_10x10mm_P0.8mm



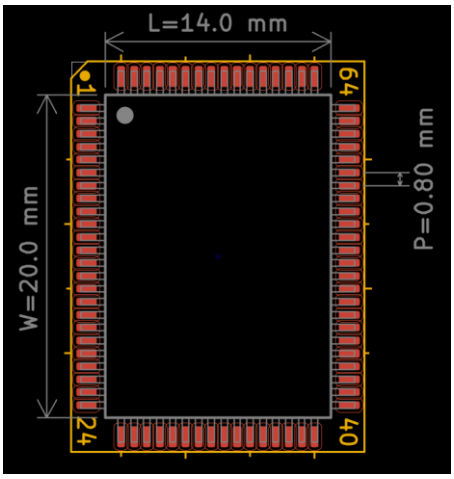
MQFP-44 footprint.

Plastic Quad Flat Pack (PQFP) footprints

Footprint count: **10**

Footprint naming convention:
PQFP-<pin count>_<length>**x**<width>**mm**
_**P**<pin pitch>**mm**

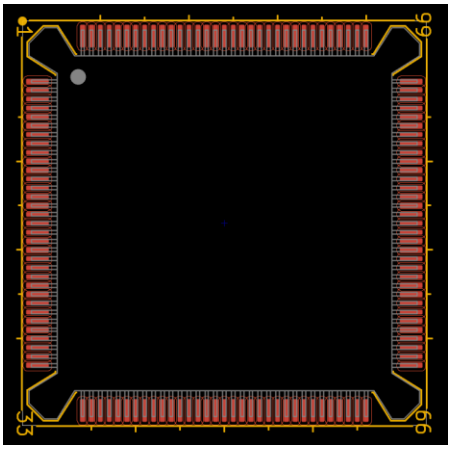
Name examples:
PQFP-100_14x20mm_P0.65mm
PQFP-256_28x28m_P0.4mm



PQFP-80 footprint with its dimensions indicated.

PQFP-132 Alternate style footprint

Footprint name:
PQFP-132_24x24mm_P0.635mm_i386



PQFP-132 footprint.

Thin Quad Flat Pack (TQFP) footprints

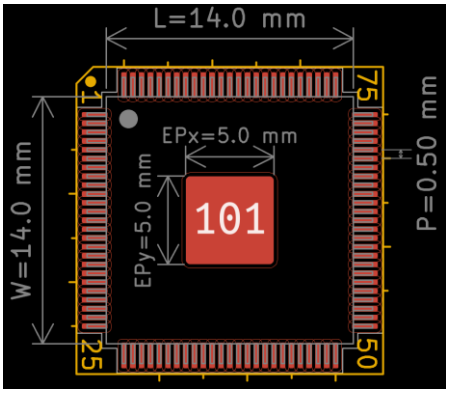
Footprint count: 36

Footprint naming convention:

TQFP-<pin count>**-**<optional: exposed pad count>_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size>_<optional: ThermalVias/ThermalVias2>

Name examples:

TQFP-32_7x7mm_P0.8mm
TQFP-48-1EP_7x7mm_P0.5mm_EP5x5mm
TQFP-100-1EP-14x14mm_P0.5mm_EP5x5mm_ThermalVias



TQFP-100-1EP footprint with its dimensions indicated.

Very thin Quad Flat Pack (VQFP) footprints

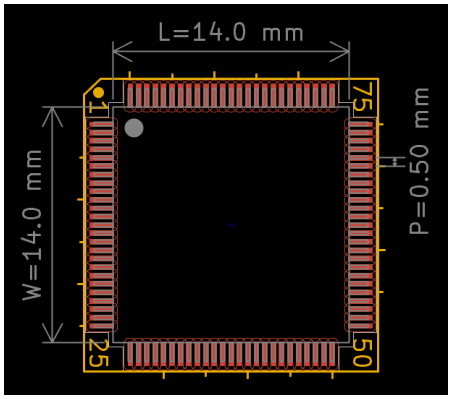
Footprint count: 4

Footprint naming convention:

VQFP-<pin count>_<length>**x**<width>**mm**_**P**<pin pitch>**mm**

Name examples:

VQFP-80_14x14mm_P0.65mm
VQFP-128_14x14mm_P0.4mm



VQFP-100 footprint with its dimensions indicated.

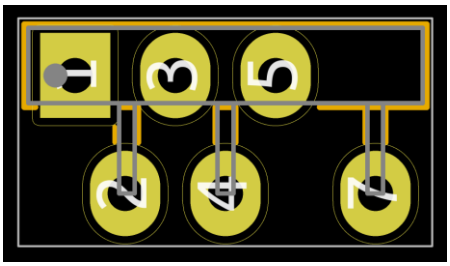
3.22. SIP Package Library

This library contains Single In-line Package (SIP) Integrated Circuit footprints

Standard variant	
Folder name: **`Package_SIP_AKL`**	
Footprint count:	**17**
Total footprints:	**17**

Power Integrations eSIP-7C footprint

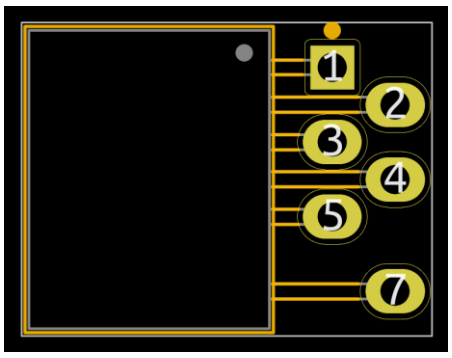
Footprint name:
PowerIntegrations_eSIP-7C



eSIP-7C footprint.

Power Integrations eSIP-7F footprint

Footprint name:
PowerIntegrations_eSIP-7F



eSIP-7F footprint.

SIP-8 footprints

Footprint names:
SIP-8
SIP-8_BigPads

SIP-8 footprint.

"BigPads" suffix denotes footprint with enlarged pads suitable for use with single-sided PCBs and helping with hand-soldering. This variant is the default footprint variant for all eligible AKL symbols.

SIP-9 footprints

SIP-9 "BigPads" footprint.

Footprint names:
SIP-9
SIP-9_BigPads

"BigPads" suffix denotes footprint with enlarged pads suitable for use with single-sided PCBs and helping with hand-soldering. This variant is the default footprint variant for all eligible AKL symbols.

SIP-10 footprints

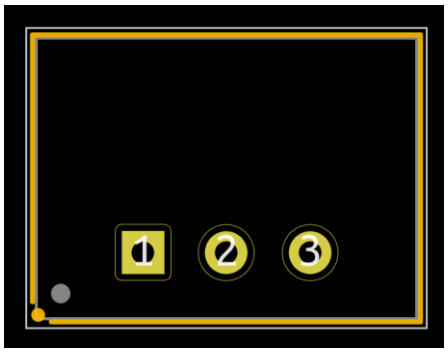
SIP-10 footprint.

Footprint names:
SIP-10
SIP-10_BigPads

"BigPads" suffix denotes footprint with enlarged pads suitable for use with single-sided PCBs and helping with hand-soldering. This variant is the default footprint variant for all eligible AKL symbols.

RECOM R78Exx Series DC-DC converter footprint

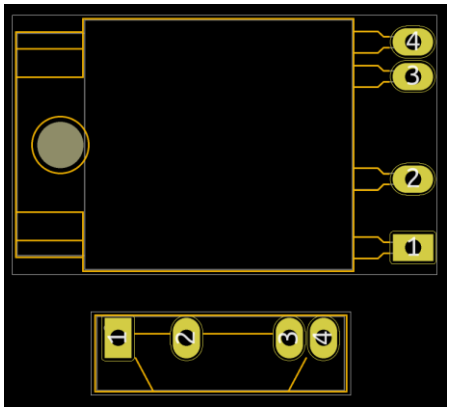
Footprint name:
SIP3_11.6x8.5mm
"BigPads" suffix denotes footprint with enlarged pads suitable for use with single-sided PCBs and helping with hand-soldering. This variant is the default footprint variant for all eligible AKL symbols.



R78Exx series footprint.

Sharp SIP-4 solid state relay footprints

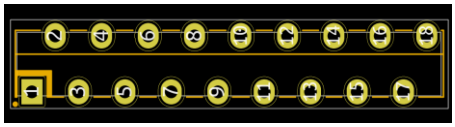
Footprint names:
SIP4_Sharp-SSR_P7.62mm_Angled
SIP4_Sharp-SSR_P7.62mm_Angled_NoHole
SIP4_Sharp-SSR_P7.62mm_Straight



SIP-4 SSR Angled footprint (top) and a straight footprint (bottom).

SLA704XM footprint

Footprint name:
SLA704XM



SLA704XM footprint.

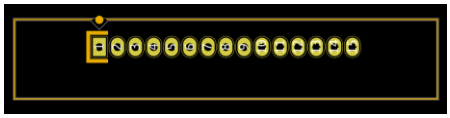
STK672-040-E footprint

Footprint name:
STK672-040-E

STK672-040-E footprint.

STK672-080-E footprint

Footprint name:
STK672-080-E



STK672-080-E footprint.

Sanyo STK-433E/STK-435E/STK-436E footprint

Footprint name:
Sanyo_STK4xx-15_59.2x8.0mm_P2.54mm

STK-433E/STK-435E/STK-436E footprint.

Sanyo STK-437E/STK-439E/STK-441E /STK-443E footprint

Footprint name:
Sanyo_STK4xx-15_78.0x8.0mm_P2.54mm

STK-437E/STK-439E/STK-441E/STK-443E footprint.

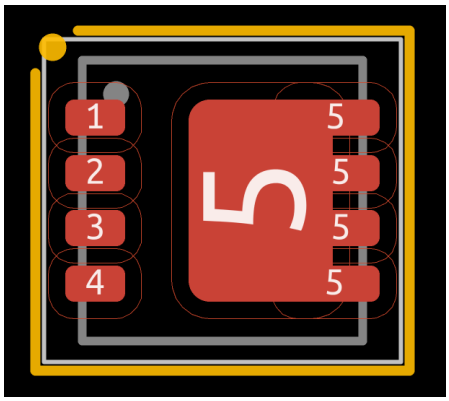
3.23. SON Package Library

This library contains footprints for Small Outline No-Lead (SON) transistor and IC packages.

Standard variant	
Folder name: `Package_SON_AKL`	
Footprint count:	**111** (+38)
Total footprints:	**111** (+38)

Diodes PowerDI3333-8 footprint

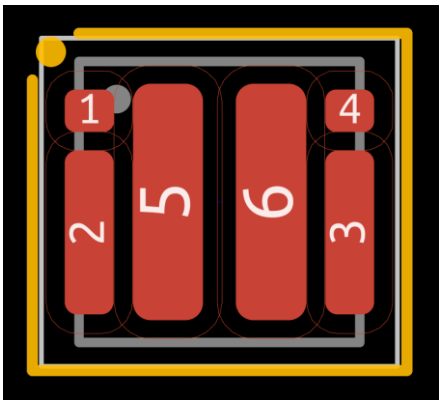
Footprint names:
Diodes_PowerDI3333-8
Diodes_PowerDI3333-8_ThermalVias



PowerDI3333-8 footprint.

Fairchild DualPower33-6 footprint

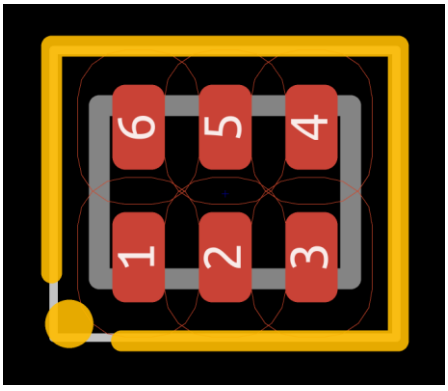
Footprint names:
Fairchild_DualPower33-6_3x3mm
Fairchild_DualPower33-6_3x3mm_ThermalVias



DualPower33-6 footprint.

Fairchild MicroPak-6 footprint

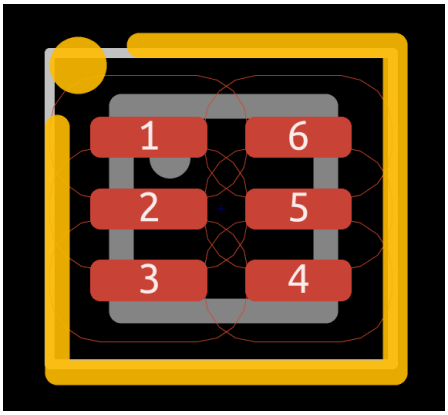
Footprint name:
Fairchild_MicroPak-6_1.0x1.45mm_P0.5mm



DualPower33-6 footprint.

Fairchild MicroPak2-6 footprint

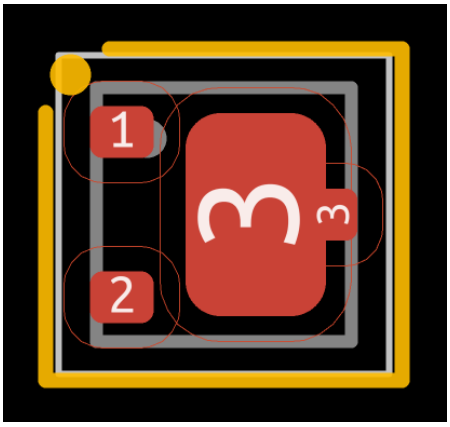
Footprint name:
Fairchild_MicroPak2-6_1.0x1.0mm_P0.35mm



DualPower33-6 footprint.

HUSON-3 footprint

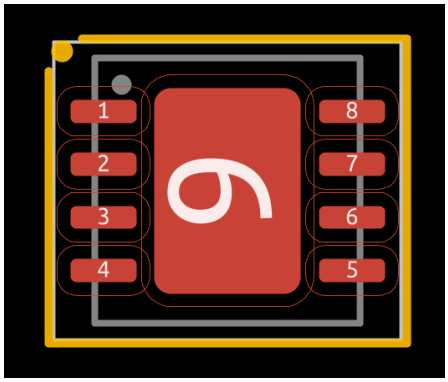
Footprint name:
HUSON-3-1EP_2x2mm_P1.3mm_EP1.1x1.6mm



HUSON-3 footprint.

HVSON-8 footprint

Footprint names:
HVSON-8-1EP_4x4mm_P0.8mm_EP2.2x3.1mm
HVSON-8-1EP_4x4mm_P0.8mm_EP2.2x3.1mm_ThermalVias
HVSON-8-1EP_4x4mm_P0.8mm_EP2.2x3.1mm_ThermalVias2

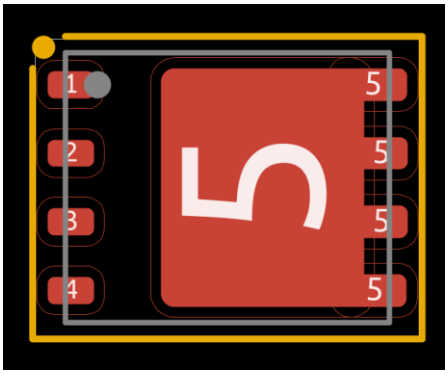


HVSON-8 footprint.

Infineon TDSON-8 footprint

Footprint names:
Infineon_PG-TDSON-8
Infineon_PG-TDSON-8_ThermalVias
Infineon_PG-TDSON-8_ThermalVias2

Industry standard 5x6mm SMD power transistor package.

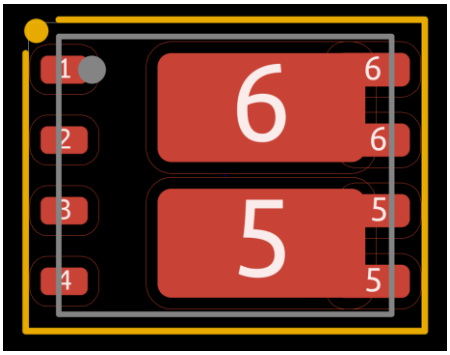


TDSON-8 footprint.

Infineon TDSON-8 "Dual" footprint

Footprint names:
Infineon_PG-TDSON-8_Dual
Infineon_PG-TDSON-8_Dual_ThermalVias
Infineon_PG-TDSON-8_Dual_ThermalVias2

This TDSON-8 footprint variant contains a split exposed pad for devices with two transistors in one package.

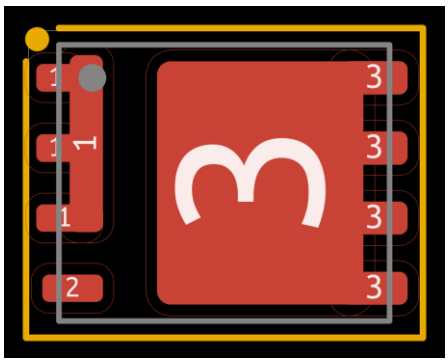


TDSON-8 "Dual" footprint.

Infineon TDSON-8 "Fused Leads" footprint

Footprint names:
Infineon_PG-TDSON-8_FL
Infineon_PG-TDSON-8_FL_ThermalVias
Infineon_PG-TDSON-8_FL_ThermalVias2

This TDSON-8 footprint variant has former pins 2 to 4 (normally used as a source terminal for a MOSFET) fused together to reduce series inductance and resistance.

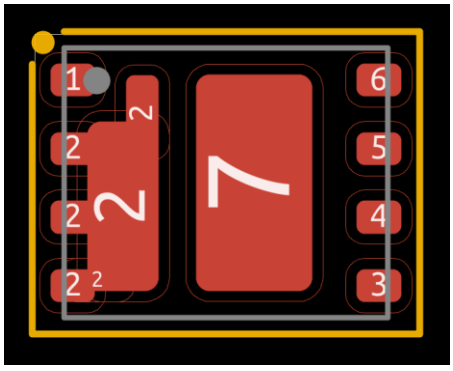


TDSON-8 "Fused Leads" footprint.

Infineon TISON-8-2/TISON-8-3 footprints

Footprint names:
Infineon_PG-TISON-8-2
Infineon_PG-TISON-8-2_ThermalVias
Infineon_PG-TISON-8-2_ThermalVias2
Infineon_PG-TISON-8-3
Infineon_PG-TISON-8-3_ThermalVias
Infineon_PG-TISON-8-3_ThermalVias2

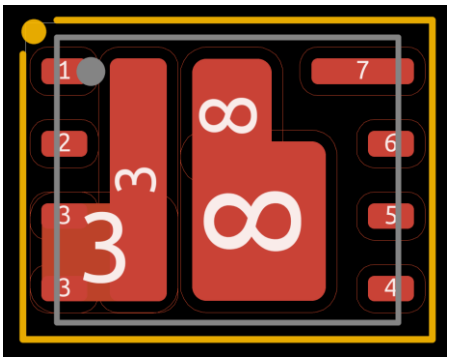
TISON-8-2 and TISON-8-3 have identical pad and solderpaste layout.



TISON-8-2 footprint.

Infineon TISON-8-4 footprint

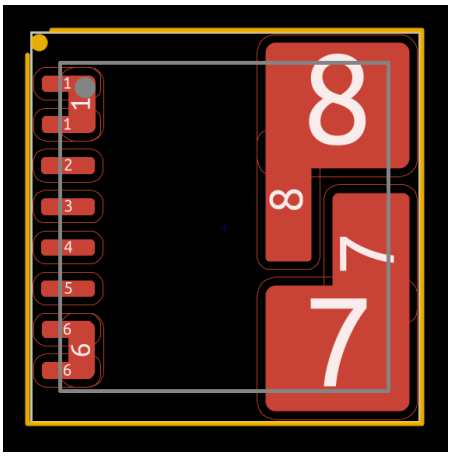
Footprint names:
Infineon_PG-TISON-8-4
Infineon_PG-TISON-8-4_ThermalVias
Infineon_PG-TISON-8-4_ThermalVias2



TISON-8-4 footprint.

Infineon TISON-8-5 footprint

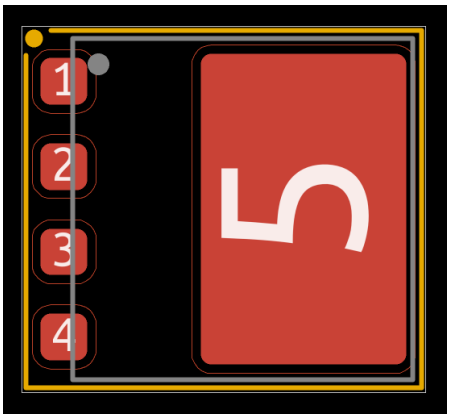
Footprint names:
Infineon_PG-TISON-8-5
Infineon_PG-TISON-8-5_ThermalVias



TISON-8-5 footprint.

Infineon ThinPAK 8x8 (VDSON-4) footprint

Footprint names:
Infineon_PG-VDSON-4_ThinPAK_8x8
Infineon_PG-VDSON-4_ThinPAK_8x8_ThermalVias
Infineon_PG-VDSON-4_ThinPAK_8x8_ThermalVias2

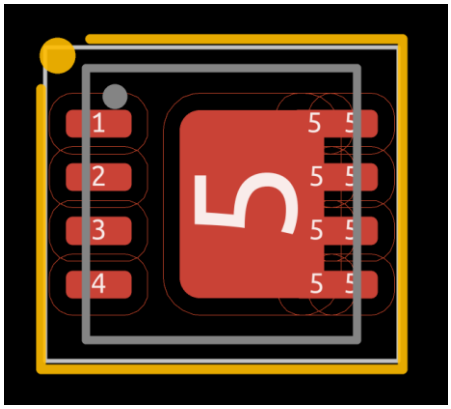


ThinPAK 8x8 footprint.

Infineon TSDSON-8 footprint

Footprint names:
Infineon_PG-TSDSON-8
Infineon_PG-TSDSON-8_ThermalVias
Infineon_PG-TSDSON-8_ThermalVias2

Industry standard 3.3x3.3mm SMD power transistor package.

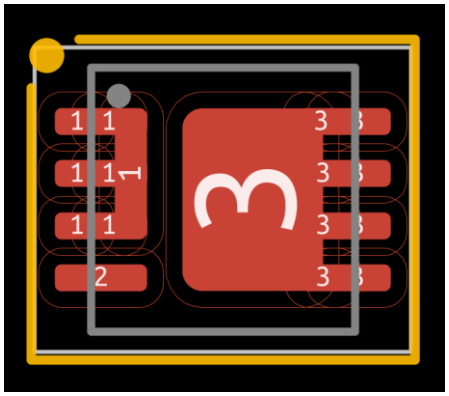


TSDSON-8 footprint.

Infineon TSDSON-8 "Fused Leads" footprint

Footprint names:
Infineon_PG-TSDSON-8_FL
Infineon_PG-TSDSON-8_FL_ThermalVias
Infineon_PG-TSDSON-8_FL_ThermalVias2

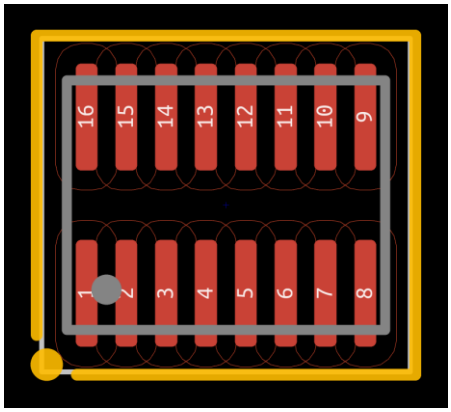
This TSDSON-8 footprint variant has former pins 1 to 3 (normally used as a source terminal for a MOSFET) fused together to reduce series inductance and resistance.



TSDSON-8 "Fused Leads" footprint.

NXP XSON-16 footprint

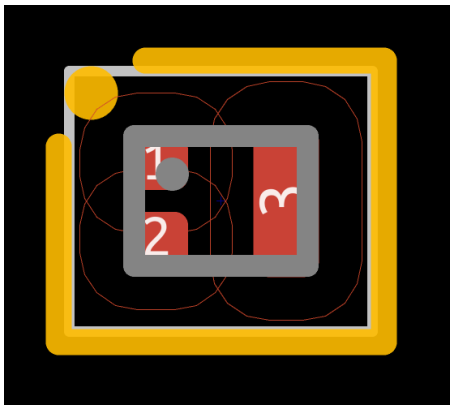
Footprint name:
NXP_XSON-16



XSON-16 footprint.

ROHM Semiconductor VML0806 footprint

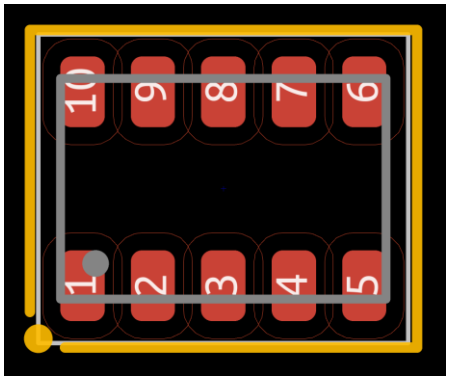
Footprint name:
ROHM_VML0806



VML0806 footprint.

Micro Crystal RV-1805-C3 RTC module footprint

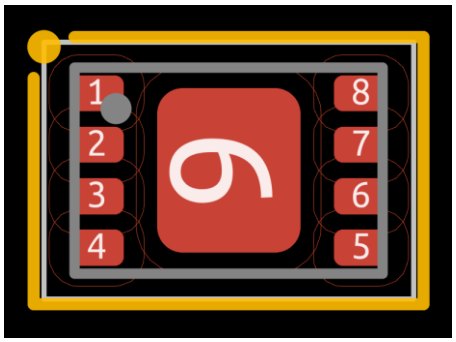
Footprint name:
RTC_SMD_MicroCrystal_C3_2.5x3.7mm



RV-1805-C3 footprint.

SON-8 3x2mm package footprint

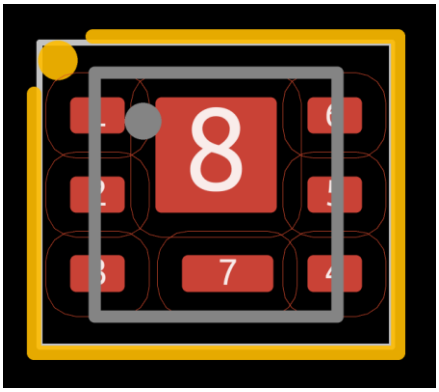
Footprint names:
SON-8-1EP_3x2mm_P0.5mm_EP1.4x1.6mm
SON-8-1EP_3x2mm_P0.5mm_EP1.4x1.6mm_ThermalVias



RV-1805-C3 footprint.

Texas Instruments DQK footprint

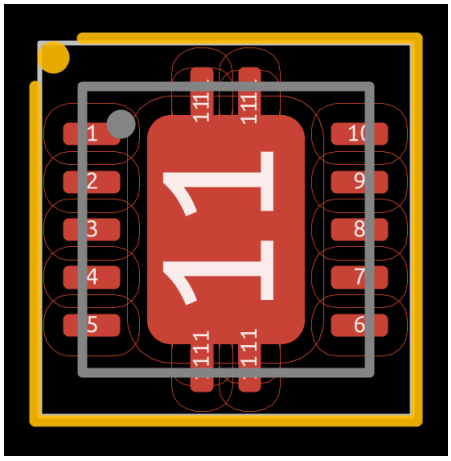
Footprint name:
Texas_DQK



DQK footprint.

Texas Instruments DRC0010J footprints

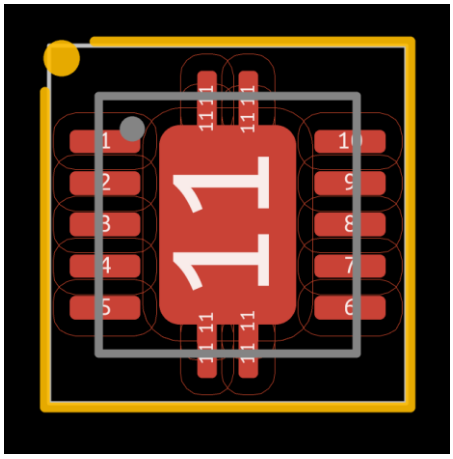
Footprint names:
Texas_DRC0010J
Texas_DRC0010J_ThermalVias



DRC0010J footprint.

Texas Instruments DSC0010J footprints

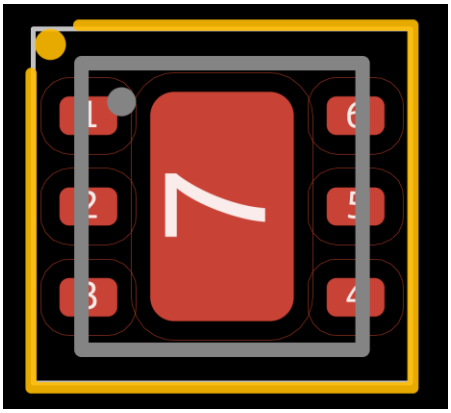
Footprint names:
Texas_DSC0010J
Texas_DSC0010J_ThermalVias



DSC0010J footprint.

Texas Instruments PWSON-N6 footprint

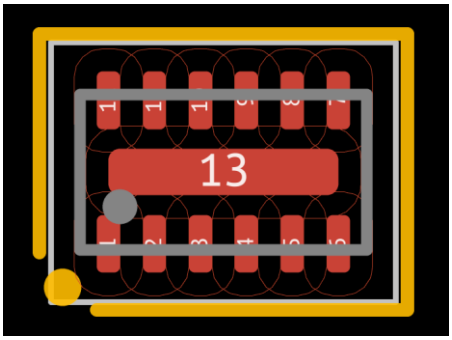
Footprint names:
Texas_PWSON-N6
Texas_PWSON-N6_ThermalVias



PWSON-N6 footprint.

Texas Instruments PWSON-N12 footprint

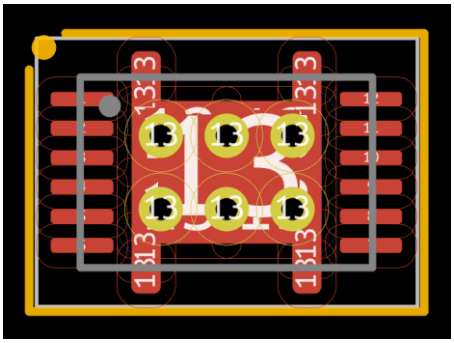
Footprint name:
Texas_R-PWSON-N12_EP0.4x2mm



PWSON-N12 footprint.

Texas Instruments PDSO-N12 footprint

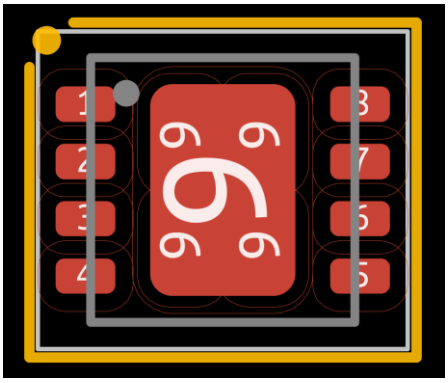
Footprint name:
Texas_S-PDSO-N12



PDSO-N12 footprint.

Texas Instruments PVSON-N8 footprints

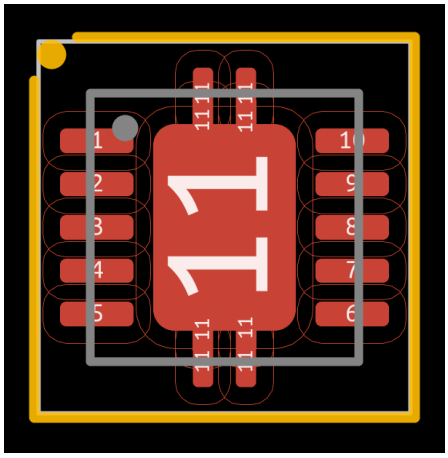
Footprint names:
Texas_S-PVSON-N8
Texas_S-PVSON-N8_ThermalVias
Texas_S-PVSON-N8_ThermalVias2



PVSON-N8 footprint.

Texas Instruments PVSON-N10 footprints

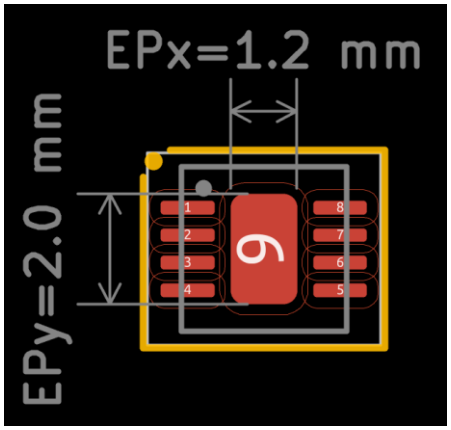
Footprint names:
Texas_S-PVSON-N10
Texas_S-PVSON-N10_ThermalVias



PVSON-N10 footprint.

Texas Instruments PWSON-N8 footprints

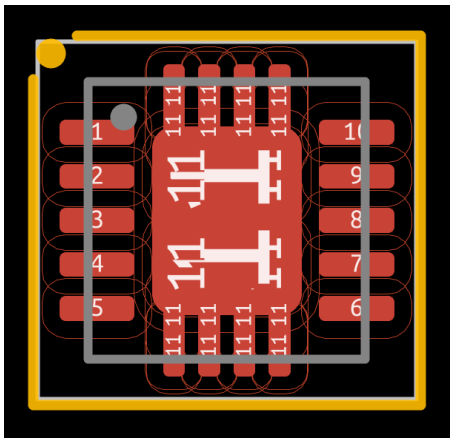
Footprint names:
Texas_S-PWSON-N8_EP1.2x2mm
Texas_S-PWSON-N8_EP1.2x2mm_ThermalVias
Texas_S-PWSON-N8_EP2.2x3mm
Texas_S-PWSON-N8_EP2.2x3mm_ThermalVias
Texas_S-PWSON-N8_EP2.2x3mm_ThermalVias2



PWSON-N8 footprint with exposed pad size indicated.

Texas Instruments PWSON-N10 footprints

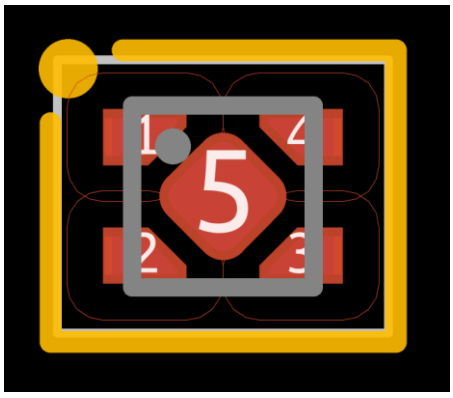
Footprint names:
Texas_S-PWSON-N10
Texas_S-PWSON-N10_ThermalVias



PWSON-N10 footprint.

Texas Instruments X2SON-4 footprint

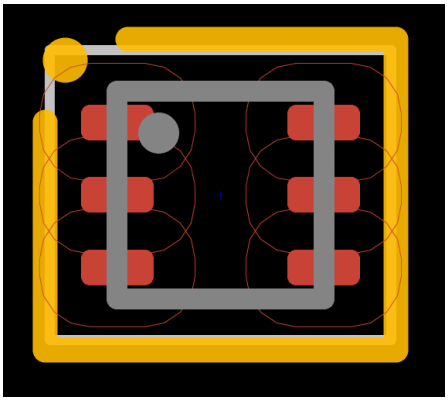
Footprint name:
Texas_X2SON-4_1x1mm_P0.65mm



X2SON-4 footprint.

Texas Instruments X2SON-6 footprint

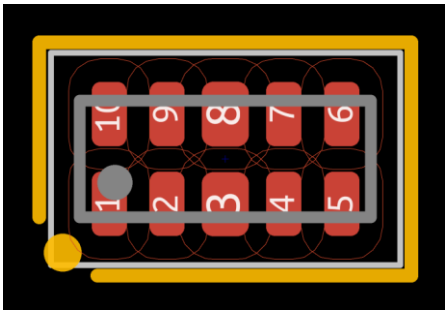
Footprint name:
Texas_X2SON-6_1x1mm_P0.35mm



X2SON-6 footprint.

USON-10 package footprint

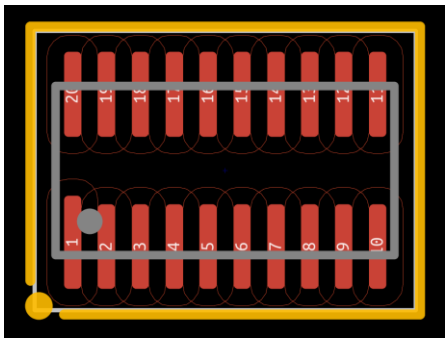
Footprint name:
USON-10_2.5x1.0mm_P0.5mm



USON-10 footprint.

USON-20 package footprint

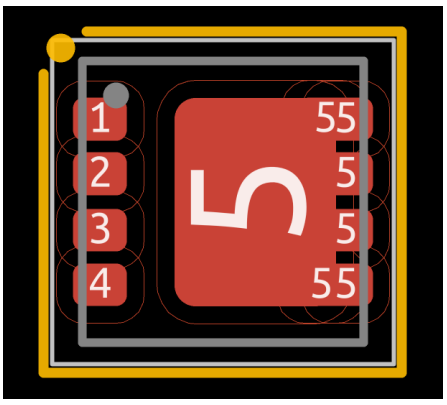
Footprint name:
USON-20_2x4mm_P0.4mm



USON-20 footprint.

VSON-8 package footprint

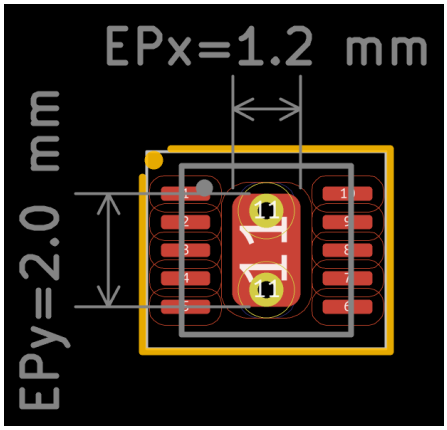
Footprint names:
VSON-8_3.3x3.3mm_P0.65mm_NexFET
VSON-8_3.3x3.3mm_P0.65mm_NexFET_ThermalVias



VSON-8 footprint.

VSON-10 footprints

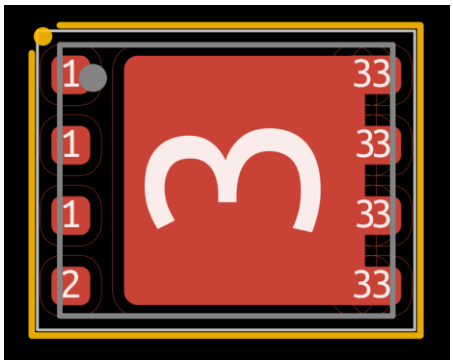
Footprint names:
VSON-10-1EP_3x3mm_P0.5mm_EP1.2x2mm
VSON-10-1EP_3x3mm_P0.5mm_EP1.2x2mm_ThermalVias
VSON-10-1EP_3x3mm_P0.5mm_EP1.65x2.4mm
VSON-10-1EP_3x3mm_P0.5mm_EP1.65x2.4mm
_ThermalVias



VSON-10 "ThermalVias" footprint with exposed pad size indicated.

VSONP-8 package footprint

Footprint names:
VSONP-8-1EP_5x6_P1.27mm
VSONP-8-1EP_5x6_P1.27mm_ThermalVias
VSONP-8-1EP_5x6_P1.27mm_ThermalVias2



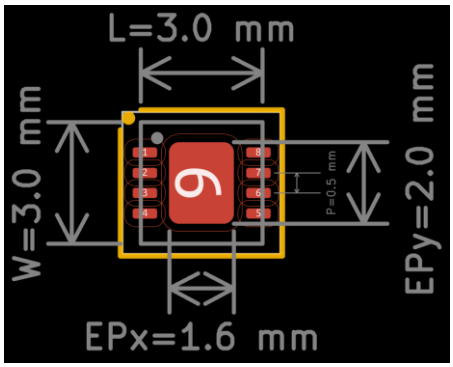
VSONP-8 footprint.

WSON package footprints

Footprint count: **36**

Footprint naming convention:
WSON-<pin count>**-**<optional: exposed pad count>_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size>_<optional: PullBack>_<optional: ThermalVias/ThermalVias2>

"PullBack" option denotes footprints with shorter pads.

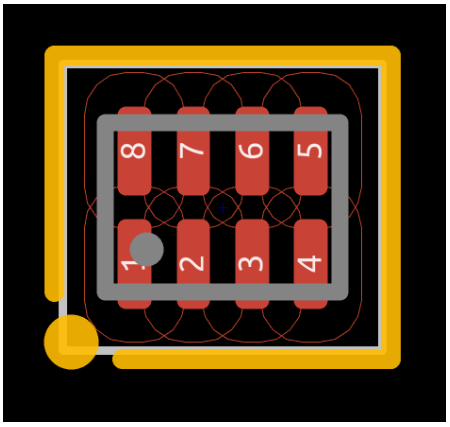


WSON footprint with its dimensions indicated.

Name examples:
WSON-6_1.5x1.5mm_P0.5mm
WSON-8-1EP_2x2mm_P0.5mm_EP0.9x1.6mm
WSON-10-1EP_2x3mm_P0.5mm_EP0.84x2.4mm_ThermalVias
WSON-8-1EP_3x2.5mm_P0.5mm_EP1.2x1.5mm_PullBack
WSON-8-1EP_3x2.5mm_P0.5mm_EP1.2x1.5mm_PullBack_ThermalVias

X2SON-8 package footprint

Footprint name:
X2SON-8_1.4x1mm_P0.35mm



X2SON-8 footprint.

3.24. SO Package Library

This library contains footprints for Small Outline IC packages (SO, SOIC, SOP, SSOP, TSSOP, MSOP etc.).

Silkscreen layer contains marks every 5 pins for some of the larger footprints.

Standard variant	
Folder name: **`Package_SO_AKL`**	
Footprint count:	**379**(+81)
Total footprints:	**379**(+81)

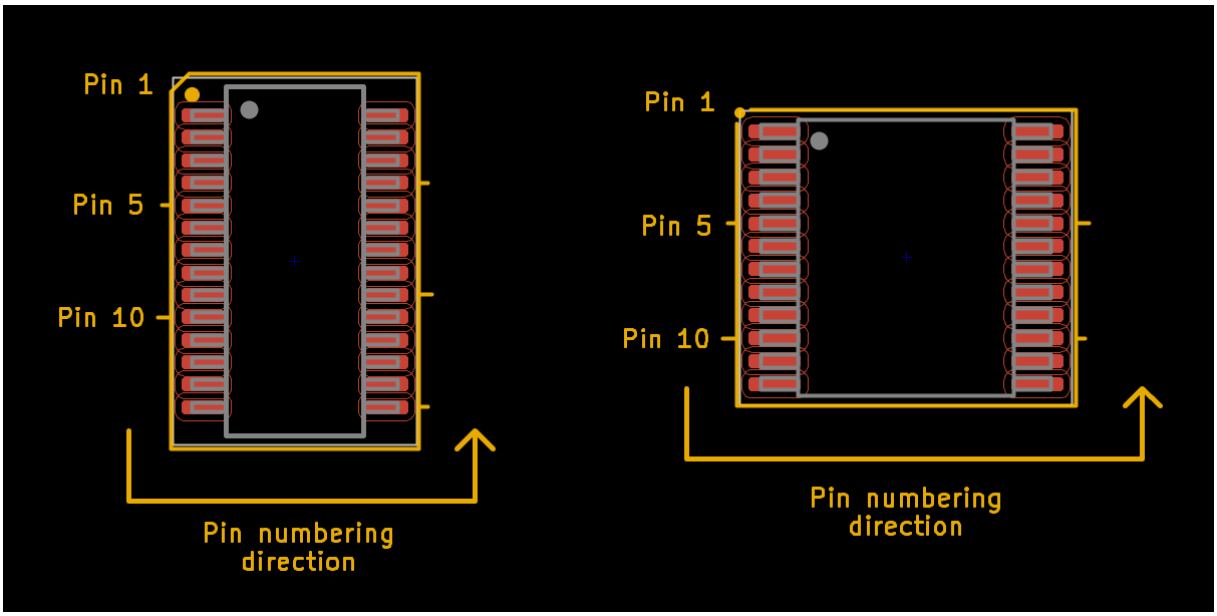
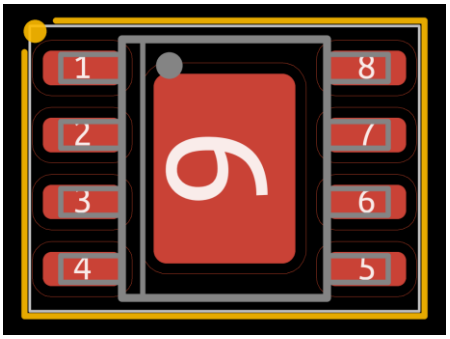


Figure 3.39. *Two SO-style package footprints showcasing the pin number indicators.*

Diodes PSOP-8 footprint

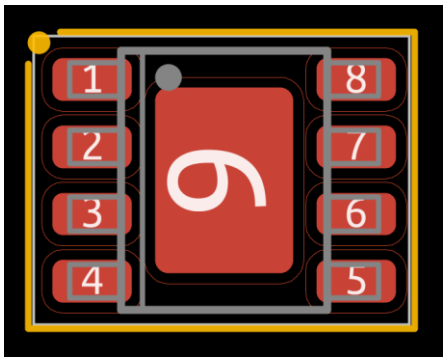
Footprint names:
Diodes_PSOP-8
Diodes_PSOP-8_ThermalVias
Diodes_PSOP-8_ThermalVias2



PSOP-8 footprint.

Diodes SO-8EP footprint

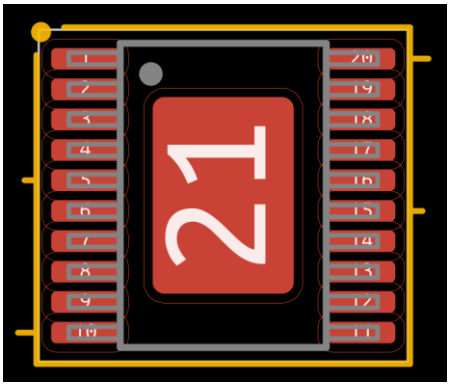
Footprint names:
Diodes_SO-8EP
Diodes_SO-8EP_ThermalVias
Diodes_SO-8EP_ThermalVias2



SO-8EP footprint.

ETSSOP-20 footprint

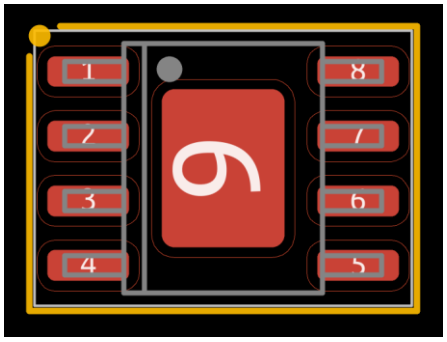
Footprint names:
ETSSOP-20-1EP_4.4x6.5mm_P0.65mm_EP3x4.2mm
ETSSOP-20-1EP_4.4x6.5mm_P0.65mm_EP3x4.2mm
_ThermalVias
ETSSOP-20-1EP_4.4x6.5mm_P0.65mm_EP3x4.2mm
_ThermalVias2



ETSSOP-20 footprint.

HSOP-8 footprints

Footprint names:
HSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.41x3.1mm
HSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.41x3.1mm
_ThermalVias
HSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.41x3.1mm
_ThermalVias2



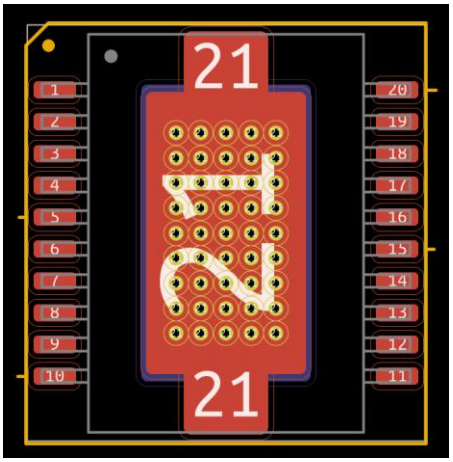
HSOP-8 footprint.

HSOP-20 footprints

Footprint names:
HSOP-20-1EP_11.0x15.9mm_P1.27mm_SlugDown
HSOP-20-1EP_11.0x15.9mm_P1.27mm_SlugDown
_ThermalVias
HSOP-20-1EP_11.0x15.9mm_P1.27mm_SlugDown
_ThermalVias2
HSOP-20-1EP_11.0x15.9mm_P1.27mm_SlugUp

"SlugDown" option denotes footprints with the thermal slug on the bottom, contacting the PCB.

"SlugUp" option denotes footprint for package variant with the thermal slug on the top side, facing away from the PCB.



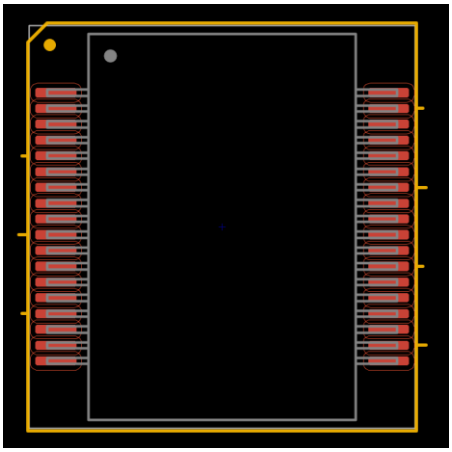
HSOP-20 "ThermalVias" "SlugDown" footprint.

HSOP-36 footprints

Footprint names:
HSOP-36-1EP_11.0x15.9mm_P0.65mm_SlugDown
HSOP-36-1EP_11.0x15.9mm_P0.65mm_SlugDown
_ThermalVias
HSOP-36-1EP_11.0x15.9mm_P0.65mm_SlugDown
_ThermalVias2
HSOP-36-1EP_11.0x15.9mm_P0.65mm_SlugUp

"SlugDown" option denotes footprints with the thermal slug on the bottom, contacting the PCB.

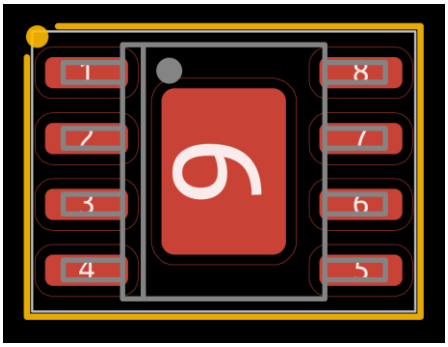
"SlugUp" option denotes footprint for package variant with the thermal slug on the top side, facing away from the PCB.



HSOP-36 "SlugUp" footprint.

HTSOP-8 footprints

Footprint names:
HTSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.4x3.2mm
HTSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.4x3.2mm
_ThermalVias
HTSOP-8-1EP_3.9x4.9mm_P1.27mm_EP2.4x3.2mm
_ThermalVias2



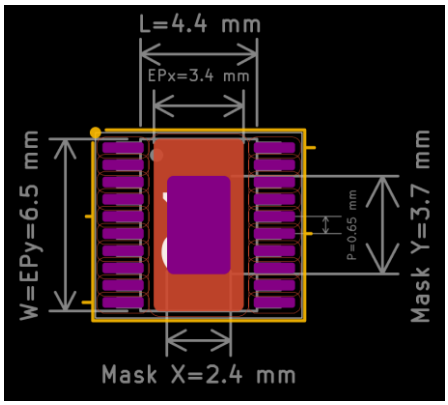
HTSOP-8 footprint.

