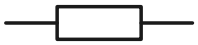
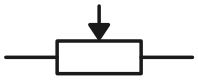
Common Electronic Circuit Symbols

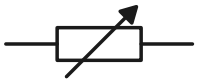
ANSI/IEEE style, with the IEC resistor shown for comparison. Symbol styles vary between standards and CAD libraries.

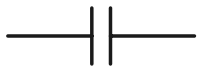
Passive components

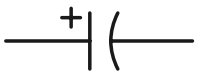

Resistor (ANSI)


Resistor (IEC)


Potentiometer

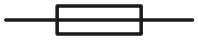

Variable resistor


Capacitor


Polarized capacitor


Inductor


Crystal

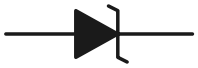

Fuse


Transformer

Semiconductors


Diode


LED

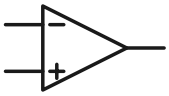

Zener diode


Schottky diode


NPN transistor


PNP transistor


N-channel MOSFET


Op-amp

Sources and connections


Battery

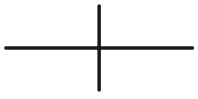

DC voltage source


AC voltage source


Ground


Chassis ground

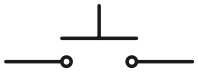

Wires joined


Wires crossing (not joined)

Switches and outputs



Switch (SPST)



Push button (normally open)

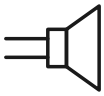


Relay coil

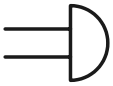


Lamp

Audio devices



Speaker



Buzzer



Microphone

Reading schematics

Connections. A dot means crossing wires are joined; without a dot they simply pass over each other.

Diodes and LEDs. Conventional current flows in the direction of the triangle, toward the bar, which marks the cathode.

Transistors. The arrow is on the emitter (or source, for a MOSFET). It points out for NPN and in for PNP.

Polarized capacitors. The "+" marks the positive lead; the curved plate is negative.

Buzzers. Library symbols differ: some show a half-disc, others a piezo element between two plates. Check whether the part is a transducer (needs a drive signal) or an indicator (needs only DC).