# Purpose

A reference designator is a unique combination of letters and numbers that identifies components and provides a link between the schematics and a printed circuit board.

# Reference Designator Definitions

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| **Reference Designator Guide** | | |
| **Designator** | | **Description** |
| **Primary** | **Secondary** |
| A |  | Integrated PCBAs, Dev/Eval Boards, or SOMs |
| ANT | AN | Antenna |
| B | BT | Battery or Battery Holder |
| BR | D | Bridge Rectifier |
| C |  | Capacitor |
| CN |  | Capacitor Network |
| CB |  | Circuit Breaker |
| CI |  | Circuit Interrupter |
| D |  | Diodes, all types |
| DS |  | Displays including LCD, LED, etc. |
| F |  | Fuse |
| FAN |  | Fan |
| FB | L | Ferrite Bead |
| FD | FID | Fiducial |
| FL |  | EMI Filter |
| G | Y | Oscillator, Resonator, Generator |
| H |  | Hardware, e.g., screws, nuts, washers, also used for drilled holes |
| HTR |  | Heater |
| J |  | Jack Connector: Least-movable connector of a connector pair |
| K |  | Relay or Contactor |
| L |  | Inductor |
| LD | D | Laser Diode |
| LED | D | Light Emitting Diode |
| LT | LAMP | Panel indicator lamps or light towers |
| M |  | Motor |
| MH | PTH, NPTH | Mounting Hole |
| MK | MIC | Microphone |
| MP | H | Mechanical parts |
| P |  | Plug connector: Most-movable connector of a connector pair |
| PCB |  | Bare printed circuit board |
| PD | D | Photodiode |
| PS |  | Power supply |
| Q |  | Transistor, all types |
| R |  | Resistor, potentiometer, and rheostats |
| RN |  | Resistor Network |
| RT |  | Thermistor |
| RV | MOV | Varistor |
| U |  | Specialty sensors, examples include hall effect etc. |
| SW |  | Switch or any type of user actuated contacts. |
| SCR |  | silicon controlled rectifier |
| SOL |  | Solenoid Valve |
| BZ |  | Speaker or buzzer |
| T | XFMR | Transformer |
| TB |  | Terminal block, DIN rail mounted for example |
| TC |  | Thermocouple |
| TP |  | Test Point. Ok to use TP or more descriptive name |
| TVS | D | Transient voltage suppression diode |
| U |  | Integrated circuit |
| VR | R | Variable resistor, pot, rheostat |
| X |  | Socket connector, used as a prefix for another item that's not P or J. |
| Y | XTAL | Crystal, ceramic resonator, powered oscillator |
| Z |  | Balun |

Table . Reference Designator Guide

1. **Reference Designator Choice**

The designer may choose the reference designator from either column found in Table 1.

A couple examples that one may choose a reference designator which differs from similar components within the design include ease of searching keywords or setting up design rules around that reference designator within the E-CAD tool.

# Revision History

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| --- | --- | --- | --- |
| **Revision** | **Description** | **Author** | **Date** |
| 01 | Initial Release | J. Petrilli | 10/30/2022 |
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