Heatsink Thin Shrink Small Outline Package (HTSSOP) footprints

Footprint count: 48

Footprint naming convention:
HTSSOP-<pin count>**-**<exposed pad count>**EP**_<length>**x**<width>**mm_P**<pin pitch>**mm**_<exposed pad size>_<optional: soldermask opening size>_<optional: ThermalVias/ThermalVias2>

Footprints with "Mask" have a smaller soldermask opening than EP copper.

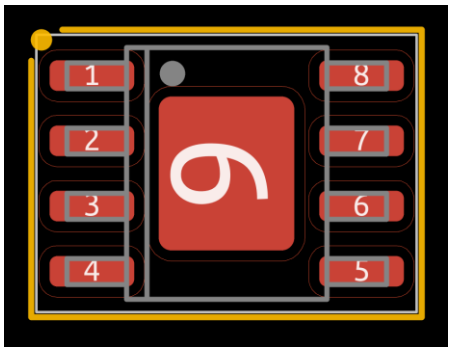


HTSSOP-20 "Mask" footprint with its dimensions indicated.

Name examples:
HTSSOP-16-1EP_4.4x5mm_P0.65mm_EP3.4x5mm
HTSSOP-28-1EP_4.4x9.7mm_P0.65mm_EP2.85x5.4mm_ThermalVias
HTSSOP-20-1EP_4.4x6.5mm_P0.65mm_EP3.4x6.5mm_Mask2.75x3.43mm
HTSSOP-24-1EP_4.4x7.8mm_P0.65mm_EP3.4x7.8mm_Mask2.4x4.68mm_ThermalVias

Infineon PG-DSO-8-27 footprints

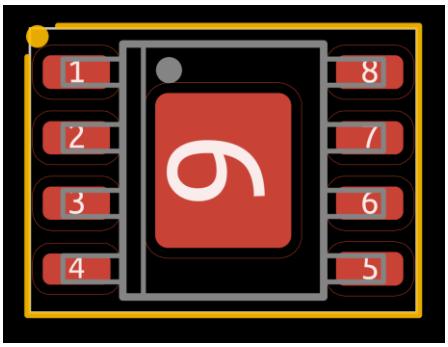
Footprint names:
Infineon_PG-DSO-8-27_3.9x4.9mm_EP2.65x3mm
Infineon_PG-DSO-8-27_3.9x4.9mm_EP2.65x3mm_ThermalVias
Infineon_PG-DSO-8-27_3.9x4.9mm_EP2.65x3mm_ThermalVias2



PG-DSO-8-27 footprint.

Infineon PG-DSO-8-43 footprint

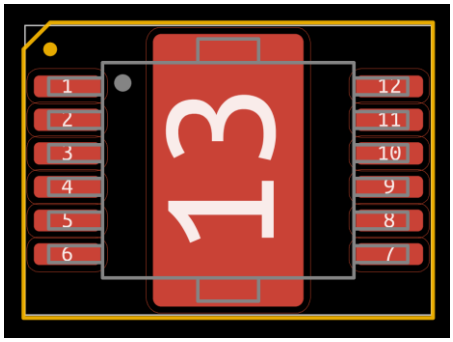
Footprint name:
Infineon_PG-DSO-8-43
Infineon_PG-DSO-8-43_ThermalVias
Infineon_PG-DSO-8-43_ThermalVias2



PG-DSO-8-43 footprint.

Infineon PG-DSO-12-9 footprints

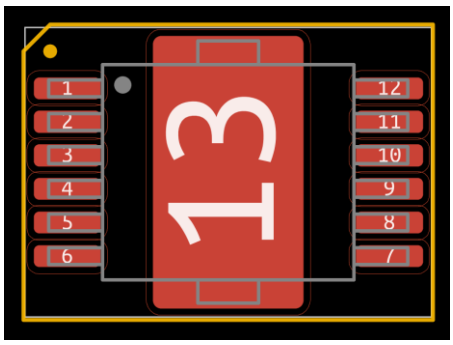
Footprint names:
Infineon_PG-DSO-12-9
Infineon_PG-DSO-12-9_ThermalVias
Infineon_PG-DSO-12-9_ThermalVias2



PG-DSO-12-9 footprint.

Infineon PG-DSO-12-11 footprints

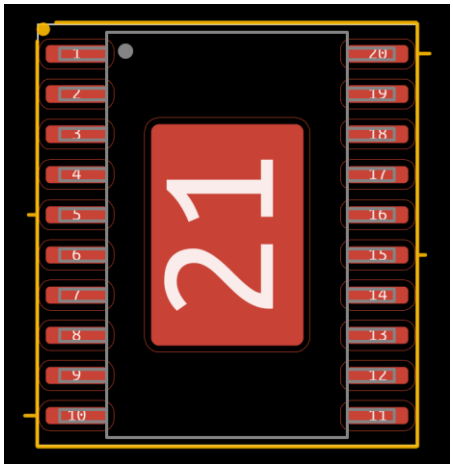
Footprint names:
Infineon_PG-DSO-12-11
Infineon_PG-DSO-12-11_ThermalVias
Infineon_PG-DSO-12-11_ThermalVias2



PG-DSO-12-11 footprint.

Infineon PG-DSO-20-30 footprints

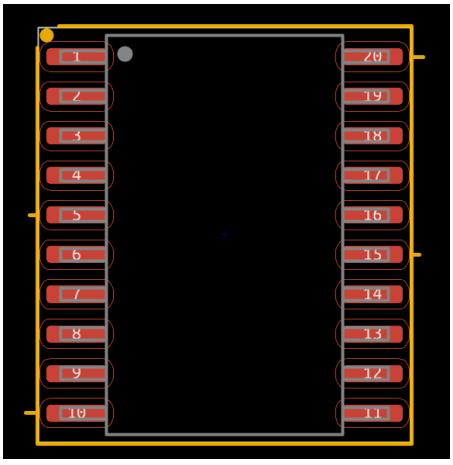
Footprint names:
Infineon_PG-DSO-20-30
Infineon_PG-DSO-20-30_ThermalVias
Infineon_PG-DSO-20-30_ThermalVias2



PG-DSO-20-30 footprint.

Infineon PG-DSO-20-32 footprint

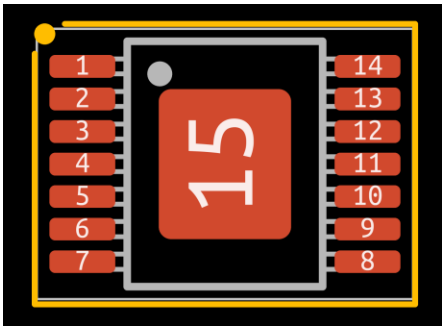
Footprint name:
Infineon_PG-DSO-20-32



PG-DSO-20-32 footprint.

Infineon PG-SSOP-14 footprints

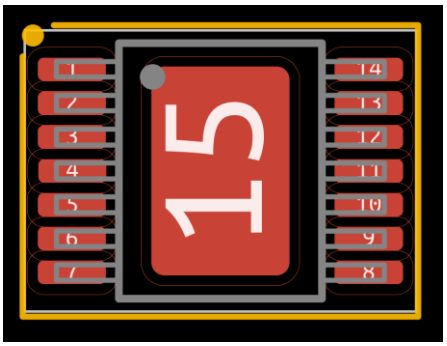
Footprint names:
Infineon_PG-SSOP-14
Infineon_PG-SSOP-14_ThermalVias
Infineon_PG-SSOP-14_ThermalVias2



PG-SSOP-14 footprint.

Infineon PG-TSDSO-14-22 footprint

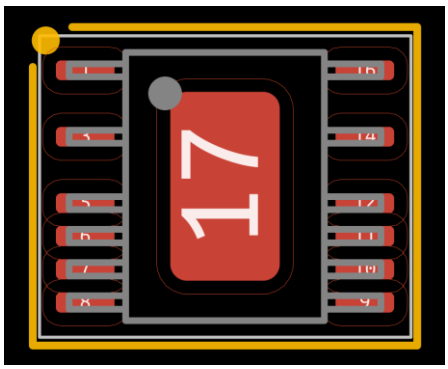
Footprint names:
Infineon_PG-TSDSO-14-22
Infineon_PG-TSDSO-14-22_ThermalVias
Infineon_PG-TSDSO-14-22_ThermalVias2



PG-TSDSO-14-22 footprint.

Linear Technology MSE16 (12) footprint

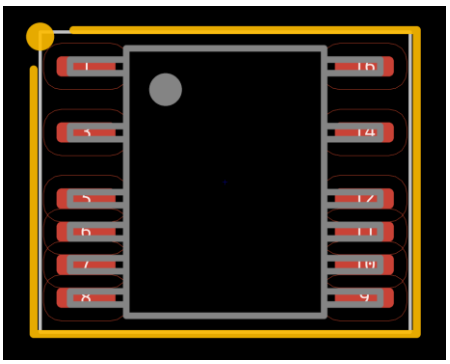
Footprint names:
Linear_MSOP-12-16-1EP_3x4mm_P0.5mm
Linear_MSOP-12-16-1EP_3x4mm_P0.5mm_ThermalVias
Linear_MSOP-12-16-1EP_3x4mm_P0.5mm_ThermalVias2



MSE16 (12) footprint.

Linear Technology MS16 (12) footprint

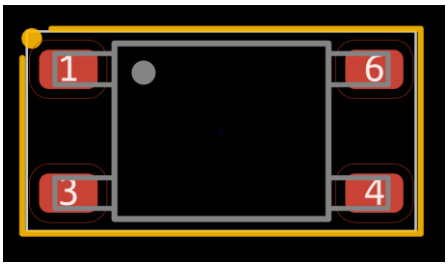
Footprint name:
Linear_MSOP-12-16_3x4mm_P0.5mm



MS16 (12) footprint.

MFSOP-4 footprint

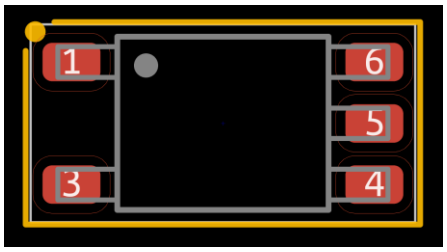
Footprint name:
MFSOP6-4_4.4x3.6mm_P1.27mm



MFSOP-4 footprint.

MFSOP-5 footprint

Footprint name:
MFSOP6-5_4.4x3.6mm_P1.27mm



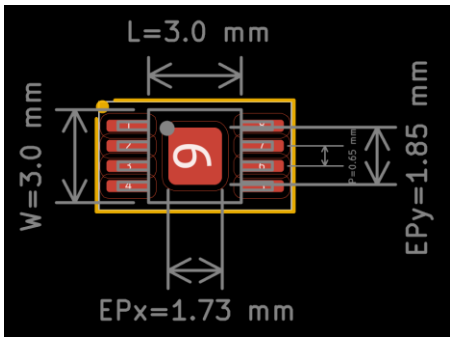
MFSOP-5 footprint.

Micro Small Outline Package (MSOP) footprints

Footprint count: **35**

Footprint naming convention:
MSOP-<pin count>**-**<optional: exposed pad count>_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size>_<optional: soldermask opening size>_<optional: ThermalVias/ThermalVias2>

Footprints with "Mask" have a smaller soldermask opening than EP copper.

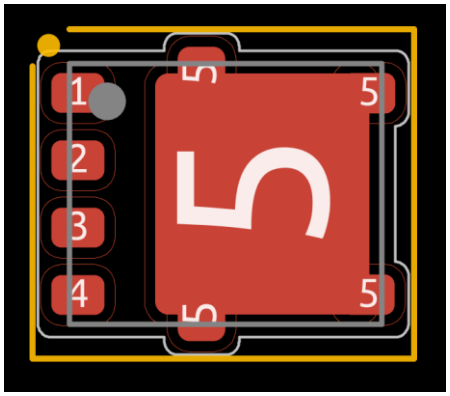


MSOP-8 footprint with its dimensions indicated.

Name examples:
MSOP-8_3x3mm_P0.65mm
MSOP-10-1EP_3x3mm_P0.5mm_EP1.68x1.88mm
MSOP-12-1EP_3x4mm_P0.65mm_EP1.65x2.85mm_ThermalVias
MSOP-8-1EP_3x3_P0.65mm_EP2.5x3mm_Mask1.73x2.63mm

OnSemi SO-8FL footprint

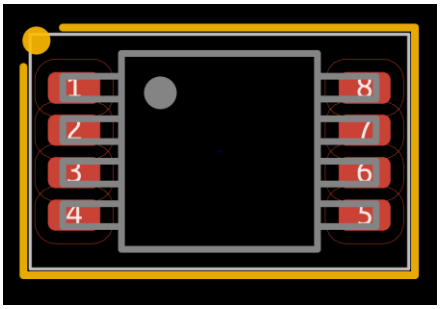
Footprint name:
ONSemi_SO-8FL_488AA
ONSemi_SO-8FL_488AA_ThermalVias



SO-8FL footprint.

OnSemi Micro8 footprint

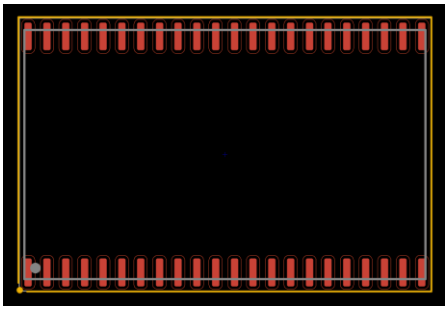
Footprint name:
OnSemi_Micro8



Micro8 footprint.

PSOP-44 footprint

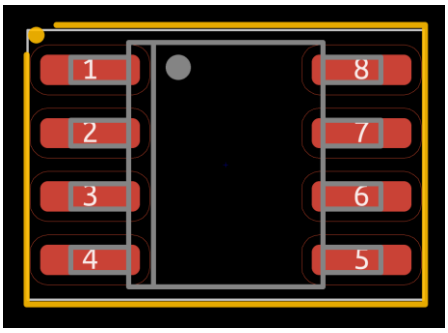
Footprint name:
PSOP-44_16.9x27.17mm_P1.27mm



PSOP-44 footprint.

Power Integrations SO-8 footprint

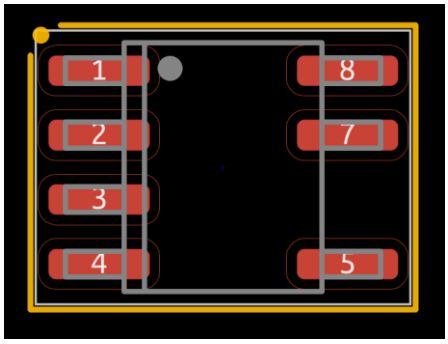
Footprint name:
PowerIntegrations_SO-8



SO-8 footprint.

Power Integrations SO-8B footprint

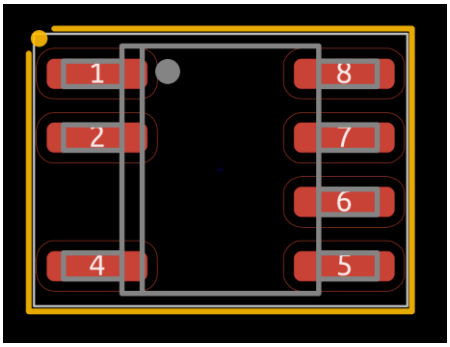
Footprint name:
PowerIntegrations_SO-8B



SO-8B footprint.

Power Integrations SO-8C footprint

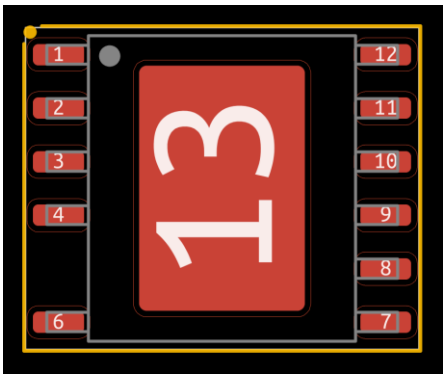
Footprint name:
PowerIntegrations_SO-8C



SO-8C footprint.

Power Integrations eSOP-12B footprint

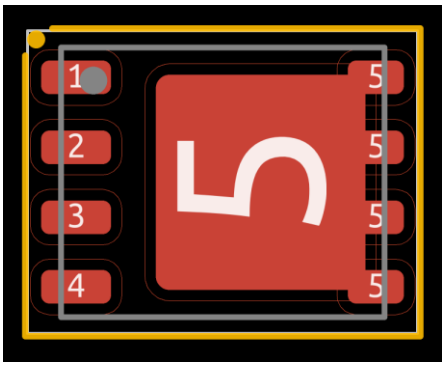
Footprint names:
PowerIntegrations_eSOP-12B
PowerIntegrations_eSOP-12B_ThermalVias
PowerIntegrations_eSOP-12B_ThermalVias2



eSOP-12B footprint.

PowerPAK SO-8 footprint

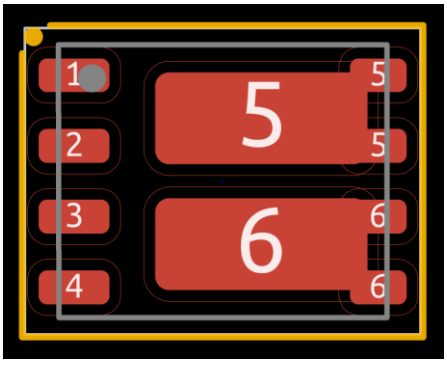
Footprint name:
PowerPAK_SO-8_Single
PowerPAK_SO-8_Single_ThermalVias



PowerPAK SO-8 footprint.

PowerPAK SO-8 Dual footprint

Footprint name:
PowerPAK_SO-8_Dual
PowerPAK_SO-8_Dual_ThermalVias



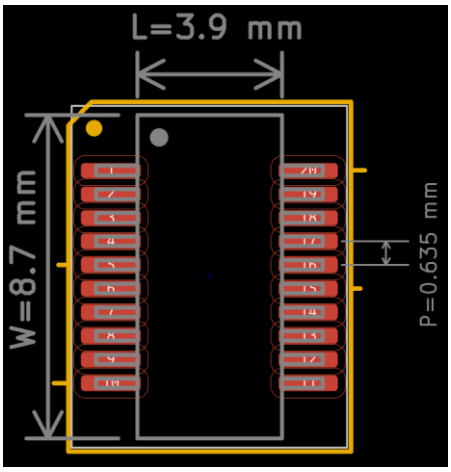
PowerPAK SO-8 Dual footprint.

Quarter Size Outline Package (QSOP) footprints

Footprint count: 3

Footprint naming convention:
QSOP-<pin count>_<length>**x**<width>**mm**
_**P**<pin pitch>**mm**

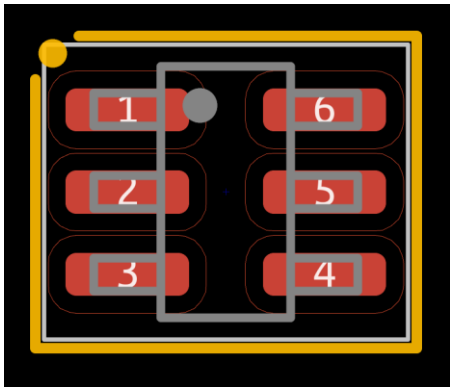
Footprint names:
QSOP-16_3.9x4.9mm_P0.635mm
QSOP-20_3.9x8.7mm_P0.635mm
QSOP-24_3.9x8.7mm_P0.635mm



QSOP-20 footprint with its dimensions indicated.

SC-74-6 footprint

Footprint name:
SC-74-6_1.5x2.9mm_P0.95mm



SC-74-6 footprint.

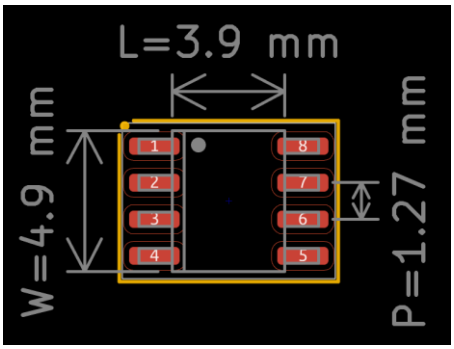
Small Outline (SO) footprints

Footprint count: 28

Footprint naming convention:
SO-<pin count>_<length>**x**<width>**mm**
**P**<pin pitch>**mm**<optional: _Wide>

"Wide" option denotes footprints with longer pins for better high voltage clearance.

Name examples:
SO-5_4.4x3.6mm_P1.27mm
SO-6_6.8x4.6mm_P1.27mm_Wide
SO-14_5.3x10.2mm_P1.27mm



SO-8 footprint with its dimensions indicated.

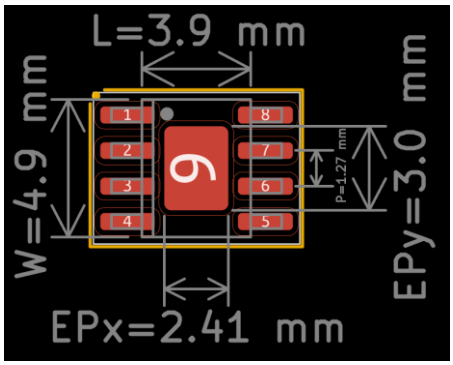
Small Outline Integrated Circuit (SOIC) footprints

Footprint count: 39

Footprint naming convention:
SOIC-<pin count>**<**optional: W for wide package>**-**<optional: N – pin count for packages with reduced pins>_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size>_<optional: soldermask opening size>_<optional: ThermalVias/ThermalVias2>

Footprints with "Mask" have a smaller soldermask opening than EP copper.

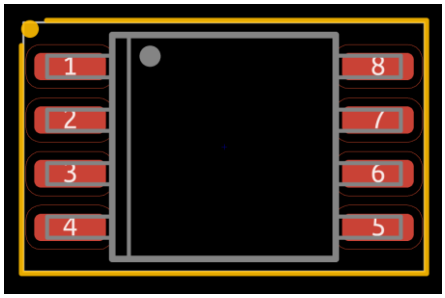
Name examples:
SOIC-4_4.55x2.6mm_P1.27mm
SOIC-N7_3.9x4.9mm_P1.27mm
SOIC-14W_7.5x9mm_P1.27mm
SOIC-8-1EP_3.9x4.9mm_P1.27mm_EP2.29x3mm_ThermalVias



SOIC-8 footprint with its dimensions indicated.

Microchip SOJJ-8 footprint

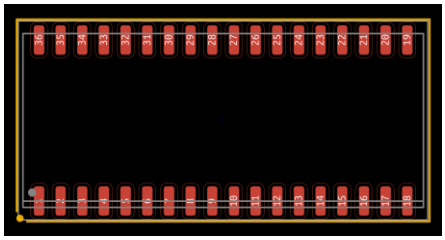
Footprint name:
SOJJ-8_5.3x5.3mm_P1.27mm



SOJJ-8 footprint.

SOJ-36 footprint

Footprint name:
SOJ-36_10.16x23.49_P1.27mm



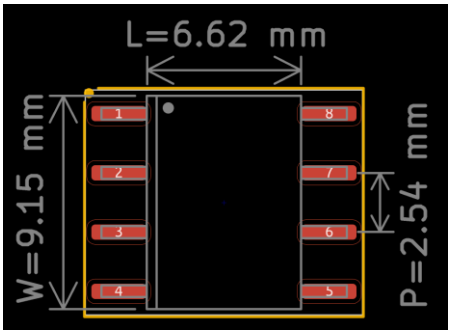
SOJ-36 footprint.

Small Outline Package (SOP) footprints

Footprint count: 12

Footprint naming convention:
SOP-<pin count>_<optional: exposed pad count>_<length>**x**<width>**mm_P**<pin pitch>**mm** _<optional: exposed pad size>_<optional: ThermalVias>

"ThermalVias" option denotes footprints with pre-placed heat-sinking vias.



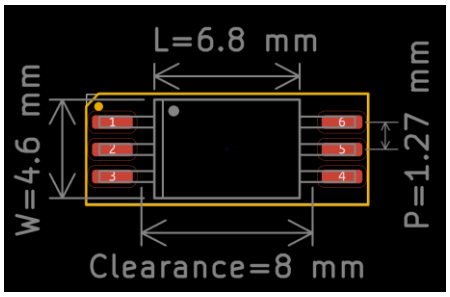
SOP-8 footprint with its dimensions indicated.

Name examples:
SOP-8_3.76x4.96mm_P1.27mm
SOP-24_7.5x15.4mm_P1.27mm
SOP-8-1EP_4.57x4.57mm_P1.27mm_EP4.57x4.45mm_ThermalVias

Stretched Small Outline (SSO) footprints

Footprint count: 8

Footprint naming convention:
SSO-<pin count>_<length>**x**<width>**mm_P**<pin pitch>**mm** **_Clearance**<pad-to-pad clearance>**mm**



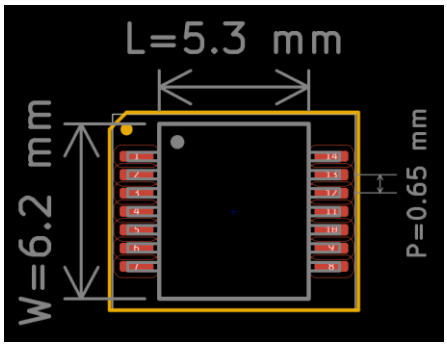
SSO-6 footprint with its dimensions indicated.

Name examples:
SSO-4_6.7x5.1mm_P2.54mm_Clearance8mm
SSO-8_9.6x6.3mm_P1.27mm_Clearance10.5mm

Shrink Small Outline Package (SSOP) footprints

Footprint count: 22

Footprint naming convention:
SSOP-<pin count>_<length>**x**<width>**mm** **_P**<pin pitch>**mm**

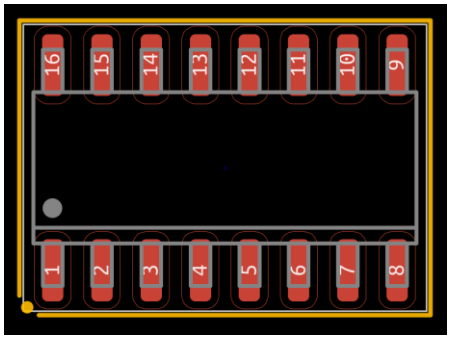


SSOP-14 footprint with its dimensions indicated.

Name examples:
SSOP-8_2.95x2.8mm_P0.65mm
SSOP-20_3.9x8.7mm_P0.635mm
SSOP-44_5.3x12.8mm_P0.5mm

STC SOP-16 footprint

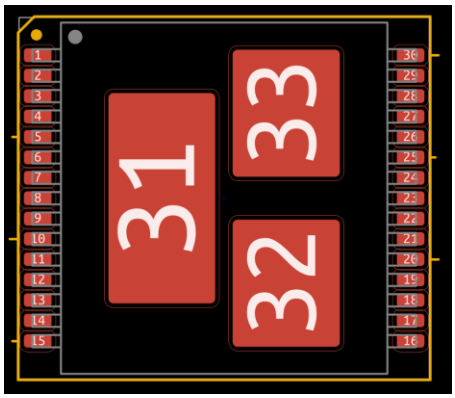
Footprint name:
STC_SOP-16_3.9x9.9mm_P1.27mm



SOP-16 footprint.

ST Microelectronics MultiPowerSO-30 footprint

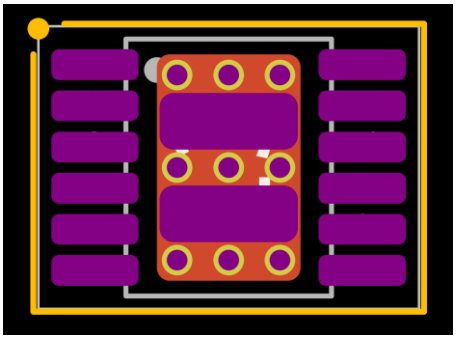
Footprint names:
ST_MultiPowerSO-30
ST_MultiPowerSO-30_ThermalVias



MultiPowerSO-30 footprint.

ST Microelectronics PowerSSO-12 footprint

Footprint names:
ST_PowerSSO-12
ST_PowerSSO-12_ThermalVias
ST_PowerSSO-12_ThermalVias2



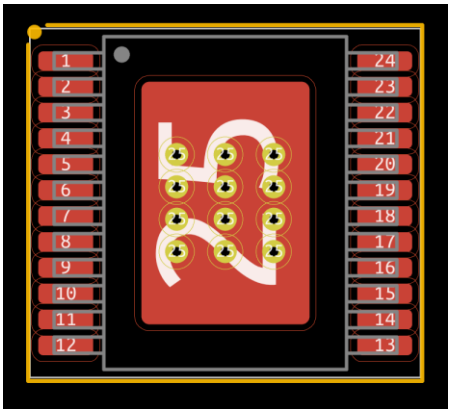
PowerSSO-12 "ThermalVias2" footprint.

ST Microelectronics PowerSSO-24 footprints

Footprint names:
ST_PowerSSO-24_SlugDown
ST_PowerSSO-24_SlugDown_ThermalVias
ST_PowerSSO-24_SlugDown_ThermalVias2
ST_PowerSSO-24_SlugUp

"SlugDown" option denotes footprints with the thermal slug on the bottom, contacting the PCB.

"SlugUp" option denotes footprint for package variant with the thermal slug on the top side, facing away from the PCB.



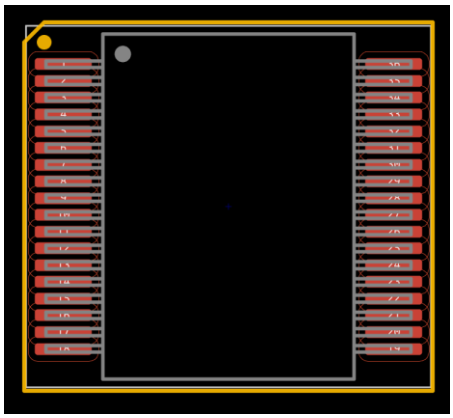
PowerSSO-24 "ThermalVias" "SlugDown" footprint.

ST Microelectronics PowerSSO-36 footprints

Footprint names:
ST_PowerSSO-36_SlugDown
ST_PowerSSO-36_SlugDown_ThermalVias
ST_PowerSSO-36_SlugDown_ThermalVias2
ST_PowerSSO-36_SlugUp

"SlugDown" option denotes footprints with the thermal slug on the bottom, contacting the PCB.

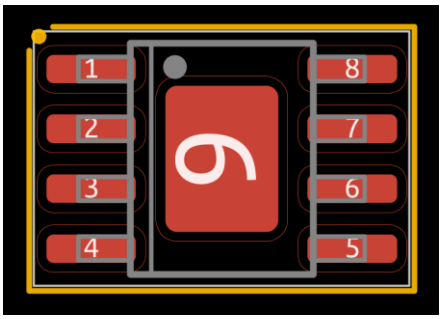
"SlugUp" option denotes footprint for package variant with the thermal slug on the top side, facing away from the PCB.



PowerSSO-36 "SlugUp" footprint.

Texas Instruments SO-PowerPAD-8 footprints

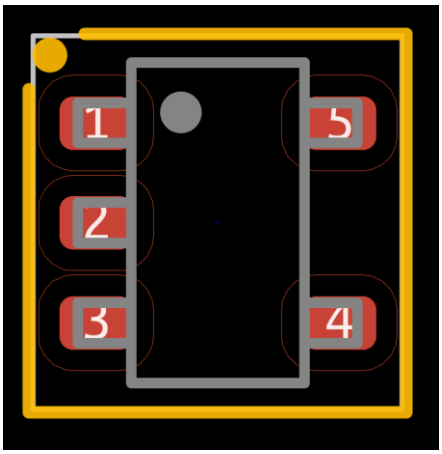
Footprint names:
TI_SO-PowerPAD-8
TI_SO-PowerPAD-8_ThermalVias



PowerPAD-8 footprint.

TSOP-5 footprint

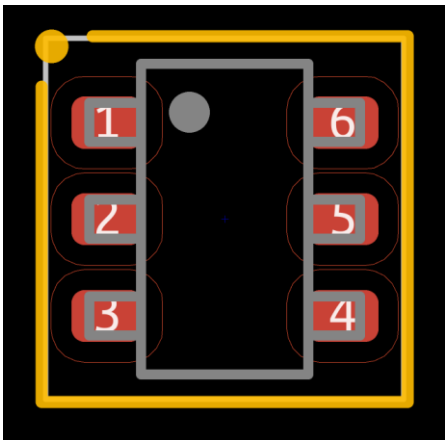
Footprint name:
TSOP-5_1.65x3.05mm_P0.95mm



TSOP-5 footprint.

TSOP-6 footprint

Footprint name:
TSOP-6_1.65x3.05mm_P0.95mm

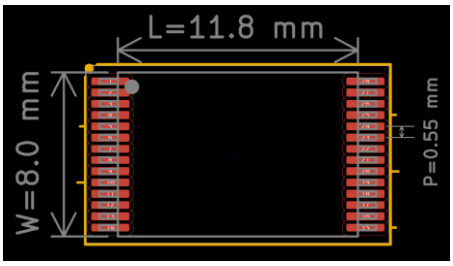


TSOP-6 footprint.

Thin Small Outline Package Type 1 (TSOP-I) footprints

Footprint count: 6

Footprint naming convention:
TSOP-I-<pin count>_<length>**x**<width>**mm**
**P**<pin pitch>**mm**<optional: Reverse>



TSOP-I-28 footprint with its dimensions indicated.

"Reverse" option refers to footprints for parts with leads bent backwards. Pin counting is reversed, as indicated by an arrow on silkscreen layer.

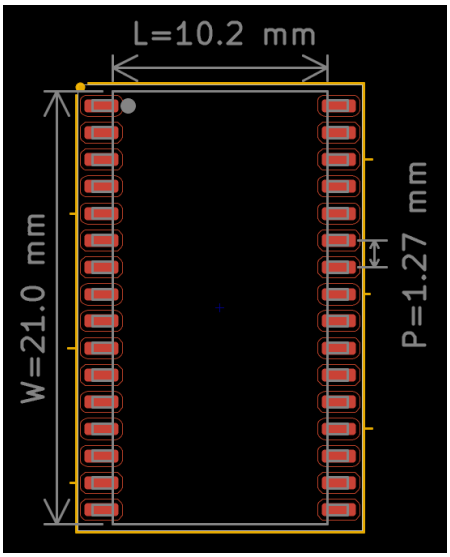
Name examples:
TSOP-I-28_11.8x8mm_P0.55mm
TSOP-I-32_18.4x8mm_P0.5mm_Reverse
TSOP-I-56_18.4x14mm_P0.5mm

Thin Small Outline Package Type 2 (TSOP-II) footprints

Footprint count: 3

Footprint naming convention:
TSOP-II-<pin count>_<length>**x**<width>**mm**
_**P**<pin pitch>**mm**

Footprint names:
TSOP-II-32_21.0x10.2mm_P1.27mm
TSOP-II-44_10.16x18.41mm_P0.8mm
TSOP-II-54_22.2x10.16mm_P0.8mm



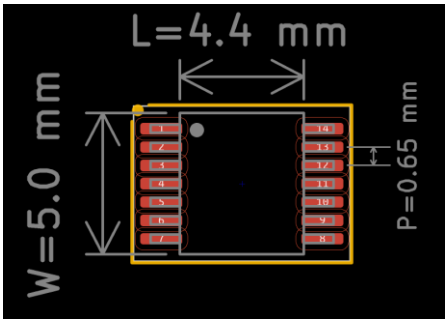
TSOP-II-32 footprint with its dimensions indicated.

Thin Shrink Small Outline Package (TSSOP) footprints

Footprint count: 70

Footprint naming convention:
TSSOP-<pin count>**<**optional: exposed pad count>
_<length>**x**<width>**mm_P**<pin pitch>**mm**_<optional: exposed pad size, ThermalVias/ThermalVias2>

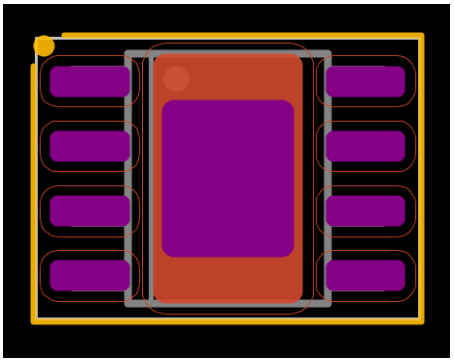
Name examples:
TSSOP-8_4.4x3mm_P0.65mm
TSSOP-14-1EP_4.4x5mm_P0.65mm_EP2.31x2.46mm
TSSOP-80_6.1x17mm_P0.4mm



TSSOP-14 footprint with its dimensions indicated.

Texas Instruments HSOP-8 footprints

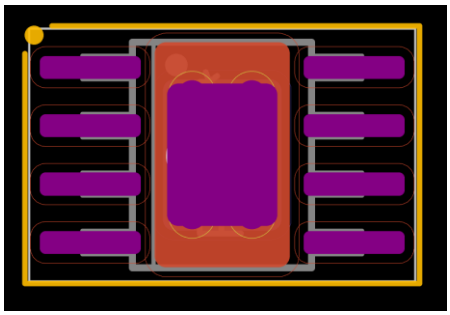
Footprint names:
Texas_HSOP-8-1EP_3.9x4.9mm_P1.27mm
Texas_HSOP-8-1EP_3.9x4.9mm_P1.27mm_ThermalVias



HSOP-8 footprint with visible soldermask layer.

Texas Instruments HTSOP-8 footprint

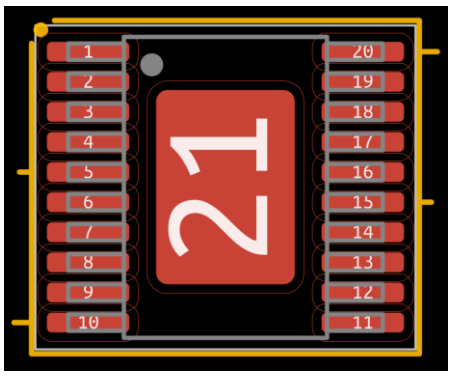
Footprint names:
Texas_HTSOP-8-1EP_3.9x4.9mm_P1.27mm
_EP2.95x4.9mm_Mask2.4x3.1mm_ThermalVias



HTSOP-8 footprint with visible soldermask layer.

Texas Instruments PWP0020A footprint

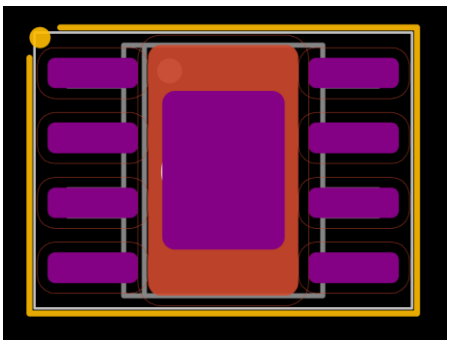
Footprint names:
Texas_PWP0020A
Texas_PWP0020A_ThermalVias
Texas_PWP0020A_ThermalVias2



PWP0020A footprint.

Texas Instruments R-PDSO-G8 footprints

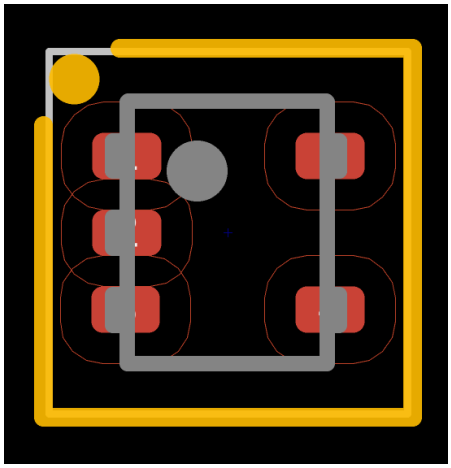
Footprint names:
Texas_R-PDSO-G8_EP2.95x4.9mm_Mask2.4x3.1mm
Texas_R-PDSO-G8_EP2.95x4.9mm_Mask2.4x3.1mm
_ThermalVias



R-PDSO-G8 footprint with visible soldermask layer.

Texas Instruments R-PDSO-N5 footprint

Footprint name:
Texas_R-PDSO-N5



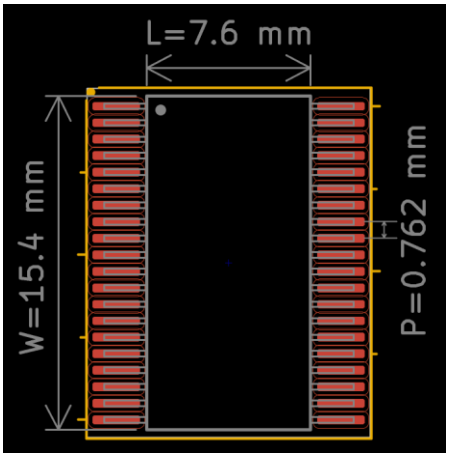
R-PDSO-N5 footprint.

Very Small Outline (VSO) footprints

Footprint count: 2

Footprint naming convention:
VSO-<pin count>_<length>**x**<width>**mm**
_**P**<pin pitch>**mm**

Footprint names:
VSO-40_7.6x15.4mm_P0.762mm
VSO-56_11.1x21.5mm_P0.75mm



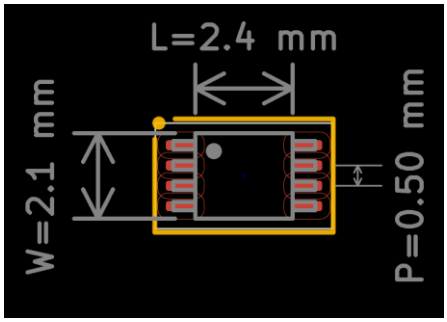
VSO-40 footprint with its dimensions indicated.

Very thin Shrink Small Outline Package (VSSOP) footprints

Footprint count: 4

Footprint naming convention:
VSSOP-<pin count>_<length>**x**<width>**mm**
_**P**<pin pitch>**mm**

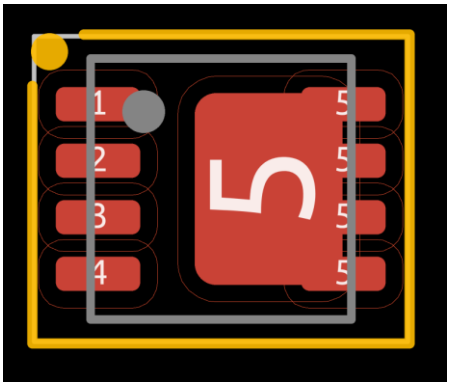
Footprint names:
VSSOP-8_2.3x2mm_P0.5mm
VSSOP-8_2.4x2.1mm_P0.5mm
VSSOP-8_3.0x3.0mm_P0.65mm
VSSOP-10_3x3mm_P0.5mm



VSSOP-8 footprint with its dimensions indicated.

Vishay PowerPAK 1212-8 footprint

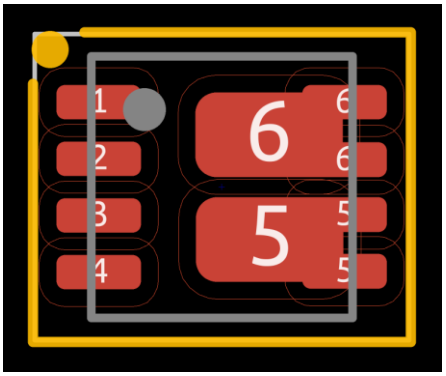
Footprint names:
Vishay_PowerPAK_1212-8_Single
Vishay_PowerPAK_1212-8_Single_ThermalVias



PowerPAK 1212-8 footprint.

Vishay PowerPAK 1212-8 “Dual” footprint

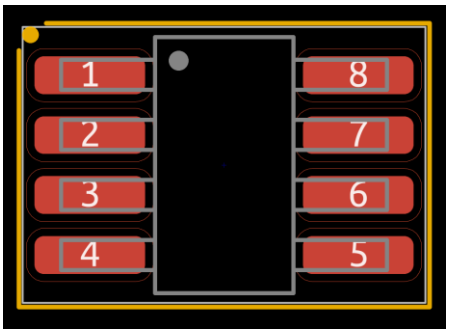
Footprint name:
Vishay_PowerPAK_1212-8_Dual



PowerPAK 1212-8 “Dual” footprint.

Zetex SM8 footprint

Footprint name:
Zetex_SM8



SM8 footprint.

3.25. SMD TO/SOT Package Library

This library contains footprints Surface Mount Transistor Outline (TO) and Small Outline Transistor (SOT) packages.

Standard variant	
Folder name: **`Package_TO_SOT_SMD_AKL`**	
Footprint count:	**203**(+64)
Total footprints:	**203**(+64)

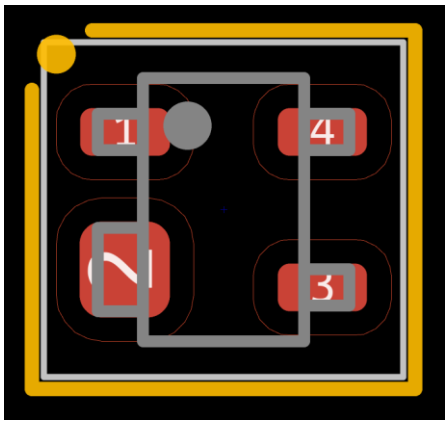
ATPAK-2 footprint

Footprint name:
ATPAK-2
ATPAK-2_ThermalVias
ATPAK-2_ThermalVias2

ATPAK-2 footprint.

Analog Devices KS-4 footprint

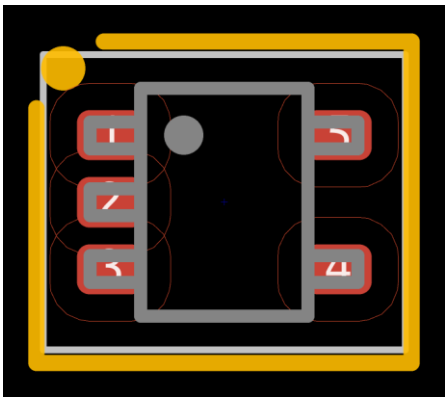
Footprint name:
Analog_KS-4



KS-4 footprint.

Diodes SOT-553 footprint

Footprint name:
Diodes_SOT-553

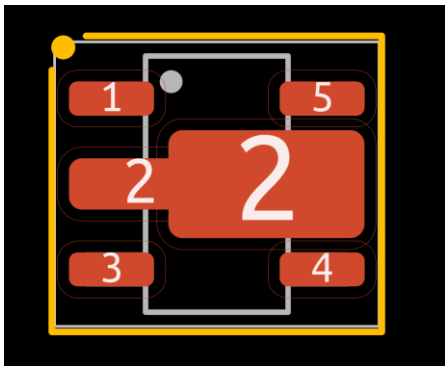


SOT-553 footprint.

Diodes SOT-89-5 footprint

Footprint name:
Diodes_SOT-89-5

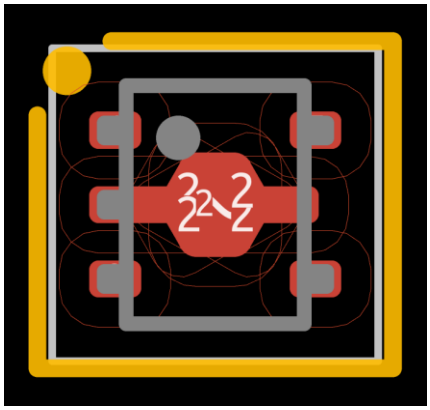
Different from standard SOT-89-5 footprint



SOT-89-5 footprint.

ROHM Semiconductor HVSOF5 footprint

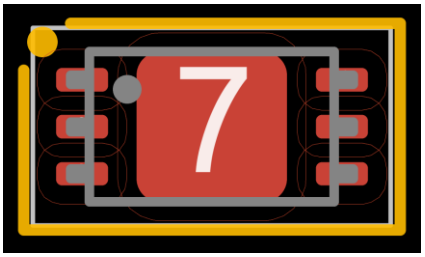
Footprint name:
HVSOF5



HVSOF5 footprint.

ROHM Semiconductor HVSOF6 footprint

Footprint names:
HVSOF6
HVSOF6_ThermalVias



HVSOF6 footprint.

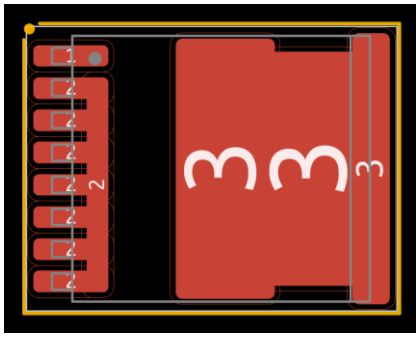
Infineon HDSOP-10-1 footprint

Footprint name:
Infineon_PG-HDSOP-10-1

HDSOP-10-1 footprint.

Infineon HSOF-8-1 footprints

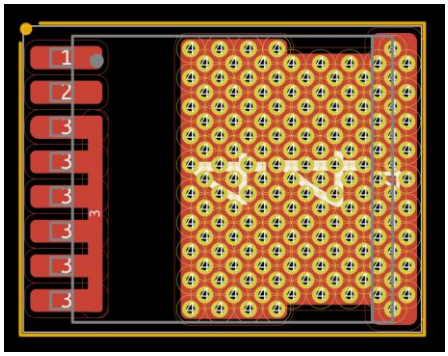
Footprint names:
Infineon_PG-HSOF-8-1
Infineon_PG-HSOF-8-1_ThermalVias
Infineon_PG-HSOF-8-1_ThermalVias2



HSOF-8-1 footprint.

Infineon HSOF-8-2 footprints

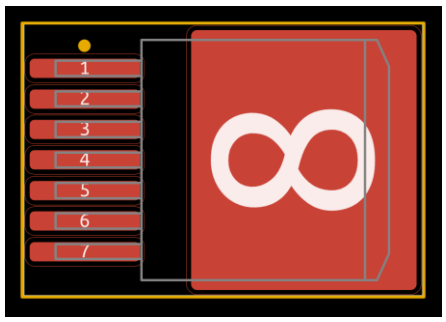
Footprint names:
Infineon_PG-HSOF-8-2
Infineon_PG-HSOF-8-2_ThermalVias
Infineon_PG-HSOF-8-2_ThermalVias2



HSOF-8-2 "ThermalVias2" footprint.

Infineon PG-TO-220-7-4 footprint

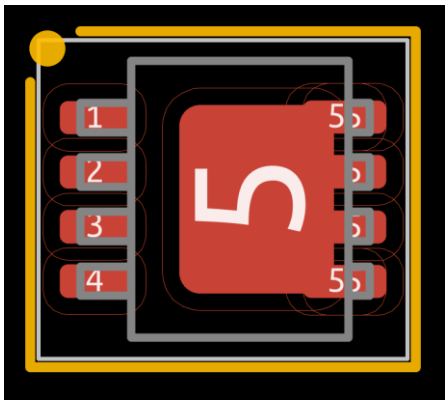
Footprint name:
Infineon_PG-TO-220-7Lead_TabPin8
Infineon_PG-TO-220-7Lead_TabPin8_ThermalVias



PG-TO-220-7-4 footprint.

