

Electrical Components (used in EMT1130 Lab Kits)

Resistor

An electrical component that used to produce heat, light, regulate the electric power entering a device and to set voltages within an electrical circuit. No polarity.

Color Value Table

Digit	Color
0	Black
1	Brown
2	Red
3	Orange
4	Yellow
5	Green
6	Blue
7	Violet
8	Grey
9	White

Resistor Color Code					
Color	1 st Band	2 nd Band	3 rd Band	Multiplier	Tolerance
Black	0	0	0	x 1 Ω	
Brown	1	1	1	x 10 Ω	+/- 1%
Red	2	2	2	x 100 Ω	+/- 2%
Orange	3	3	3	x 1K Ω	
Yellow	4	4	4	x 10K Ω	
Green	5	5	5	x 100K Ω	+/- 5%
Blue	6	6	6	x 1M Ω	+/- 25%
Violet	7	7	7	x 10M Ω	+/- 1%
Grey	8	8	8		+/- .05%
White	9	9	9		
Gold				x .1 Ω	+/- 5%
Silver				x .01 Ω	+/- 10%

Example

The following resistor would be:

Brown – 1

Black – 0

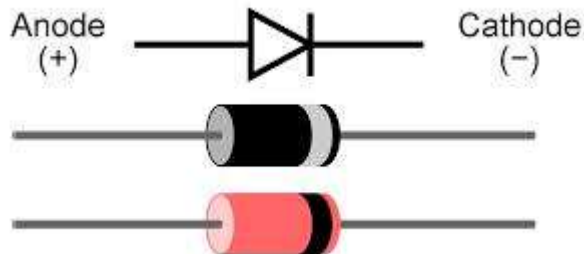
Red – 2

$$1\ 0 \times 10^2 = 1\ 0 \times 100 = 1000\Omega = 1k\ \Omega$$

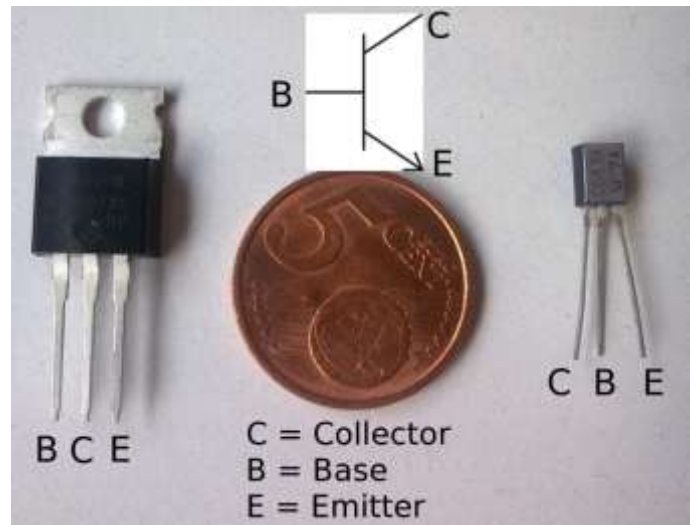


Diodes

An electronic device that restricts current flow to one direction, having a negative end (cathode) and a positive end (anode).

**Transistors**

A semi-conductor device that regulates current or voltage flow and acts as a switch or gate for electronic signals. (Transistor on the right)

**Heat Sink**

A device used for absorbing excessive heat and dissipating it into the surrounding area. (on the back of regulator)

**+5 Volt Regulator**

An electromechanical component that maintains constant output of volts. (Regulator on the left)

Capacitors

A device used to store an electric charge and then discharges it into a circuit. (Long end positive (anode), short end negative (cathode)).



IC Chip (Integrated Circuit)

A device made of interconnected electronic components, such as transistors and resistors that are etched or imprinted onto a tiny slice of a semiconducting material, such as silicon or germanium. An integrated circuit smaller than a fingernail can hold millions of circuits. ICs may also be called a chip, or microchip.



IC Chip Holder

A device used to mount the IC chip to the circuit board.

