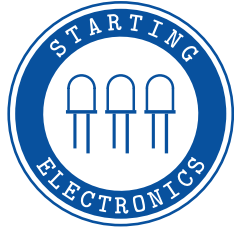


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Light Emitting Diode (LED)

Created on: 30 July 2012

The LED (Light Emitting Diode) is exactly what its name suggests – a diode that emits light. LEDs are like small light bulbs and are available in different sizes and colours.



Examples of LEDs used in Electronics

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LED Symbol

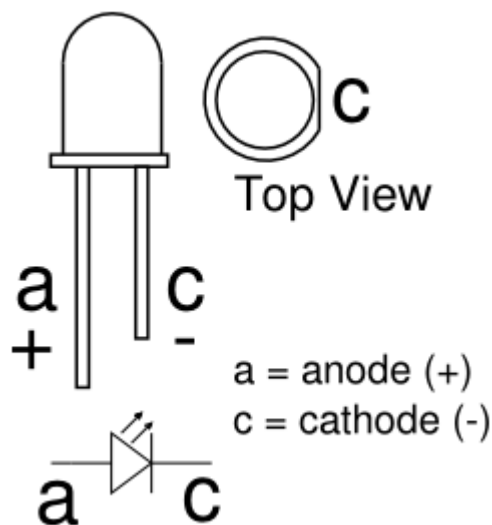
The symbol for an LED used in circuit diagrams is shown here:



LED Polarity

An LED has a positive lead known as the anode and a negative lead known as the cathode. An LED must be connected in a circuit the right way around – observe the polarity of the LED.

The way that the schematic symbol of the LED maps to the physical LED is shown in the diagram below:



On the physical LED, the longer lead (or leg) of the LED is the anode. The cathode is marked on the

Electronic Components

7 Segment Display

Batteries

Capacitor

Coin Battery

Crystal

Diode

IC (Integrated Circuit)

LCD (Liquid Crystal Display)

LDR (Photoresistor)

LED (Light Emitting Diode)

Loudspeaker

Operational Amplifier (Op-Amp)

Piezo Disk

Potentiometer

Reed Switch

rim of the LED body with a flat area shown in the diagram.

Another way to tell which lead is the anode and which is the cathode is to look at the two plates at the end of the leads inside the body of the LED. The bigger plate will be the cathode.

Tips and Hints

Never connect an LED directly across a battery or other power source – it will burn out. LEDs must always be connected in series with a resistor.

LEDs are diodes which means that current can only flow through an LED from the anode to the cathode and not the other way around.

If an LED is connected the wrong way around in a circuit (anode to negative and cathode to positive) it is said to be "reverse biased" and will not emit light. When connected the right way around the LED is said to be "forward biased".

LEDs, unlike other diodes, can not withstand large reverse bias voltages.

Resistor

Switch

Transistor

Transistor - NPN

Transistor - PNP

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