SOT-1210 (LFPAK33) footprint

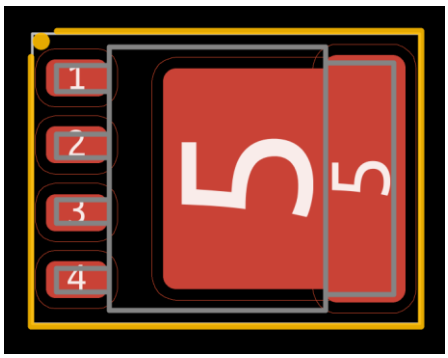
Footprint name:
LFPAK33
LFPAK33_ThermalVias
LFPAK33_ThermalVias2



LFPAK33 footprint.

SOT-669 (LFPAK56) footprint

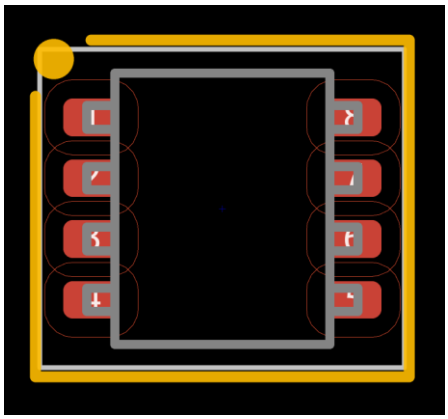
Footprint name:
LFPAK56
LFPAK56_ThermalVias
LFPAK56_ThermalVias2



LFPAK56 footprint.

OnSemi ECH8 footprint

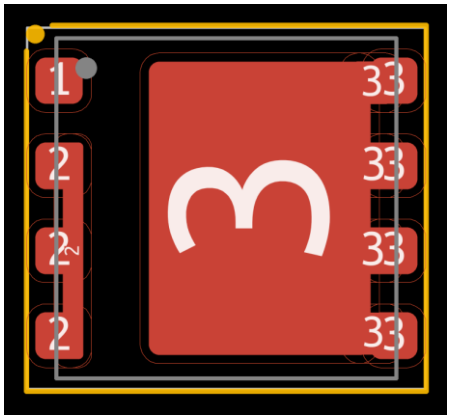
Footprint name:
OnSemi_ECH8



ECH-8 footprint.

PQFN 8x8mm footprint

Footprint name:
PQFN_8x8
PQFN_8x8_ThermalVias
PQFN_8x8_ThermalVias2

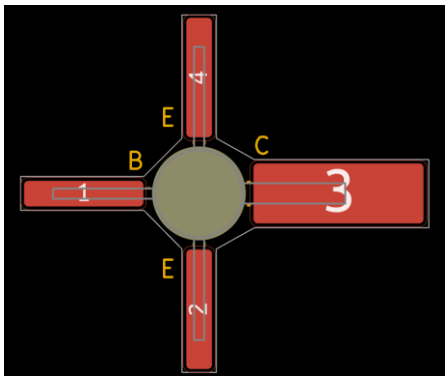


PQFN 8x8mm footprint.

PowerMacro (M234) footprints

Footprint names:
PowerMacro_M234_BECE_NoHole
PowerMacro_M234_BECE_WithHole
PowerMacro_M234_NoHole
PowerMacro_M234_WithHole

"NoHole" option denotes footprints with no holes in the PCB.



PowerMacro "BECE" "WithHole" footprint.

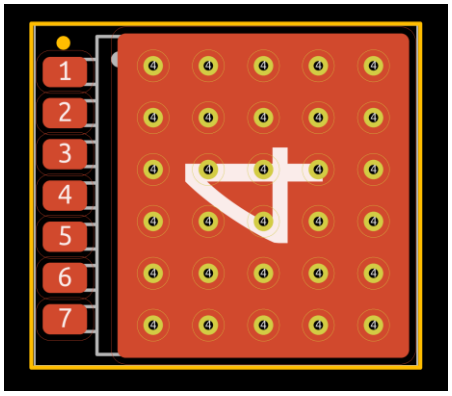
"WithHole" option denotes footprints with a hole in the PCB that allow to achieve lower profile as part of the package sits recessed into the board.

String of letters (i. e. "BECE") denotes a footprint with pin designation marks on the silkscreen layer according to the order of the string (if B is first then letter B is printed next to the pin 1).

PowerMacro (M234) package is physically and functionally similar to the TO-50, although having a much thicker pin 3 allowing for higher power dissipation.

ROHM Semiconductor HRP7 footprint

Footprint name:
ROHM_HRP7
ROHM_HRP7_ThermalVias

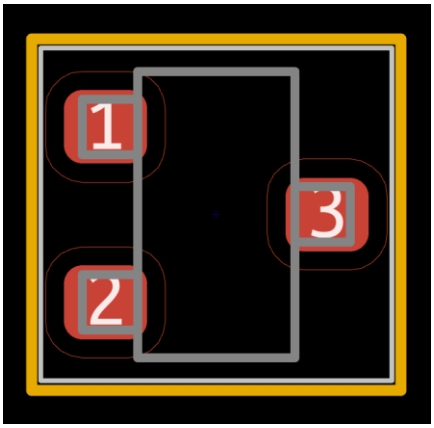


HRP7 "thermal vias" footprint.

SC-59 footprints

Footprint names:
SC-59
SC-59_BigPads

"BigPads" option denotes a footprint enlarged pads.



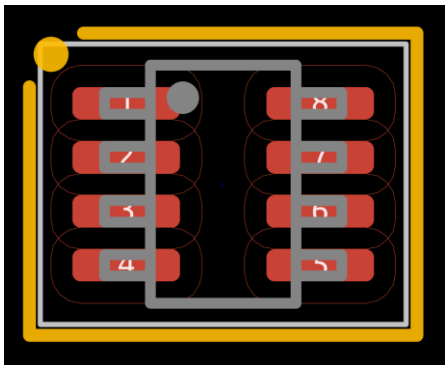
SC-59 footprint.

SC-70-8 footprints

Footprint names:
SC-70-8
SC-70-8_BigPads

"BigPads" option denotes a footprint enlarged pads.

SC-70-8 is an 8-pin variant of the SC-70 package (also known as SOT-323)

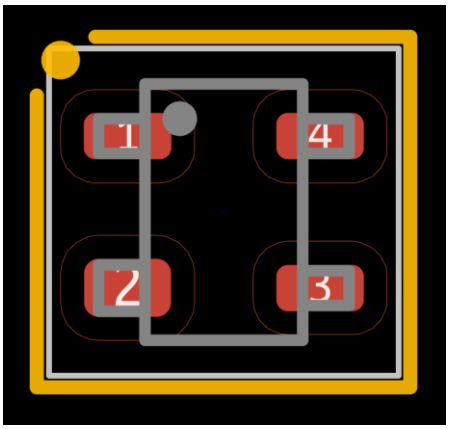


SC-70-8 footprint.

SC-82AA footprints

Footprint names:
SC-82AA
SC-82AA_BigPads

"BigPads" option denotes a footprint enlarged pads.

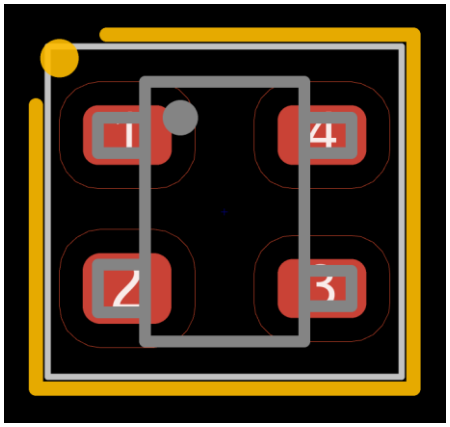


SC-82AA footprint.

SC-82AB footprints

Footprint names:
SC-82AB
SC-82AB_BigPads

"BigPads" option denotes a footprint enlarged pads.



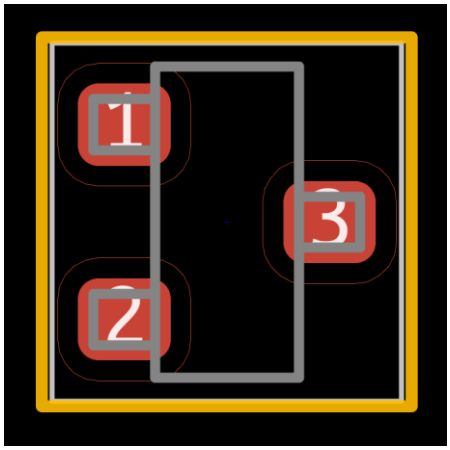
SC-82AB footprint.

SOT-23 footprints

Footprint names:
SOT-23
SOT-23_BigPads

"BigPads" option denotes a footprint enlarged pads.

Industry standard SMD transistor package.



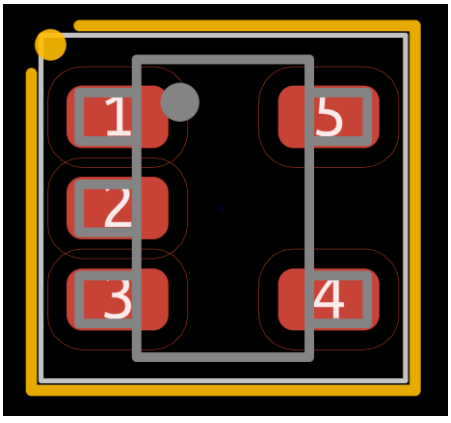
SOT-23 footprint.

SOT-23-5 footprints

Footprint names:
SOT-23-5
SOT-23-5_BigPads

"BigPads" option denotes a footprint enlarged pads.

Variant of the SOT-23 package with 5 pins.



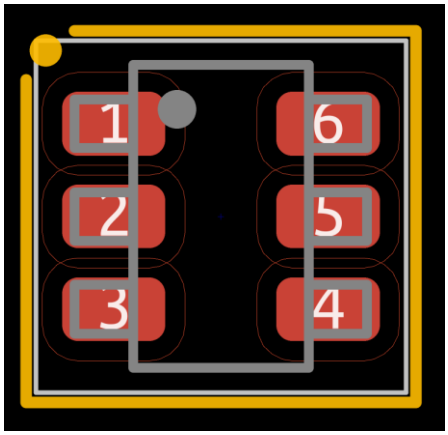
SOT-23-5 footprint.

SOT-23-6 footprints

Footprint names:
SOT-23-6
SOT-23-6_BigPads

"BigPads" option denotes a footprint enlarged pads.

Variant of the SOT-23 package with 6 pins.



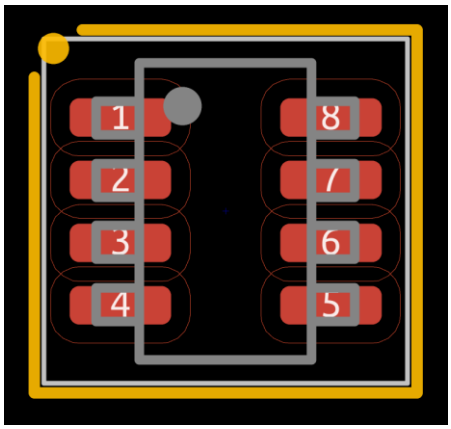
SOT-23-6 footprint.

SOT-23-8 footprints

Footprint names:
SOT-23-8
SOT-23-8_BigPads

"BigPads" option denotes a footprint enlarged pads.

Variant of the SOT-23 package with 8 pins.



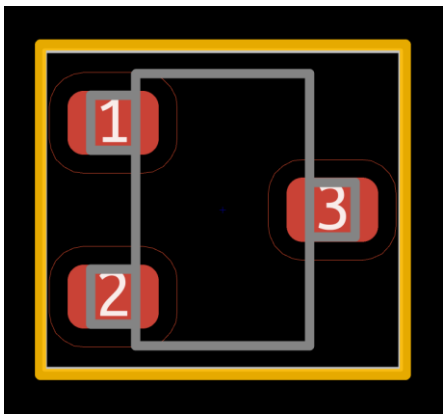
SOT-23-8 footprint.

SOT-23W footprints

Footprint names:
SOT-23W
SOT-23W_BigPads

"BigPads" option denotes a footprint enlarged pads.

Wide variant of the SOT-23 package.

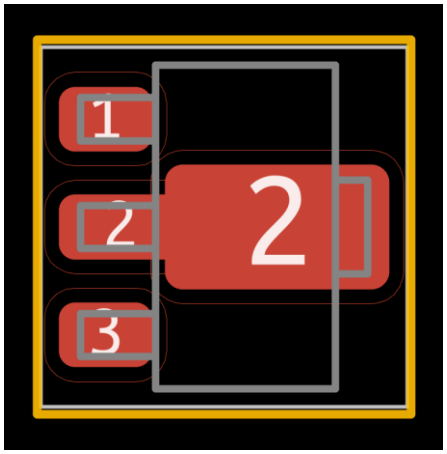


SOT-23W footprint.

SOT-89 footprints

Footprint names:
SOT-89-3
SOT-89-3_BigPads

"BigPads" option denotes a footprint enlarged pads.



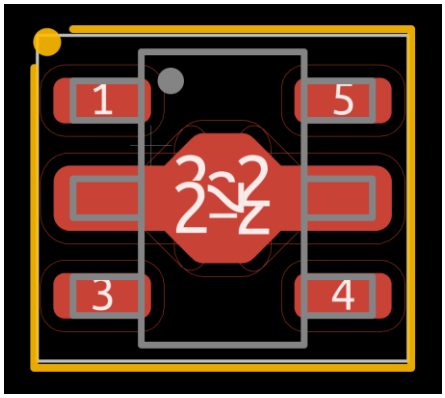
SOT-89 footprint.

SOT-89-5 footprints

Footprint names:
SOT-89-5
SOT-89-5_BigPads

"BigPads" option denotes a footprint enlarged pads.

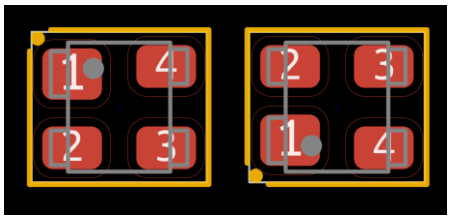
5-pin variant of the SOT-89 package.



SOT-89-5 footprint.

SOT-143 footprints

Footprint names:
SOT-143
SOT-143_BigPads
SOT-143R_Reverse
SOT-143R_Reverse_BigPads



Standard SOT-143 footprint (left) and a reversed SOT-143R (right).

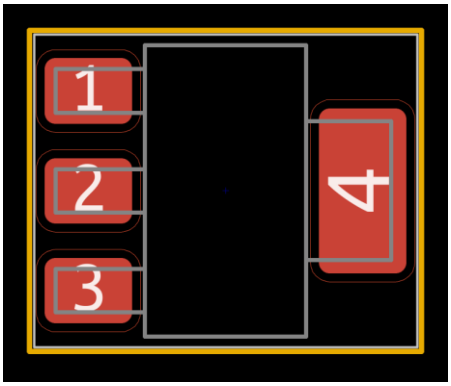
"BigPads" option denotes a footprint enlarged pads.

"Reverse" option denotes a footprint for a package with leads bent backwards (pin order is reversed)

SOT-223 footprints

Footprint names:
SOT-223
SOT-223-3_TabPin2

"TabPin2" option means that the heatsink tab has the same number (and is electrically connected to) pad 2.

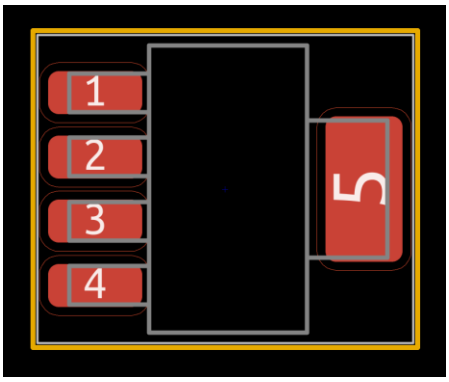


SOT-223 footprint.

SOT-223-5 footprint

Footprint name:
SOT-223-5

5-pin variant of the SOT-223 package.



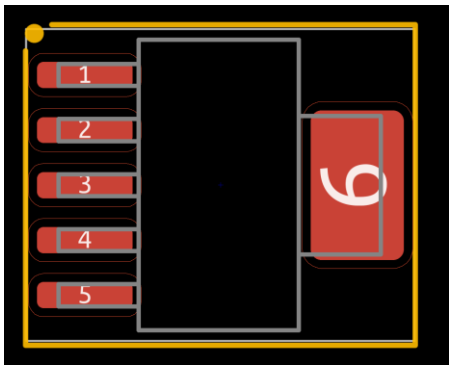
SOT-223-5 footprint.

SOT-223-6 footprints

Footprint names:
SOT-223-6
SOT-223-6_TabPin3

"TabPin3" option means that the heatsink tab has the same number (and is electrically connected to) pad 3.

6-pin variant of the SOT-223 package.

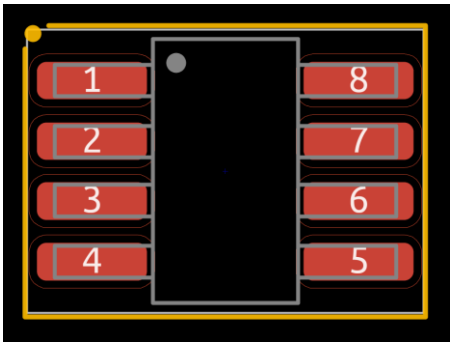


SOT-223-6 footprint.

SOT-223-8 footprint

Footprint name:
SOT-223-8

8-pin variant of the SOT-223 package.



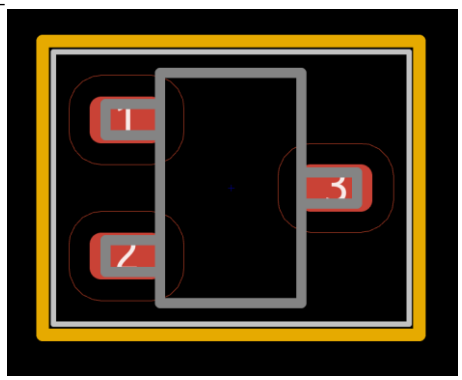
SOT-223-8 footprint.

SOT-323 (SC-70) footprints

Footprint names:
SOT-323_SC-70
SOT-323_SC-70_BigPads

"BigPads" option denotes a footprint enlarged pads.

SMD transistor package that's smaller than standard SOT-23.



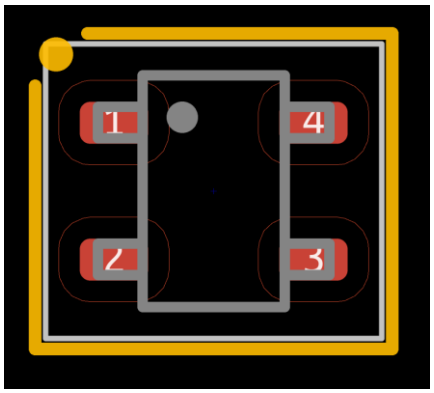
SOT-323 footprint.

SOT-343 (SC-70-4) footprints

Footprint names:
SOT-343_SC-70-4
SOT-343_SC-70-4_BigPads

"BigPads" option denotes a footprint enlarged pads.

4-pin variant of the SOT-323 package and a similar pin layout to SOT-143.



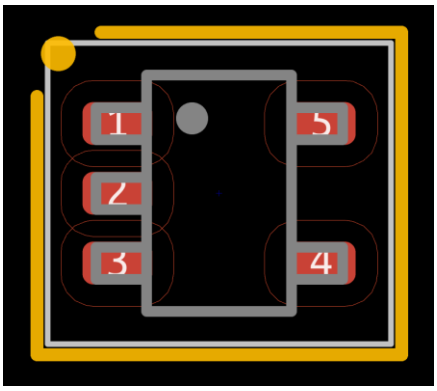
SOT-343 footprint.

SOT-353 (SC-70-5) footprints

Footprint names:
SOT-353_SC-70-5
SOT-353_SC-70-5_BigPads

"BigPads" option denotes a footprint enlarged pads.

5-pin variant of the SOT-323 package.



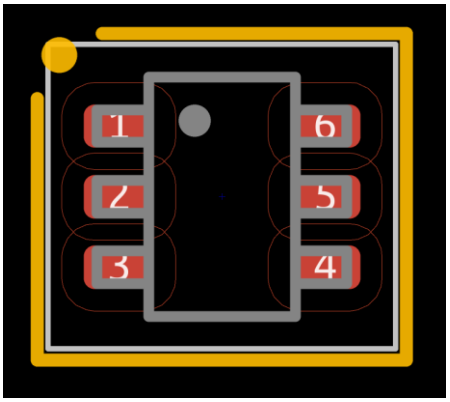
SOT-353 footprint.

SOT-363 (SC-70-6) footprints

Footprint names:
SOT-363_SC-70-6
SOT-363_SC-70-6_BigPads

"BigPads" option denotes a footprint enlarged pads.

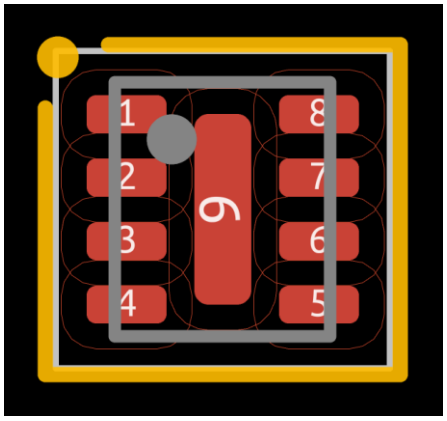
6-pin variant of the SOT-323 package.



SOT-363 footprint.

SOT-383F footprint

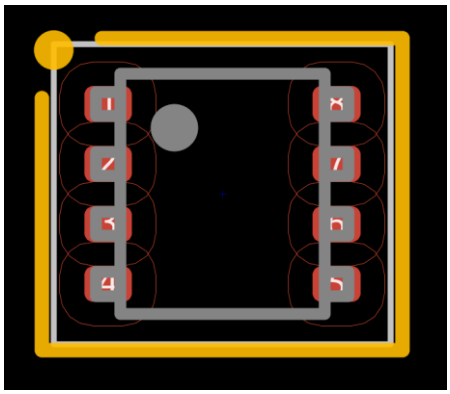
Footprint name:
SOT-383F



SOT-383F footprint.

SOT-383FL footprint

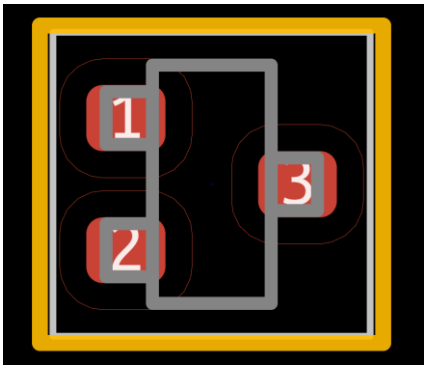
Footprint name:
SOT-383FL



SOT-383FL footprint.

SOT-416 footprint

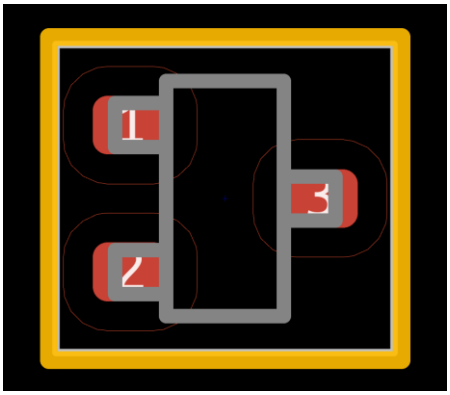
Footprint name:
SOT-416



SOT-416 footprint.

SOT-523 footprint

Footprint name:
SOT-523

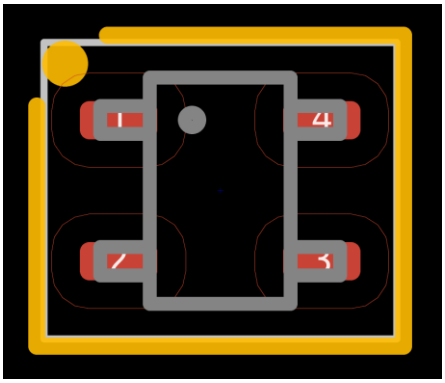


SOT-523 footprint.

SOT-543 footprint

Footprint name:
SOT-543

4-pin variant of the SOT-523 package.

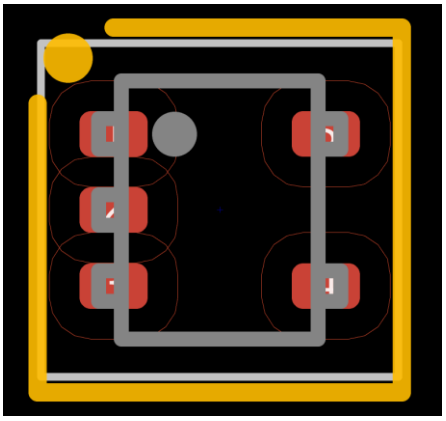


SOT-543 footprint.

SOT-553 footprint

Footprint name:
SOT-553

5-pin variant of the SOT-523 package.

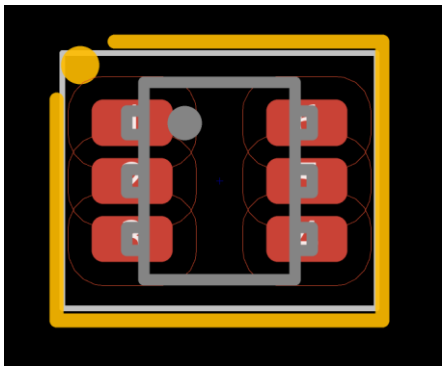


SOT-553 footprint.

SOT-563 footprint

Footprint name:
SOT-563

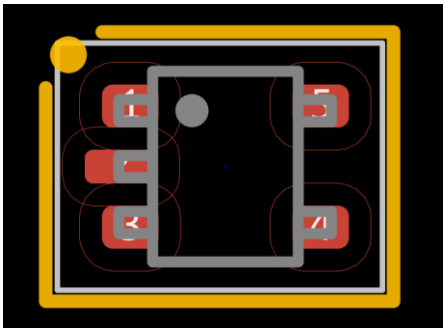
6-pin variant of the SOT-523 package.



SOT-563 footprint.

SOT-665 footprint

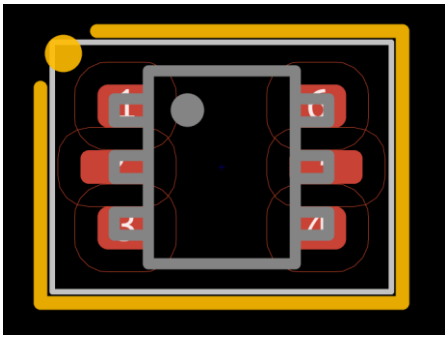
Footprint name:
SOT-665



SOT-665 footprint.

SOT-666 footprint

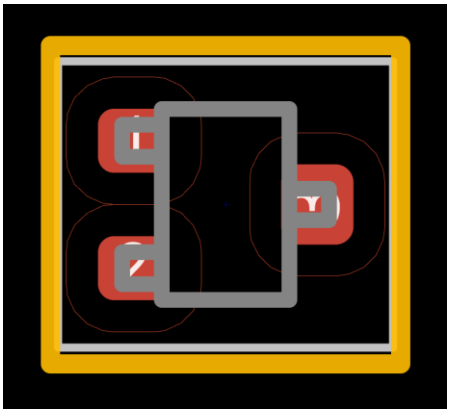
Footprint name:
SOT-666



SOT-666 footprint.

SOT-723 footprint

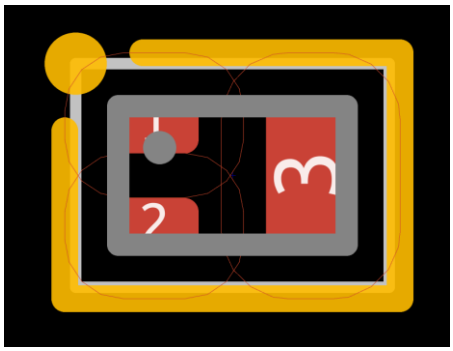
Footprint name:
SOT-723



SOT-723 footprint.

SOT-883 footprint

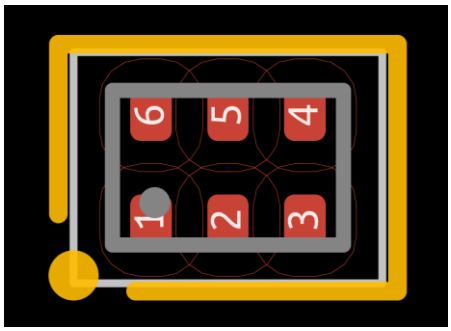
Footprint name:
SOT-883



SOT-883 footprint.

SOT-886 footprint

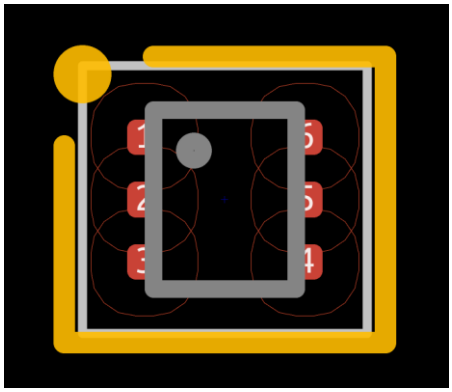
Footprint name:
SOT-886



SOT-886 footprint.

SOT-963 footprint

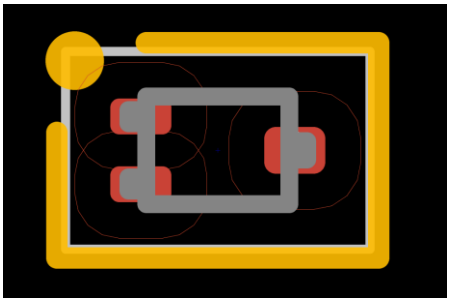
Footprint name:
SOT-963



SOT-963 footprint.

SOT-1123 footprint

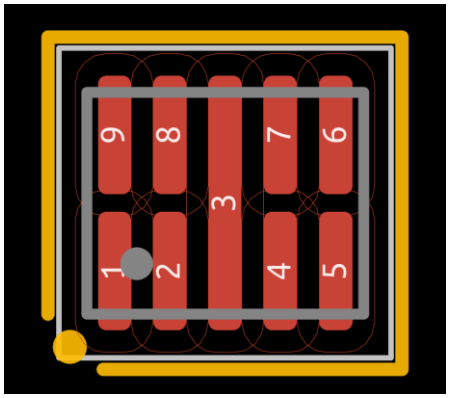
Footprint name:
SOT-1123



SOT-1123 footprint.

SOT-1333-1 footprint

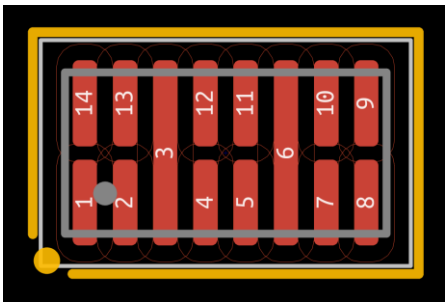
Footprint name:
SOT-1333-1



SOT-1333 footprint.

SOT-1334-1 footprint

Footprint name:
SOT-1334-1

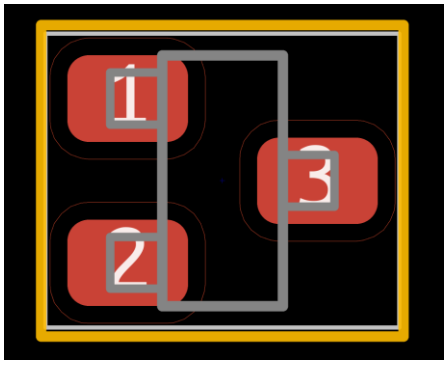


SOT-1334 footprint.

SuperSOT-3 footprint

Footprint name:
SuperSOT-3

Variant of the standard SOT-23 package optimized for power dissipation.

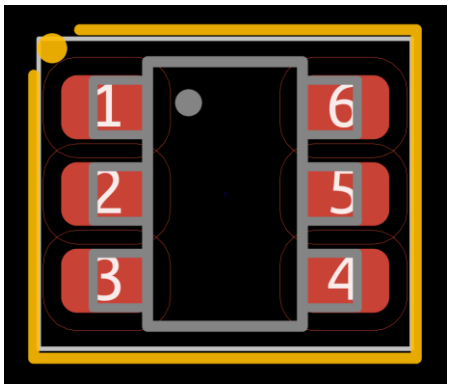


SuperSOT-3 footprint.

SuperSOT-6 footprint

Footprint name:
SuperSOT-6

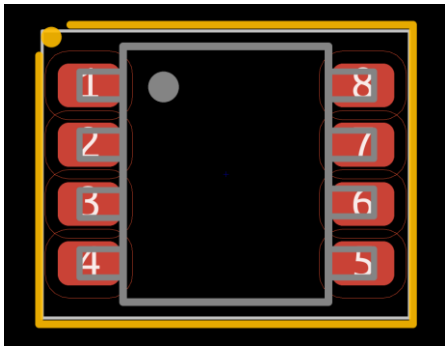
6-pin variant of SuperSOT-3 package.



SuperSOT-6 footprint.

SuperSOT-8 footprint

Footprint name:
SuperSOT-8

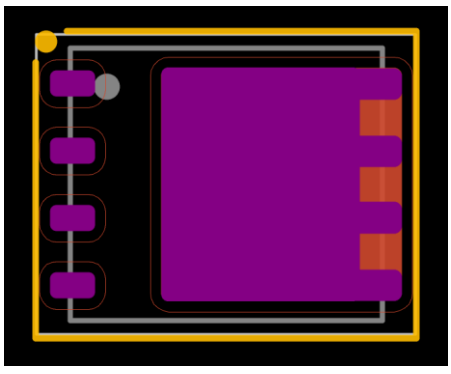


SuperSOT-8 footprint.

TDSON-8-1 footprint

Footprint name:
TDSON-8-1

See Infineon PG-TDSON-8 series in the SON package library for higher-quality footprints



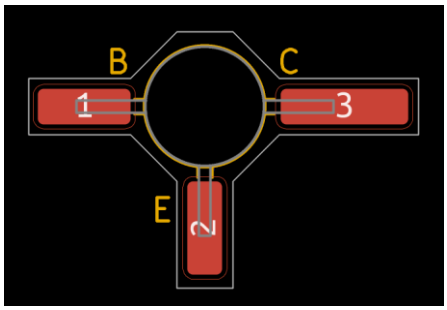
TDSON-8-1 footprint with the soldermask layer visible.

TO-50 footprints

Footprint count: **20**

Footprint naming convention:
TO-50-<pin count>_<pad length>_<hole type>_<optional: pin configuration>_**Housing**

Name examples:
TO-50-3_ShortPad_NoHole_Housing
TO-50-3_LongPad_WithHole_BEC_Housing
TO-50-4_LongPad_NoHole_BECE_Housing



TO-50-3 "BEC" "ShortPad" "NoHole" footprint.

"NoHole" option denotes footprints with no holes in the PCB.

"WithHole" option denotes footprints with a hole in the PCB that allow to achieve lower profile as part of the package sits recessed into the board.

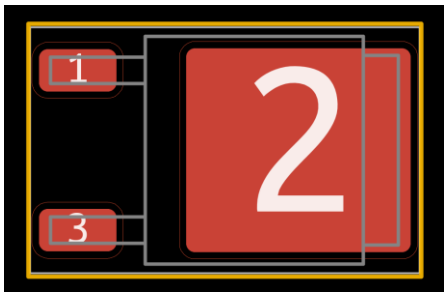
String of letters (i. e. "BECE") denotes a footprint with pin designation marks on the silkscreen layer according to the order of the string (if B is first then letter B is printed next to the pin 1)

TO-252 (DPAK) footprints

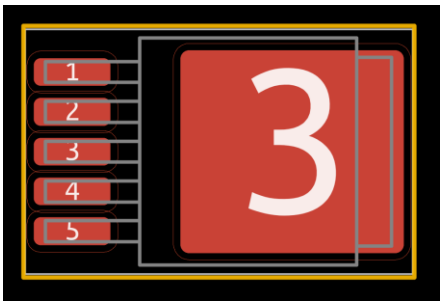
Footprint count: **30**

Footprint naming convention:
TO-252-<pin count>_<optional: TabPin – thermal tab pad number, pin pitch for 1.27mm version of TO-252-4 and TO-252-5, ThermalVias/ThermalVias2>

Name examples:
TO-252-2
TO-252-2_TabPin1
TO-252-3_TabPin4_ThermalVias (1.14mm pin pitch)
TO-252-5_TabPin3_ThermalVias2
TO-252-4_1.27mm (1.27mm pin pitch)



TO-252-2 (DPAK) footprint.

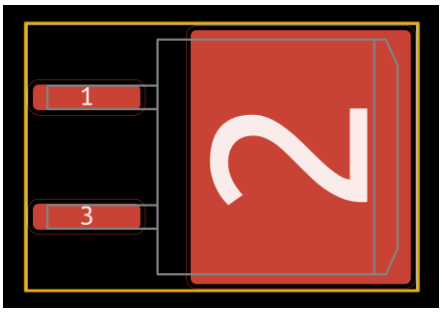


TO-252-5_TabPin3 footprint.

TO-263 (DDPAK/D^{2}PAK) footprints

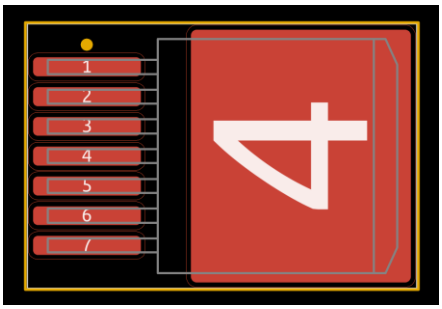
Footprint count: **36**

Footprint naming convention:
TO-263-<pin count>_<optional: TabPin – thermal tab pad number, ThermalVias/ThermalVias2>



TO-263-2 (DDPAK) footprint.

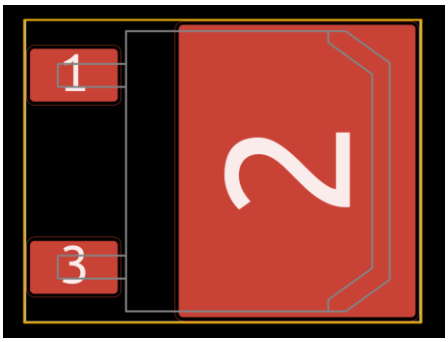
Name examples:
TO-263-2
TO-263-5_TabPin3
TO-263-6_ThermalVias
TO-263-9_TabPin5
TO-263-2_TabPin1_ThermalVias2



TO-263-7_TabPin4 footprint.

TO-268 (D³PAK) footprint

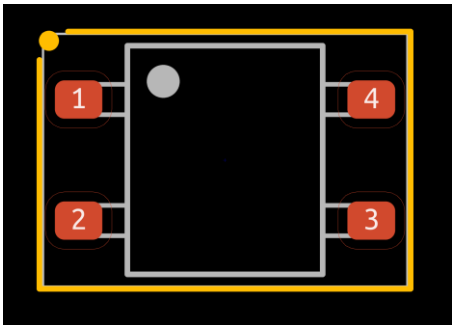
Footprint names:
TO-268-2
TO-268-2_ThermalVias
TO-268-2_ThermalVias2



TO-268 footprint.

TO-269AA footprint

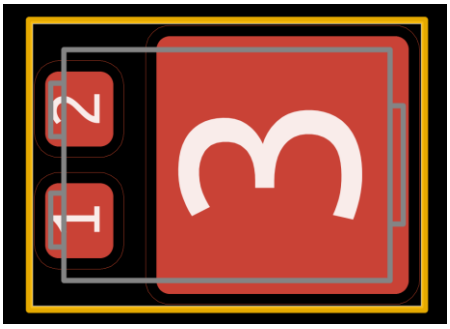
Footprint name:
TO-269AA



TO-269AA footprint.

TO-277A footprint

Footprint names:
TO-277A
TO-277A_ThermalVias



TO-277A footprint.

TO-277B footprint

Footprint names:
TO-277B
TO-277B_ThermalVias

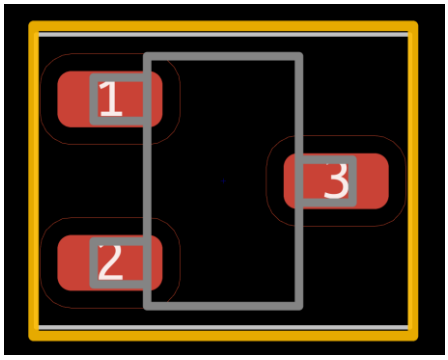
TO-277B footprint.

Thin SOT-23 (TSOT-23) footprints

Footprint names:
TSOT-23
TSOT-23_BigPads

"BigPads" option denotes a footprint enlarged pads.

TSOT-23 has a lower package height than standard SOT-23.



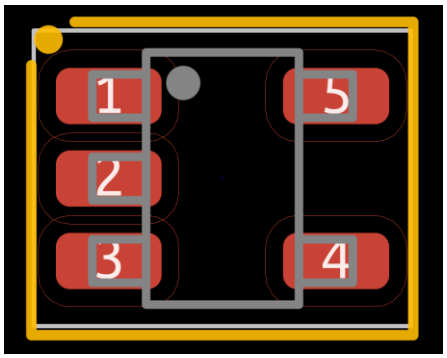
TSOT-23 footprint.

TSOT-23-5 footprints

Footprint names:
TSOT-23-5
TSOT-23-5_BigPads

"BigPads" option denotes a footprint enlarged pads.

5-pin variant of the TSOT-23 package



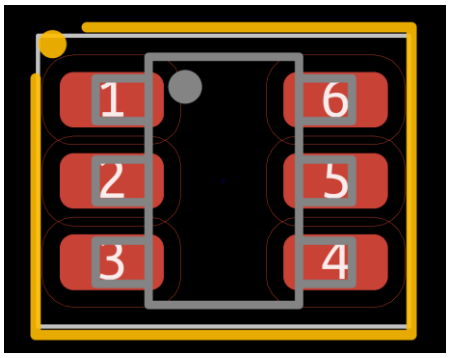
TSOT-23-5 footprint.

TSOT-23-6 footprints

Footprint names:
TSOT-23-6
TSOT-23-6_BigPads

"BigPads" option denotes a footprint enlarged pads.

6-pin variant of the TSOT-23 package



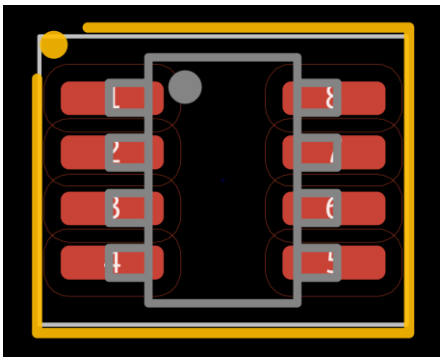
TSOT-23-6 footprint.

TSOT-23-8 footprints

Footprint names:
TSOT-23-8
TSOT-23-8_BigPads

"BigPads" option denotes a footprint enlarged pads.

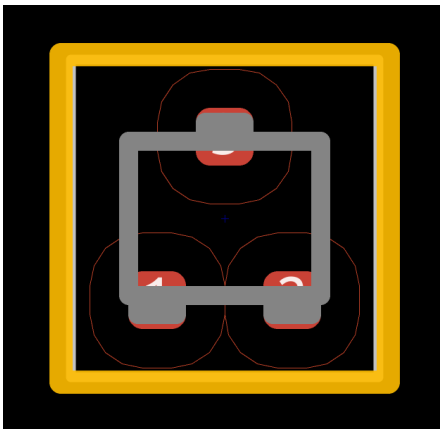
8-pin variant of the TSOT-23 package



TSOT-23-8 footprint.

Texas Instruments DRT-3 footprint

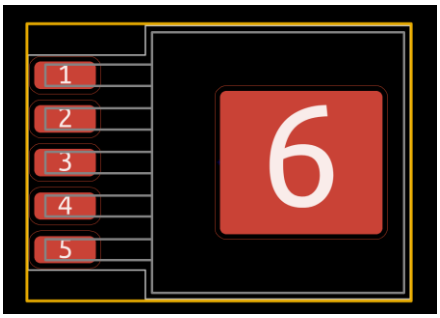
Footprint name:
Texas_DRT-3



DRT-3 footprint.

Texas Instruments NDQ footprint

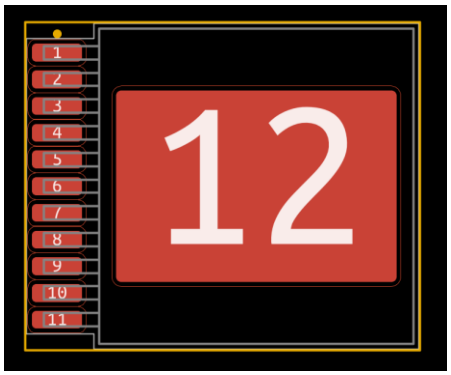
Footprint name:
Texas_NDQ



NDQ footprint.

Texas Instruments NDY0011A footprint

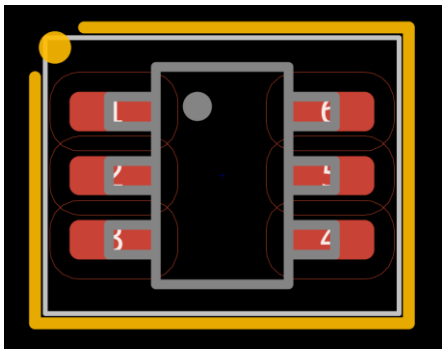
Footprint name:
Texas_NDY0011A



NDY0011A footprint.

Texas Instruments PDSO-G6 footprint

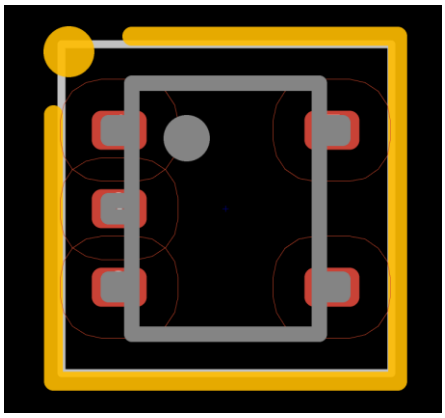
Footprint name:
Texas_R-PDSO-G6



PDSO-G6 footprint.

VSOF5 footprint

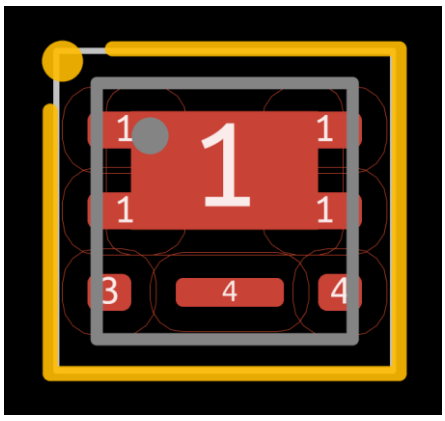
Footprint name:
VSOF5



VSOF5 footprint.

Vishay PowerPAK SC-70-6L footprint

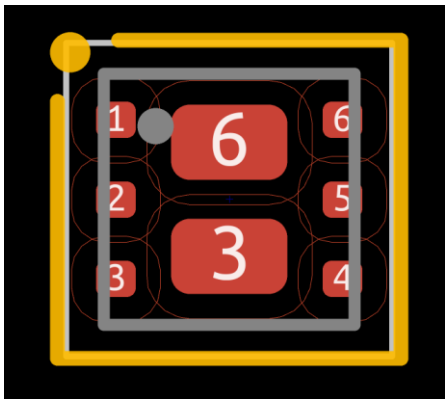
Footprint name:
Vishay_PowerPAK_SC70-6L_Single



SC70-6L footprint.

Vishay PowerPAK SC-70-6L "Dual" footprint

Footprint name:
Vishay_PowerPAK_SC70-6L_Dual



SC70-6L "Dual" footprint.

3.26. THT TO/SOT Package Libraries

These libraries contain footprints for through-hole Transistor Outline (TO) and Small Outline Transistor (SOT) packages.

Double-sided library variant contains footprints with silkscreen pin markings (E B C etc.) on both sides of the PCB. Only footprints with pin markings have a double-sided variant.

Standard variant	
Folder name: **`Package_TO_SOT_THT_AKL`**	
Footprint count:	**566**(+73)
Double-sided variant	
Folder name: **`Package_TO_SOT_THT_AKL_Double`**	
Footprint count:	**274**(+32)
Total footprints:	**840**(+105)

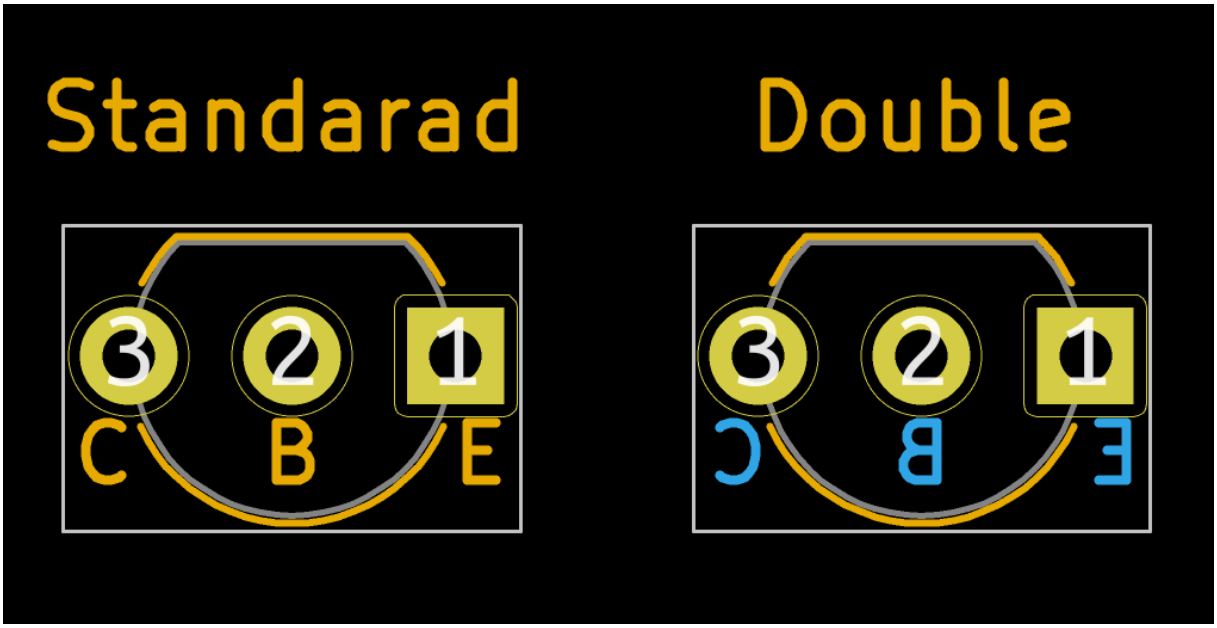
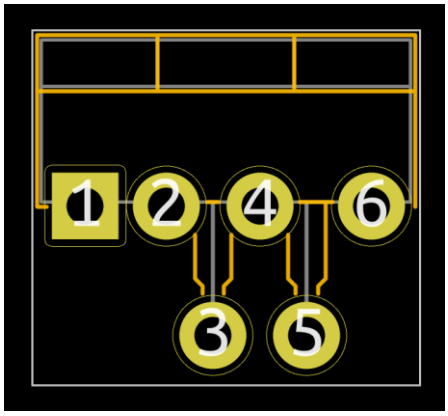


Figure 3.40. *TO-92 footprints from standard and double-sided libraries with emitter, base and collector pin markings.*

Fairchild TO-220F-6L footprint

Footprint name:
Fairchild_TO-220F-6L

6-lead TO-220F with special lead forming.

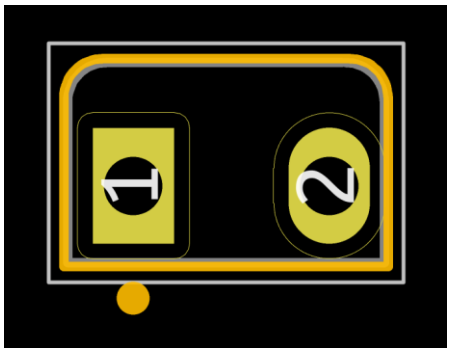


TO-220F-6L footprint.

Heraeus TO-92-style temperature sensor footprint

Footprint name:
Heraeus_TO-92-2

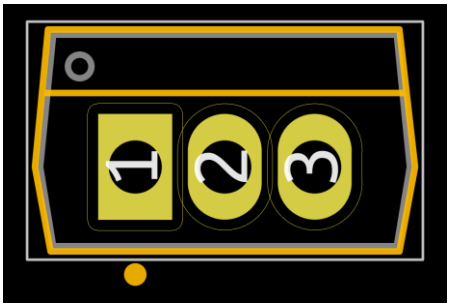
2-terminal temperature sensor.



TO-92-2 footprint.

2SB734 transistor specific footprint

Footprint name:
NEC_Molded_7x4x9mm

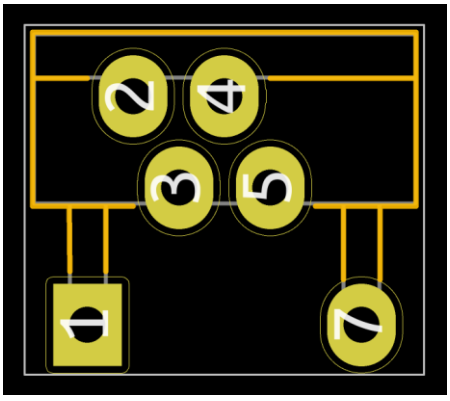


2SB734 footprint.

Power Integrations TO-220-7C footprint

Footprint name:
PowerIntegrations_TO-220-7C

6-lead TO-220 with special lead forming.



TO-220-7C footprint.

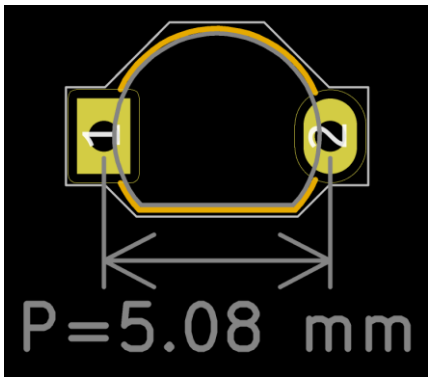
SIPAK footprints

Footprint names:
SIPAK-1EP_Horizontal_TabDown
SIPAK_Vertical

SIPAK vertical footprint (top) and horizontal footprint (bottom).

SOD-70 temperature sensor footprints

Footprint names:
SOD-70_P2.54mm
SOD-70_P5.08mm



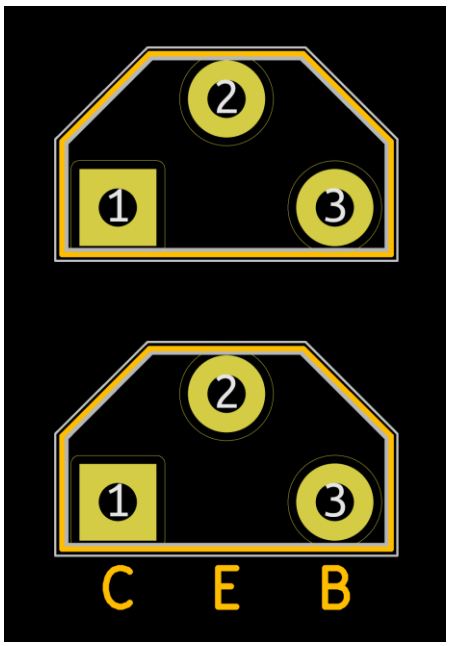
SOD-70 footprint with its pin pitch indicated.

SOT-25 transistor footprints

Footprint count: 3

Footprint naming convention:
SOT-25-<optional: pin marking order>

Footprint names:
SOT-25
SOT-25_CEB
SOT-25_CBE



SOT-25 standard footprint (top) and SOT-25 bipolar transistor footprint with pin markings (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: CBE suffix denotes a footprint for a transistor with Collector on pin 1, Base on pin 2 and Emitter on pin 3).

SOT-25 package was used for old European small-signal transistors as a cheaper replacement for metal TO-18 package.

SOT-33 transistor footprints

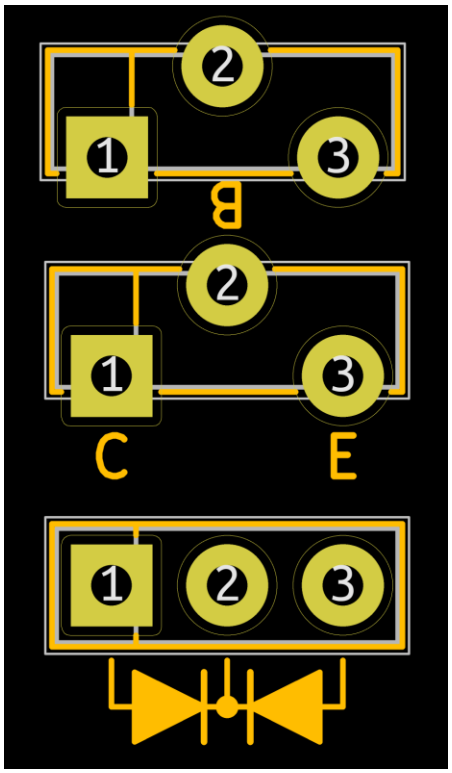
Footprint count: 5

Footprint naming convention:
SOT-33_<optional: pin spacing variant>_<optional: pin marking order>

Footprint names:
SOT-33
SOT-33_C_B_E
SOT-33_C_E_B
SOT-33_Inline
SOT-33_Inline_AKA

Available pin markings:
Bipolar transistors: CBE, CEB
Dual diodes: AKA

Available pin spacing variants:
Standard – pins are spaced 2.54mm in the horizontal direction with the center pin also being placed 2mm backwards.
Inline – pins are arranged along a single line, spaced 2.54mm apart.



SOT-33 standard footprint (top), SOT-33 footprint with CBE pin markings (middle) and SOT-33 Inline footprint with common-cathode diode markings.

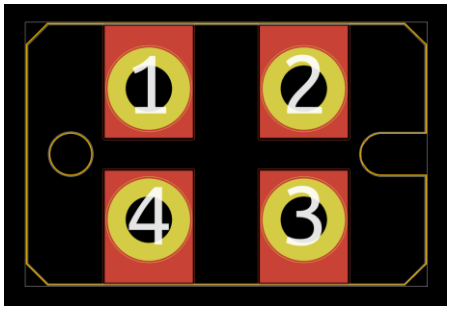
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

SOT-33 package was used for old European small-signal transistors and dual capacitance diodes as a cheaper replacement for metal TO-18 package.

SOT-227 (ISOTOP) power transistor module footprint

Footprint name:
SOT-227

Module connects to the PCB using M4 screws, with the module itself mounted on a heat sink.



SOT-227 footprint

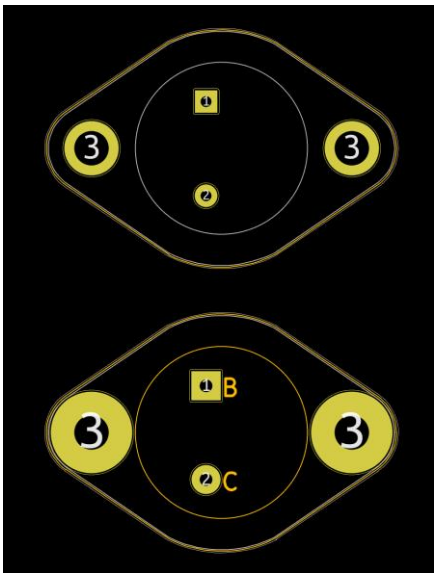
TO-3 power transistor footprints

Footprint count: 6

Footprint naming convention:
TO-3-<optional: BigPads>_optional: pin marking order>

Footprint names:
TO-3
TO-3_BEC
TO-3_BigPads_GSD

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GSD suffix denotes a footprint for a FET transistor with Gate on pin 1, Source on pin 2 and Drain on pin 3).



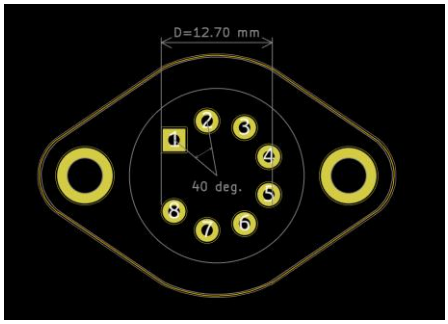
TO-3 standard footprint (top) and TO-3 bipolar transistor footprint with pin markings and enlarged pads (bottom).

"BigPads" variant denotes a footprint with enlarged pads more suitable for single-layer PCB's without metalized holes.

8-pin TO-3 footprint

Footprint name:
TO-3-8_Isolated

8-pin variant of the TO-3 package with pins situated along a 12.7mm circle spaced out every 40 degrees. Outer metal case is isolated from internal circuitry.



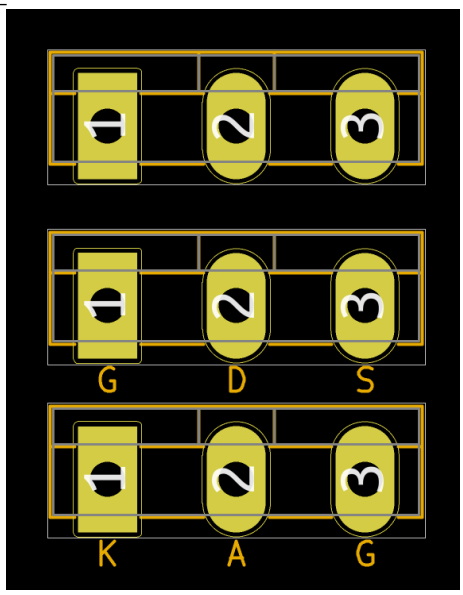
TO-3-8_Isolated footprint

TO-3 – Plastic (TO-3P) vertical power transistor footprints

Footprint count: 5

Footprint naming convention:
TO-3P-3_Vertical_<optional: pin marking order>

Footprint names:
TO-3P-3_Vertical
TO-3P-3_Vertical_BCE
TO-3P-3_Vertical_GCE
TO-3P-3_Vertical_GDS
TO-3P-3_Vertical_KAG



TO-3P standard footprint (top), FET transistor footprint with GDS pin markings (middle) and a Thryistor footprint with KAG pin markings (bottom).

Available pin markings:

Bipolar transistors:	BCE
IGBT transistors:	GCE
FET transistors:	GDS
Thyristors:	KAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

TO-3 – Plastic (TO-3P) horizontal power transistor footprints

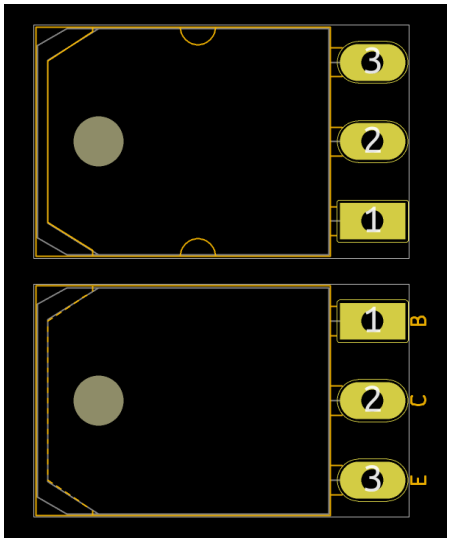
Footprint count: **10**

Footprint naming convention:
TO-3P-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:
TO-3P-3_Horizontal_TabDown
TO-3P-3_Horizontal_TabUp
TO-3P-3_Horizontal_TabDown_GCE
TO-3P-3_Horizontal_TabUp_KAG

Available pin markings:

Bipolar transistors:	BCE
IGBT transistors:	GCE
FET transistors:	GDS
Thyristors:	KAG



TO-3P horizontal "TabDown" standard footprint (top) and bipolar transistor "TabUp" footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

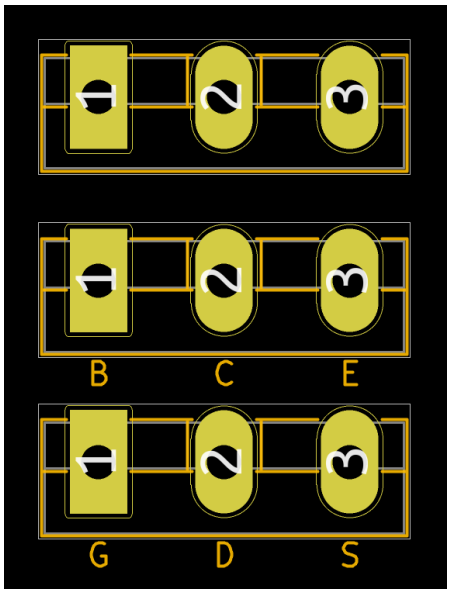
TO-3PB vertical power transistor footprints

Footprint count: **3**

Footprint naming convention:
TO-3PB-3_Vertical_<optional: pin marking order>

Footprint names:
TO-3PB-3_Vertical
TO-3PB-3_Vertical_BCE
TO-3PB-3_Vertical_GDS

Available pin markings:
Bipolar transistors: BCE
FET transistors: GDS



TO-3PB standard footprint (top), bipolar transistor BCE footprint (middle) and a FET transistor GDS footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

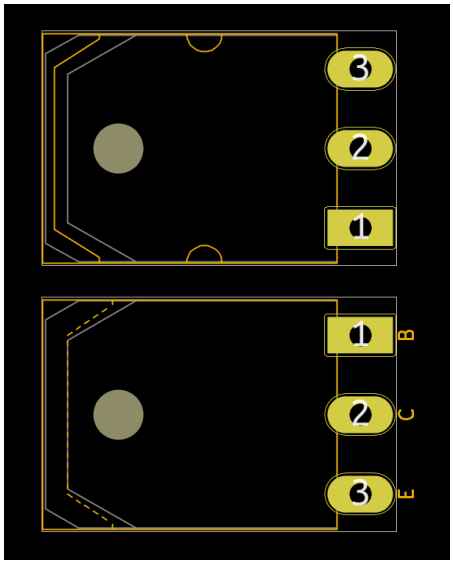
TO-3PB package is almost identical to TO-3P.

TO-3PB horizontal power transistor footprints

Footprint count: 6

Footprint naming convention:
TO-3PB-3_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:
TO-3PB-3_Horizontal_TabDown
TO-3PB-3_Horizontal_TabDown_BCE
TO-3PB-3_Horizontal_TabDown_GDS
TO-3PB-3_Horizontal_TabUp
TO-3PB-3_Horizontal_TabUp_BCE
TO-3PB-3_Horizontal_TabUp_GDS



TO-3PB horizontal "TabDown" standard footprint (top) and bipolar transistor "TabUp" footprint (bottom).

Available pin markings:
Bipolar transistors: BCE
FET transistors: GDS

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

TO-3 Plastic Fully Molded (TO-3PF) vertical power transistor footprints

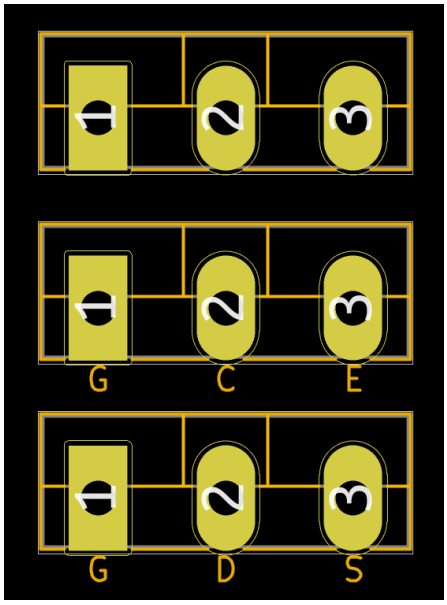
Footprint count: **4**

Footprint naming convention:
TO-3PF-3_Vertical_<optional: pin marking order>

Footprint names:
TO-3PF-3_Vertical
TO-3PF-3_Vertical_BCE
TO-3PF-3_Vertical_GCE
TO-3PF-3_Vertical_GDS

Available pin markings:

Bipolar transistors:	BCE
IGBT transistors:	GCE
FET transistors:	GDS



TO-3PF standard footprint (top), IGBT transistor GCE footprint (middle) and a FET transistor GDS footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

TO-3PF package is a fully insulated version of TO-3P.

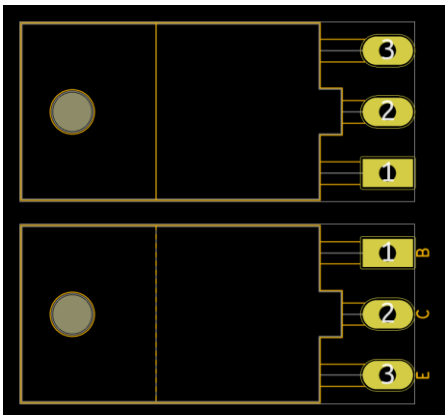
TO-3 Plastic Fully Molded (TO-3PF) horizontal power transistor footprints

Footprint count: 8

Footprint naming convention:
TO-3PF-3_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:
TO-3PF-3_Horizontal_TabDown
TO-3PF-3_Horizontal_TabDown_BCE
TO-3PF-3_Horizontal_TabDown_GCE
TO-3PF-3_Horizontal_TabDown_GDS
TO-3PF-3_Horizontal_TabUp
TO-3PF-3_Horizontal_TabUp_BCE
TO-3PF-3_Horizontal_TabUp_GCE
TO-3PF-3_Horizontal_TabUp_GDS

Available pin markings:
Bipolar transistors: BCE
IGBT transistors: GCE
FET transistors: GDS

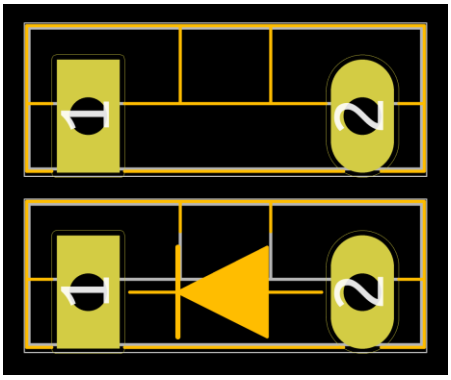


TO-3PF horizontal "TabDown" standard footprint (top) and bipolar transistor "TabUp" footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.

TO-3 Plastic Fully Molded (TO-3PF) two-pin vertical power transistor footprints



TO-3PF-2 standard footprint (top), and a diode footprint (bottom).

Footprint count: **2**

Footprint naming convention:
TO-3PF-2_Vertical_<optional: pin marking order>

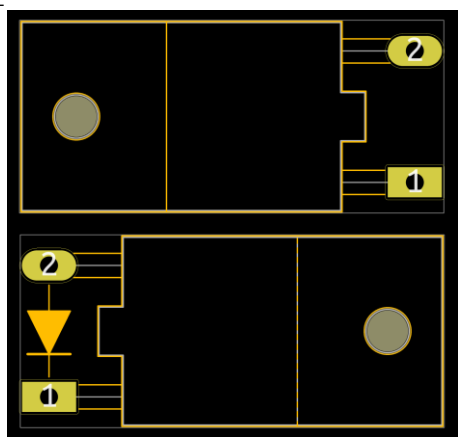
Footprint names:
TO-3PF-3_Vertical
TO-3PF-3_Vertical_KA

Available pin markings:
Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: K means cathode terminal for a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with cathode on pin 1 and anode on pin 2).

TO-3PF package is a fully insulated version of TO-3P.

TO-3 Plastic Fully Molded (TO-3PF) two-pin horizontal power transistor footprints



TO-3PF-2 horizontal "TabDown" standard footprint (top) and diode "TabUp" footprint (bottom).

Footprint count: **4**

Footprint naming convention:
TO-3PF-2_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:
TO-3PF-3_Horizontal_TabDown
TO-3PF-3_Horizontal_TabDown_KA
TO-3PF-3_Horizontal_TabUp
TO-3PF-3_Horizontal_TabUp_KA

Available pin markings:
Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: K means cathode terminal for a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with cathode on pin 1 and anode on pin 2).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.

TO-5 metal can package footprints

Footprint count: **38**

Footprint naming convention:
TO-5-<pin count>_<optional: pin pitch diameter>_<optional: BigPads>_<optional: window>_<optional: pin marking order>

Name examples:
TO-5-3
TO-5-4_Window
TO-5-8_PD5.08
TO-5-6_CBE-EBC
TO-5-2_BigPads_AK
TO-5-10

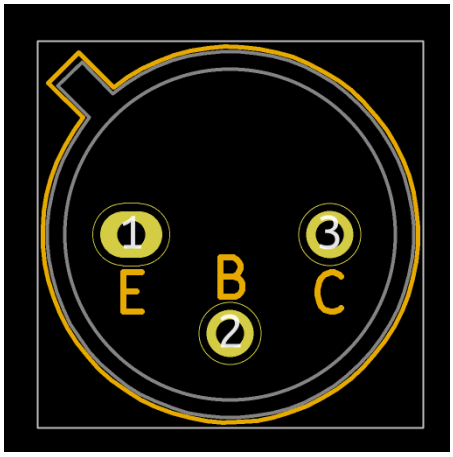
Available pin markings:
Diodes: AK, KA
Bipolar transistors: EBC, CBE-EBC

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode terminal of a diode). Order of the letters corresponds to the device's pinout (example: EBC suffix denotes a footprint for a bipolar transistor with Emitter on pin 1, Base on pin 2 and Collector on pin 3).

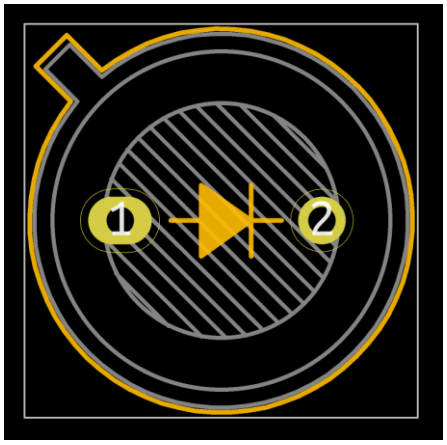
"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

Some footprints have multiple pin pitch variants. Pins are laid out along a circle of specified diameter.

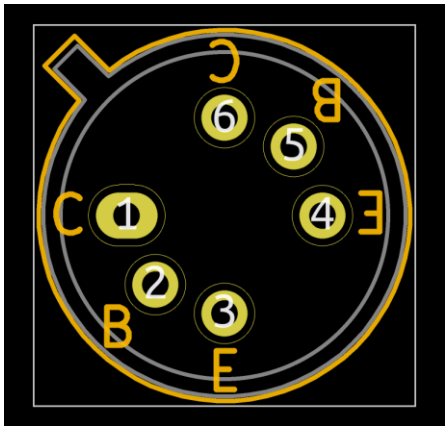
"BigPads" variant denotes a footprint with enlarged pads more suitable for single-layer PCB's without metalized holes.



TO-5-3 "EBC" bipolar transistor footprint.



TO-5-2 "AK" "Window" footprint.



TO-5-6 "CBE-EBC" dual transistor footprint.

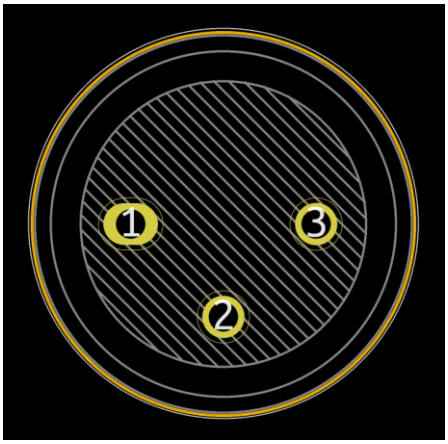
TO-8 metal can package footprints

Footprint count: 4

Footprint naming convention:
TO-8-<pin count>_<optional: window>

Footprint names:
TO-8-2
TO-8-2_Window
TO-8-3
TO-8-3_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-8-3 "Window" footprint.

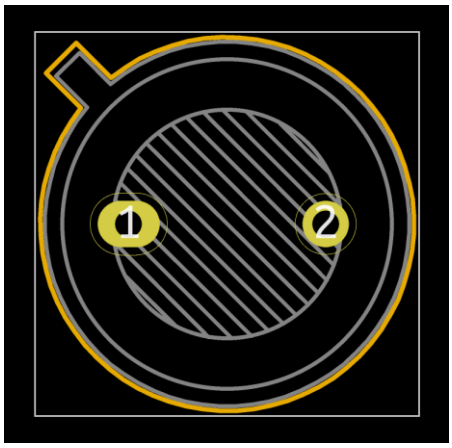
TO-11 metal can package footprints

Footprint count: 4

Footprint naming convention:
TO-11-<pin count>_<optional: window>

Footprint names:
TO-11-2
TO-11-2_Window
TO-11-3
TO-11-3_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-11-2 "Window" footprint.

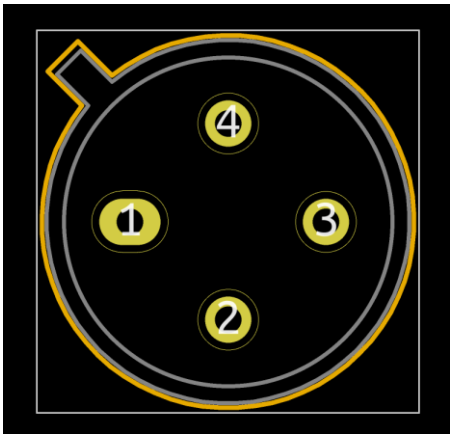
TO-12 metal can package footprints

Footprint count: 2

Footprint naming convention:
TO-12-4_<optional: window>

Footprint names:
TO-12-4
TO-12-4_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-12-4 footprint.

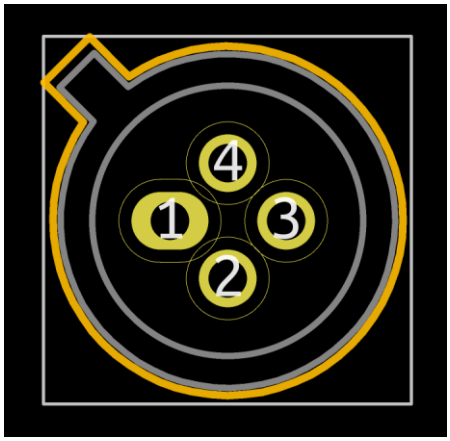
TO-17 metal can package footprints

Footprint count: 2

Footprint naming convention:
TO-17-4_<optional: window>

Footprint names:
TO-17-4
TO-17-4_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-17-4 footprint.

TO-18 metal can package footprints

Footprint count: **33**

Footprint naming convention:
TO-18-<pin count>_<optional: window/lens>_<optional: BigPads>_<optional: in-board mounting>_<optional: pin marking order>

Name examples:
TO-18-2
TO-18-2_Lens_AK
TO-18-2_Zener
TO-18-3_Board_EBC
TO-18-3_BigPads_SDG
TO-18-4_Window

Available pin markings:

Diodes:	AK, KA
Bipolar transistors:	EBC
FET transistors:	SGD, SDG

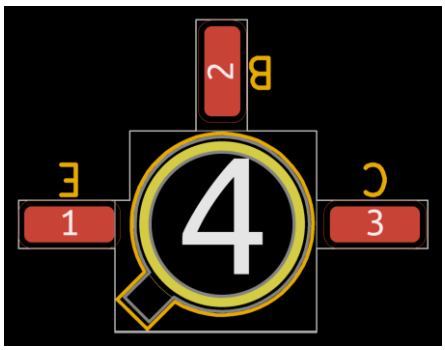
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode terminal of a diode). Order of the letters corresponds to the device's pinout (example: EBC suffix denotes a footprint for a bipolar transistor with Emitter on pin 1, Base on pin 2 and Collector on pin 3).

Lens or Window options denote packages with embedded windows used by optoelectronic devices (phototransistors, photodiodes etc.).

Board option denotes an alternate mounting method for metal can packages, where the can is put through a plated hole in the PCB and leads are soldered to the surface of the board.

"BigPads" variant denotes a footprint with enlarged pads more suitable for single-layer PCB's without metalized holes.

TO-18-2 "Zener" footprint.



TO-18-3 "Board" transistor footprint.

TO-18-4 "Lens" footprint.

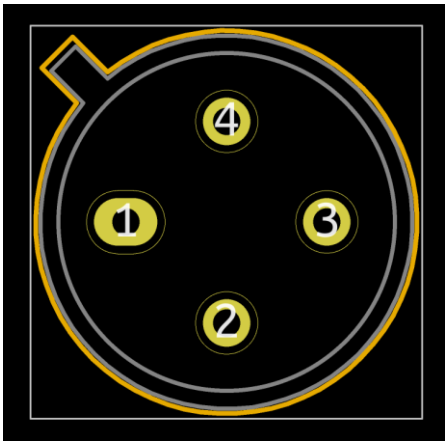
TO-33 metal can package footprints

Footprint count: 2

Footprint naming convention:
TO-33-4_<optional: window>

Footprint names:
TO-33-4
TO-33-4_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-33-4 footprint.

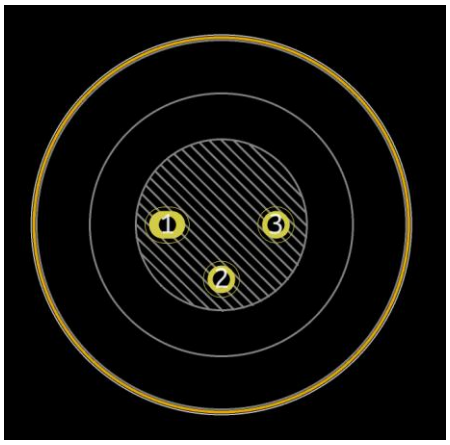
TO-38 metal can package footprints

Footprint count: 4

Footprint naming convention:
TO-38-<pin count>_<optional: window>

Footprint names:
TO-38-2
TO-38-2_Window
TO-38-3
TO-38-3_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



TO-38-3 "Window" footprint.

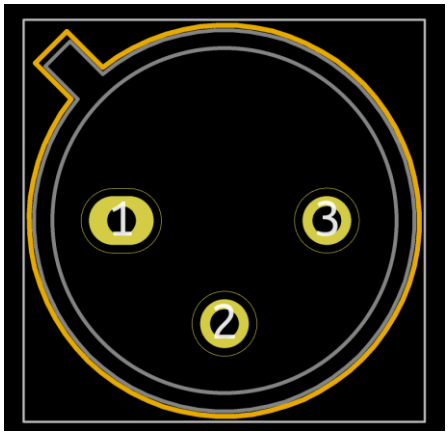
TO-39 metal can package footprints

Footprint count: **20**

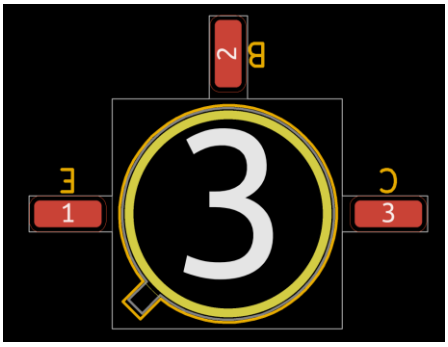
Footprint naming convention:
TO-39-<pin count>_<optional: window>_<optional: BigPads>_<optional: in-board mounting>_<optional: pin marking order>

Name examples:
TO-39-2_Window
TO-39-3_SGD
TO-39-3_Board_EBC
TO-39-6
TO-39-10
TO-39-3_BigPads_EBC

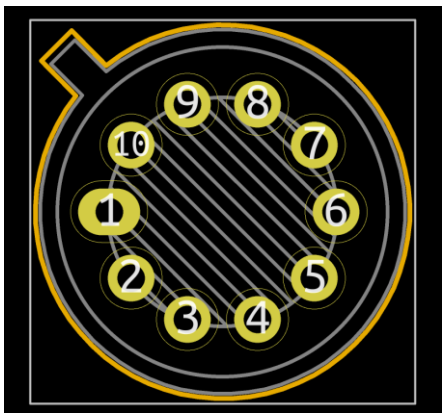
Available pin markings:
Bipolar transistors: EBC
FET transistors: SGD



TO-39-3 footprint.



TO-39-3 "Board" bipolar transistor footprint.



TO-39-10 "Window" footprint.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode terminal of a diode). Order of the letters corresponds to the device's pinout (example: EBC suffix denotes a footprint for a bipolar transistor with Emitter on pin 1, Base on pin 2 and Collector on pin 3).

Window option denotes package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

Board option denotes an alternate mounting method for metal can packages, where the can is put through a plated hole in the PCB and leads are soldered to the surface of the board.

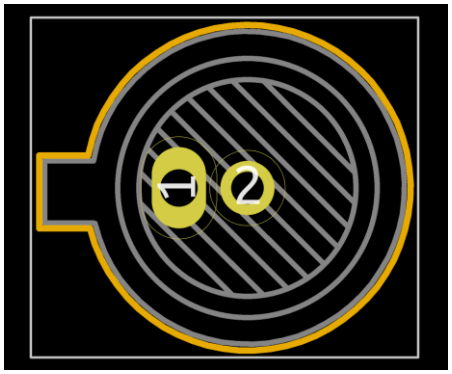
"BigPads variant denotes a footprint with enlarged pads more suitable for single-layer PCB's without metalized holes.

TO-46 metal can package footprints

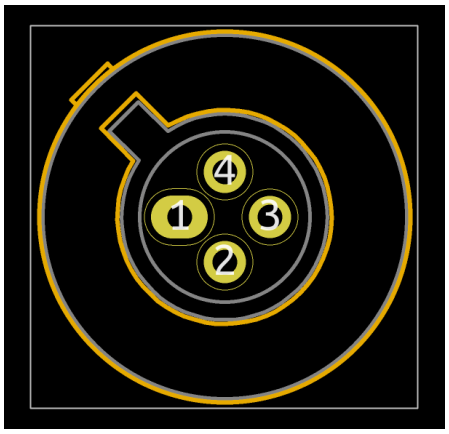
Footprint count: 14

Footprint naming convention:
TO-46-<pin count>_<optional: Pin2Center>_<optional: BigPads>_<optional: window>_<optional: ThermalShield>

Name examples:
TO-46-2
TO-46-2_Pin2Center_Window
TO-46-3_Window
TO-46-4_ThermalShield
TO-46-4



TO-46-2 "Window" footprint with pin 2 on the center.



TO-46-4 "ThermalShield" footprint.

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

"Pin2Center" option means that a particular footprint has pad number 2 in the center of the can.

"ThermalShield" option refers to a TO-46 package with a thermal shield as used by the LM399 reference voltage sources.

"BigPads variant denotes a footprint with enlarged pads more suitable for single-layer PCB's without metalized holes.

TO-52 metal can package footprints

Footprint count: 4

Footprint naming convention:
TO-52-<pin count>_<optional: window>

Footprint names:
TO-52-2
TO-52-2_Window
TO-52-3
TO-52-3_Window

TO-52-3 footprint.

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

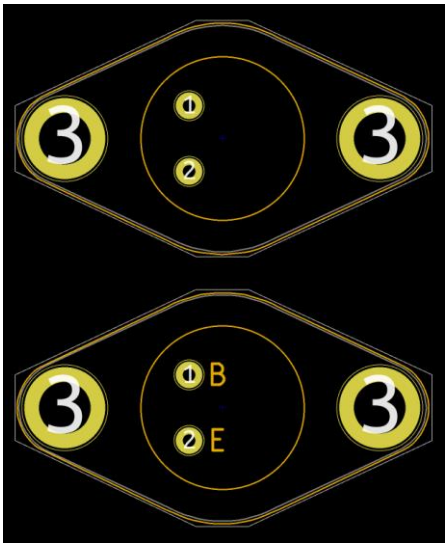
TO-66 power transistor footprints

Footprint count: 2

Footprint naming convention:
TO-66-<optional: pin marking order>

Footprint names:
TO-66
TO-66_BEC

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).



TO-66 standard footprint (top) and TO-66 bipolar transistor footprint with pin markings (bottom).

TO-66 package is a smaller version of the standard TO-3 metal can.

TO-71 metal can package footprints (new)

Footprint count: 6

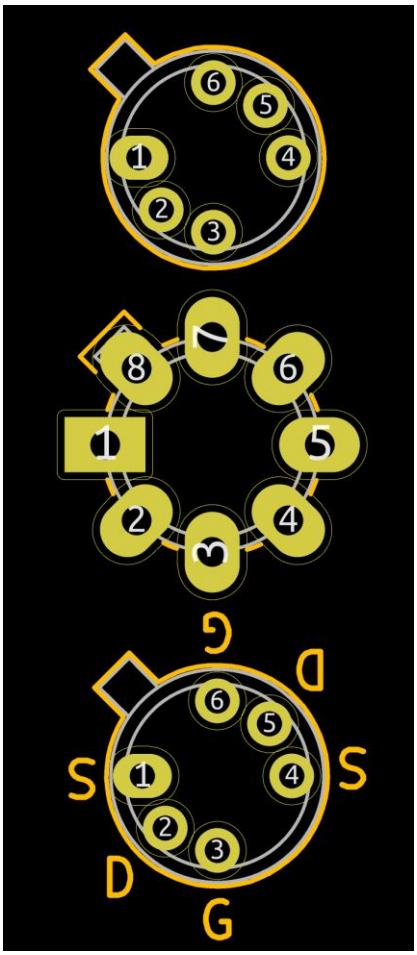
Footprint naming convention:
TO-71-<pin count>_<optional: BigPads>_<optional: pin marking order>

Name examples:
TO-71-6
TO-71-8_BigPads
TO-71-6_SDG_SDG

Available pin markings:
Dual FET transistors: SDG_SDG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode terminal of a diode). Order of the letters corresponds to the device's pinout (example: EBC suffix denotes a footprint for a bipolar transistor with Emitter on pin 1, Base on pin 2 and Collector on pin 3).

"BigPads variant denotes a footprint with enlarged pads more suitable for single-layer PCB's without metalized holes.



TO-71-6 standard footprint (top), TO-71-8 BigPads footprint (middle) and TO-71-6 footprint with dual FET pin markings (bottom)

TO-72 metal can package footprints

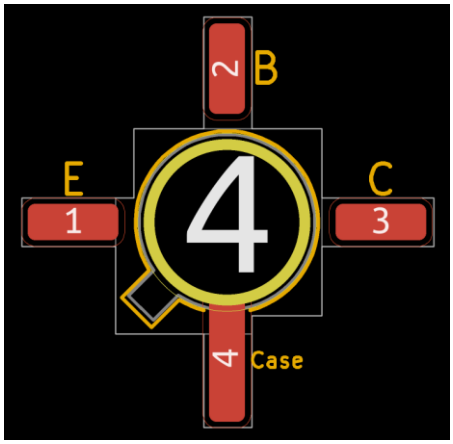
Footprint count: 12

Footprint naming convention:
TO-72-4_<optional: Pin2Center>_<optional: window>
<optional: BigPads>_<optional: pin marking order>

Name examples:
TO-72-4
TO-72-4_Board_DGGS
TO-72-4_BigPads_EBC
TO-72-4_Window

TO-72 FET transistor footprint.

Available pin markings:
Bipolar transistors: EBC
FET transistors: SDG
Dual-Gate FETs: DGGS



TO-72 "Board" bipolar transistor footprint.

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

Board option denotes an alternate mounting method for metal can packages, where the can is put through a plated hole in the PCB and leads are soldered to the surface of the board.

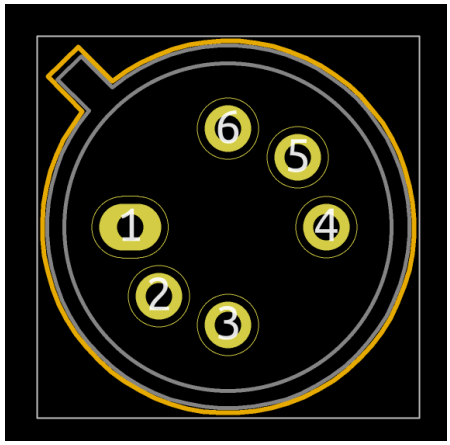
"BigPads variant denotes a footprint with enlarged pads more suitable for single-layer PCB's without metalized holes.

TO-75 metal can package footprints

Footprint count: 2

Footprint naming convention:
TO-75-6_<optional: window>

Footprint names:
TO-75-6
TO-75-6_Window



TO-75-6 footprint.

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

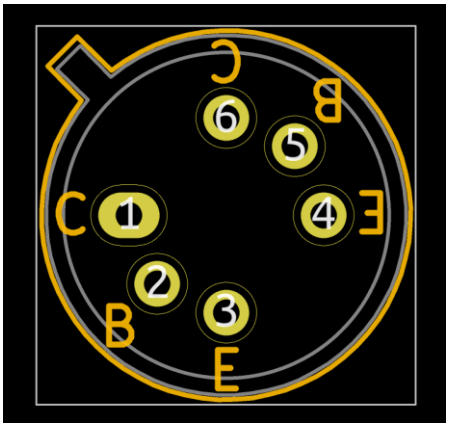
TO-78 metal can package footprints

Footprint count: 10

Footprint naming convention:
TO-78-6_<pin count>_<optional: window>_<optional: pin marking order>

Name examples:
TO-78-8
TO-78-6_CBE-EBC
TO-78-10_Window

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).



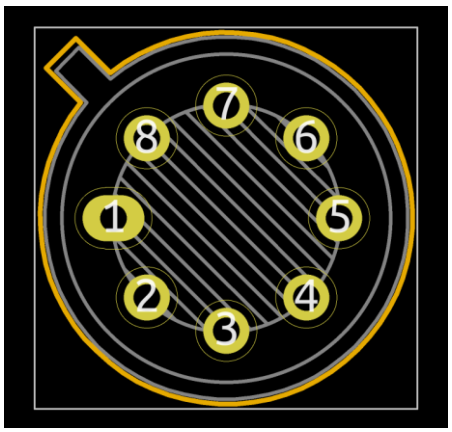
TO-78-6 dual transistor footprint.

TO-99 metal can package footprints

Footprint count: 6

Footprint naming convention:
TO-99-<pin count>_<optional: window>_<optional: BigPads>

Footprint names:
TO-99-6
TO-99-6_Window
TO-99-8
TO-99-8_Window
TO-99-8_BigPads
TO-99-8_Window_BigPads



TO-99-8 "Window" footprint.

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

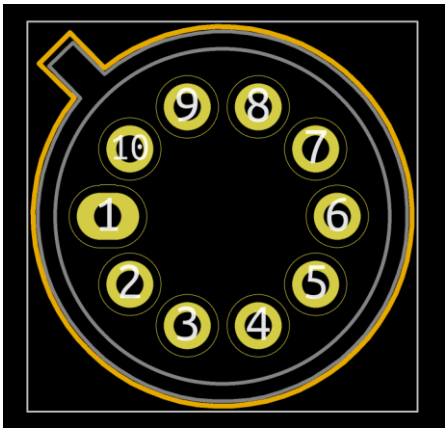
"BigPads variant denotes a footprint with enlarged pads more suitable for single-layer PCB's without metalized holes.

TO-100 metal can package footprints

Footprint count: 4

Footprint naming convention:
TO-100-10_<optional: window>_<optional: BigPads>

Footprint names:
TO-100-10
TO-100-10_Window
TO-100-10_BigPads
TO-100-10_Window_BigPads



TO-100 footprint.

"Window" option denotes a package with embedded window used by optoelectronic devices (phototransistors, photodiodes etc.).

"BigPads variant denotes a footprint with enlarged pads more suitable for single-layer PCB's without metalized holes.

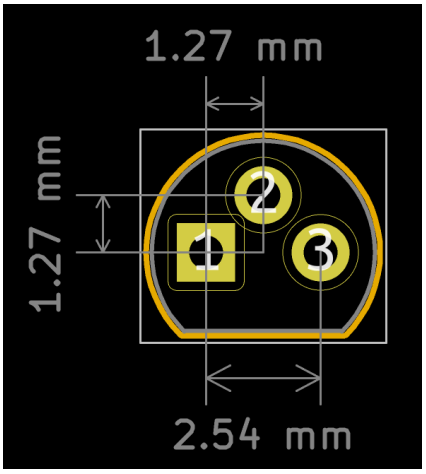
TO-92 (SOT-54) vertical molded plastic package footprints

Footprint count: 45

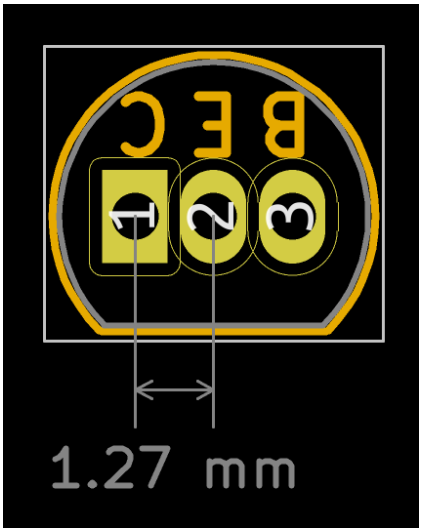
Footprint naming convention:
TO-92_<optional: pin spacing variant>_<optional: HandSolder>_<optional: pin marking order>

Name examples:
TO-92
TO-92_Inline_CBE
TO-92_Wide_DGS
TO-92_Inline_Wide_EBC
TO-92_HandSolder

Available pin markings:
Bipolar transistors: CBE, CEB, EBC, ECB,
FET transistors: DGS, DSG, GDS, GSD, SDG, SGD



TO-92 footprint with standard lead spacing.

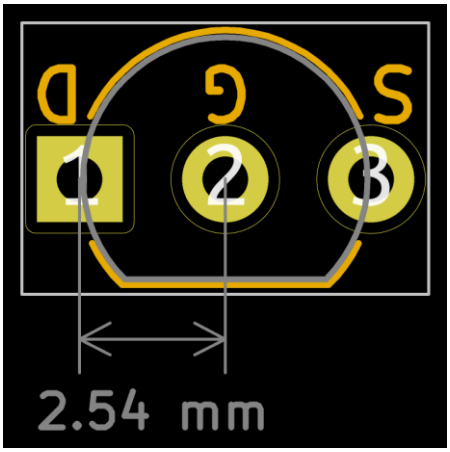


TO-92 bipolar transistor footprint with "Inline" lead spacing.

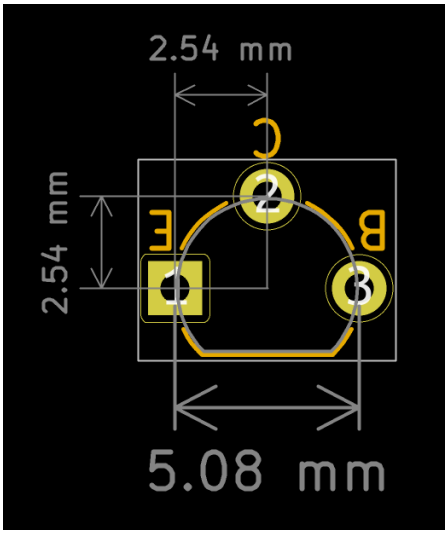
Available pin spacing variants:
Standard – pins are spaced 1.27mm apart with the center pin also being placed 1.27mm forward. This lead spacing used to be commonplace as it was compatible with TO-18 package used by older transistors.
Inline – pins are arranged along a single line, spaced 1.27mm apart. This lead spacing is very common for transistors sold in bulk.
Inline Wide – pins are arranged along a single line, spaced 2.54mm apart. This lead spacing is very common for transistors packaged on tape or ammo packs. This is a default TO-92 type for AKL transistor symbols.
Wide – pins are spaced 2.54mm apart with the center pin additionally being placed 2.54mm forward. This lead spacing provides the most routing space and ease of access for hand soldering.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

"HandSolder" option denotes a footprint with enlarged pads for easier soldering.



TO-92 FET transistor footprint with "Inline Wide" lead spacing.



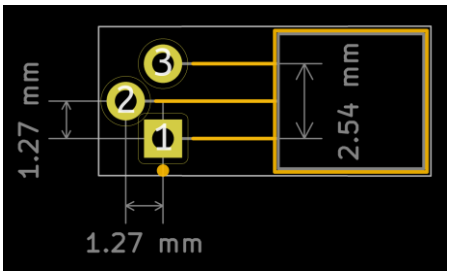
TO-92 bipolar transistor footprint with "Wide" lead spacing.

TO-92 (SOT-54) horizontal molded plastic package footprints

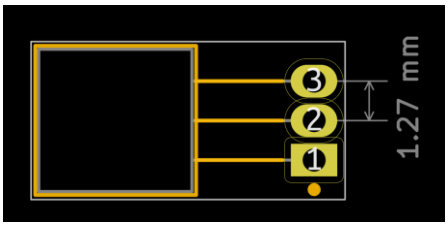
Footprint count: 8

Footprint names:
TO-92_Horizontal1
TO-92_Horizontal2
TO-92_Inline_Horizontal1
TO-92_Inline_Horizontal2
TO-92_Inline_W4.0mm_Horizontal_FlatSideDown
TO-92_Inline_W4.0mm_Horizontal_FlatSideUp
TO-92_W4.0mm_StaggerEven_Horizontal_FlatSideDown
TO-92_W4.0mm_StaggerEven_Horizontal_FlatSideUp

"Horizontal 1" footprints are identical to "Flat side down" footprints. "StaggerEven" footprints are indentical to the standard horizontal footprints. Duplicate footprints with different names are inherited from the original KiCad library and have been left here for backwards compatibility with existing projects.



TO-92 "Horizontal1" or "W4.0mm_Stagger Even_Horizontal_FlatSideDown" footprint.



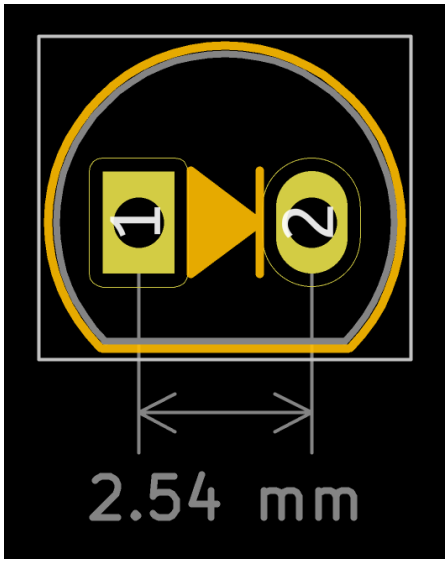
TO-92 "Inline_Horizontal2" or "Inline_ W4.0mm_Horizontal_FlatSideUp" footprint.

Two-pin TO-92 vertical molded plastic package footprints

Footprint count: 6

Footprint naming convention:
TO-92_<optional: pin spacing variant>_<optional: pin marking order>

Footprint names:
TO-92-2
TO-92-2_AK
TO-92-2_KA
TO-92-2_Wide
TO-92-2_Wide_AK
TO-92-2_Wide_KA

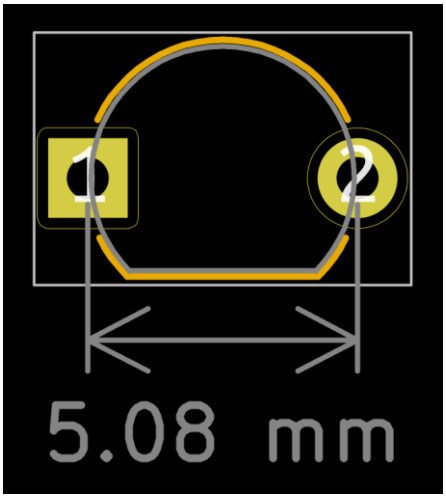


TO-92 diode footprint with standard lead spacing.

Available pin markings:
Diodes: AK, KA

Available pin spacing variants:
Standard – the two pins are spaced 2.54mm apart just as they come out of the package.
Wide – pins are formed to be spaced 5.08mm apart.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: K means cathode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with cathode on pin 1 and anode on pin 2).



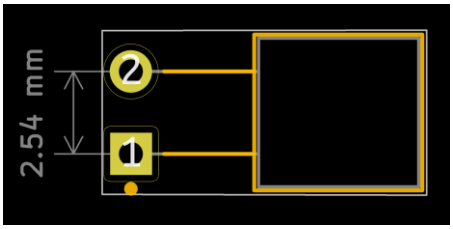
TO-92-2 footprint with "Wide" lead spacing.

Two-pin TO-92 horizontal molded plastic package footprints

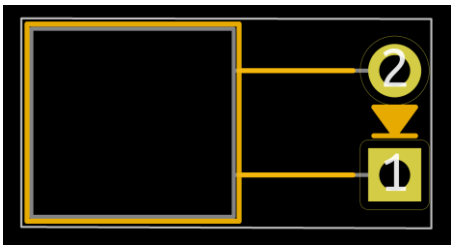
Footprint count: 6

Footprint names:
TO-92-2_Horizontal1
TO-92-2_Horizontal1_KA
TO-92-2_Horizontal2
TO-92-2_Horizontal2_KA
TO-92-2_W4.0mm_Horizontal_FlatSideDown
TO-92-2_W4.0mm_Horizontal_FlatSideUp

Available pin markings:
Diodes: KA



TO-92 "Horizontal1" or "W4.0mm_Horizontal_FlatSideDown" footprint



TO-92 "Horizontal2" diode footprint.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: K means cathode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with cathode on pin 1 and anode on pin 2).

"Horizontal 1" footprints are identical to "Flat side down" footprints. "StaggerEven" footprints are indentical to the standard horizontal footprints. Duplicate footprints with different names are inherited from the original KiCad library and have been left here for backwards compatibility with existing projects.

TO-92 Flat footprint

Footprint name:
TO-92Flat

Slimmer version of the standard TO-92 package, often used by Hall Effect sensors.

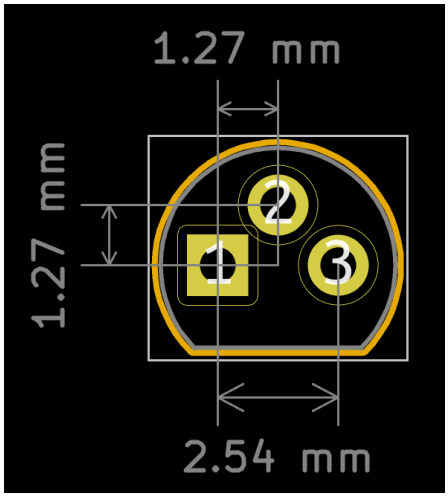
To-92 Flat footprint.

TO-92L vertical molded plastic package footprints

Footprint count: 9

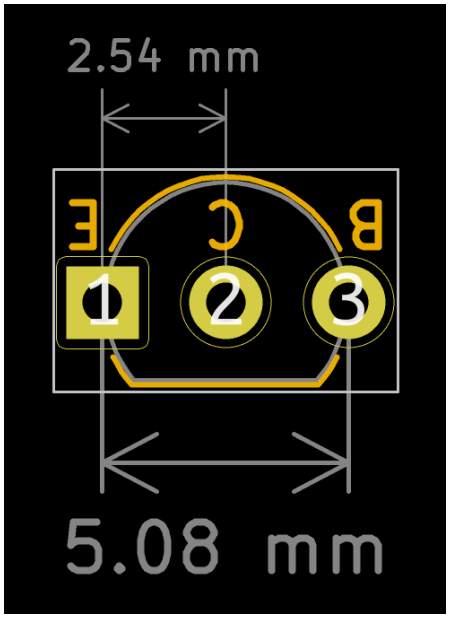
Footprint naming convention:
TO-92L_<optional: pin spacing variant>_<optional: HandSolder>_<optional: pin marking order>

Name examples:
TO-92L
TO-92L_Inline_ECB
TO-92L_HandSolder
TO-92L_Wide



TO-92L footprint with standard lead spacing.

Available pin markings:
Bipolar transistors: ECB



TO-92L bipolar transistor footprint with "Inline Wide" lead spacing.

Available pin spacing variants:
Standard – pins are spaced 1.27mm apart with the center pin also being placed 1.27mm forward. This lead spacing used to be commonplace as it was compatible with TO-18 package used by older transistors.
Inline – pins are arranged along a single line, spaced 1.27mm apart. This lead spacing is very common for transistors sold in bulk.
Inline Wide – pins are arranged along a single line, spaced 2.54mm apart. This lead spacing is very common for transistors packaged on tape or ammo packs. This is a default TO-92 type for AKL transistor symbols.
Wide – pins are spaced 2.54mm apart with the center pin additionally being placed 2.54mm forward. This lead spacing provides the most routing space and ease of access for hand soldering.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order

of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

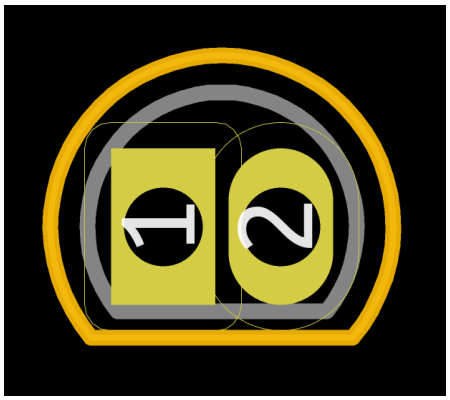
"HandSolder" option denotes a footprint with enlarged pads for easier soldering.

TO-92L is a taller version of the standard TO-92 package, permitting a higher power dissipation.

Two pin Mini TO-92 footprint

Footprint name:
TO-92Mini-2

Miniature temperature sensor package with similar shape to a TO-92 package.



To-92 Mini-2 footprint.

TO-92S vertical molded plastic package footprints

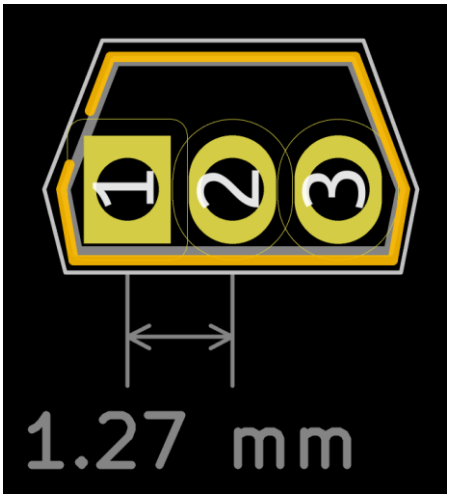
Footprint count: **5**

Footprint naming convention:
TO-92S_<optional: pin count if other than 3>_<optional: pin spacing variant>_<optional: pin marking order>

Footprint names:
TO-92S
TO-92S-2
TO-92S_ECB
TO-92S_Wide
TO-92S_Wide_ECB

Available pin markings:
Bipolar transistors: ECB

Available pin spacing variants:
Standard – pins are spaced 1.27mm apart.
Wide – pins are spaced 2.54mm apart.



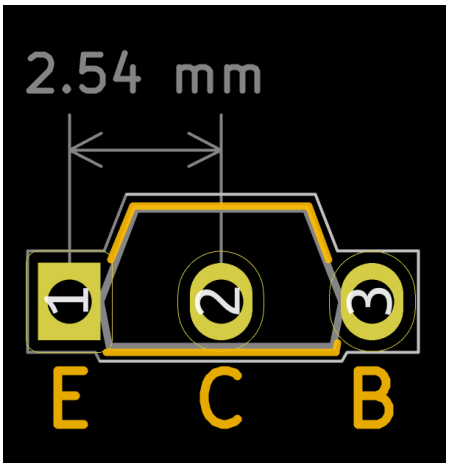
TO-92S footprint with standard lead spacing.

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order

of the letters corresponds to the device's pinout (example: BEC suffix denotes a footprint for a bipolar transistor with Base on pin 1, Emitter on pin 2 and Collector on pin 3).

"HandSolder" option denotes a footprint with enlarged pads for easier soldering.

TO-92S is a slim version of the standard TO-92 package.



TO-92S footprint with standard lead spacing.

TO-126 vertical medium power transistor footprints

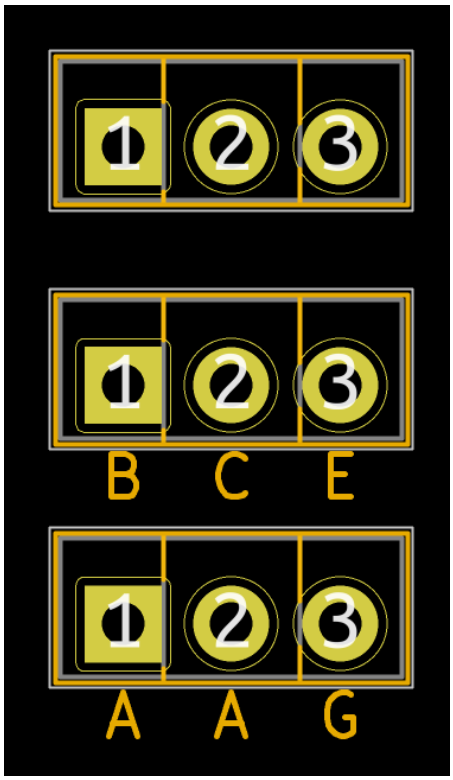
Footprint count: **5**

Footprint naming convention:
TO-126-3_Vertical_<optional: pin marking order>

Footprint names:
TO-126-3_Vertical
TO-126-3_Vertical_AAG
TO-126-3_Vertical_BCE
TO-126-3_Vertical_ECB
TO-126-3_Vertical_KAG

Available pin markings:

Bipolar transistors:	BCE, ECB
Thyristors:	KAG
Triacs:	AAG



TO-126 standard footprint (top), bipolar transistor footprint (middle) and a Triac footprint (bottom).

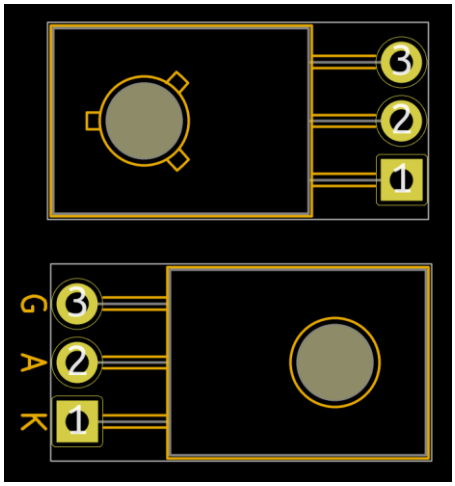
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-126 horizontal medium power transistor footprints

Footprint count: **10**

Footprint naming convention:
TO-126-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:
TO-126-3_Horizontal_TabUp
TO-126-3_Horizontal_TabDown_AAG
TO-126-3_Horizontal_TabUp_ECB
TO-126-3_Horizontal_TabDown



TO-126 horizontal "TabDown" standard footprint (top) and thyristor "TabUp" footprint (bottom).

Available pin markings:

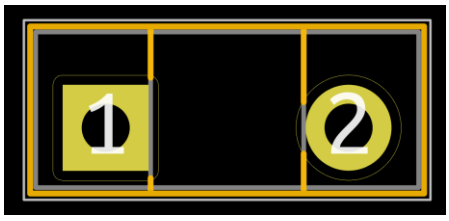
Bipolar transistors:	BCE, ECB
Thyristors:	KAG
Triacs:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: GDS suffix denotes a footprint for a FET transistor with Gate on pin 1, Drain on pin 2 and Source on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

Two pin TO-126 vertical footprint

Footprint name:
TO-126-2_Vertical



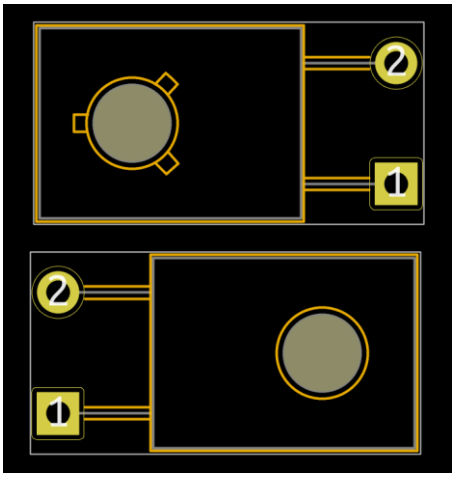
TO-126-2 vertical footprint.

Two pin TO-126 horizontal medium power transistor footprints

Footprint count: 2

Footprint names:
TO-126-2_Horizontal_TabDown
TO-126-2_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



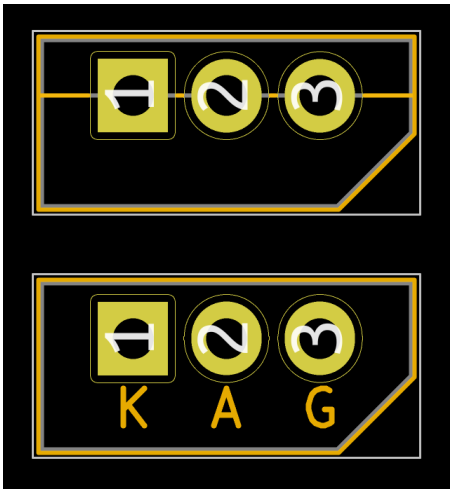
TO-126 horizontal "TabDown" footprint (top) and a "TabUp" footprint (bottom).

TO-202 vertical medium power transistor footprints

Footprint count: 4

Footprint naming convention:
TO-202-3_Vertical_<optional: tabless>_<optional: pin marking order>

Footprint names:
TO-202-3_Vertical
TO-202-3_Vertical_BCE
TO-202-3_Vertical_Tabless
TO-202-3_Vertical_Tabless_KAG



TO-202 standard footprint (top) and a Thyristor footprint (bottom).

Available pin markings:
Bipolar transistors: BCE
Thyristors: KAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"Tabless" option denotes a TO-202 package without the metal tab.

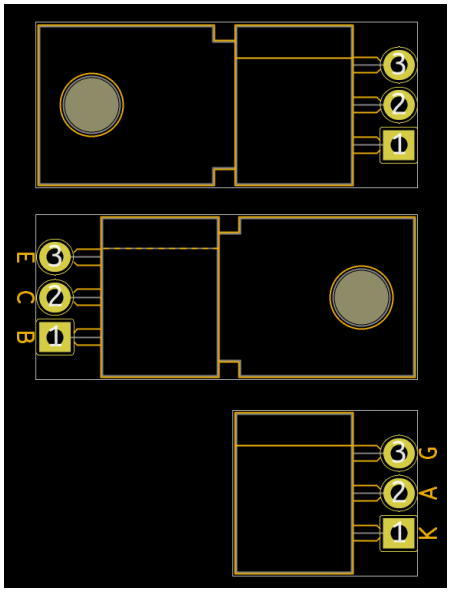
TO-202 horizontal medium power transistor footprints

Footprint count: 8

Footprint naming convention:
TO-202-3_Horizontal_<optional: tabless>_<optional: pin marking order>

Name examples:
TO-202-3_Horizontal_Up
TO-202-3_Horizontal_Tabless_Down_KAG
TO-202-3_Horizontal_Tabless_Up
TO-202-3_Horizontal_Down_BCE

Available pin markings:
Bipolar transistors: BCE
Thyristors: KAG



TO-202 standard horizontal footprint (top), bipolar transistor footprint (middle) and a tables Thyristor footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint
for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"Tabless" option denotes a TO-202 package without the metal tab.

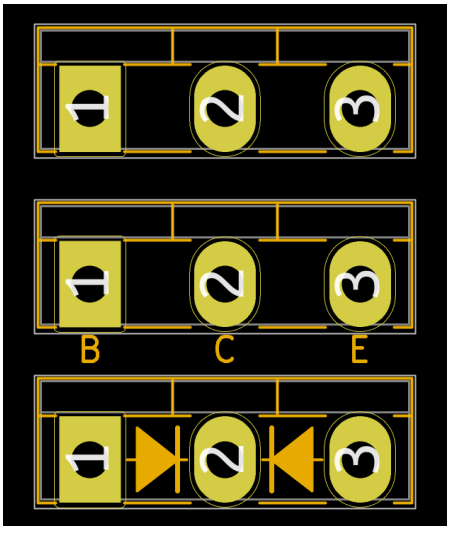
"Down" and "Up" options refer to the direction the part is bent. "Up" means that the front of the package is facing up and "Down" means that front of the package is facing down and contacting the PCB.

TO-218 vertical power transistor footprints

Footprint count: 6

Footprint naming convention:
TO-218-3_Vertical_<optional: pin marking order>

Footprint names:
TO-218-3_Vertical
TO-218-3_Vertical_AAG
TO-218-3_Vertical_AKA
TO-218-3_Vertical_BCE
TO-218-3_Vertical_GDS
TO-218-3_Vertical_KAG



TO-218 standard footpritnt (top), bipolar transistor footprint (middle) and a dual diode footprint (bottom).

Available pin markings:

Diodes:	AKA
Bipolar transistors:	BCE
FET transistors:	GDS
Thyristors:	KAG
Traics:	AAG

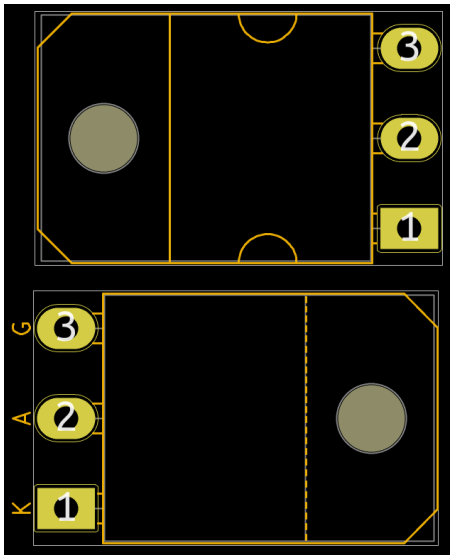
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-218 horizontal power transistor footprints

Footprint count: **12**

Footprint naming convention:
TO-218-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:
TO-218-3_Horizontal_TabDown
TO-218-3_Horizontal_TabUp_GDS
TO-218-3_Horizontal_TabDown_AKA
TO-218-3_Horizontal_TabUp



TO-218 standard footpritnt "TabDown" (top) and a thyristor "TabUp" footprint (bottom).

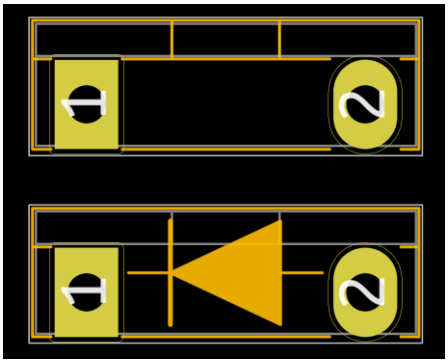
Available pin markings:

Diodes:	AKA
Bipolar transistors:	BCE
FET transistors:	GDS
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

Two pin TO-218 vertical power transistor footprints



TO-218-2 standard footpritnt (top) and a diode footprint (bottom).

Footprint count: **2**

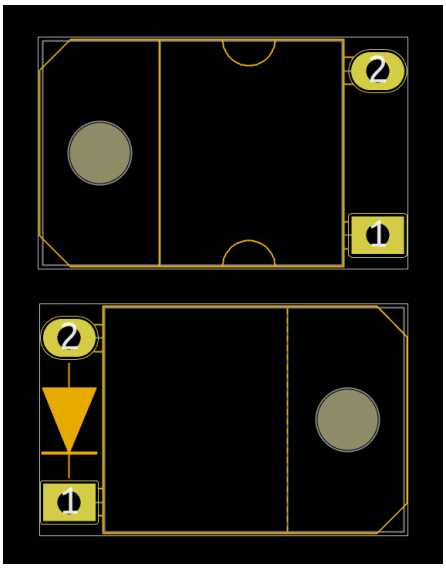
Footprint naming convention:
TO-218-2_Vertical_<optional: pin marking order>

Footprint names:
TO-218-2_Vertical
TO-218-2_Vertical_KA

Available pin markings:
Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

Two pin TO-218 horizontal power transistor footprints



TO-218 "TabDown" footpritnt (top) and a diode "TabUp" footprint (bottom).

Footprint count: **4**

Footprint naming convention:
TO-218-2_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:
TO-218-2_Horizontal_TabDown
TO-218-2_Horizontal_TabDown_KA
TO-218-2_Horizontal_TabUp
TO-218-2_Horizontal_TabUp_KA

Available pin markings:
Diodes: KA

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

TO-220 vertical power transistor footprints

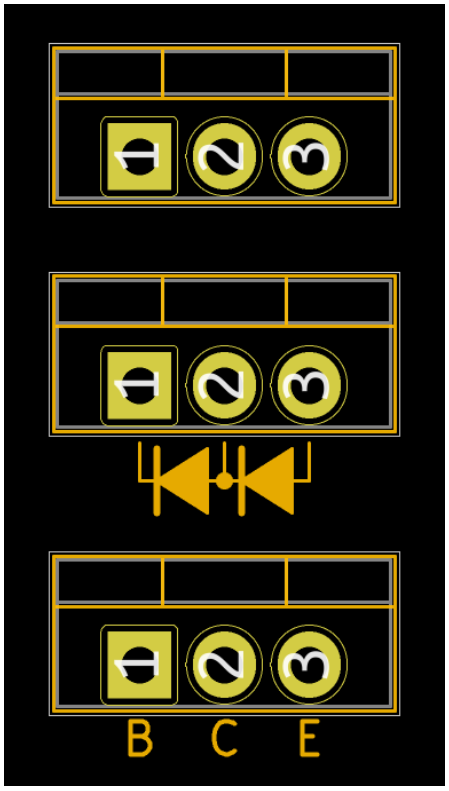
Footprint count: 9

Footprint naming convention:
TO-220-3_Vertical_<optional: pin marking order>

Name examples:
TO-220-3_Vertical
TO-220-3_Vertical_GCE
TO-220-3_Vertical_Series

Available pin markings:

Diodes:	AKA, KAK, Series
Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG



TO-220 standard footpritnt (top), dual diode series footprint (middle) and a bipolar transistor footprint (bottom).

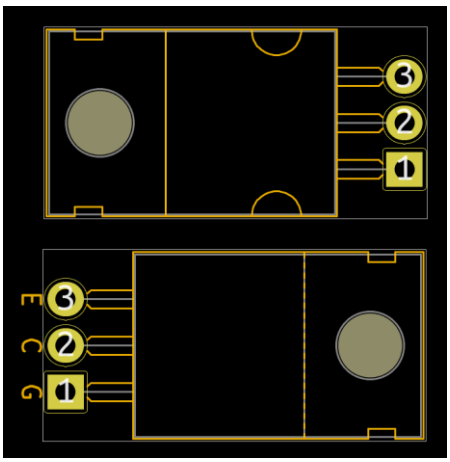
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-220 horizontal power transistor footprints

Footprint count: 18

Footprint naming convention:
TO-220-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:
TO-220-3_Horizontal_TabUp
TO-220-3_Horizontal_TabDown_KAK
TO-220-3_Horizontal_TabUp_GCE
TO-220-3_Horizontal_TabDown
TO-220-3_Horizontal_TabDown_GDS
TO-220-3_Horizontal_TabUp_Series
TO-220-3_Horizontal_TabDown_KAG



TO-220 standard "TabDown" footpritnt (top) and an IGBT "TabUp" footprint (bottom).

Available pin markings:

Diodes:	AKA, KAK, Series
Bipolar transistors:	BCE
FET transistors:	GDS
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

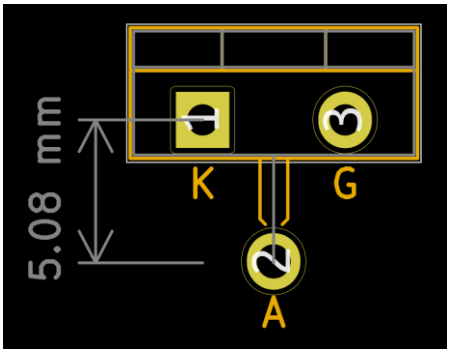
"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

TO-220 vertical power transistor footprints with staggered pin layout

Footprint count: **6**

Footprint naming convention:
TO-220-3_Staggered_Vertical_<optional: pin marking order>

Name examples:
TO-220-3_Staggered_Vertical
TO-220-3_Staggered_Vertical_BCE
TO-220-3_Staggered_Vertical_GDS



TO-220 Thyistor footprint with staggered pin layout.

Available pin markings:

Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

Staggered pin spacing allows for greater clearance, important in high voltage applications.

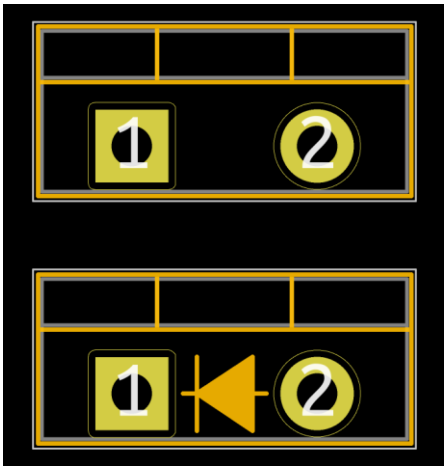
Two pin TO-220 vertical footprints

Footprint count: **2**

Footprint naming convention:
TO-220-2_Vertical_<optional: pin marking order>

Footprint names:
TO-220-2_Vertical
TO-220-2_Vertical_KA

Available pin markings:
Diodes: KA



TO-220 standard footpritnt (top) and a diode footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

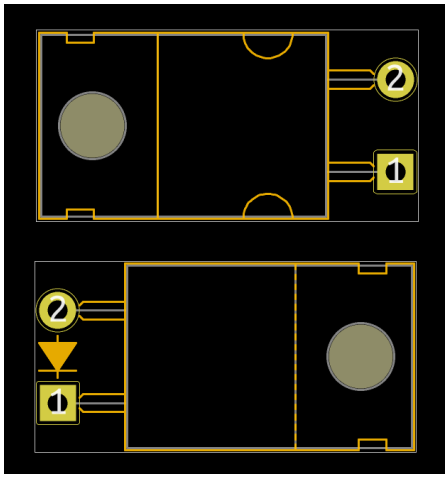
Two pin TO-220 horizontal footprints

Footprint count: **4**

Footprint naming convention:
TO-220-2_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:
TO-220-2_Horizontal_TabDown
TO-220-2_Horizontal_TabDown_KA
TO-220-2_Horizontal_TabUp
TO-220-2_Horizontal_TabUp_KA

Available pin markings:
Diodes: KA



TO-220 "TabDown" footpritnt (top) and a diode "TabUp" footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

Four pin TO-220 vertical footprint

Footprint name:
TO-220-4_Vertical

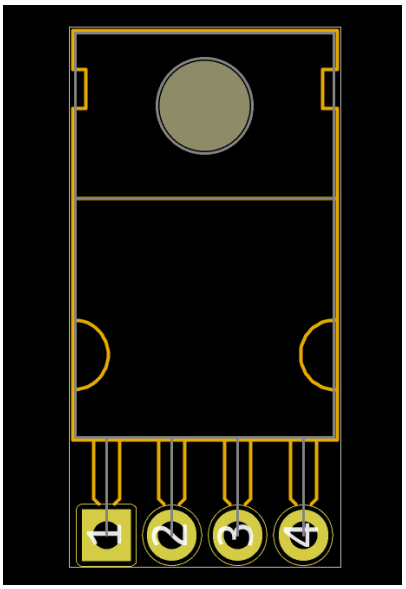
TO-220-4 vertical footprint.

Four pin TO-220 horizontal footprints

Footprint count: **2**

Footprint names:
TO-220-4_Horizontal_TabDown
TO-220-4_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



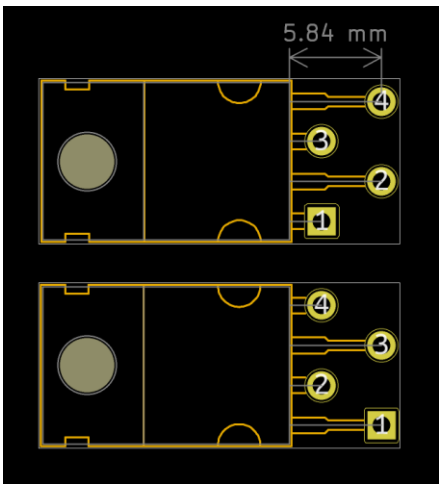
TO-220-4 "TabDown" footpritnt.

Four pin TO-220 horizontal footprints with staggered pins

Footprint count: **2**

Footprint naming convention:
TO-220-4_P5.08x2.54mm_<Pin stagger option>**_Lead**<Distance to furthest hole>**_TabDown**

Footprint names:
TO-220-4_P5.08x2.54mm_StaggerEven_Lead5.84mm_TabDown
TO-220-4_P5.08x2.54mm_StaggerOdd_Lead5.84mm_TabDown



TO-220-4 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole shown.

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.

"TabDown" means the footprints have the metal tab contacting the PCB.

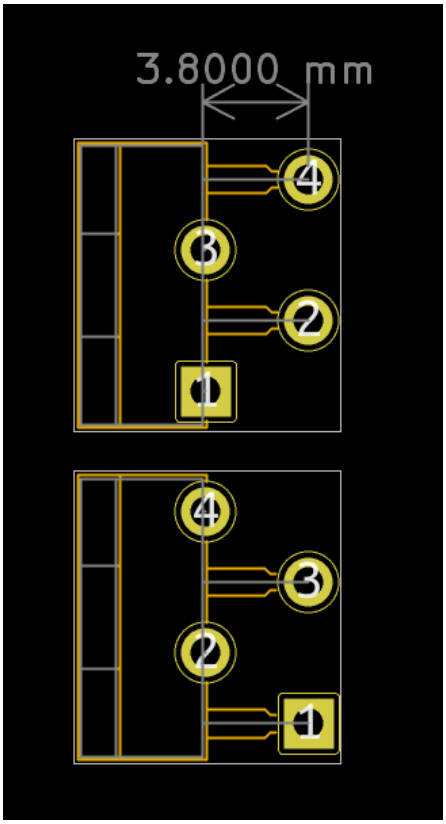
Four pin TO-220 vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-4_P5.08x2.54mm_<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

Footprint names:
TO-220-4_P5.08x2.54mm_StaggerEven_Lead3.8mm_Vertical
TO-220-4_P5.08x2.54mm_StaggerEven_Lead3.8mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.

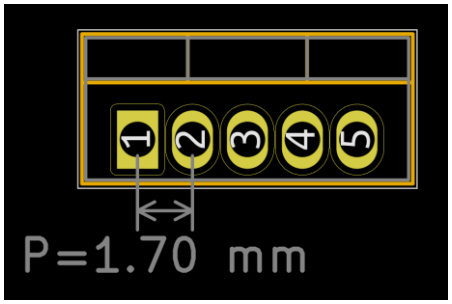


TO-220-4 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole shown.

Five pin TO-220 (Pentawatt) vertical footprint

Footprint name:
TO-220-5_Vertical

5-pin version of the standard TO-220 package. Due to size constraints pin pitch is reduced to 1.7mm



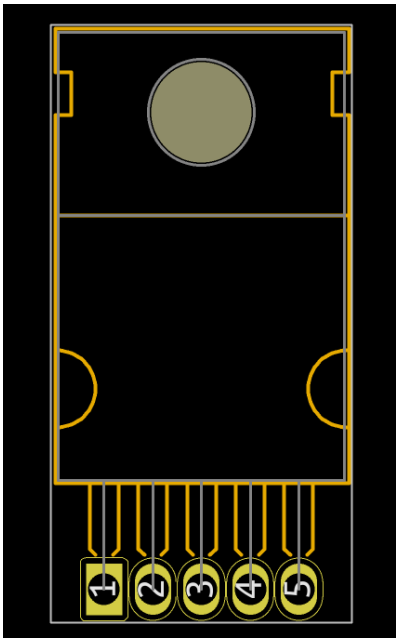
TO-220-5 vertical footprint.

Five pin TO-220 (Pentawatt) horizontal footprints

Footprint count: 2

Footprint names:
TO-220-5_Horizontal_TabDown
TO-220-5_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



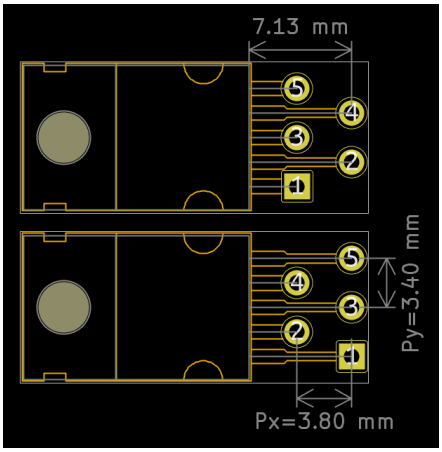
TO-220-5 "TabDown" footpritnt.

Five pin TO-220 (Pentawatt) horizontal footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-5_P3.4x3.8mm_<Pin stagger option>
_Lead<Distance to furthest hole>**_TabDown**

Footprint names:
TO-220-5_P3.4x3.8mm_StaggerEven_Lead7.13mm
_TabDown
TO-220-5_P3.4x3.8mm_StaggerOdd_Lead7.13mm
_TabDown



TO-220-5 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.

"TabDown" means the footprints have the metal tab contacting the PCB.

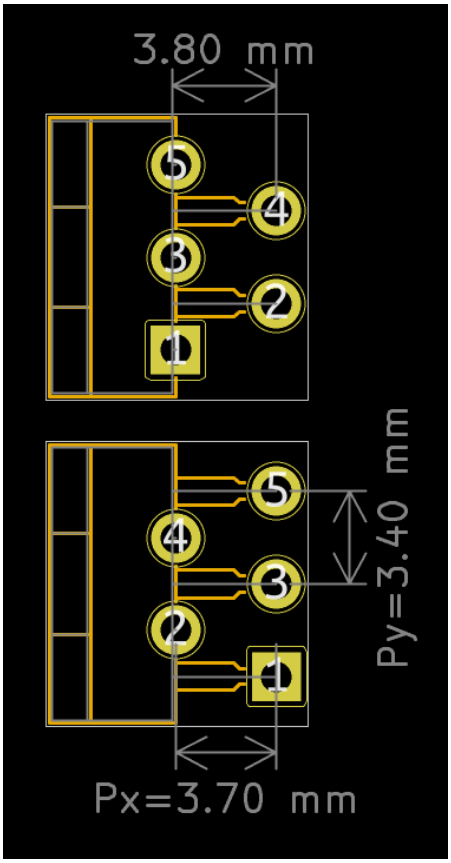
Five pin TO-220 (Pentawatt) vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-5_P3.4x3.7mm_<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

Footprint names:
TO-220-5_P3.4x3.7mm_StaggerEven_Lead3.8mm_Vertical
TO-220-5_P3.4x3.7mm_StaggerEven_Lead3.8mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward. "StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.



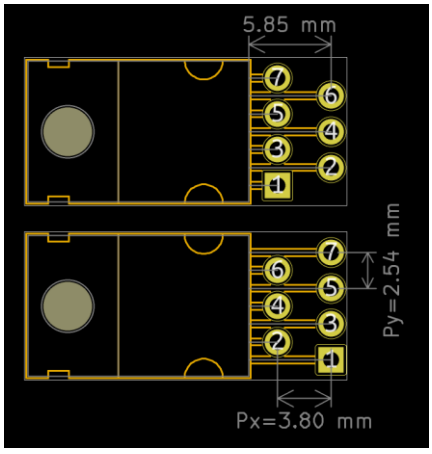
TO-220-5 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

Seven pin TO-220 (Heptawatt) horizontal footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-7_P2.54x3.8mm_<Pin stagger option>**_Lead**<Distance to furthest hole>**_TabDown**

Footprint names:
TO-220-7_P2.54x3.8mm_StaggerEven_Lead5.85mm_TabDown
TO-220-7_P2.54x3.8mm_StaggerOdd_Lead5.85mm_TabDown



TO-220-7 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward. "StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.

"TabDown" means the footprints have the metal tab contacting the PCB.

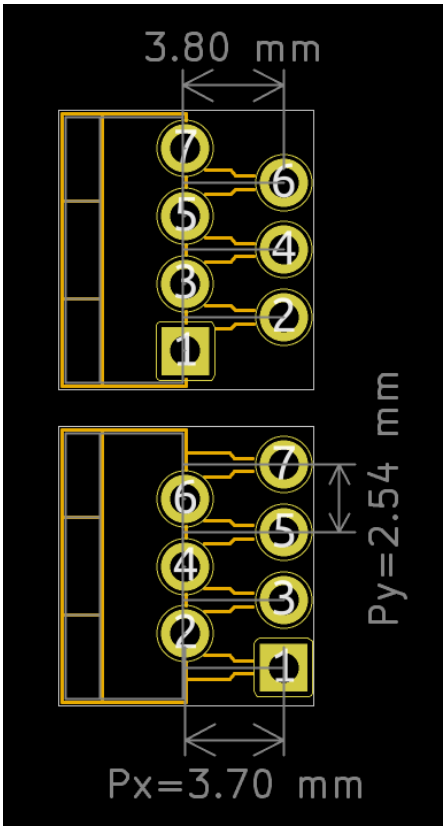
Seven pin TO-220 (Heptawatt) vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-7_P3.4x3.7mm_<Pin stagger option>_**Lead**<Distance to furthest hole>_**Vertical**

Footprint names:
TO-220-7_P2.54x3.7mm_StaggerEven_Lead3.8mm_Vertical
TO-220-7_P2.54x3.7mm_StaggerEven_Lead3.8mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.

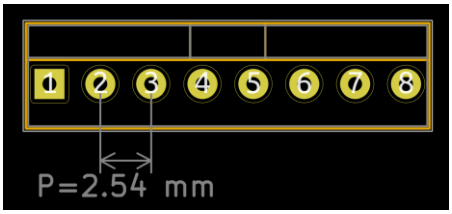


TO-220-7 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

Eight pin extended TO-220 footprint

Footprint name:
TO-220-8_Vertical

8-pin version of the standard TO-220 package with wider body.



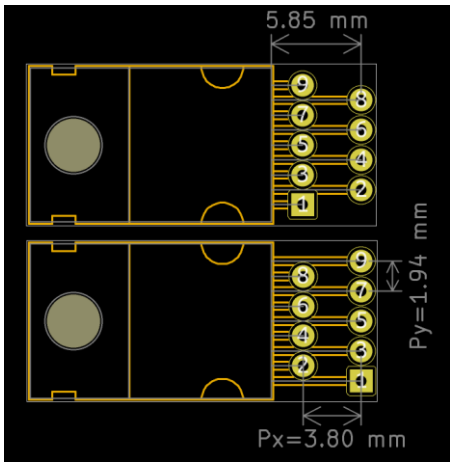
TO-220-8 vertical footprint.

Nine pin TO-220 horizontal footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-9_P2.54x3.8mm_<Pin stagger option>
_Lead<Distance to furthest hole>**_TabDown**

Footprint names:
TO-220-9_P1.94x3.8mm_StaggerEven_Lead5.85mm_TabDown
TO-220-9_P1.94x3.8mm_StaggerOdd_Lead5.85mm_TabDown



TO-220-9 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward. "StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.

"TabDown" means the footprints have the metal tab contacting the PCB.

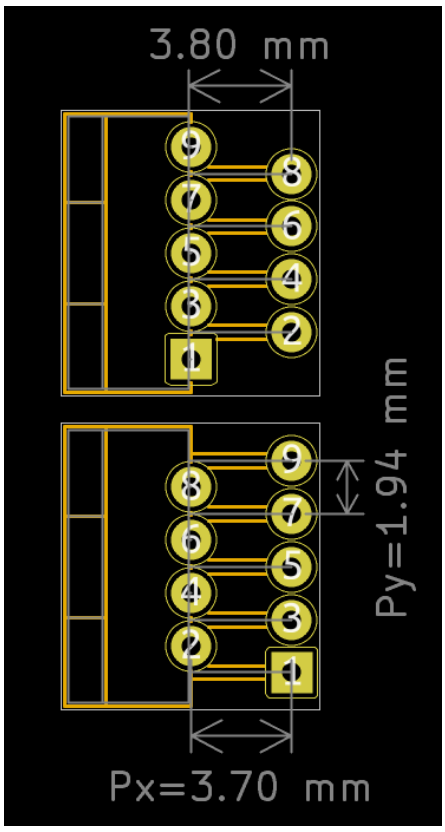
Nine pin TO-220 vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-9_P1.94x3.7mm_<Pin stagger option>
_Lead<Distance to furthest hole>**_Vertical**

Footprint names:
TO-220-9_P1.94x3.7mm_StaggerEven_Lead3.8mm_Vertical
TO-220-9_P1.94x3.7mm_StaggerEven_Lead3.8mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.



TO-220-9 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

11-pin extended TO-220 horizontal footprints with staggered pins

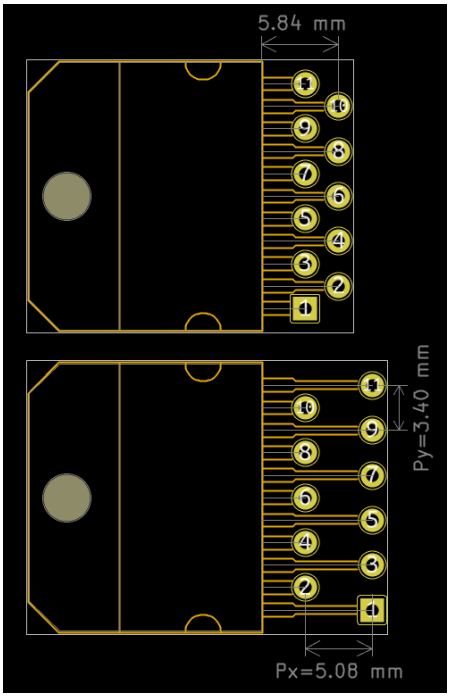
Footprint count: 2

Footprint naming convention:
TO-220-11_P<pitch x>**x**<pitch y>**mm**_<Pin stagger option>**_Lead**<Distance to furthest hole>**_TabDown**

Footprint names:
TO-220-11_P3.4x2.54mm_StaggerEven_Lead5.84mm_TabDown
TO-220-11_P3.4x2.54mm_StaggerOdd_Lead5.84mm_TabDown
TO-220-11_P3.4x5.08mm_StaggerOdd_Lead8.45mm_TabDown

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward. "StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.

"TabDown" means the footprints have the metal tab contacting the PCB.



TO-220-11 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

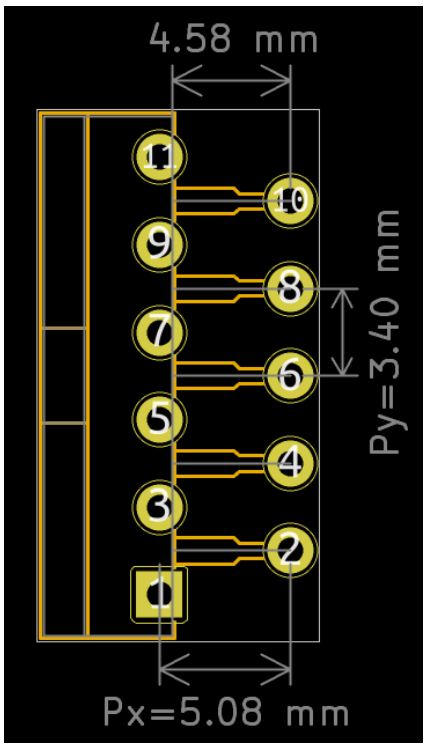
11-pin extended TO-220 vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-11_P3.4x5.08mm_<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

Footprint names:
TO-220-11_P3.4x5.08mm_StaggerEven_Lead4.85mm_Vertical
TO-220-11_P3.4x5.08mm_StaggerEven_Lead4.85mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.



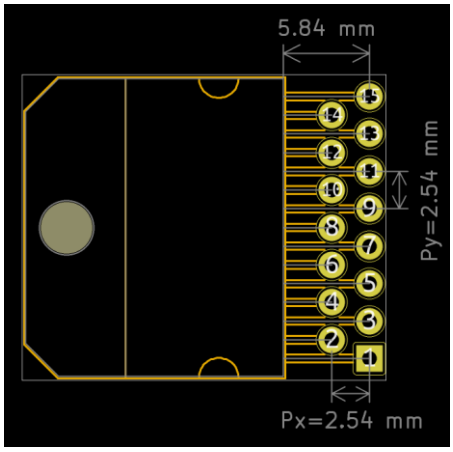
TO-220-11 "StaggerEven" footprint with distance to furthest hole and pin pitches shown.

15-pin extended TO-220 horizontal footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-15_P2.54x2.54mm_<Pin stagger option>**_Lead**<Distance to furthest hole>**_TabDown**

Footprint names:
TO-220-15_P2.54x2.54mm_StaggerEven_Lead5.84mm_TabDown
TO-220-15_P2.54x2.54mm_StaggerOdd_Lead5.84mm_TabDown



TO-220-15 "StaggerOdd" footprint with distance to furthest hole and pin pitches shown.

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward. "StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.

"TabDown" means the footprints have the metal tab contacting the PCB.

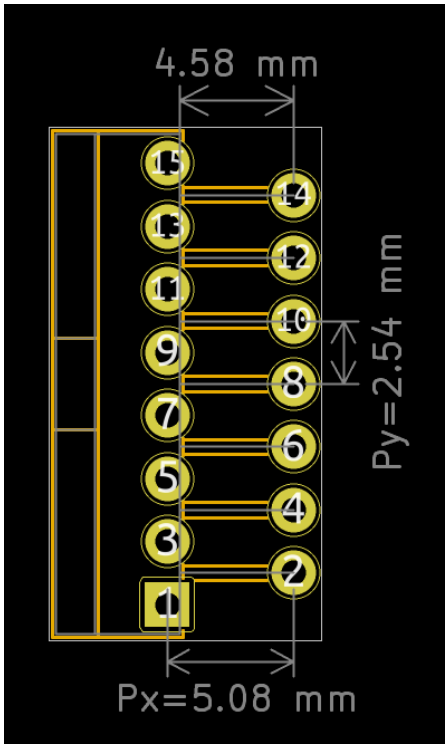
15-pin extended TO-220 vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220-15_P2.54x2.54mm_<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

Footprint names:
TO-220-15_P2.54x2.54mm_StaggerEven_Lead4.85mm_Vertical
TO-220-15_P2.54x2.54mm_StaggerEven_Lead4.85mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.



TO-220-15 "StaggerEven" footprint with distance to furthest hole and pin pitches shown.

Fully Molded TO-220 (TO-220F) vertical footprints

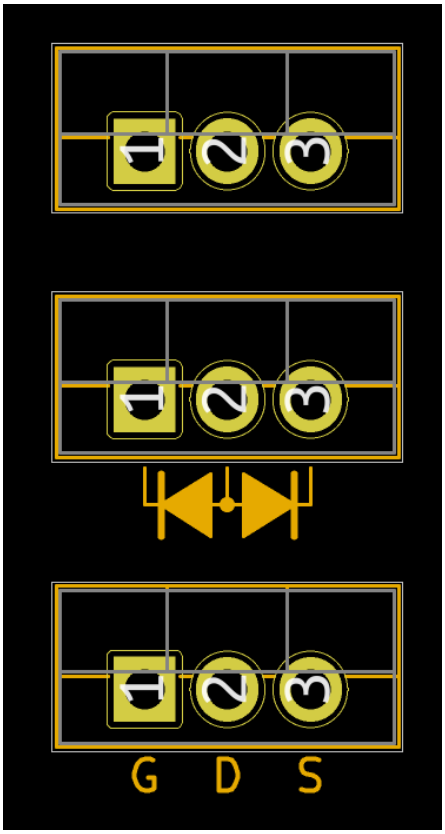
Footprint count: **9**

Footprint naming convention:
TO-220F-3_Vertical_<optional: pin marking order>

Name examples:
TO-220F-3_Vertical
TO-220F-3_Vertical_GCE
TO-220F-3_Vertical_Series

Available pin markings:

Diodes:	AKA, KAK, Series
Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG



TO-220F standard footpritnt (top), dual diode series footprint (middle) and a bipolar transistor footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

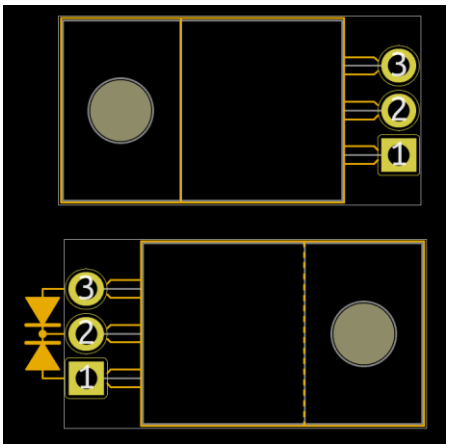
TO-220F package is a fully insulated variant of the standard TO-220.

TO-220F horizontal power transistor footprints

Footprint count: **18**

Footprint naming convention:
TO-220F-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:
TO-220F-3_Horizontal_TabUp
TO-220F-3_Horizontal_TabDown_KAK
TO-220F-3_Horizontal_TabUp_GCE
TO-220F-3_Horizontal_TabDown
TO-220F-3_Horizontal_TabDown_GDS



TO-220F standard "TabDown" footpritnt (top) and an IGBT "TabUp" footprint (bottom).

Available pin markings:

Diodes:	AKA, KAK, Series
Bipolar transistors:	BCE
FET transistors:	GDS
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

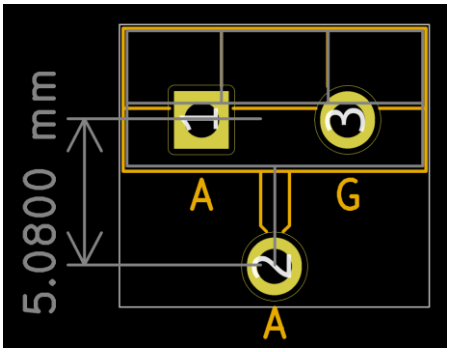
"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.

TO-220F vertical power transistor footprints with staggered pin layout

Footprint count: **6**

Footprint naming convention:
TO-220F-3_Staggered_Vertical_<optional: pin marking order>

Name examples:
TO-220F-3_Staggered_Vertical
TO-220F-3_Staggered_Vertical_BCE
TO-220F-3_Staggered_Vertical_GDS



TO-220F Thyistor footprint with staggered pin layout.

Available pin markings:

Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

Staggered pin spacing allows for greater clearance, important in high voltage applications.

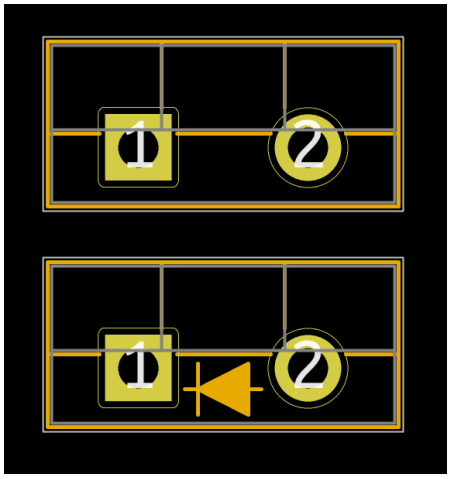
Two pin TO-220F vertical footprints

Footprint count: 2

Footprint naming convention:
TO-220F-2_Vertical_<optional: pin marking order>

Footprint names:
TO-220F-2_Vertical
TO-220F-2_Vertical_KA

Available pin markings:
Diodes: KA



TO-220F standard footpritnt (top) and a diode footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

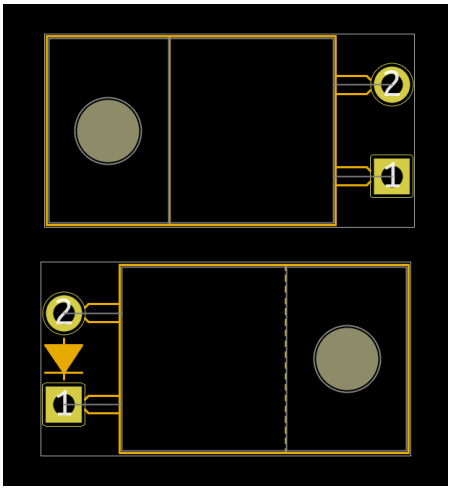
Two pin TO-220F horizontal footprints

Footprint count: 4

Footprint naming convention:
TO-220F-2_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:
TO-220F-2_Horizontal_TabDown
TO-220F-2_Horizontal_TabDown_KA
TO-220F-2_Horizontal_TabUp
TO-220F-2_Horizontal_TabUp_KA

Available pin markings:
Diodes: KA



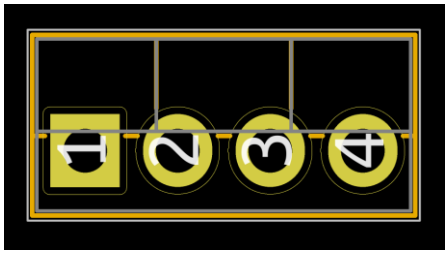
TO-220F "TabDown" footpritnt (top) and a diode "TabUp" footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.

Four pin TO-220F vertical footprint

Footprint name:
TO-220F-4_Vertical



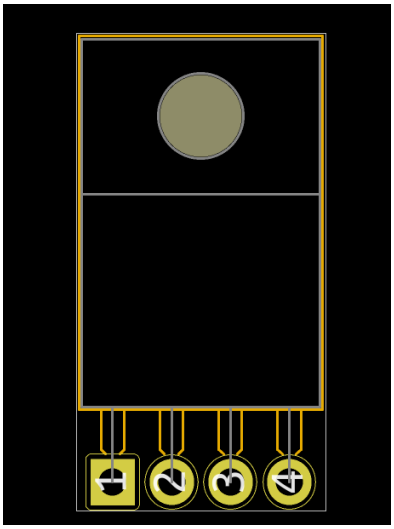
TO-220F-4 vertical footprint.

Four pin TO-220F horizontal footprints

Footprint count: **2**

Footprint names:
TO-220F-4_Horizontal_TabDown
TO-220F-4_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.



TO-220F-4 "TabDown" footpritnt.

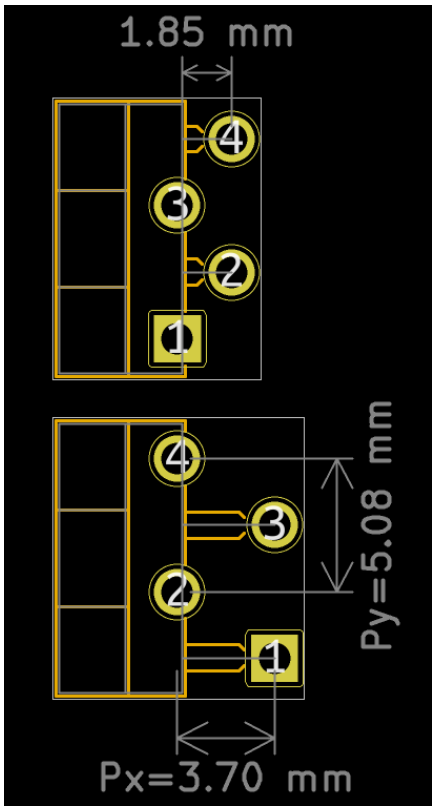
Four pin TO-220F vertical footprints with staggered pins

Footprint count: **4**

Footprint naming convention:
TO-220F-4_P<Vertical pitch>**x**<Horizontal pitch>**_mm_**<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

Footprint names:
TO-220F-4_P5.08x2.05mm_StaggerEven_Lead1.85mm_Vertical
TO-220F-4_P5.08x2.05mm_StaggerEven_Lead1.85mm_Vertical
TO-220F-4_P5.08x3.7mm_StaggerEven_Lead3.5mm_Vertical
TO-220F-4_P5.08x3.7mm_StaggerEven_Lead3.5mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.

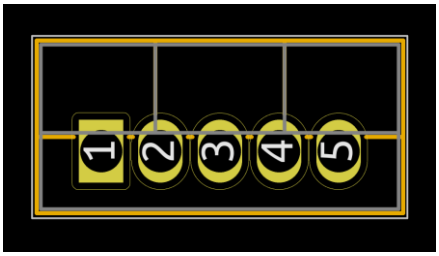


TO-220-4F "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

Five pin TO-220F vertical footprint

Footprint name:
TO-220-5F_Vertical

5-pin version of the standard TO-220F package. Due to size constraints pin pitch is reduced to 1.7mm



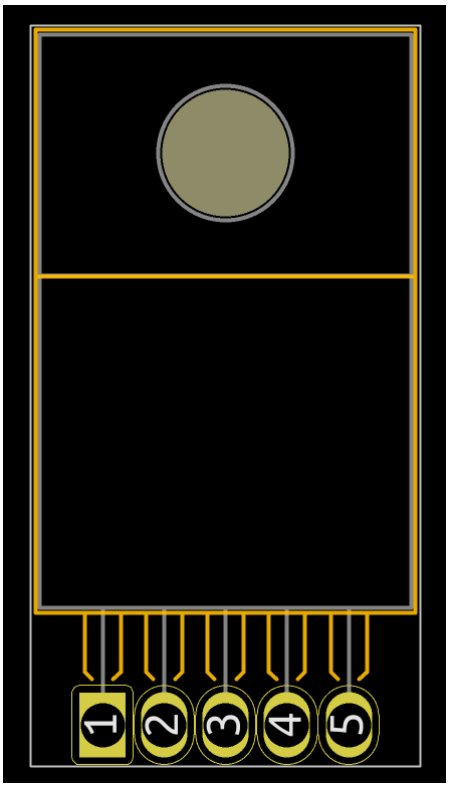
TO-220F-5 vertical footprint.

Five pin TO-220F horizontal footprints

Footprint count: **2**

Footprint names:
TO-220F-5_Horizontal_TabDown
TO-220F-5_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.



TO-220F-5 "TabDown" footpritnt.

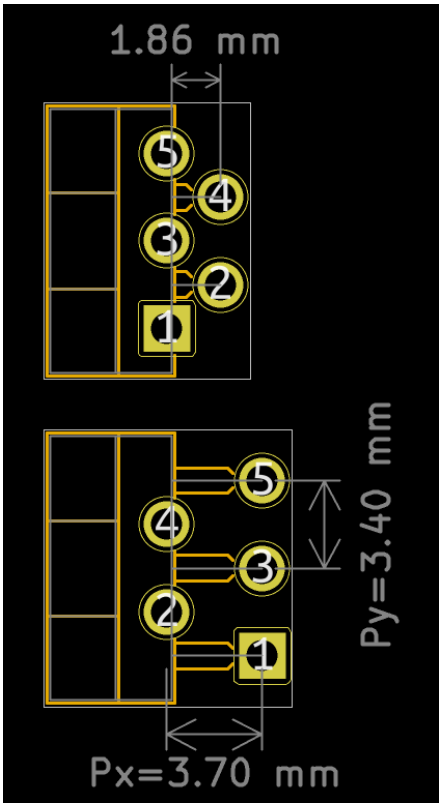
Five pin TO-220F vertical footprints with staggered pins

Footprint count: 4

Footprint naming convention:
TO-220F-5_P<Vertical pitch>**x**<Horizontal pitch>**_mm_**<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

Footprint names:
TO-220F-5_P3.4x2.06mm_StaggerEven_Lead1.86mm_Vertical
TO-220F-5_P3.4x2.06mm_StaggerOdd_Lead1.86mm_Vertical
TO-220F-5_P3.4x3.7mm_StaggerEven_Lead3.5mm_Vertical
TO-220F-5_P3.4x3.7mm_StaggerOdd_Lead3.5mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.



TO-220F-5 "StaggerEven" footprint (top) and a "StaggerOdd" footprint (bottom) with distance to furthest hole and pin pitches shown.

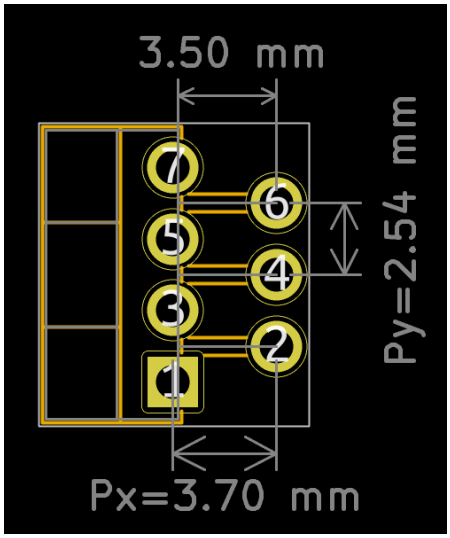
Seven pin TO-220F vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220F-7_P2.54x3.7mm_<Pin stagger option>**_Lead**<Distance to furthest hole>**_Vertical**

Footprint names:
TO-220F-7_P2.54x3.7mm_StaggerEven_Lead3.5mm_Vertical
TO-220F-7_P2.54x3.7mm_StaggerEven_Lead3.5mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.



TO-220F-7 "StaggerEven" footprint with distance to furthest hole and pin pitches shown.

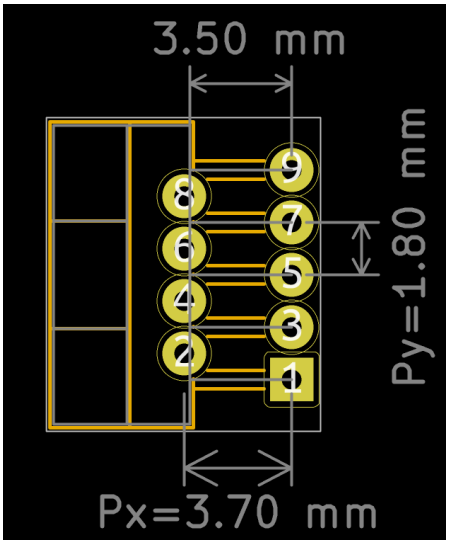
Nine pin TO-220F vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220F-9_P1.8x3.7mm_<Pin stagger option>
**Lead**<Distance to furthest hole>**Vertical**

Footprint names:
TO-220F-9_P1.8x3.7mm_StaggerEven_Lead3.5mm
_Vertical
TO-220F-9_P1.8x3.7mm_StaggerEven_Lead3.5mm
_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.



TO-220F-9 "StaggerOdd" footprint with distance to furthest hole and pin pitches shown.

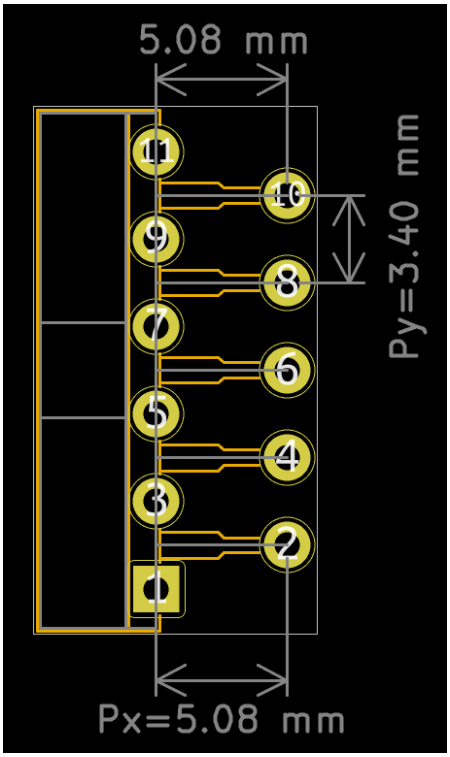
11-pin extended TO-220F vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220F-11_P3.4x5.08mm_<Pin stagger option>
**Lead**<Distance to furthest hole>**Vertical**

Footprint names:
TO-220F-11_P3.4x5.08mm_StaggerEven_Lead5.08mm
_Vertical
TO-220F-11_P3.4x5.08mm_StaggerEven_Lead5.08mm
_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.



TO-220F-11 "StaggerEven" footprint with distance to furthest hole and pin pitches shown.

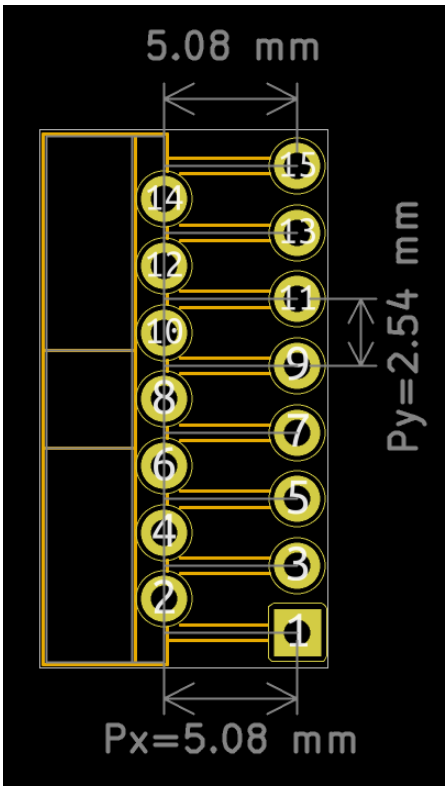
15-pin extended TO-220F vertical footprints with staggered pins

Footprint count: 2

Footprint naming convention:
TO-220F-15_P2.54x5.08mm_<Pin stagger option>
**Lead**<Distance to furthest hole>**Vertical**

Footprint names:
TO-220F-15_P2.54x5.08mm_StaggerEven_Lead5.08mm_Vertical
TO-220F-15_P2.54x5.08mm_StaggerEven_Lead5.08mm_Vertical

"StaggerEven" option denotes footprints with even-numbered pads (2, 4…) extended outward.
"StaggerOdd" option denotes footprints with odd-numbered pads (1, 3…) extended outward.



TO-220F-15 "StaggerOdd" footprint with distance to furthest hole and pin pitches shown.

TO-247 vertical power transistor footprints

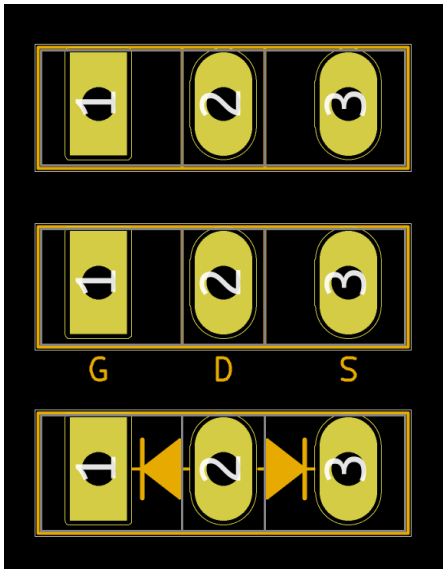
Footprint count: 9

Footprint naming convention:
TO-247-3_Vertical_<optional: pin marking order>

Name examples:
TO-247-3_Vertical
TO-247-3_Vertical_BCE
TO-247-3_Vertical_KAG
TO-247-3_Vertical_AKA

Available pin markings:

Diodes:	AKA, KAK, xKA
Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG



TO-247 standard footpritnt (top), MOSFET footprint (middle) and a dual diode footprint (bottom).

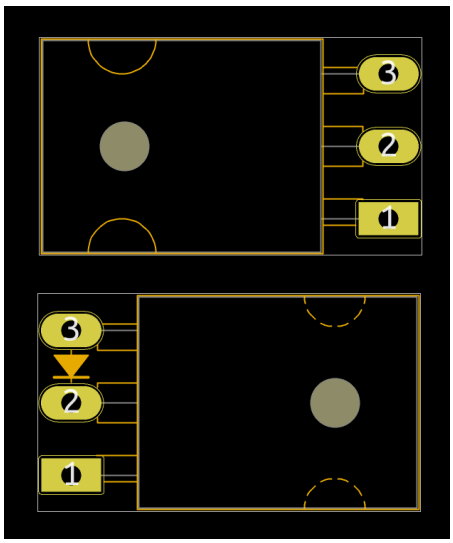
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-247 horizontal power transistor footprints

Footprint count: **18**

Footprint naming convention:
TO-247-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:
TO-247-3_Horizontal_TabUp
TO-247-3_Horizontal_TabDown_KAK
TO-247-3_Horizontal_TabUp_GCE
TO-247-3_Horizontal_TabDown
TO-247-3_Horizontal_TabDown_GDS
TO-247-3_Horizontal_TabUp_Series
TO-247-3_Horizontal_TabDown_KAG



TO-247 standard "TabDown" footpritnt (top) and a single diode "TabUp" footprint (bottom).

Available pin markings:

Diodes:	AKA, KAK, xKA
Bipolar transistors:	BCE
FET transistors:	GDS
IGBT transistors:	GCE
Thyristors:	KAG
Traics:	AAG

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

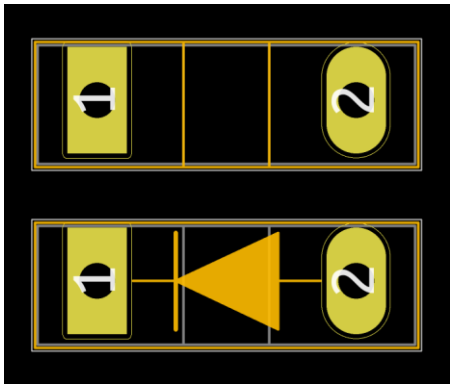
Two pin TO-247 vertical footprints

Footprint count: 2

Footprint naming convention:
TO-247-2_Vertical_<optional: pin marking order>

Footprint names:
TO-247-2_Vertical
TO-247-2_Vertical_KA

Available pin markings:
Diodes: KA



TO-247 standard footpritnt (top) and a diode footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode
on pin 2).

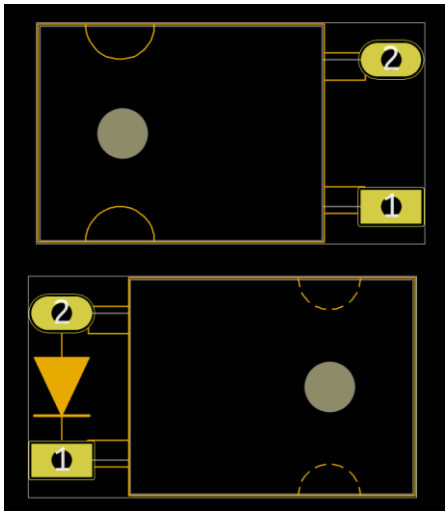
Two pin TO-247 horizontal footprints

Footprint count: 4

Footprint naming convention:
TO-247-2_Horizontal_<tab orientation>_<optional: pin marking order>

Footprint names:
TO-247-2_Horizontal_TabDown
TO-247-2_Horizontal_TabDown_KA
TO-247-2_Horizontal_TabUp
TO-247-2_Horizontal_TabUp_KA

Available pin markings:
Diodes: KA



TO-247 "TabDown" footpritnt (top) and a diode "TabUp" footprint (bottom).

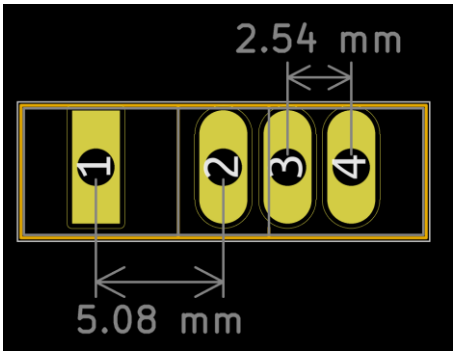
Footprints with pin markings are indicated by a string of
letters corresponding to the terminals for the device (example: A means anode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint
for a diode with Cathode on pin 1 and Anode on pin 2).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the thermal tab contacting the PCB.

Four pin TO-247 vertical footprint

Footprint name:
TO-247-4_Vertical

Package used in some high-power switching transistors with kelvin connection for the source/emitter pin.



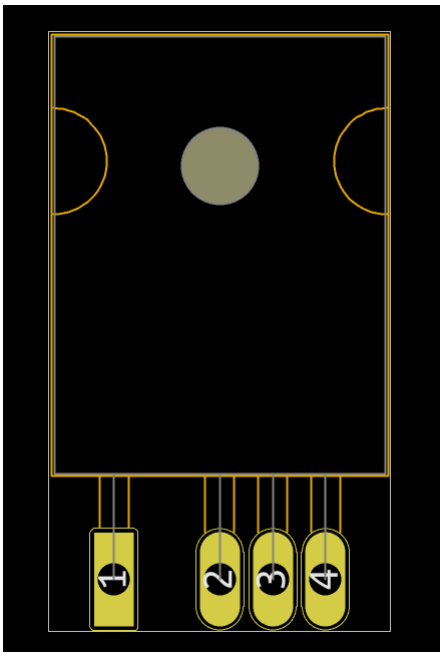
TO-247-4 vertical footprint.

Four pin TO-247 horizontal footprints

Footprint count: 2

Footprint names:
TO-247-4_Horizontal_TabDown
TO-247-4_Horizontal_TabUp

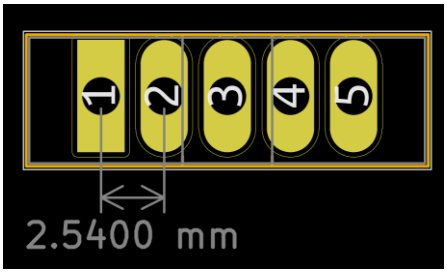
"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-247-4 "TabDown" footpritnt.

Five pin TO-247 vertical footprint

Footprint name:
TO-247-5_Vertical



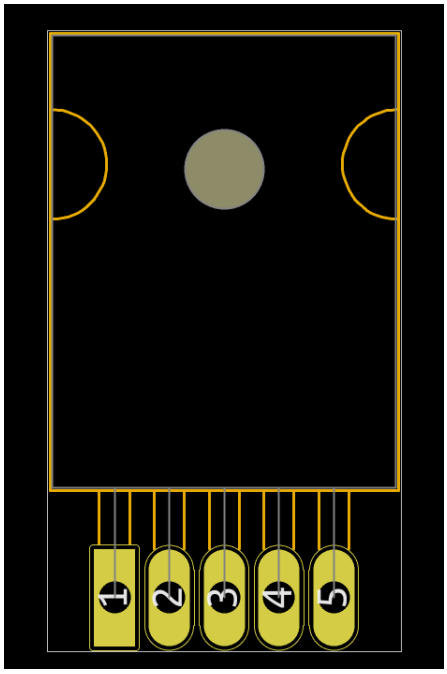
TO-247-5 vertical footprint.

Five pin TO-247 horizontal footprints

Footprint count: 2

Footprint names:
TO-247-5_Horizontal_TabDown
TO-247-5_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-247-5 "TabDown" footpritnt.

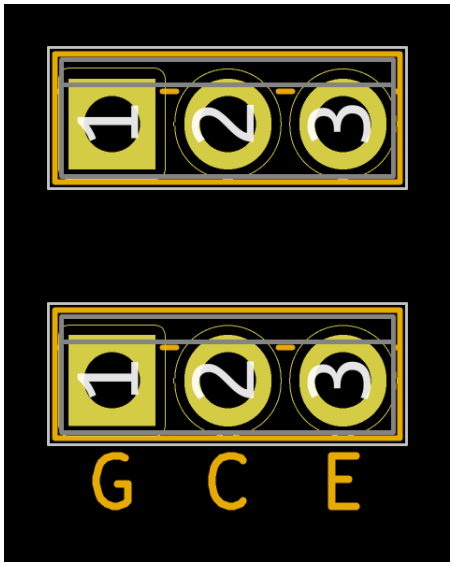
TO-251 (IPAK) vertical power transistor footprints

Footprint count: 4

Footprint naming convention:
TO-251-3_Vertical_<optional: pin marking order>

Footprint names:
TO-251-3_Vertical
TO-251-3_Vertical_BCE
TO-251-3_Vertical_GCE
TO-251-3_Vertical_GDS

Available pin markings:
Bipolar transistors: BCE
FET transistors: GDS
IGBT transistors: GCE

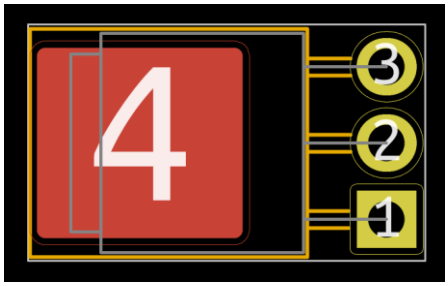


TO-251 standard footpritnt (top) and an IGBT footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-251 (IPAK) horizontal footprint

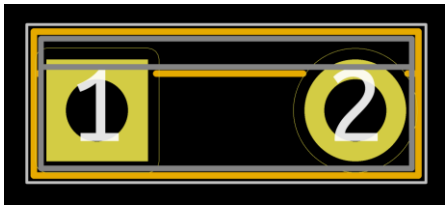
Footprint name:
TO-251-3-1EP_Horizontal_TabDown



TO-251 horizontal footprint.

Two pin TO-251 (IPAK) vertical footprint

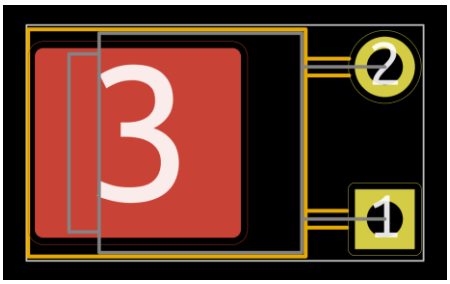
Footprint name:
TO-251-2_Vertical



TO-251-2 vertical footprint.

Two pin TO-251 (IPAK) horizontal footprint

Footprint name:
TO-251-2-1EP_Horizontal_TabDown



TO-251-2 horizontal footprint.

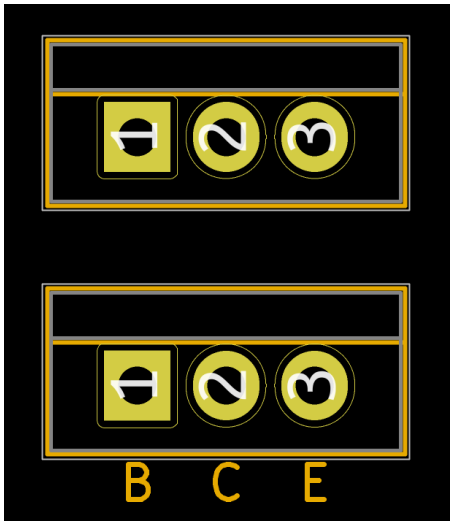
TO-262 (IIPAK/I²PAK) vertical power transistor footprints

Footprint count: **4**

Footprint naming convention:
TO-262-3_Vertical_<optional: pin marking order>

Footprint names:
TO-262-3_Vertical
TO-262-3_Vertical_BCE
TO-262-3_Vertical_GCE
TO-262-3_Vertical_GDS

Available pin markings:
Bipolar transistors: BCE
FET transistors: GDS
IGBT transistors: GCE



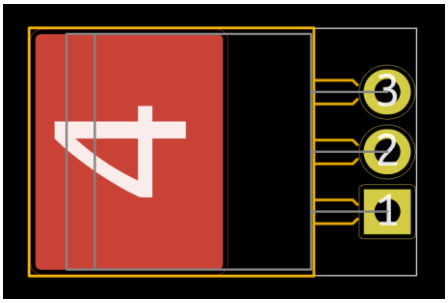
TO-262 standard footpritnt (top) and an IGBT footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order

of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-262 (IIPAK/I²PAK) horizontal footprint

Footprint name:
TO-262-3-1EP_Horizontal_TabDown



TO-262 horizontal footprint.

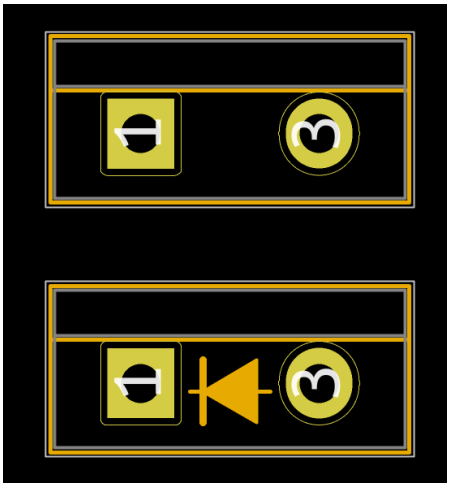
Two pin TO-262 vertical footprints

Footprint count: **2**

Footprint naming convention:
TO-262-2_Vertical_<optional: pin marking order>

Footprint names:
TO-262-2_Vertical
TO-262-2_Vertical_KA

Available pin markings:
Diodes: KA



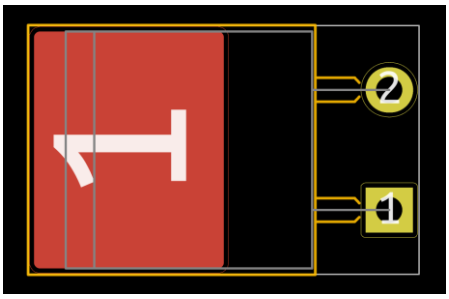
TO-262-2 standard footpritnt (top) and a diode footprint (bottom).

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: K means Cathode of a diode). Order of the letters corresponds to the device's pinout (example: KA suffix denotes a footprint for a diode with Cathode on pin 1 and Anode on pin 2).

Two pin TO-262 horizontal footprints

Footprint name:
TO-262-2-1EP_Horizontal_TabDown
TO-262-2-1EP_Horizontal_TabPin1

"TabPin1" denotes a footprint for a device with the metal tab internally connected to pin 1.



TO-262-2 "TabPin1" horizontal footprint.

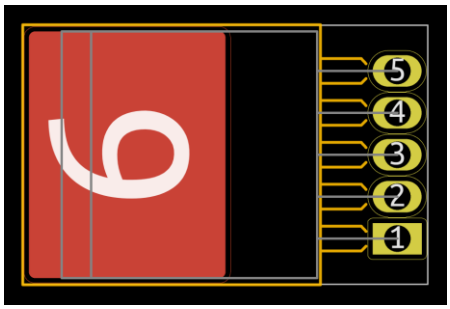
Five pin TO-262 vertical footprint

Footprint name:
TO-262-5_Vertical

TO-262-5 vertical footprint.

Five pin TO-262 horizontal footprint

Footprint name:
TO-262-5-1EP_Horizontal_TabDown



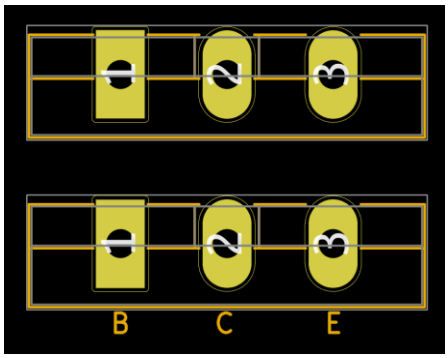
TO-262-5 horizontal footprint.

TO-264 vertical power transistor footprints

Footprint count: **4**

Footprint naming convention:
TO-264-3_Vertical_<optional: pin marking order>

Footprint names:
TO-262-3_Vertical
TO-262-3_Vertical_BCE
TO-262-3_Vertical_GCE
TO-262-3_Vertical_GDS



TO-264 standard footpritnt (top) and an IGBT footprint (bottom).

Available pin markings:
Bipolar transistors: BCE
FET transistors: GDS
IGBT transistors: GCE

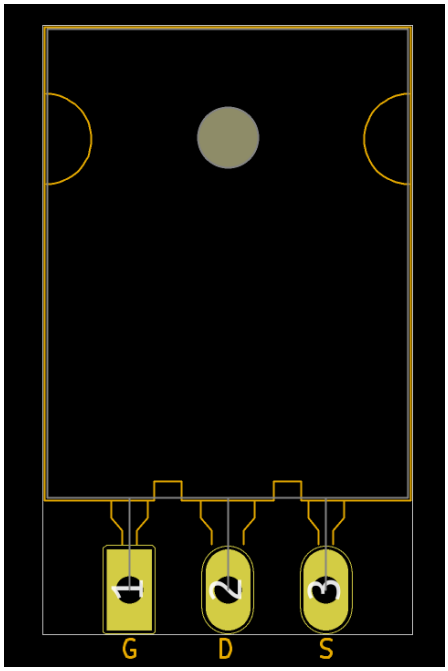
Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

TO-264 horizontal power transistor footprints

Footprint count: 8

Footprint naming convention:
TO-264-3_Horizontal_<tab orientation>_<optional: pin marking order>

Name examples:
TO-264-3_Horizontal_TabDown
TO-264-3_Horizontal_TabDown_BCE
TO-264-3_Horizontal_TabDown_GCE
TO-264-3_Horizontal_TabDown_GDS
TO-264-3_Horizontal_TabUp
TO-264-3_Horizontal_TabUp_BCE
TO-264-3_Horizontal_TabUp_GCE
TO-264-3_Horizontal_TabUp_GDS



TO-264 standard "TabDown" FET transistor footprint.

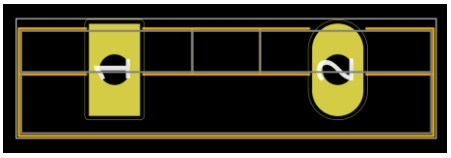
Available pin markings:
Bipolar transistors: BCE
FET transistors: GDS
IGBT transistors: GCE

Footprints with pin markings are indicated by a string of letters corresponding to the terminals for the device (example: C means collector terminal for a bipolar transistor). Order of the letters corresponds to the device's pinout (example: KAG suffix denotes a footprint for a Thyristor with Cathode on pin 1, Anode on pin 2 and Gate on pin 3).

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.

Two pin TO-264 vertical footprint

Footprint name:
TO-264-2_Vertical

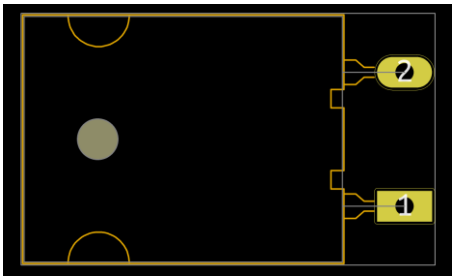

TO-264-2 vertical footprint.

Two pin TO-264 horizontal footprints

Footprint count: 2

Footprint names:
TO-264-2_Horizontal_TabDown
TO-264-2_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-264-2 "TabDown" footpritnt.

Five pin TO-264 vertical footprint

Footprint name:
TO-264-5_Vertical

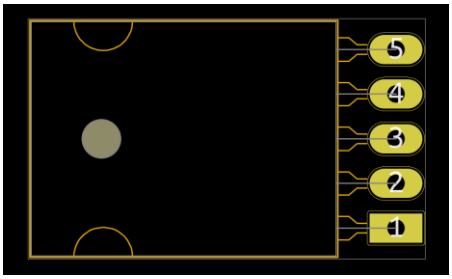
TO-264-5 vertical footprint.

Five pin TO-264 horizontal footprints

Footprint count: 2

Footprint names:
TO-264-5_Horizontal_TabDown
TO-264-5_Horizontal_TabUp

"TabUp" footprints have the heat-sink tab facing away from the PCB, and "TabDown" footprints have the metal tab contacting the PCB.



TO-264-5 "TabDown" footpritnt.

3.27. SMD Potentiometer Libraries

These libraries contain footprints for Surface Mount potentiometers and rheostats.

Handsoldering library variant contains additional symbols on the silkscreen layer placed under the part.

Handsoldering (US symbol) library variant has additional US - style symbols on the silkscreen layer placed under the part.

Standard variant	
Folder name: `Potentiometer_SMD_AKL`	
Footprint count:	**26**
Handsoldering variant	
Folder name: `Potentiometer_SMD_Handsoldering_AKL`	
Footprint count:	**26**
Handsoldering variant (US symbol)	
Folder name: `Potentiometer_SMD_US_Handsoldering_AKL`	
Footprint count:	**26**
Total footprints:	**78**

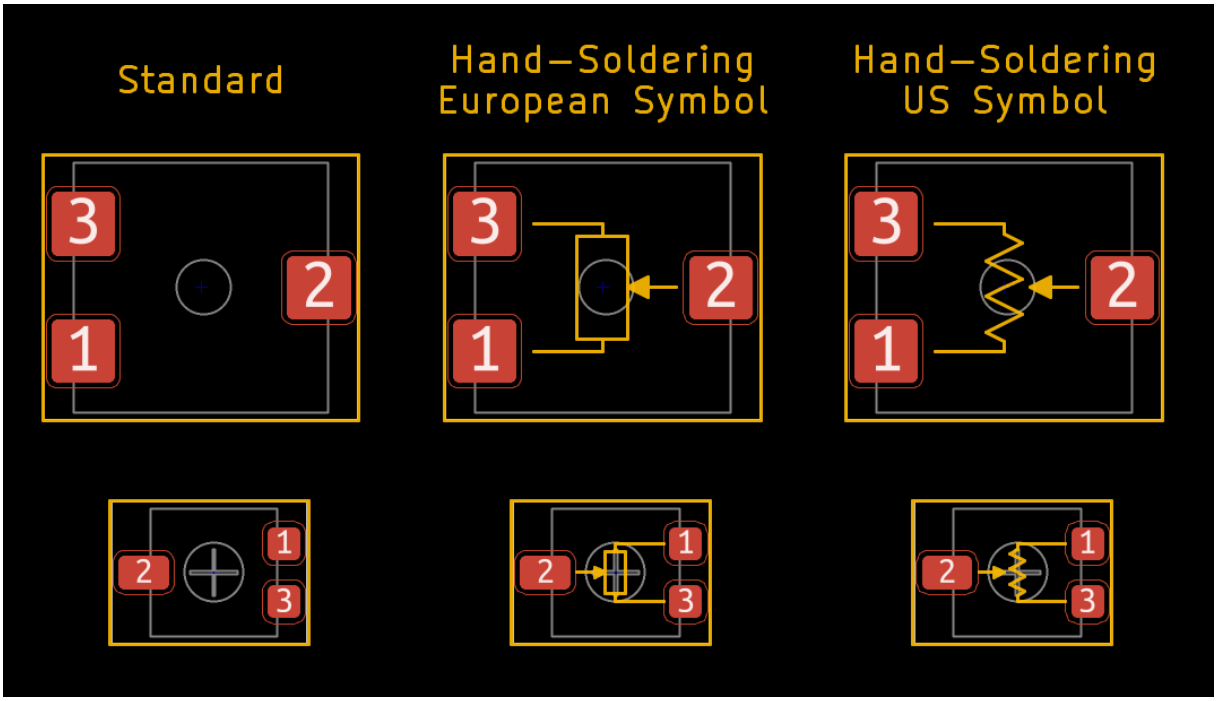


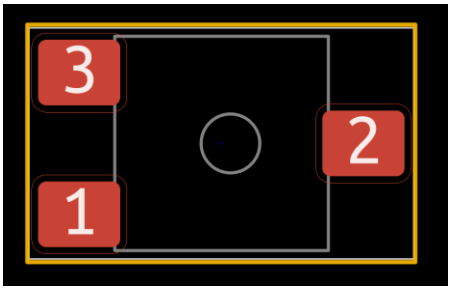
Figure 3.41. *SMD potentiometer footprints demonstrating differences between the standard library (left), "Handsoldering" library (center) and a "US Handsoldering" library (right).*

ACP CA6-VSMD footprints

Footprint count: 2

Footprint names:
Potentiometer_ACP_CA6-VSMD_Vertical
Potentiometer_ACP_CA6-VSMD_Vertical_Hole

"Hole" option denotes a footprint with a big NPTH hole allowing access to the bottom of the part.



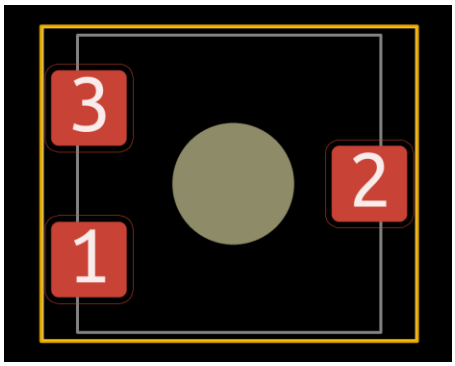
CA6-VSMD footpritnt.

ACP CA9-VSMD footprints

Footprint count: 2

Footprint names:
Potentiometer_ACP_CA9-VSMD_Vertical
Potentiometer_ACP_CA9-VSMD_Vertical_Hole

"Hole" option denotes a footprint with a big NPTH hole allowing access to the bottom of the part.



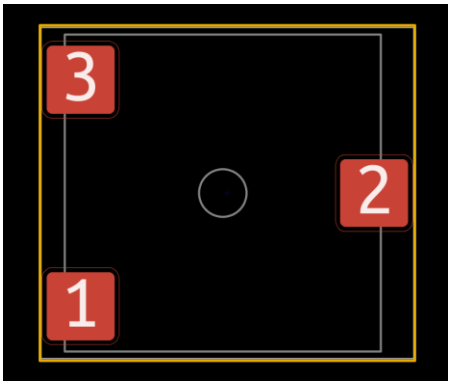
CA9-VSMD "Hole" footpritnt.

ACP CA14-VSMD footprints

Footprint count: 2

Footprint names:
Potentiometer_ACP_CA14-VSMD_Vertical
Potentiometer_ACP_CA14-VSMD_Vertical_Hole

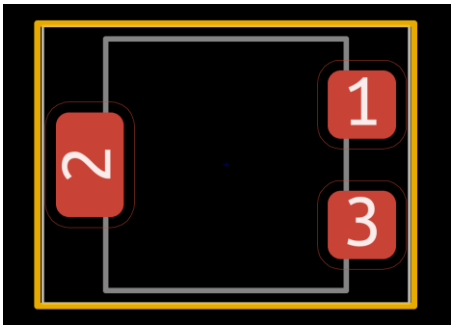
"Hole" option denotes a footprint with a big NPTH hole allowing access to the bottom of the part.



CA14-VSMD footpritnt.

Bourns 3214G footprint

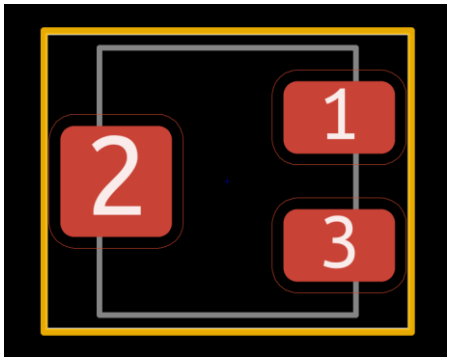
Footprint name:
Potentiometer_Bourns_3214G_Horizontal



3214G footprint.

Bourns 3214J footprint

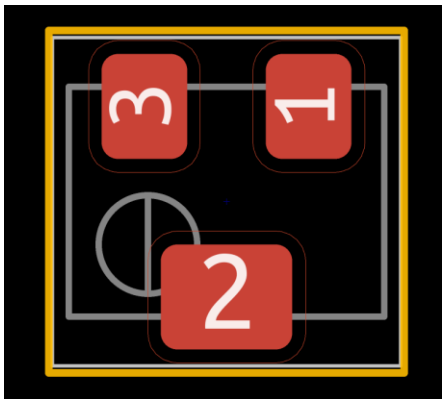
Footprint name:
Potentiometer_Bourns_3214J_Horizontal



3214J footprint.

Bourns 3214W footprint

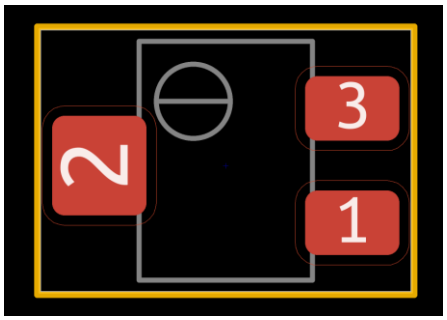
Footprint name:
Potentiometer_Bourns_3214W_Vertical



3214W footprint.

Bourns 3214X footprint

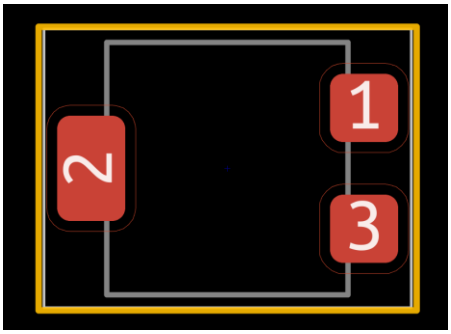
Footprint name:
Potentiometer_Bourns_3214X_Vertical



3214X footprint.

Bourns 3224G footprint

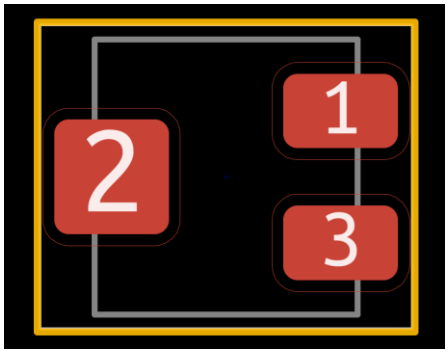
Footprint name:
Potentiometer_Bourns_3224G_Horizontal



3224G footprint.

Bourns 3224J footprint

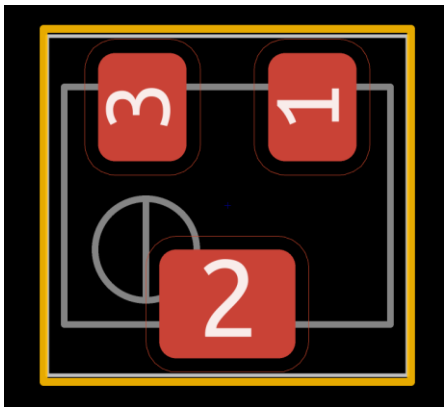
Footprint name:
Potentiometer_Bourns_3224J_Horizontal



3224J footprint.

Bourns 3224W footprint

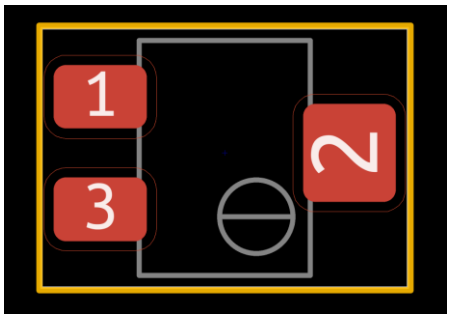
Footprint name:
Potentiometer_Bourns_3224W_Vertical



3224W footprint.

Bourns 3224X footprint

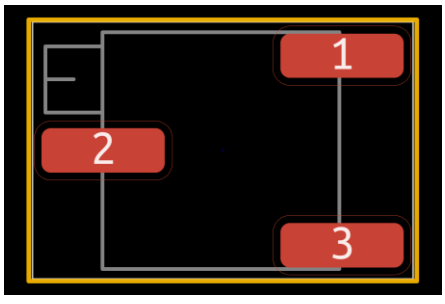
Footprint name:
Potentiometer_Bourns_3224X_Vertical



3224X footprint.

Bourns 3269P footprint

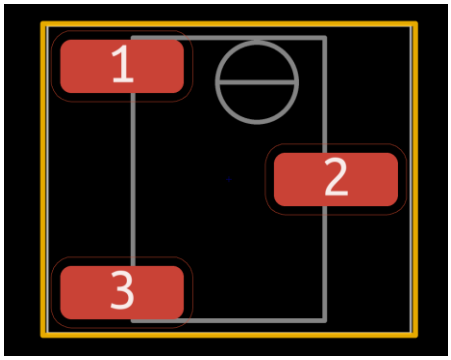
Footprint name:
Potentiometer_Bourns_3269P_Horizontal



3269P footprint.

Bourns 3269W footprint

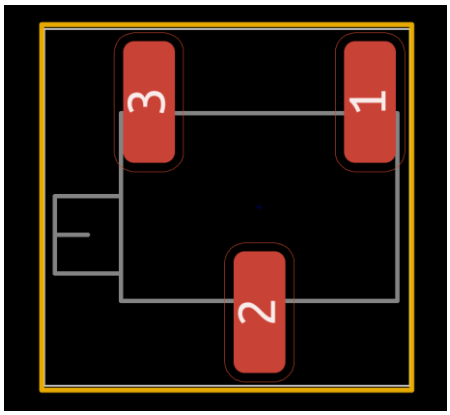
Footprint name:
Potentiometer_Bourns_3269W_Vertical



3269W footprint.

Bourns 3269X footprint

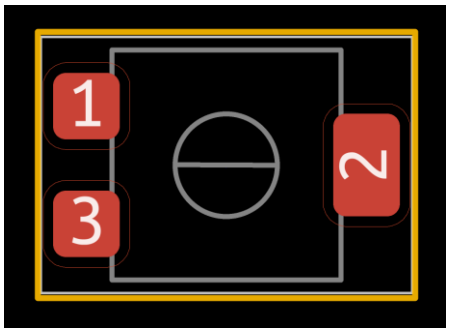
Footprint name:
Potentiometer_Bourns_3269X_Horizontal



3269X footprint.

Bourns 3314G footprint

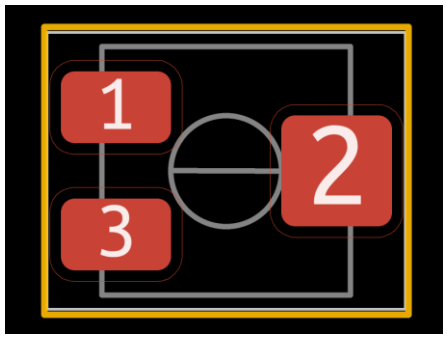
Footprint name:
Potentiometer_Bourns_3314G_Vertical



3314G footprint.

Bourns 3314J footprint

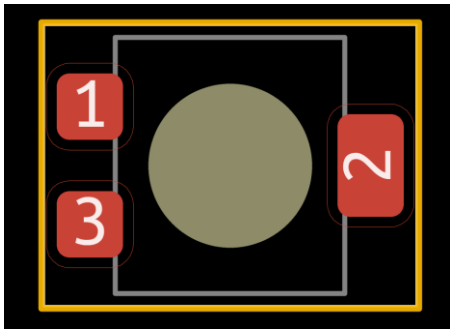
Footprint name:
Potentiometer_Bourns_3314J_Vertical



3314J footprint.

Bourns 3314R-1 footprint

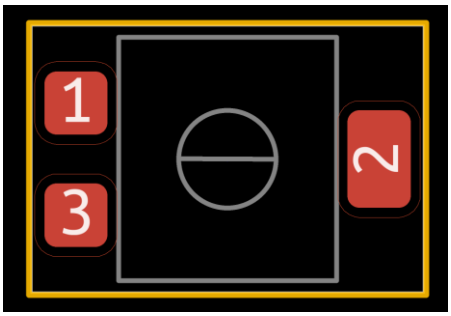
Footprint name:
Potentiometer_Bourns_3314R-1_Vertical_Hole



3314R-1 footprint.

Bourns 3314R-GM5 footprint

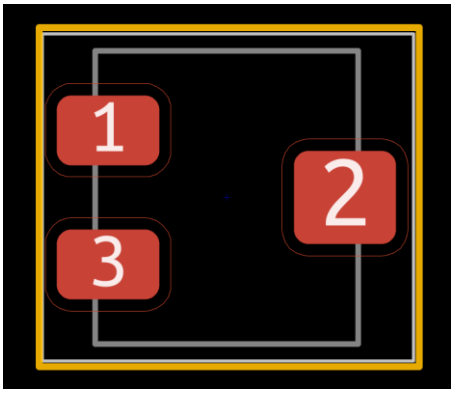
Footprint name:
Potentiometer_Bourns_3314R-GM5_Vertical



3314R-GM5 footprint.

Bourns 3314S footprint

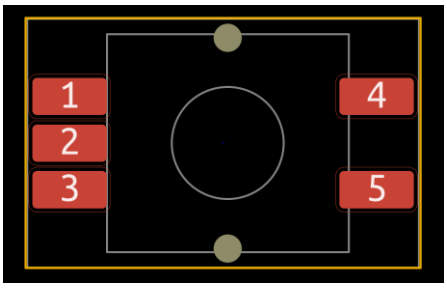
Footprint name:
Potentiometer_Bourns_3314S_Horizontal



3314S footprint.

Bourns PRS11S footprint

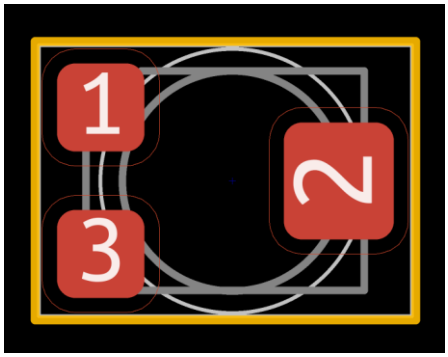
Footprint name:
Potentiometer_Bourns_PRS11S_Vertical



PRS11S footprint.

Bourns TC33X footprint

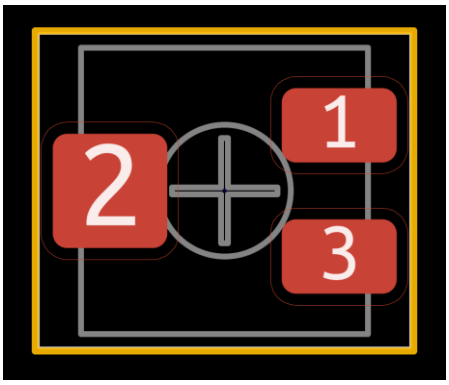
Footprint name:
Potentiometer_Bourns_TC33X_Vertical



TC33X footprint.

Vishay TS53YJ footprint

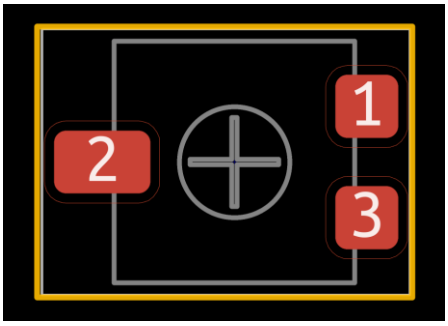
Footprint name:
Potentiometer_Vishay_TS53YJ_Vertical



TS53YJ footprint.

Vishay TS53YL footprint

Footprint name:
Potentiometer_Vishay_TS53YL_Vertical



TS53YL footprint.

3.28. THT Potentiometer Libraries

These libraries contain footprints for Through-hole potentiometers and Rheostats

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

US symbol library variants use the US - style potentiometer symbol instead of the standard one on the silkscreen.

Standard variant	
Folder name: **`Potentiometer_THT_AKL`**	
Footprint count:	**110**
Double-sided variant	
Folder name: **`Potentiometer_THT_AKL_Double`**	
Footprint count:	**104**
Standard variant (US symbol)	
Folder name: **`Potentiometer_THT_US_AKL`**	
Footprint count:	**110**
Double-sided variant (US symbol)	
Folder name: **`Potentiometer_THT_US_AKL_Double`**	
Footprint count:	**105**
Total footprints:	**429**

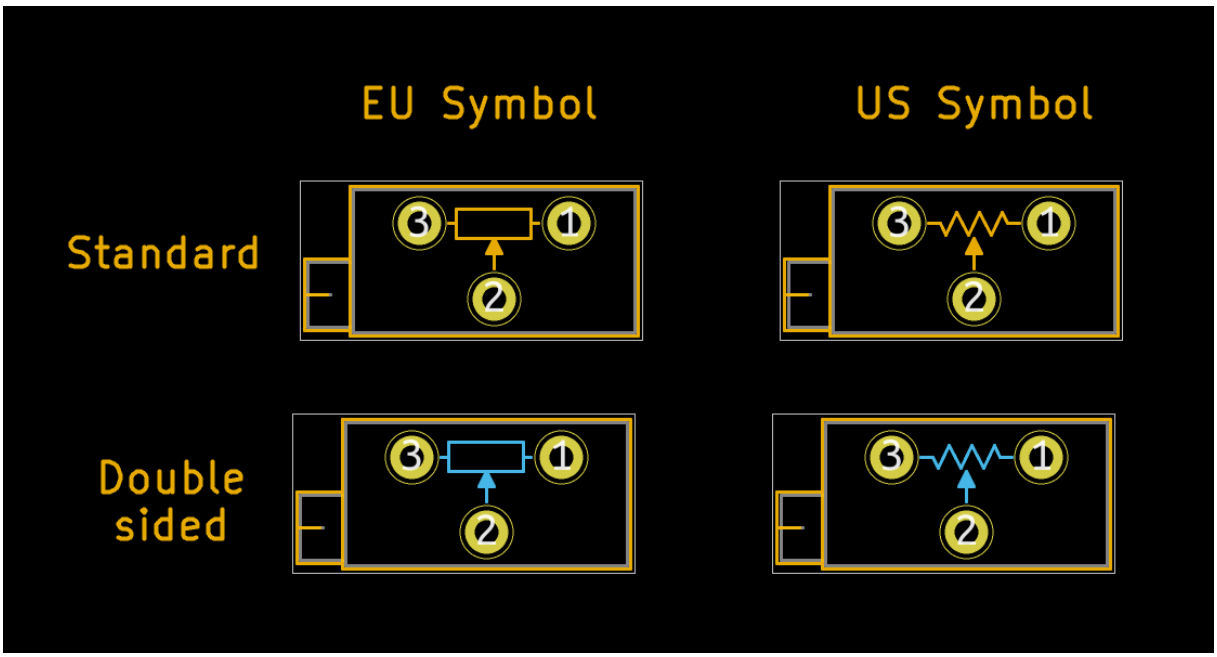
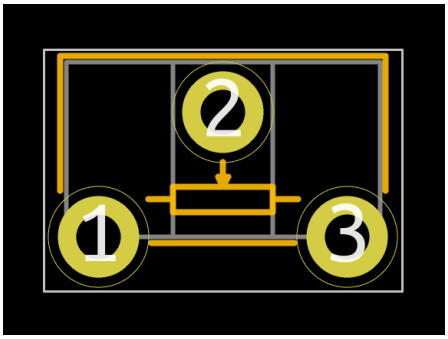


Figure 3.42. *Potentiometer footprints demonstrating different library variants.*

ACP CA6-H2.5 footprint

Footprint name:
Potentiometer_ACP_CA6-H2,5_Horizontal



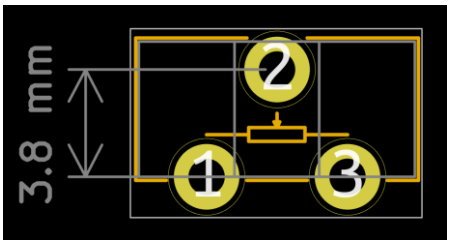
CA6-H2.5 footprint.

ACP CA9 Horizontal footprints

Footprint count: **3**

Footprint naming convention:
Potentiometer_ACP_CA9_H<Pin spacing>
_Horizontal

Footprint names:
Potentiometer_ACP_CA9_H2,5_Horizontal
Potentiometer_ACP_CA9_H3,8_Horizontal
Potentiometer_ACP_CA9_H5_Horizontal



CA9 footprint with pin spacing indicated.

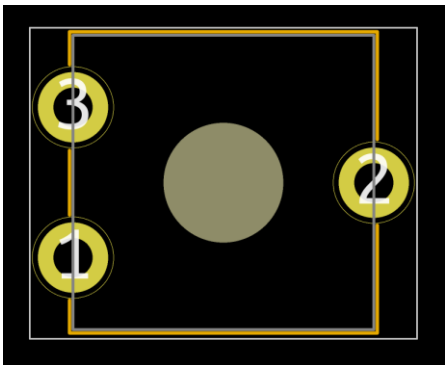
ACP CA9 Vertical footprints

Footprint count: **2**

Footprint naming convention:
Potentiometer_ACP_CA9_V10_Vertical<optional: hole>

Footprint names:
Potentiometer_ACP_CA9_V10_Vertical
Potentiometer_ACP_CA9_V10_Vertical_Hole

"Hole" option denotes a footprint with a NTPH hole allowing access to the bottom of the potentiometer



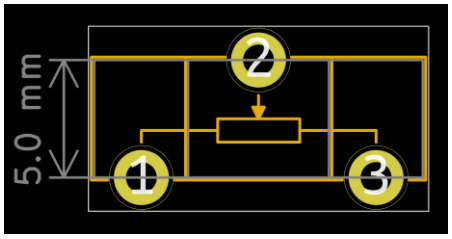
CA9 vertical footprint with bottom access hole.

ACP CA14 Horizontal footprints

Footprint count: 3

Footprint naming convention:
Potentiometer_ACP_CA14_H<Pin spacing>**_Horizontal**

Footprint names:
Potentiometer_ACP_CA14_H2,5_Horizontal
Potentiometer_ACP_CA14_H3,8_Horizontal
Potentiometer_ACP_CA14_H5_Horizontal



CA14 footprint with pin spacing indicated.

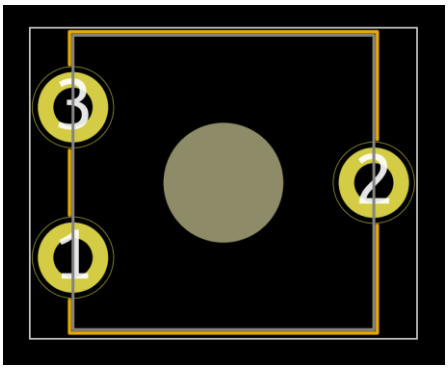
ACP CA14 Vertical footprints

Footprint count: 2

Footprint naming convention:
Potentiometer_ACP_CA14V-15_Vertical<optional: hole>

Footprint names:
Potentiometer_ACP_CA14V-15_Vertical
Potentiometer_ACP_CA14V-15_Vertical_Hole

"Hole" option denotes a footprint with a NTPH hole allowing access to the bottom of the potentiometer



CA14 vertical footprint.

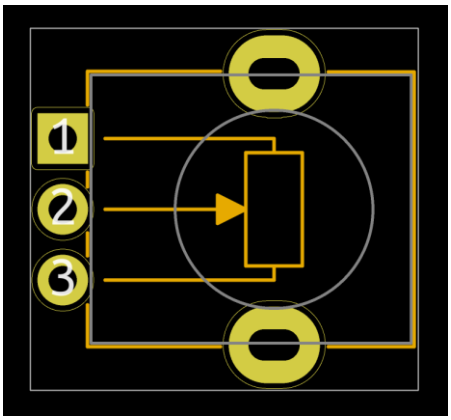
Alpha DR901F-40-00D footprints

Footprint count: 2

Footprint naming convention:
Potentiometer_Alpha_RD901F-40-00D
_Single_Vertical<optional: CurcularHoles>

Footprint names:
Potentiometer_Alpha_RD901F-40-00D_Single_Vertical
Potentiometer_Alpha_RD901F-40-00D_Single_Vertical
_CircularHoles

"CircularHoles" option denotes a footprint with round case PTH pads instead of slots.



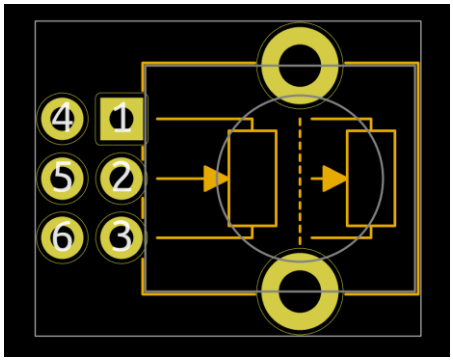
DR901F-40-00D footprint.

Alpha DR902F-40-00D footprints

Footprint count: 2

Footprint naming convention:
Potentiometer_Alpha_RD902F-40-00D
_Single_Vertical<optional: CurcularHoles>

Footprint names:
Potentiometer_Alpha_RD902F-40-00D_Single_Vertical
Potentiometer_Alpha_RD902F-40-00D_Single_Vertical
_CircularHoles

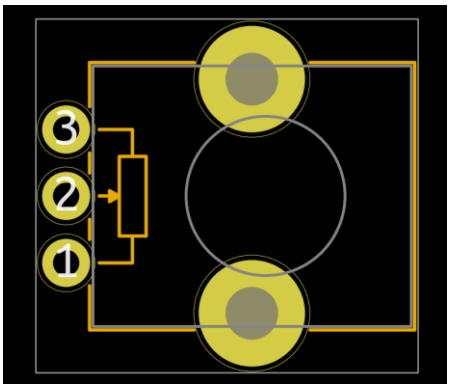


DR902F-40-00D "CircularHoles" footprint.

"CircularHoles" option denotes a footprint with round case PTH pads instead of slots.

Alps RK09K-Single Vertical footprint

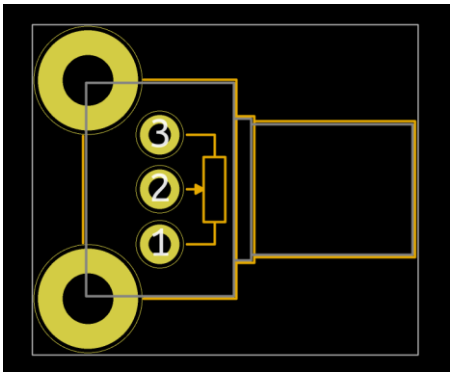
Footprint name:
Potentiometer_Alps_RK09K_Single_Vertical



RK09K Single Vertical footprint.

Alps RK09K-Single Horizontal footprint

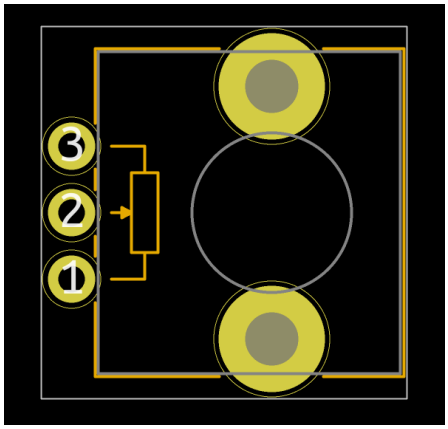
Footprint name:
Potentiometer_Alps_RK09K_Single_Horizontal



RK09K Single Horizontal footprint.

Alps RK09L-Single Vertical footprint

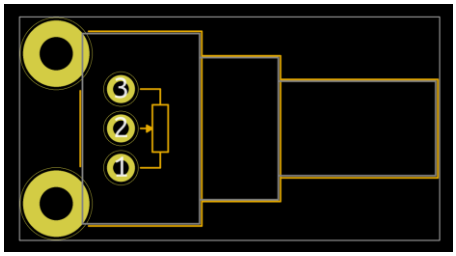
Footprint name:
Potentiometer_Alps_RK09L_Single_Vertical



RK09L Single Vertical footprint.

Alps RK09L-Single Horizontal footprint

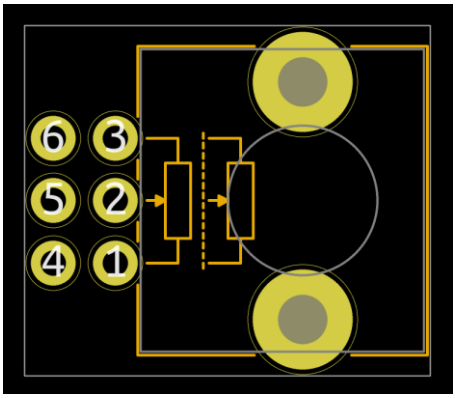
Footprint name:
Potentiometer_Alps_RK09L_Single_Horizontal



RK09L Single Horizontal footprint.

Alps RK09L-Double Vertical footprint

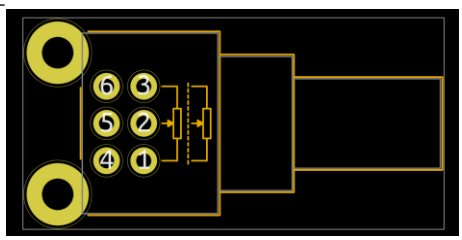
Footprint name:
Potentiometer_Alps_RK09L_Double_Vertical



RK09L Double Vertical footprint.

Alps RK09L-Double Horizontal footprint

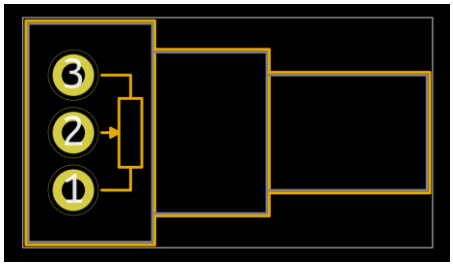
Footprint name:
Potentiometer_Alps_RK09L_Double_Horizontal



RK09L Double Horizontal footprint.

Alps RK09Y11-Single Horizontal footprint

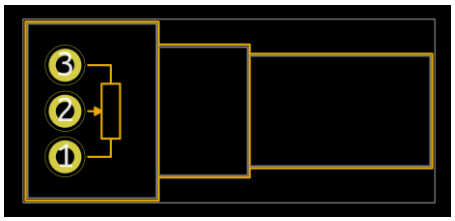
Footprint name:
Potentiometer_Alps_RK09Y11_Single_Horizontal



RK09Y11 Single Horizontal footprint.

Alps RK097-Single Horizontal footprint

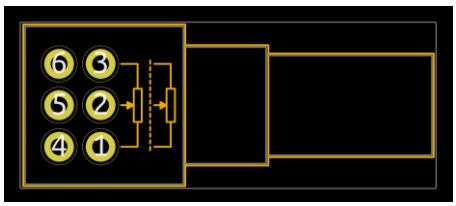
Footprint name:
Potentiometer_Alps_RK097_Single_Horizontal



RK097 Single Horizontal footprint.

Alps RK097-Dual Horizontal footprint

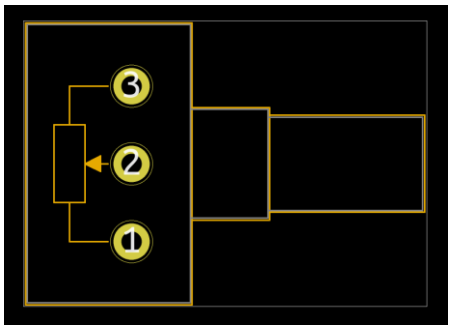
Footprint name:
Potentiometer_Alps_RK097_Dual_Horizontal



RK097 Double Horizontal footprint.

Alps RK163-Single Horizontal footprint

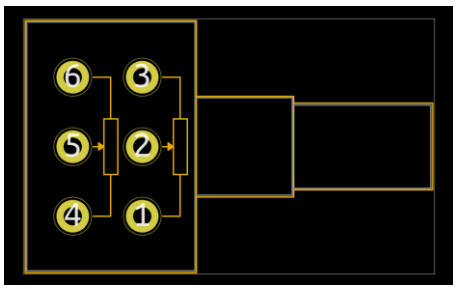
Footprint name:
Potentiometer_Alps_RK163_Single_Horizontal



RK163 Single Horizontal footprint.

Alps RK163-Dual Horizontal footprint

Footprint name:
Potentiometer_Alps_RK163_Dual_Horizontal



RK163 Double Horizontal footprint.

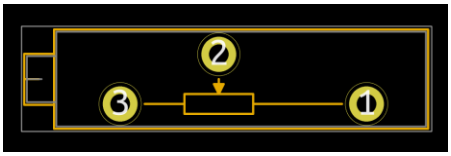
Bourns 3005 10-turn potentiometer footprint

Footprint name:
Potentiometer_Bourns_3005_Horizontal

Bourns 3005 footprint.

Bourns 3006P 10-turn potentiometer footprint

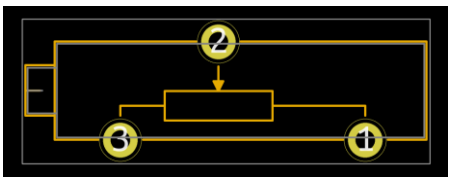
Footprint name:
Potentiometer_Bourns_3006P_Horizontal



Bourns 3006P footprint.

Bourns 3006W 10-turn potentiometer footprint

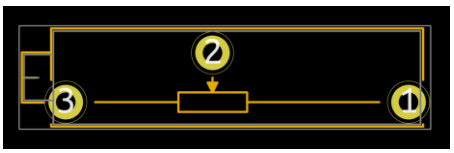
Footprint name:
Potentiometer_Bourns_3006W_Horizontal



Bourns 3006W footprint.

Bourns 3006Y 10-turn potentiometer footprint

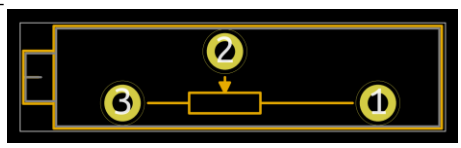
Footprint name:
Potentiometer_Bourns_3006Y_Horizontal



Bourns 3006Y footprint.

Bourns 3009P 10-turn potentiometer footprint

Footprint name:
Potentiometer_Bourns_3009P_Horizontal



Bourns 3009P footprint.

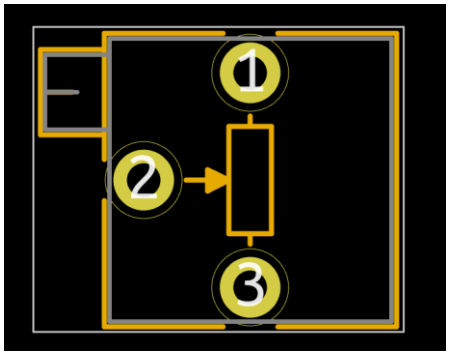
Bourns 3009Y 10-turn potentiometer footprint

Footprint name:
Potentiometer_Bourns_3009Y_Horizontal

Bourns 3009Y footprint.

Bourns 3266P 10-turn potentiometer footprint

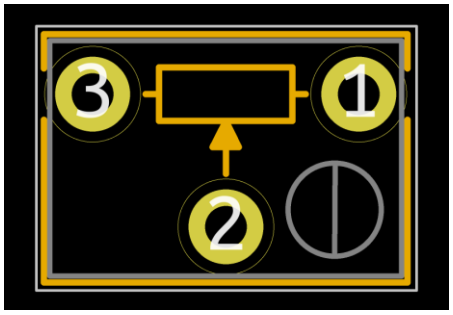
Footprint name:
Potentiometer_Bourns_3266P_Horizontal



Bourns 3266P footprint.

Bourns 3266W 10-turn potentiometer footprint

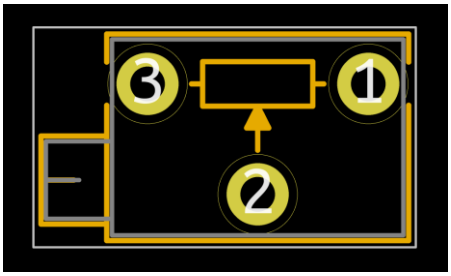
Footprint name:
Potentiometer_Bourns_3266W_Horizontal



Bourns 3266W footprint.

Bourns 3266X 10-turn potentiometer footprint

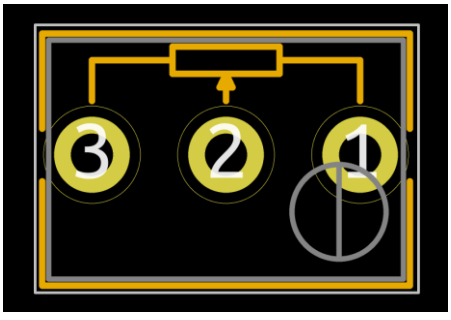
Footprint name:
Potentiometer_Bourns_3266X_Horizontal



Bourns 3266X footprint.

Bourns 3266Y 10-turn potentiometer footprint

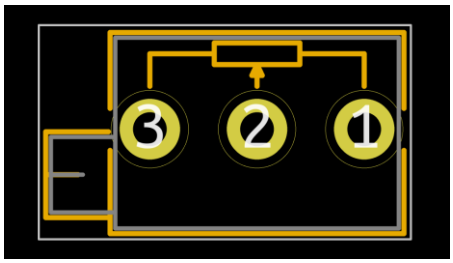
Footprint name:
Potentiometer_Bourns_3266Y_Horizontal



Bourns 3266Y footprint.

Bourns 3266Z 10-turn potentiometer footprint

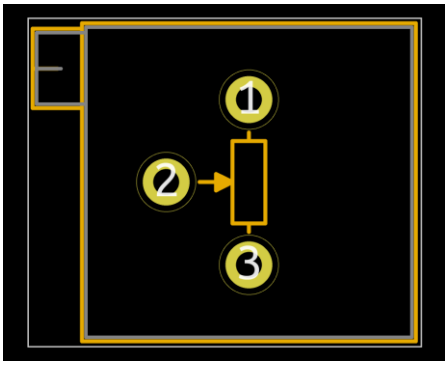
Footprint name:
Potentiometer_Bourns_3266Z_Horizontal



Bourns 3266Z footprint.

Bourns 3296P 10-turn potentiometer footprint

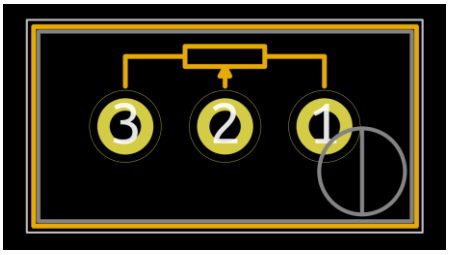
Footprint name:
Potentiometer_Bourns_3296P_Horizontal



Bourns 3296P footprint.

Bourns 3296W 10-turn potentiometer footprint

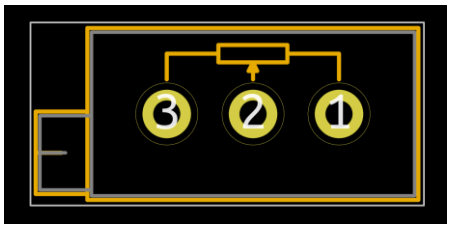
Footprint name:
Potentiometer_Bourns_3296W_Horizontal



Bourns 3296W footprint.

Bourns 3296X 10-turn potentiometer footprint

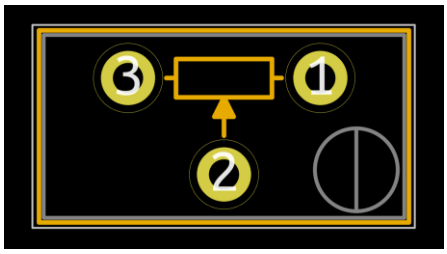
Footprint name:
Potentiometer_Bourns_3296X_Horizontal



Bourns 3296X footprint.

Bourns 3296Y 10-turn potentiometer footprint

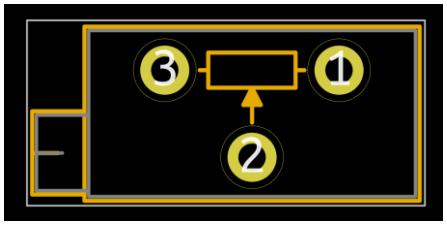
Footprint name:
Potentiometer_Bourns_3296Y_Horizontal



Bourns 3296Y footprint.

Bourns 3296Z 10-turn potentiometer footprint

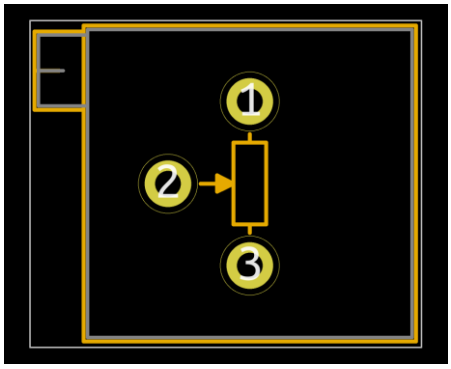
Footprint name:
Potentiometer_Bourns_3296Z_Horizontal



Bourns 3296Z footprint.

Bourns 3299P 10-turn potentiometer footprint

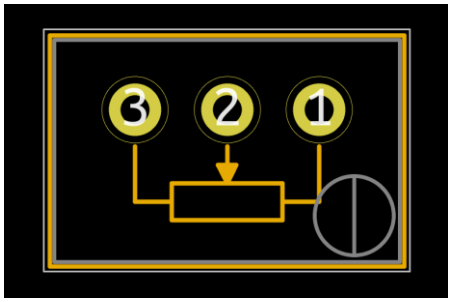
Footprint name:
Potentiometer_Bourns_3299P_Horizontal



Bourns 3299P footprint.

Bourns 3299W 10-turn potentiometer footprint

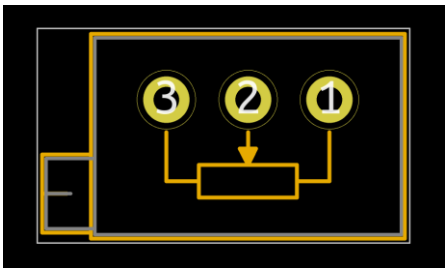
Footprint name:
Potentiometer_Bourns_3299W_Horizontal



Bourns 3299W footprint.

Bourns 3299X 10-turn potentiometer footprint

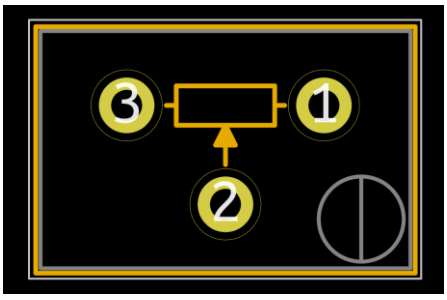
Footprint name:
Potentiometer_Bourns_3299X_Horizontal



Bourns 3299X footprint.

Bourns 3299Y 10-turn potentiometer footprint

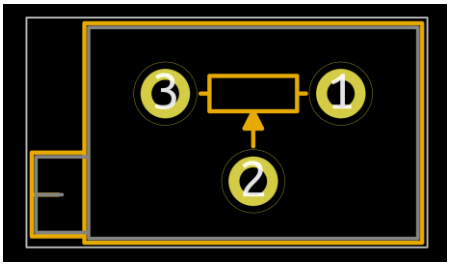
Footprint name:
Potentiometer_Bourns_3299Y_Horizontal



Bourns 3299Y footprint.

Bourns 3299Z 10-turn potentiometer footprint

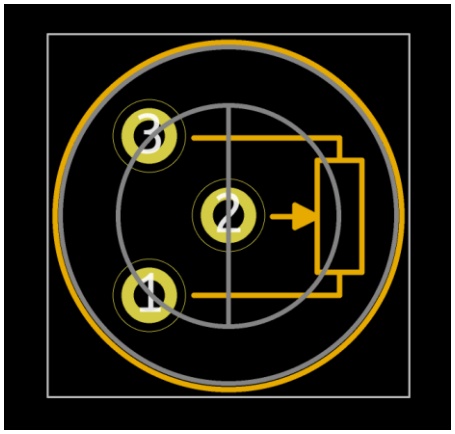
Footprint name:
Potentiometer_Bourns_3299Z_Horizontal



Bourns 3299Z footprint.

Bourns 3339H footprint

Footprint name:
Potentiometer_Bourns_3339H_Vertical



Bourns 3339H footprint.

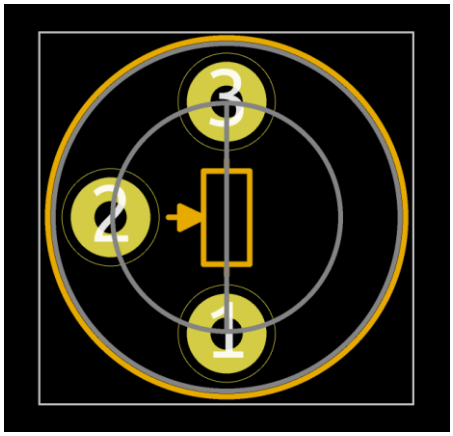
Bourns 3339P footprints

Footprint count: **2**

Footprint naming convention:
Potentiometer_Bourns_3339P_Vertical<optional: HandSoldering>

Footprint names:
Potentiometer_Bourns_3339P_Vertical
Potentiometer_Bourns_3339P_Vertical_HandSoldering

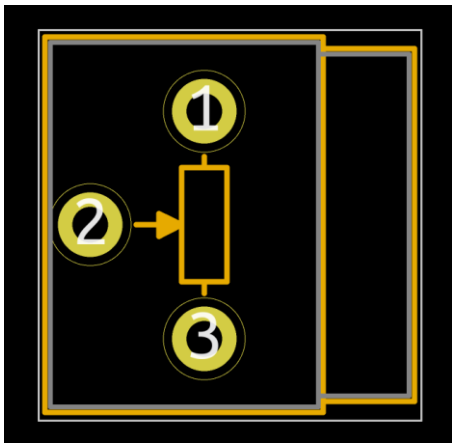
"HandSoldering" option denotes a footprint with enlarged pads.



Bourns 3339P "HandSoldering" footprint.

Bourns 3339S footprint

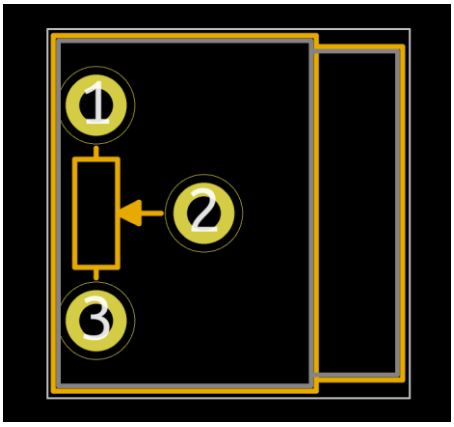
Footprint name:
Potentiometer_Bourns_3339S_Horizontal



Bourns 3339S footprint.

Bourns 3339W footprint

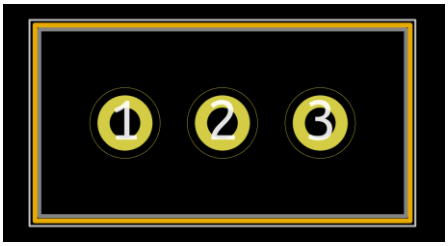
Footprint name:
Potentiometer_Bourns_3339W_Horizontal



Bourns 3339W footprint.

Bourns 3386C footprint

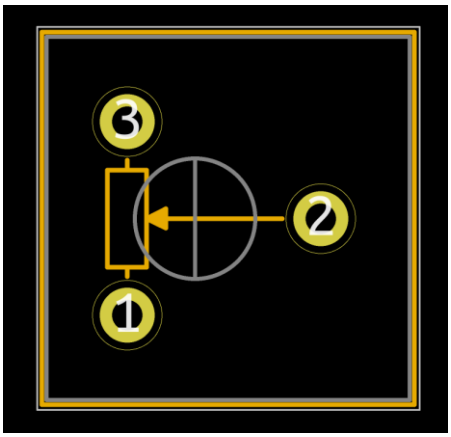
Footprint name:
Potentiometer_Bourns_3386C_Horizontal



Bourns 3386C footprint.

Bourns 3386F footprint

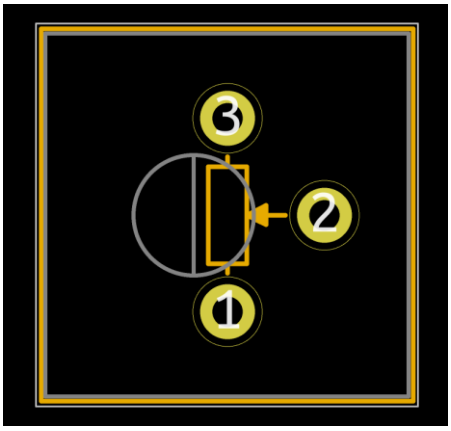
Footprint name:
Potentiometer_Bourns_3386F_Vertical



Bourns 3386F footprint.

Bourns 3386P footprint

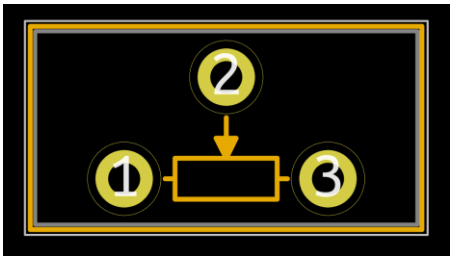
Footprint name:
Potentiometer_Bourns_3386P_Vertical



Bourns 3386P footprint.

Bourns 3386X footprint

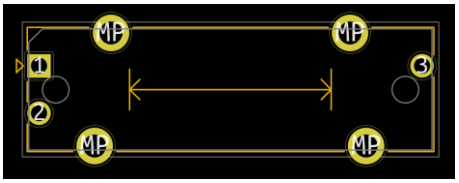
Footprint name:
Potentiometer_Bourns_3386X_Horizontal



Bourns 3386X footprint.

Bourns PTA1543 footprint

Footprint name:
Potentiometer_Bourns_PTA1543_Single_Slide



PTA1543 footprint.

Bourns PTA2043 footprint

Footprint name:
Potentiometer_Bourns_PTA2043_Single_Slide

PTA2043 footprint.

Bourns PTA3043 footprint

Footprint name:
Potentiometer_Bourns_PTA3043_Single_Slide

PTA3043 footprint.

Bourns PTA4543 footprint

Footprint name:
Potentiometer_Bourns_PTA4543_Single_Slide

PTA4543 footprint.

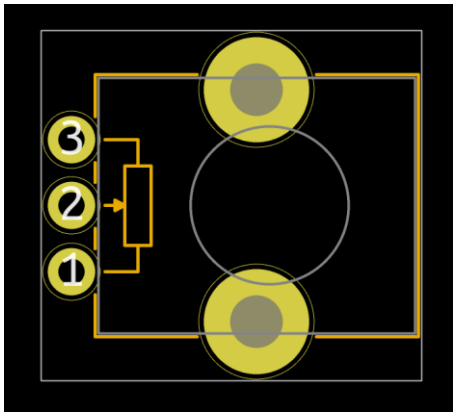
Bourns PTA6043 footprint

Footprint name:
Potentiometer_Bourns_PTA6043_Single_Slide

PTA6043 footprint.

Bourns PTV09A-1 footprint

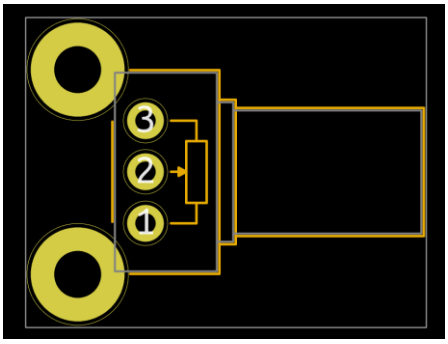
Footprint name:
Potentiometer_Bourns_PTV09A-1_Single_Vertical



PTV09A-1 footprint.

Bourns PTV09A-2 footprint

Footprint name:
Potentiometer_Bourns_PTV09A-2_Single_Vertical



PTV09A-2 footprint.

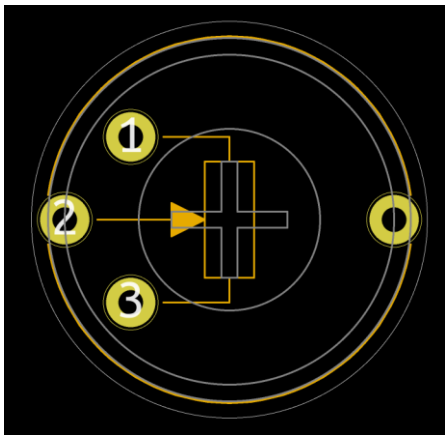
22mm Round Wire-wound Potentiometer footprints

Footprint count: **2**

Footprint naming convention:
Potentiometer_D22mm_H12.5mm<optional: Hole>

Footprint names:
Potentiometer_D22mm_H12.5mm
Potentiometer_D22mm_H12.5mm_Hole

"Hole" option denotes a footprint with bottom access hole.

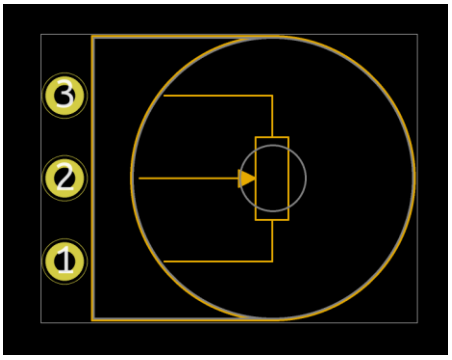


22mm round potentiometer footprint.

This footprint was created based on real-life measurement of a long-obsolete part.

Omeg PC16BU Vertical footprint

Footprint name:
Potentiometer_Omeg_PC16BU_Vertical



PC16BU Vertical footprint.

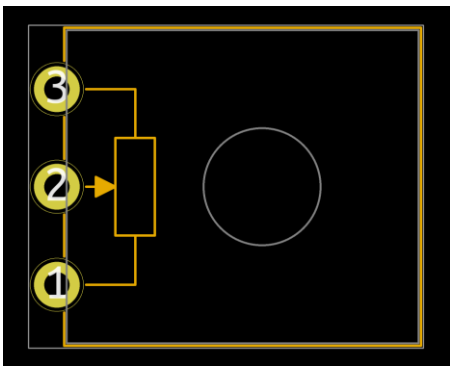
Omeg PC16BU Horizontal footprint

Footprint name:
Potentiometer_Omeg_PC16BU_Horizontal

PC16BU Horizontal footprint.

Piher PC-16 Vertical footprint

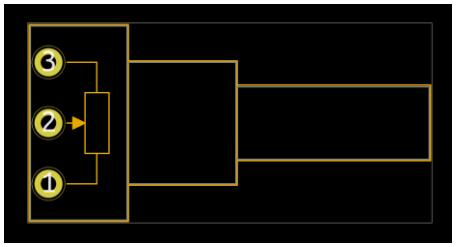
Footprint name:
Potentiometer_Piher_PC-16_Single_Vertical



PC-16 Vertical footprint.

Piher PC-16 Horizontal footprint

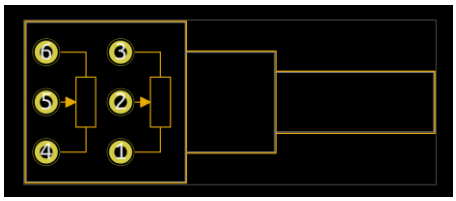
Footprint name:
Potentiometer_Piher_PC-16_Single_Horizontal



PC-16 Horizontal footprint.

Piher PC-16 Dual Horizontal footprint

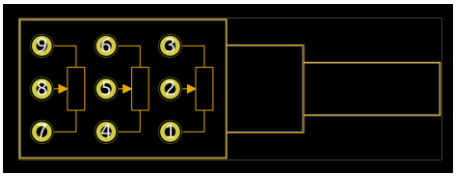
Footprint name:
Potentiometer_Piher_PC-16_Dual_Horizontal



PC-16 Dual Horizontal footprint.

Piher PC-16 Triple Horizontal footprint

Footprint name:
Potentiometer_Piher_PC-16_Triple_Horizontal



PC-16 Triple Horizontal footprint.

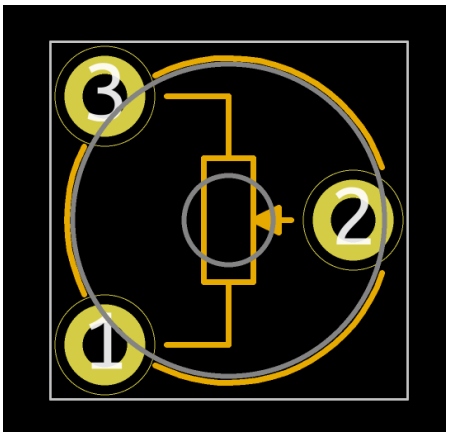
Piher PT-6 Vertical footprints

Footprint count: **2**

Footprint naming convention:
Potentiometer_Piher_PT-6-V_Vertical<optional: Hole>

Footprint names:
Potentiometer_Piher_PT-6-V_Vertical
Potentiometer_Piher_PT-6-V_Vertical_Hole

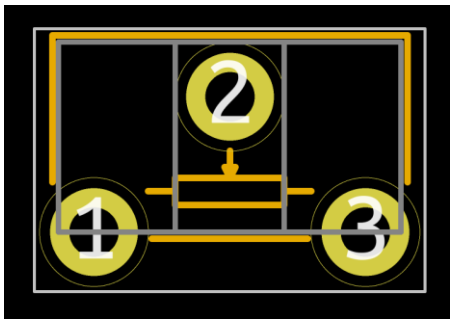
"Hole" option denotes a footprint with bottom access hole.



PT-6 Vertical footprint.

Piher PT-6 Horizontal footprint

Footprint name:
Potentiometer_Piher_PT-6-H_Horizontal



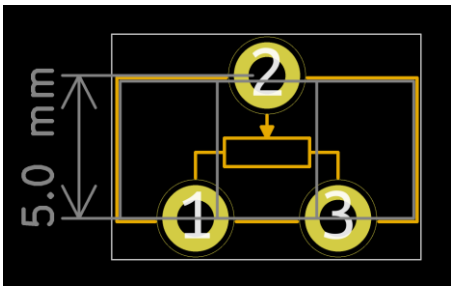
PT-6 Horizontal footprint.

Piher PT-10 Horizontal footprints

Footprint count: **2**

Footprint naming convention:
Potentiometer_Piher_PT-10-H<Pin spacing>
_Horizontal

Footprint names:
Potentiometer_Piher_PT-10-H01_Horizontal
Potentiometer_Piher_PT-10-H05_Horizontal



PT-10 Vertical footprint with pin spacing indicated.

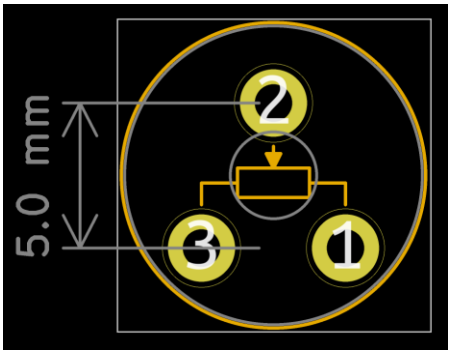
Piher PT-10 Vertical footprints

Footprint count: 3

Footprint naming convention:
Potentiometer_Piher_PT-10-V<Pin spacing>
_Vertical<optional: Hole>

Footprint names:
Potentiometer_Piher_PT-10-V05_Vertical
Potentiometer_Piher_PT-10-V10_Vertical
Potentiometer_Piher_PT-10-V10_Vertical_Hole

"Hole" option denotes a footprint with bottom access hole.



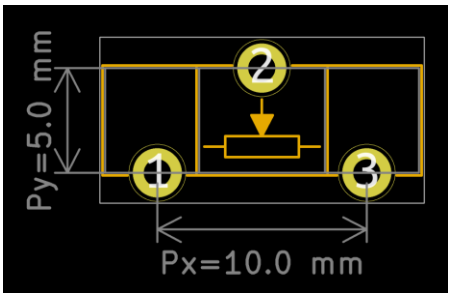
PT-10 Vertical footprint with pin spacing indicated.

Piher PT-15 Horizontal footprints

Footprint count: 4

Footprint naming convention:
Potentiometer_Piher_PT-15-H<Pin spacing>
_Horizontal

Footprint names:
Potentiometer_Piher_PT-15-H01_Horizontal
Potentiometer_Piher_PT-15-H05_Horizontal
Potentiometer_Piher_PT-15-H06_Horizontal
Potentiometer_Piher_PT-15-H25_Horizontal



PT-15 Vertical footprint with pin spacing indicated.

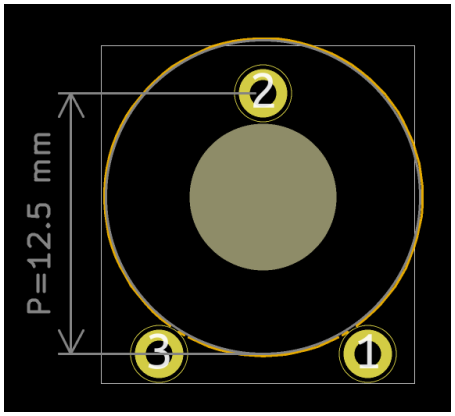
Pin spacing according to manufacturer data found in the footprint description (link):
H01: Px = 10mm, Py = 2.5mm
H05: Px = 10mm, Py = 5mm
H06: Px = 8.8mm, Py = 4mm
H25: Px = 10mm, Py = 5mm

Piher PT-15 Vertical footprints

Footprint count: 4

Footprint naming convention:
Potentiometer_Piher_PT-15-V<Pin spacing>
_Vertical<optional: Hole>

Footprint names:
Potentiometer_Piher_PT-15-V02_Vertical
Potentiometer_Piher_PT-15-V02_Vertical_Hole
Potentiometer_Piher_PT-15-V15_Vertical
Potentiometer_Piher_PT-15-V15_Vertical_Hole



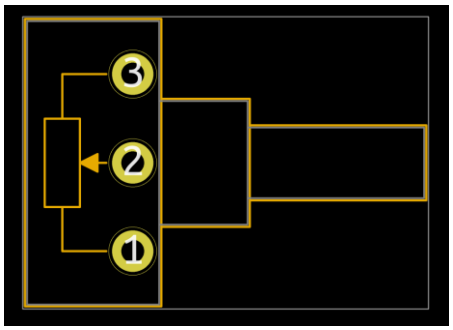
PT-15 Vertical footprint with pin spacing indicated.

"Hole" option denotes a footprint with bottom access hole.

Pin spacing according to manufacturer data found in the footprint description (link):
V02: P = 12.5mm
V15: P =15 mm

Piher T-16H footprint

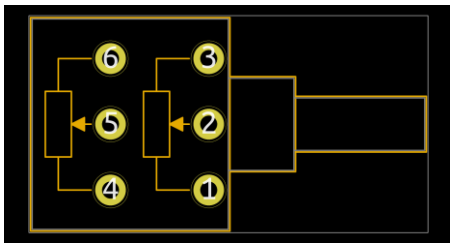
Footprint name:
Potentiometer_Piher_T-16H_Single_Horizontal



T-16H footprint.

Piher T-16H Dual footprint

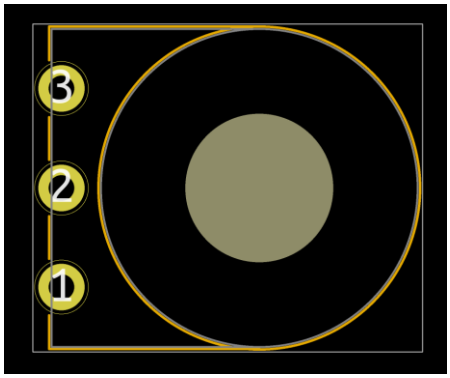
Footprint name:
Potentiometer_Piher_T-16H_Double_Horizontal



T-16H Dual footprint.

Piher T-16L footprint

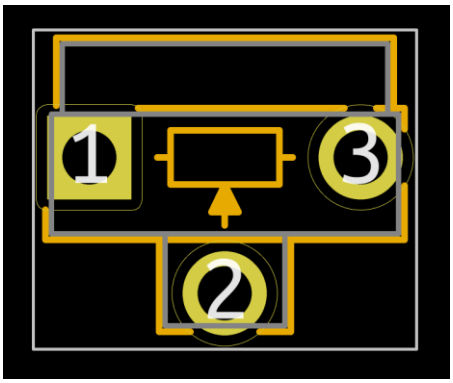
Footprint name:
Potentiometer_Piher_T-16L_Single_Vertical_Hole



T-16L footprint.

Runtron RM-063 footprint

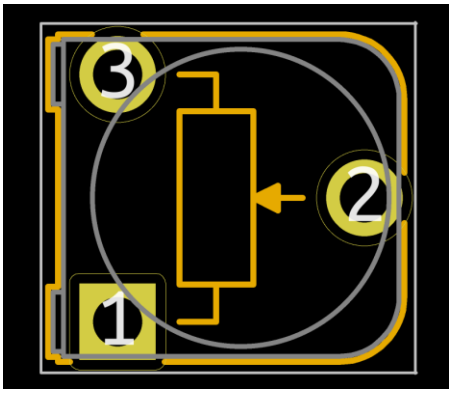
Footprint name:
Potentiometer_Runtron_RM-063_Horizontal



RM-063 footprint.

Runtron RM-065 footprint

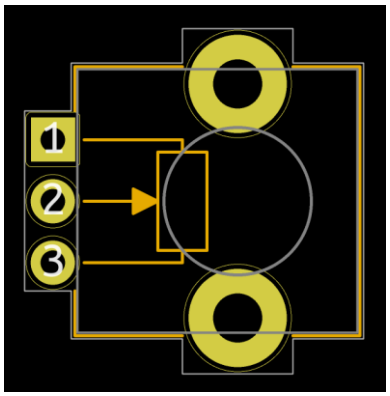
Footprint name:
Potentiometer_Runtron_RM-065_Horizontal



RM-065 footprint.

TT P0915N footprint

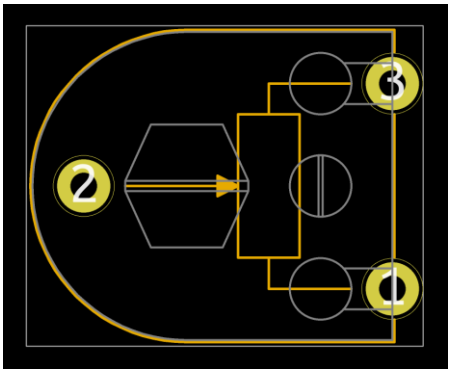
Footprint name:
Potentiometer_TT_P0915N



P0915N footprint.

Telpod CN15.1 footprint

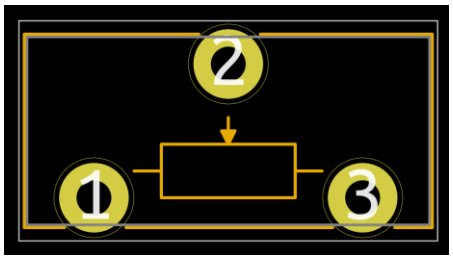
Footprint name:
Potentiometer_Telpod_CN15.1



CN15.1 footprint.

Telpod CN15.2 footprint

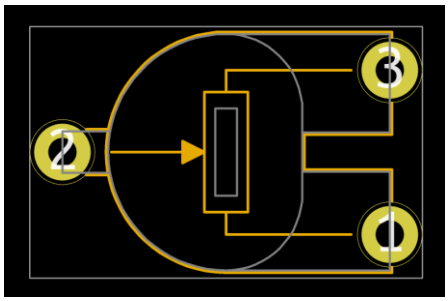
Footprint name:
Potentiometer_Telpod_CN15.2



CN15.2 footprint.

Telpod TVP1212 footprint

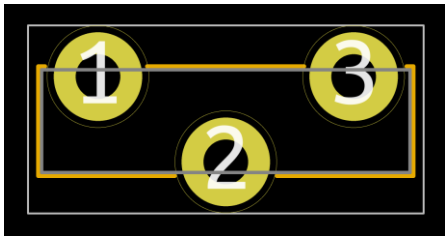
Footprint name:
Potentiometer_Telpod_TVP1212



TVP1212 footprint.

Telpod TVP1232 footprint

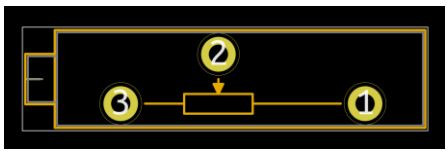
Footprint name:
Potentiometer_Telpod_TVP1232



TVP1232 footprint.

Vishay 43 footprint

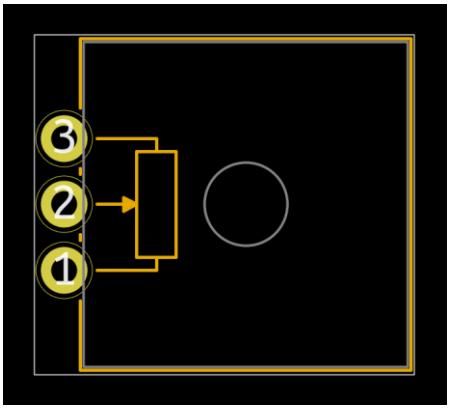
Footprint name:
Potentiometer_Vishay_43_Horizontal



Vishay 43 footprint.

Vishay 148/149 vertical footprint

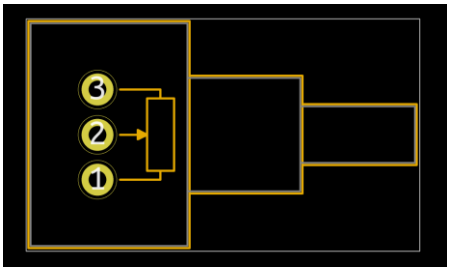
Footprint name:
Potentiometer_Vishay_148-149_Single_Vertical



Vishay 148/149 vertical footprint.

Vishay 148/149 horizontal footprint

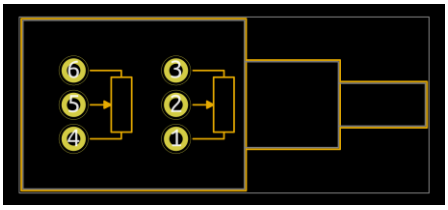
Footprint name:
Potentiometer_Vishay_148-149_Single_Horizontal



Vishay 148/149 horizontal footprint.

Vishay 148/149 dual horizontal footprint

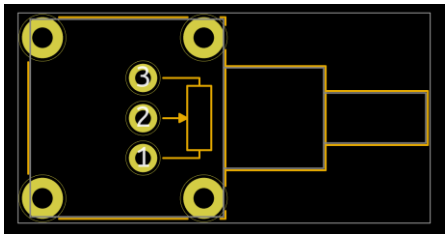
Footprint name:
Potentiometer_Vishay_148-149_Dual_Horizontal



Vishay 148/149 dual horizontal footprint.

Vishay 148E/149E horizontal footprint

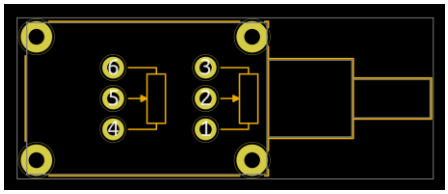
Footprint name:
Potentiometer_Vishay_148E-149E_Single_Horizontal



Vishay 148E/149E horizontal footprint.

Vishay 148E/149E dual horizontal footprint

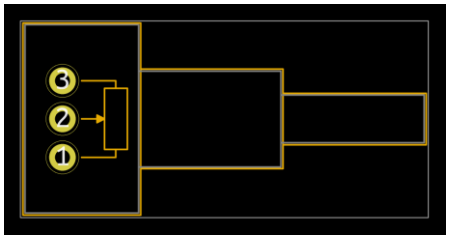
Footprint name:
Potentiometer_Vishay_148E-149E_Dual_Horizontal



Vishay 148E/149E dual horizontal footprint.

Vishay 248BH/249BH horizontal footprint

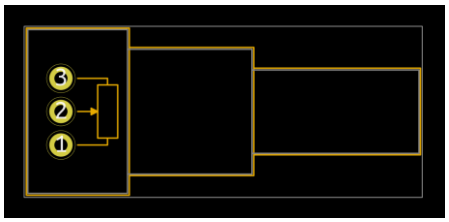
Footprint name:
Potentiometer_Vishay_248BH-249BH_Single_Horizontal



Vishay 248BH/249BH horizontal footprint.

Vishay 248GJ/249GJ horizontal footprint

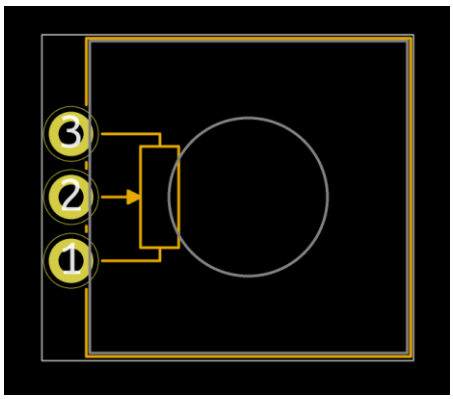
Footprint name:
Potentiometer_Vishay_248GJ-249GJ_Single_Horizontal



Vishay 248GJ/249GJ horizontal footprint.

Vishay 248GJ/249GJ vertical footprint

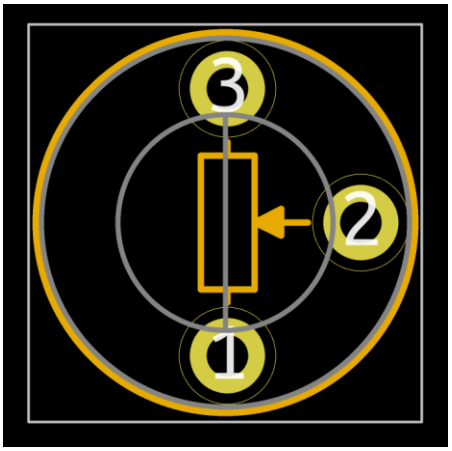
Footprint name:
Potentiometer_Vishay_248GJ-249GJ_Single_Vertical



Vishay 248GJ/249GJ vertical footprint.

Vishay T7-YA footprint

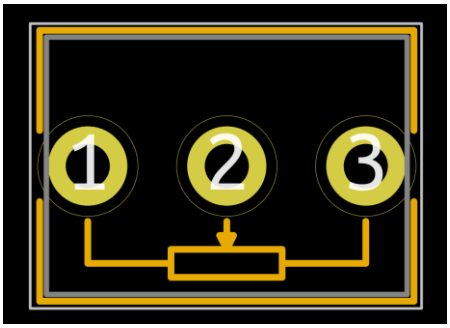
Footprint name:
Potentiometer_Vishay_T7-YA_Horizontal



Vishay T7-YA footprint.

Vishay T73XW footprint

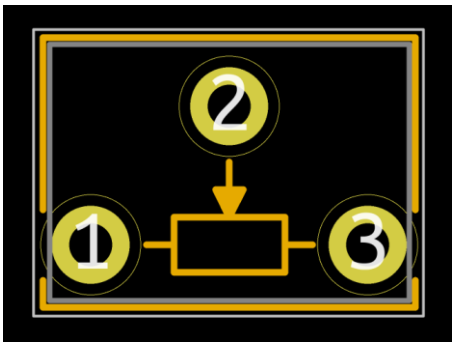
Footprint name:
Potentiometer_Vishay_T73XW_Horizontal



Vishay T73XW footprint.

Vishay T73XX footprint

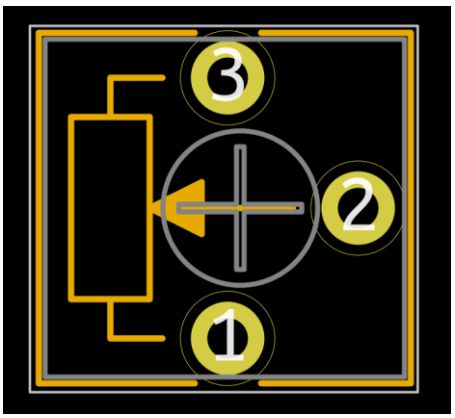
Footprint name:
Potentiometer_Vishay_T73XX_Horizontal



Vishay T73XX footprint.

Vishay T73XP footprint

Footprint name:
Potentiometer_Vishay_T73XP_Vertical



Vishay T73XP footprint.

3.29. SMD Resistor Library

This library contains footprints for surface mount resistors, current shunts and resistor networks.

Standard variant	
Folder name: `Resistor_THT_AKL`	
Footprint count:	**71**
Total footprints:	**71**

Chip Resistor footprints

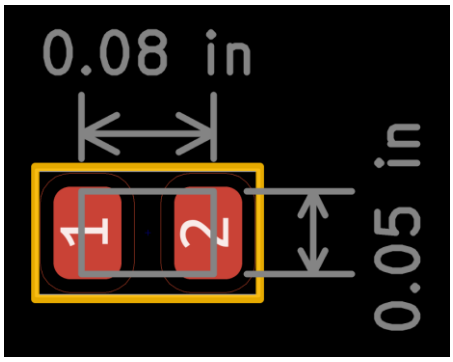
Footprint count: 41

Footprint naming convention:
R_<imp. size code>_<metric size code>**Metric**
(optional: _**Pad**<pad width>**x**<pad length>**mm)**

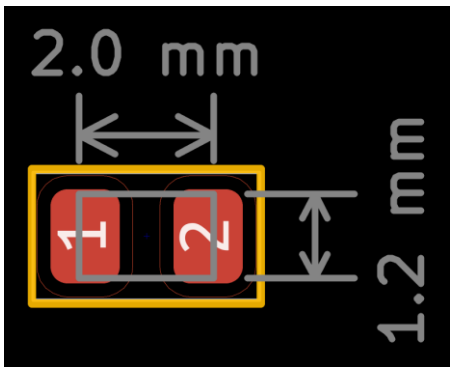
Name examples:
R_0805_2012Metric
R_0603_1608Metric_Pad1.05x095mm

Imperial size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.01 in. Example: 0805 size code means package length of 0.08 in and width of 0.05 in.

Metric size code:
First two digits denote length of the capacitor package last two digits correspond to its width measured in 0.1 mm. Example: 2012 metric size code means package length of 2 mm and width of 1.2 mm.



SMD Chip Resistor footprint with 0805 imperial size code, length and width of the package indicated.



SMD Chip Resistor footprint with 2012 metric size code, length and width of the package indicated.

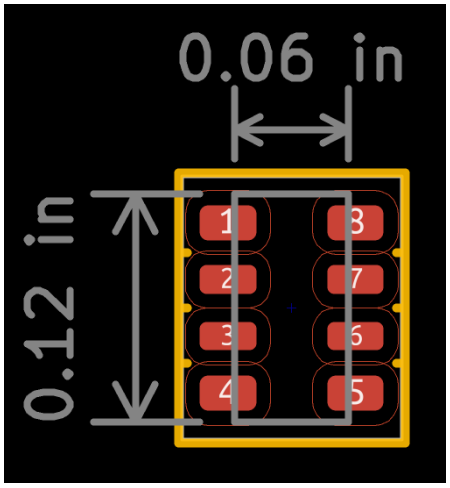
Chip Resistor Pack footprints

Footprint count: 14

Footprint naming convention:
R_Array_<pin shape>_<number of resistors>**x**
<resistor size>

Name examples:
R_Array_Concave_4x0603
R_Array_Convex_4x0402

Resistor pack pad shape can either be convex or concave, with convex being generally regarded as easier to solder and visually inspect.



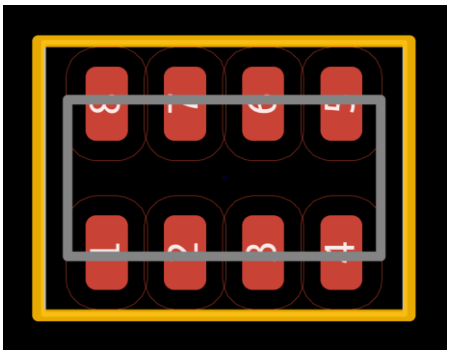
4x0603 resistor network footprint with size indicated (0.12in equals 4 resistors 0.03in wide)

Bourns Cat16 Resistor Pack footprints

Footprint count: 3

Footprint naming convention:
R_Cat16-<resistor count>

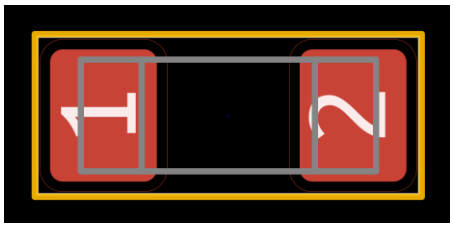
Footprint names:
R_Cat16-2
R_Cat16-4
R_Cat16-8



Cat16-4 footprint.

Metal Electrode Leadless Face (MELF) Resistor footprint

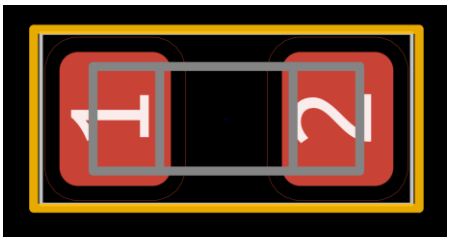
Footprint name:
R_MELF_MMB-0207



MELF Resistor footprint.

Mini Metal Electrode Leadless Face (MiniMELF) Resistor footprint

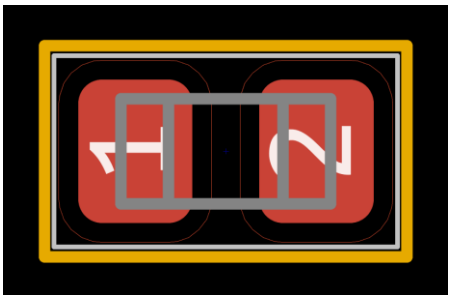
Footprint name:
R_MiniMELF_MMA-0204



MiniMELF Resistor footprint.

Micro Metal Electrode Leadless Face (MicroMELF) Resistor footprint

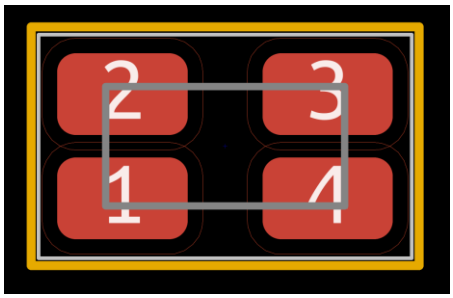
Footprint name:
R_MicroMELF_MMA-0204



MicroMELF Resistor footprint.

Ohmite LVK12 Shunt Resistor footprint

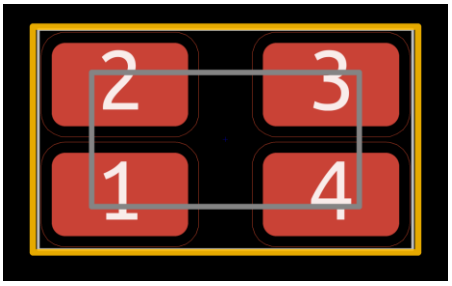
Footprint name:
R_Shunt_Ohmite_LVK12



LVK12 footprint.

Ohmite LVK20 Shunt Resistor footprint

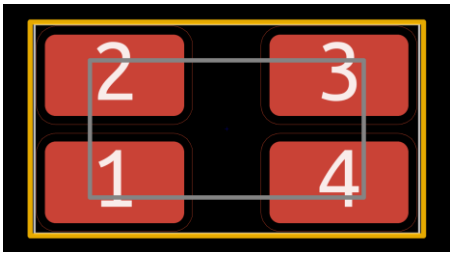
Footprint name:
R_Shunt_Ohmite_LVK20



LVK20 footprint.

Ohmite LVK24 Shunt Resistor footprint

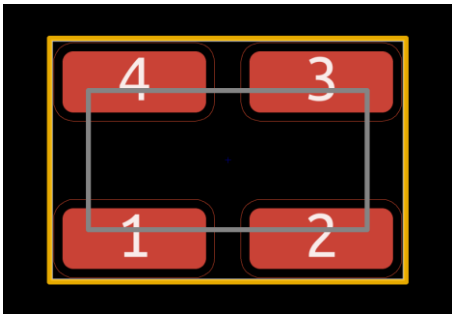
Footprint name:
R_Shunt_Ohmite_LVK24



LVK24 footprint.

Ohmite LVK25 Shunt Resistor footprint

Footprint name:
R_Shunt_Ohmite_LVK25



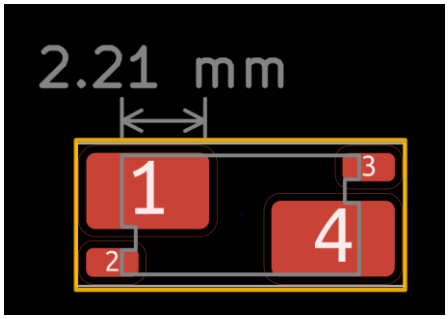
LVK25 footprint.

Vishay WSK2512 Shunt Resistor footprints

Footprint count: 3

Footprint naming convention:
R_Shunt_Vishay_WSK2512_6332Metric_T<pad depth>

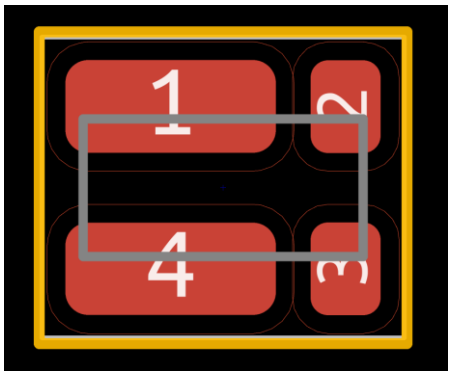
Footprint names:
R_Shunt_Vishay_WSK2512_6332Metric_T1.19mm
R_Shunt_Vishay_WSK2512_6332Metric_T2.21mm
R_Shunt_Vishay_WSK2512_6332Metric_T2.66mm



WSK2512 footprint with pad depth indicated.

Vishay WSKW0612 Shunt Resistor footprint

Footprint name:
R_Shunt_Vishay_WSKW0612

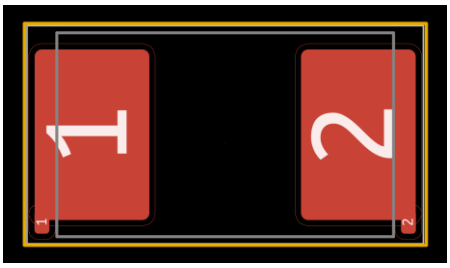


WSKW0612 footprint.

Vishay WSR2/WSR3 Shunt Resistor footprints

Footprint count: 2

Footprint naming convention:
R_Shunt_Vishay_WSR2_WSR3<optional: KelvinConnection>



WSR2/WSR3 "KelvinConnection" footprint.

Footprint names:
R_Shunt_Vishay_WSR2_WSR3
R_Shunt_Vishay_WSR2_WSR3_KelvinConnection

"KelvinConnection" option denotes a footprint with pad shaped specifically for easier sense trace placement.

3.30. THT Resistor Libraries

These libraries contain footprints for Through-hole resistors, current shunts and resistor networks.

Double-sided library variant contains both the top and bottom silkscreen layer. Bottom silkscreen contains a simplified symbol of the component and a reference designator.

US symbol library variants use the US - style resistor symbol instead of the standard one on the silkscreen.

Standard variant	
Folder name: `Resistor_THT_AKL`	
Footprint count:	**129**
Double-sided variant	
Folder name: `Resistor_THT_AKL_Double`	
Footprint count:	**101**
Standard variant (US symbol)	
Folder name: `Resistor_THT_US_AKL`	
Footprint count:	**129**
Double-sided variant (US symbol)	
Folder name: `Resistor_THT_US_AKL_Double`	
Footprint count:	**94**
Total footprints:	**453**

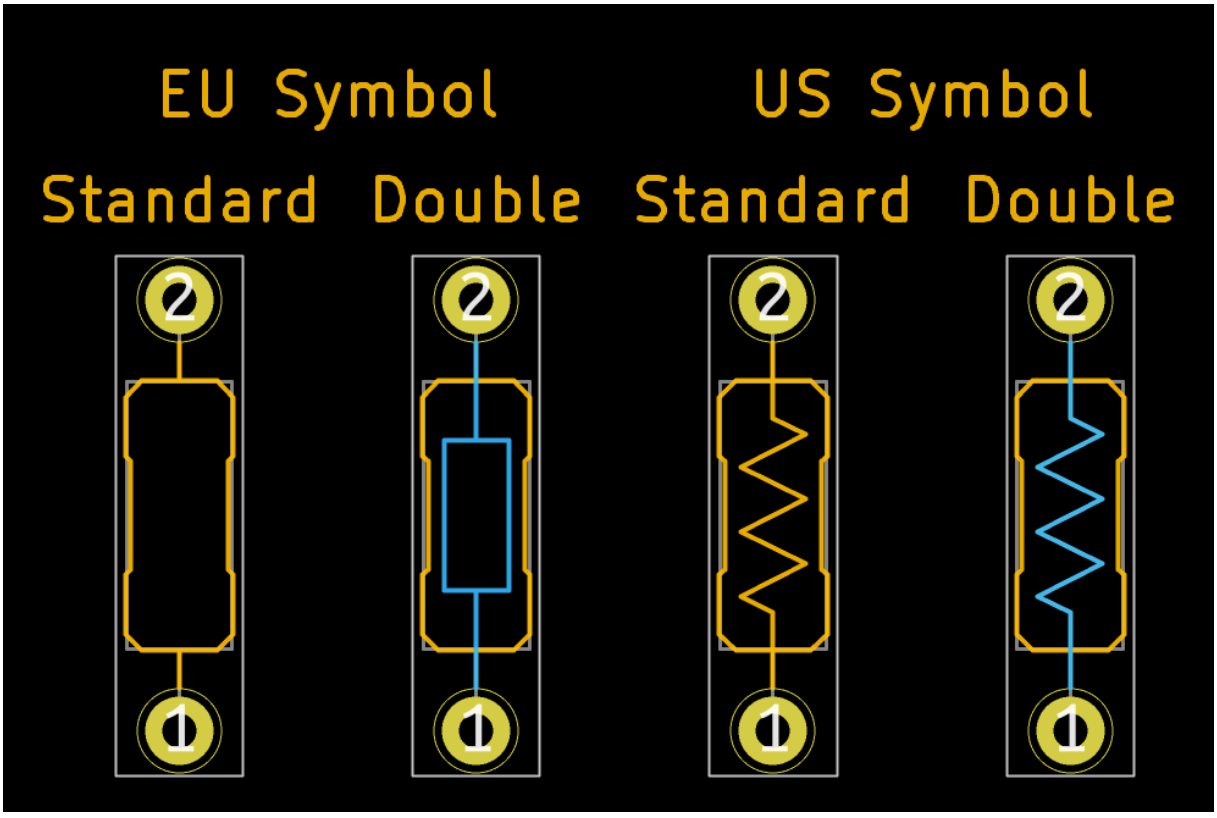


Figure 3.43. *Axial resistor footprints demonstrating different library variants.*

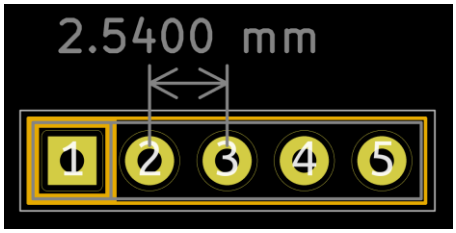
SIP resistor network footprints

Footprint count: 22

Footprint naming convention:
R_Array_SIP<pin count>_<optional: BigPads>

Name examples:
R_Array_SIP7
R_Array_SIP9_BigPads
R_Array_SIP14

"BigPads" option denotes a footprint with enlarged pads.



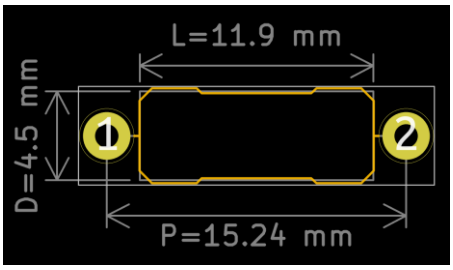
SIP-5 footprint with pin pitch indicated.

Axial resistor footprints

Footprint count: 63

Footprint naming convention:
R_Axial_DIN<size code>**_L**<length>**mm_D**<diameter>**mm**
P<pin pitch>**mm**<orientation>

Name examples:
R_Axial_DIN0204_L3.6mm_D1.6mm_P2.554mm_Vertical
R_Axial_DIN0207_L6.3mm_D2.5mm_P12.70mm_Horizontal
R_Axial_DIN0414_L11.9mm_D4.5mm_P30.48mm_Horizontal



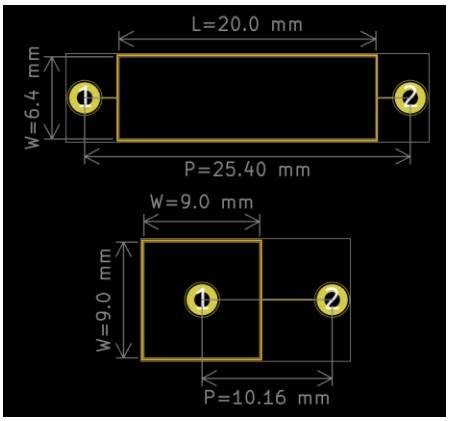
Axial resistor footprint with its dimensions indicated.

Axial ceramic power resistor footprints

Footprint count: 26

Footprint naming convention:
R_Axial_Power_L<length>**mm_W**<width>**mm**
P<pin pitch>**mm**<optional: vertical>

Name examples:
R_Axial_Power_L20.0mm_W6.4mm_P25.40mm
R_Axial_Power_L25.0mm_W9.0mm_P10.16mm_Vertical
R_Axial_Power_L50.0mm_W9.0mm_P60.96mm



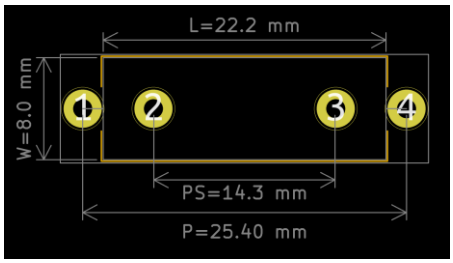
Axial horizontal power resistor footprint (Top) and a vertical power resistor footprint (Bottom) with all dimensions indicated.

Axial shunt resistor footprints

Footprint count: 5

Footprint naming convention:
R_Axial_Shunt_L<length>**mm_W**<width>**mm**
_PS<sense pin pitch>**mm_P**<pin pitch>**mm**

Name examples:
R_Axial_Shunt_L22.2mm_W8.0mm_PS14.30mm
_P25.40mm
R_Axial_Shunt_L35.3mm_W9.5mm_PS25.40mm
_P38.10mm



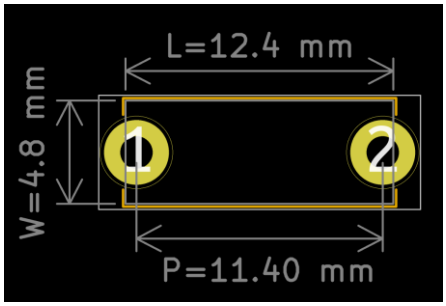
Axial shunt resistor footprint with all dimensions indicated.

Metal element resistor footprints

Footprint count: 3

Footprint naming convention:
R_Bare_Metal_Element_L<length>**mm_W**<width>**mm**
_P<pin pitch>**mm**

Footprint names:
R_Bare_Metal_Element_L12.4mm_W4.8mm_P11.40mm
R_Bare_Metal_Element_L16.3mm_W4.8mm_P15.30mm
R_Bare_Metal_Element_L21.3mm_W4.8mm_P20.30mm



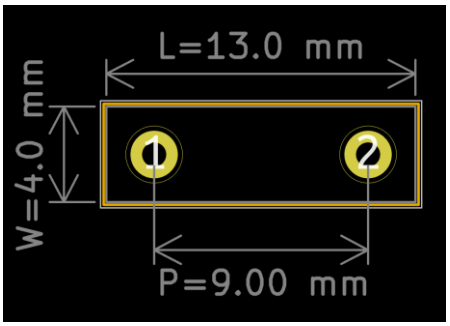
Bare metal element resistor footprint with all dimensions indicated

Box resistor footprints

Footprint count: 4

Footprint naming convention:
R_Box_L<length>**mm_W**<width>**mm_P**<pin pitch>**mm**

Footprint names:
R_Box_L8.4mm_W2.5mm_P5.08mm
R_Box_L13.0mm_W4.0mm_P9.00mm
R_Box_L14.0mm_W5.0mm_P9.00mm
R_Box_L26.0mm_W5.0mm_P20.00mm



Box resistor footprint with all dimensions indicated

Radial ceramic power resistor footprints

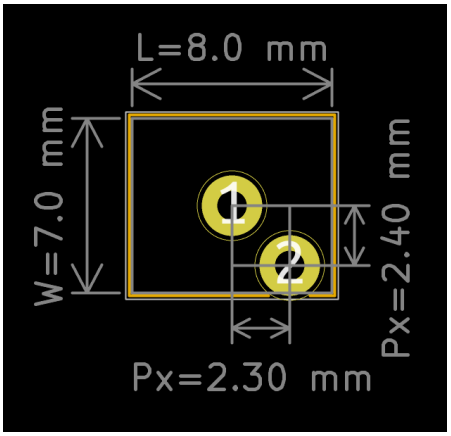
Footprint count: 6

Footprint naming convention:

R_Radial_Power_L<length>**mm_W**<width>**mm**
(Either:**_P**<pin pitch>**mm,** or:
_Px<horizontal pin pitch>**mm_Py**<vertical pin pitch>**mm**)

Name examples:

R_Radial_Power_L11.0mm_W7.0mm_P5.00mm
R_Radial_Power_L16.1mm_W9.0mm_P7.37mm
R_Radial_Power_L9.0mm_W10.0mm_Px2.70mm
_Py2.30mm



Radial power resistor footprint with all dimensions indicated.

4. Version History

This chapter contains summary changes to the Alternate KiCad Library and its User Manual.

4.1. User Manual Version History

Version	Description	Date
1.0	Initial release alongside AKL 2.0	11/2021
2.0	AKL 3.0 release, document changed to a new, scalable format	09/2022
3.0	AKL 4.0 release, added chapters detailing new features, updated relevant content to match the new library.	08/2024

4.2. Library Version History

Version	Description	Date
1.0	Initial Release: -Added **Capacitor_SMD_AKL** footprint library -Added **Capacitor_Tantalum_SMD_AKL** footprint library -Added **Capacitor_THT_AKL** footprint library -Added **Crystal_AKL** footprint library -Added **Diode_SMD_AKL** footprint library -Added **Diode_THT_AKL** footprint library -Added **Inductor_SMD_AKL** footprint library -Added **Inductor_THT_AKL** footprint library -Added **Package_DFN_QFN_AKL** footprint library -Added **Package_DIP_AKL** footprint library -Added **Package_LCC_AKL** footprint library -Added **Package_QFP_AKL** footprint library -Added **Package_SO_AKL** footprint library -Added **Package_SON_AKL** footprint library -Added **Package_TO_SOT_SMD_AKL** footprint library -Added **Package_TO_SOT_THT_AKL** footprint library -Added **Resistor_SMD_AKL** footprint library -Added **Resistor_THT_AKL** footprint library -Added **Jumper_AKL** footprint library	04/2021
1.1	AKL 1.1 Release: -SMD Diode, Capacitor and Inductor footprint libraries were split into two variants. Standard variant has no silkscreen under the part bodies, “Handsoldering” variant has silkscreen symbols under the part bodies. -Improvements to SMD Inductor libraries -Removed unnecessary polarity marks on some TVS diode footprints -Removed silkscreen from under the parts in Crystal and SMD Resistor libraries.	05/2021
2.0	AKL 2.0 Release:	11/2021

	-Added **Diode_AKL** symbol library -Added **Diode_Schottky_AKL** symbol library -Added **Diode_Capacitance_AKL** symbol library -Added **Diode_Zener_AKL** symbol library -Added **Diode_TVS_AKL** symbol library -Added **Diode_Bridge_AKL** symbol library -Added **Diode_Current_Limiting_AKL** symbol library -Added **Diac_AKL** symbol library -Added **Transistor_BJT_AKL** symbol library -Added **Transistor_BJT_Darlington_AKL** symbol library -Added **Transistor_BJT_Pre-Biased_AKL** symbol library -Added **Transistor_MOSFET_AKL** symbol library -Added **Transistor_JFET_AKL** symbol library -Added **Transistor_IGBT_AKL** symbol library -Added **Thyristor_AKL** symbol library -Added **Triac_AKL** symbol library -Added **Optocoupler_AKL** symbol library -Added **Optocoupler_Gate_Driver_AKL** symbol library -Added **Optocoupler_Logic_AKL** symbol library -Added **Optocoupler_Triac_AKL** symbol library -Added **Optocoupler_Misc_AKL** symbol library -Added **Device_AKL** symbol library -Added **Optocoupler_AKL** footprint library -Added **Package_CSP_AKL** footprint library -Added **Ferrite_THT_AKL** footprint library -Added **Ferrite_SMD_AKL** footprint library -Added **Ferrite_SMD_Handsoldering_AKL** footprint library -Added **Fuse_AKL** footprint library -Added **Fuse_AKL_Double** footprint library -Added **Fuse_Handsoldering_AKL** footprint library -Added **Capacitor_AKL_Double** footprint library -Added **Diode_THT_AKL_Double** footprint library -Added **Inductor_THT_AKL_Double** footprint library -Added **Jumper_AKL_Double** footprint library -Added **Package_TO_SOT_THT_AKL_Double** footprint library -Added **Resistor_AKL_Double** footprint library -Added new footprints to **Diode_SMD_AKL** and its variants: SOD-882, SOD-882_TVS SMP (DO220AA) MicroSMP (DO219AD) SMAFL (SMA – Flat Lead) SMBFL (SMB – Flat Lead) MBF Diode Bridge -Added new footprints to **Diode_THT_AKL**: 5W_Zener (CASE-017AA) DO-35_Diac	

	Diode_Bridge_28.6x28.6x7.3mm_P5.08mm_Vertical Diode_Bridge_3F_35x25x5.5mm_P7.5mm Diode_Bridge_3F_40x21.5x5.4mm_P7.5mm -Added new footprints to **Package_DFN_QFN_AKL**: DFN-4_2x2mm_P0.45mm_EP1x1.35mm DFN-4_2x2mm_P0.45mm_EP1x1.35mm DFN-6_1.6x1.6mm_P0.5mm DFN-6-1EP_1.6x1.6mm_P0.5mm_EP0.6x1mm DFN-6-2EP_2x2mm_P0.65mm_EP1.15x0.95mm_EP0.8x0.48mm DFN-8-1EP_3x3mm_P0.5mm_EP1.55x1.85mm DFN-8-1EP_3x3mm_P0.5mm_EP1.7x1.7mm DFN-8-1EP_3x3mm_P0.5mmEP1.45x2.4mm DFN-10-1EP-2.6x2.6mm_P0.5_EP1.26x2.35mm DFN-10-1EP-2x2mm_P0.4mm_EP0.9x1.5mm Linear_DJC_DFN22_6x3mm OnSemi_WQFN-10_2.6x2.6mm_P0.5mm -Added new footprints to **Package_DIP_AKL**: DIP-4-8_W7.62mm DIP-4-8_W7.62mm_LongPads -Added new footprints to **Package_SON_AKL**: Infineon_PG-TDSON-8 Infineon_PG-TDSON-8_FL Infineon_PG-TDSON-8_Dual Infineon_PG-TSDSON-8 Infineon_PG-TSDSON-8_FL Texas_S-PWSON-N8_EP2.2x3mm Texas_S-PWSON-N8_EP2.2x3mm_ThermalVias WSON-8-1EP_3x3mm_P0.5mm_EP1.45x2.4mm -Added new footprints to **Package_SO_AKL**: SO-5_4.4x4.1mm_P1.27mm SO-6_6.8x4.6mm_P1.27mm SO-6_6.8x4.6mm_P1.27mm_Wide SO-6_7.5x3.84mm_P1.27mm SO-6_7.5x3.84mm_P1.27mm_Wide SO-8_4.4x5mm_P1.27mm SOIC-28W-8_7.5x17.9mm_P1.27mm -Added new footprints to **Package_TO_SOT_THT_AKL**: TO-3-8_Isolated Package TO-262-2 Package TO-66 Package Added more pin indicator variants for existing footprints -Fixes for **Diode_THT_AKL**: Some diode bridges had their pin numbering changed. -Fixes for **Package_DIP_AKL:** Some DIP package footprints were too short leading to component collisions when placed right next to each other.	

	(DIP14, DIP18, DIP20, DIP24, DIP28, DIP32, DIP40, DIP48 now have slightly longer bodies).	
2.1	AKL 2.1 Release: -Footprints now load KiCad's 3D models correctly -No-connect pads now have empty net name instead of '~' -SMD and THT Trimmers now have directional marks with external electrode being the pad 2 (connect to low impedance) -SIP Resistor networks have more pronounced pin 1 indicators.	12/2021
3.0	AKL 3.0 Release: -Added **Amplifier_Operational_AKL** symbol library -Added **Amplifier_Instrumental_AKL** symbol library -Added **Amplifier_Difference_AKL** symbol library -Added **Amplifier_Differential_AKL** symbol library -Added **Amplifier_Programmable_AKL** symbol library -Added **Amplifier_Isolation_AKL** symbol library -Added **Analog_Comparator_AKL** symbol library -Added **Analog_AKL** symbol library -Added **Capacitor_AKL** symbol library -Added **Capacitor_US_AKL** symbol library -Added **Resistor_AKL** symbol library -Added **Resistor_US_AKL** symbol library SMD Footprints have been revamped: - All pads are rounded rectangles with either 25% or 0.25mm corner radius (wichever is smaller). - Updated FAB Layer for better assembly drawings. - Silkscreen outline snaps to 0.1mm (or 0.05mm for small footprints) outside the courtyard. -Added **Capacitor_SMD US_Handsoldering_AKL** footprint library -Added **Capacitor_SMD Tantalum_US_Handsoldering_AKL** footprint library -Added **Capacitor_THT_US_AKL** footprint library -Added **Capacitor_THT_US_AKL_Double** footprint library -Added **Crystal_AKL_Double** footprint library -Added **Crystal_Handsoldering_AKL** footprint library -Added **Fuse_US_AKL** footprint library -Added **Fuse_US_AKL_Double** footprint library -Added **Fuse_US_Handsoldering_AKL** footprint library -Added **Potentiometer_SMD_AKL** footprint library -Added **Potentiomerer_SMD_Handsoldering_AKL** footprint library -Added **Potentiometer_SMD_US_Handsoldering_AKL** footprint library -Added **Potentiometer_THT_AKL** footprint library	09/2022

	-Added **Potentiometer_THT_AKL_Double** footprint library -Added **Potentiometer_THT_US_AKL** footprint library -Added **Potentiometer_THT_US_AKL_Double** footprint library -Added **Package_SIP_AKL** footprint library -Added new footprints to **Package_DFN_QFN_AKL**: DFN-8-1EP_3x3mm_P0.5mm_EP1.2x2mm Texas_RSV_UQFN16_1.8x2.6mm_P0.4mm DFN-6_1.3x1.6_P0.4mm QFN-16_3x3mm_P0.5mm Diodes_UDFN-6_1.4x1.0mm_P0.5mm Texas_X2QFN-8_1.5x1.5mm -Added new footprints to **Package_SO_AKL**: TSSOP-14-1EP_4.4x5mm_P0.65mm_EP2.31x2.46mm TSSOP-20-1EP_4.4x6.5mm_P0.65mm_EP2.4x3.4mm SSOP-8_4.4x3.5mm_P0.65mm SO-8_5x5mm_P1.27mm -Added new footprints to **Package_SON_AKL**: Texas_X2SON_6_1x1mm_P0.35mm -Added new footprints to **Capacitor_THT_AKL** and all its variants: C_Rect_L15mm_W15mm_P10x10mm C_Rect_L17mm_W8.5mm_P12.50mm C_Rect_L36.5mm_W15mm_P32.50mm -Added new footprints to **Resistor_THT_AKL** and **Resistor_THT_US_AKL**: R_Array_SIP4_BigPads R_Array_SIP5_BigPads R_Array_SIP6_BigPads R_Array_SIP7_BigPads R_Array_SIP8_BigPads R_Array_SIP9_BigPads R_Array_SIP10_BigPads R_Array_SIP11_BigPads R_Array_SIP12_BigPads R_Array_SIP13_BigPads R_Array_SIP14_BigPads	
4.0-rc1	AKL 4.0 Release Candidate (GitHub only) **Added alternate body styles for certain symbols** **Reworked Transistor_BJT_Pre-Biased_AKL symbol library to show resistor values.** **Added new LED_AKL symbol library** **Added new Voltage_Regulator_AKL symbol library** **Reworked NC pins** **Added new LED_SMD_AKL footprint library** **Added new LED_THT_AKL footprint library** **New symbols added to existing libraries:** Diode_AKL Diode_Schottky_AKL	03/2024

	Diode_Zener_AKL Diode_TVS_AKL Diode_Current_Limiting_AKL Diode_Bridge_AKL **Crystal_AKL, Crystal_AKL_Double and Crystal_Handsoldering_AKL Footprint libraries:** -Added Crystal_SMD_8.7x3.8mm_P5.50mm **Diode_THT_AKL and Diode_THT_AKL_Double Footprint Libraries:** -Added DO-7 (DO-204AA) series -Added 7.3x22 mm used by BY4 type high voltage diodes -Added SOD-23 – old plastic rectangular diode package -Added SOD-61 series -Added SOD-61A series -Added CASE-194 series **Package_DFN_QFN_AKL Footprint library:** -Added DFN-8-1EP_3x2mm_P0.5mm_EP1.7x1.6mm **Package_SO_AKL Footprint library:** -Added SOIC-8-1EP_3.9x4.9mm_P1.27mm_EP2.29x2.29mm and thermal vias variants. -Added HTSSOP-16-1EP_4.4x5mm_P0.65mm_EP2.94x3.58mm_ThermalVias2 and thermal vias variants. -Added Infineon_PG-SSOP-14 and thermal vias variants. **Package_TO_SOT_SMD_AKL Footprint library:** -Added 1.27mm pin pitch variants for TO-252-4 and TO-252-5 footprints. (Default was only good for 1.14mm pin pitch devices). Some symbols previously using old footprint had the new one assigned when needed. -Added Diodes_SOT-89-5 **Package_TO_SOT_THT_AKL and Package_TO_SOT_THT_AKL_Double Footprint libraries:** -Added "BigPads" handsoldering-friendly variants to most metal-can packages: TO-3, TO-5-2, TO-5-3, TO-5-4, TO-5-6, TO-18-2, TO-18-3, TO-18-4, TO-39-3, TO-46-4, TO-78-6, TO-99-8, TO-100-10 -Added TO-71-6, TO-71-8 with pin indicators and BigPads variants -Added two-pin TO-3PF and KA variants -Added SOT-33 and SOT-33_Inline with pin variants -Added SOT-25 with pin variants	
4.0	AKL 4.0 full release -Various bug fixes since 4.0-rc1 **Added new LED_SMD_Handsoldering_AKL footprint library** **Added new LED_THT_AKL_Double footprint library**	08/2024