

Current and circuit symbol

Current:

- ▶ An electric current is a flow of electric charge. A circuit has many electrons (charges) flowing around. This is a current “a flow of charge”
- ▶ The current can be measured in **amperes (A)**. The value for current, in amperes (A), is the rate of flow of charge.
- ▶ A current is constant in a closed loop. A current has the same value at any point in a single closed loop of a circuit.
- ▶ **Potential Difference:**
 - I. It is the driving force that pushes the charge around the circuit
 - II. Unit of potential difference is **Volt (V)**
- ▶ **Resistance:**
 - I. It is anything in the circuit which slow the flow down
 - II. Unit of Resistance is **Ohm (Ω)**
- ▶ The current flow through the component of a circuit is depend on the potential difference and resistance of the component

The Greater the resistance across the Component = smaller the current that flow through it

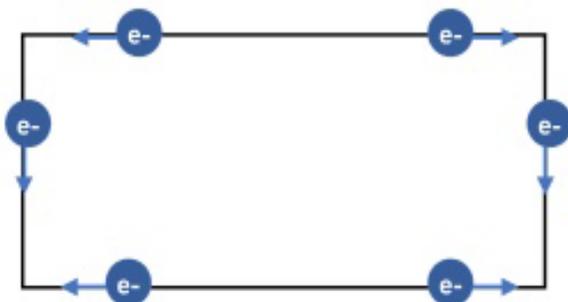


Fig 1. Circuit Without a Cell or Battery.

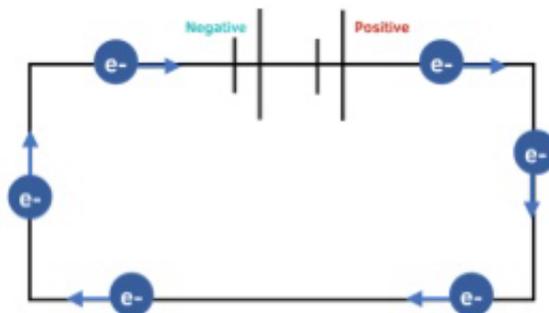


Fig 2. Circuit With a Cell or Battery.

Total Charge in a Circuit depends on Current and Time

- ▶ The size of an electric current is the amount of charge passing through a component per second
- ▶ The current, charge and time are related by the equation:

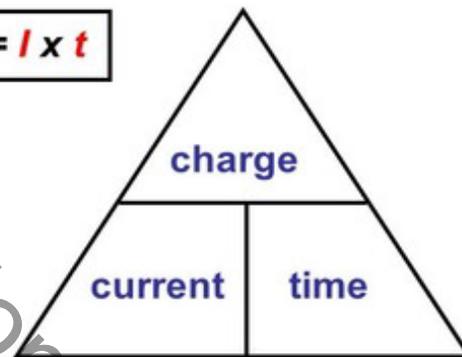
Charge-current equation

$$\text{electric charge} = \text{current} \times \text{time}$$

$$Q = I \times t$$

also: $I = Q / t$

and: $t = Q / I$



Where:

I = current, measured in amperes (or amps, A)

Q = charge, measured in coulombs (C)

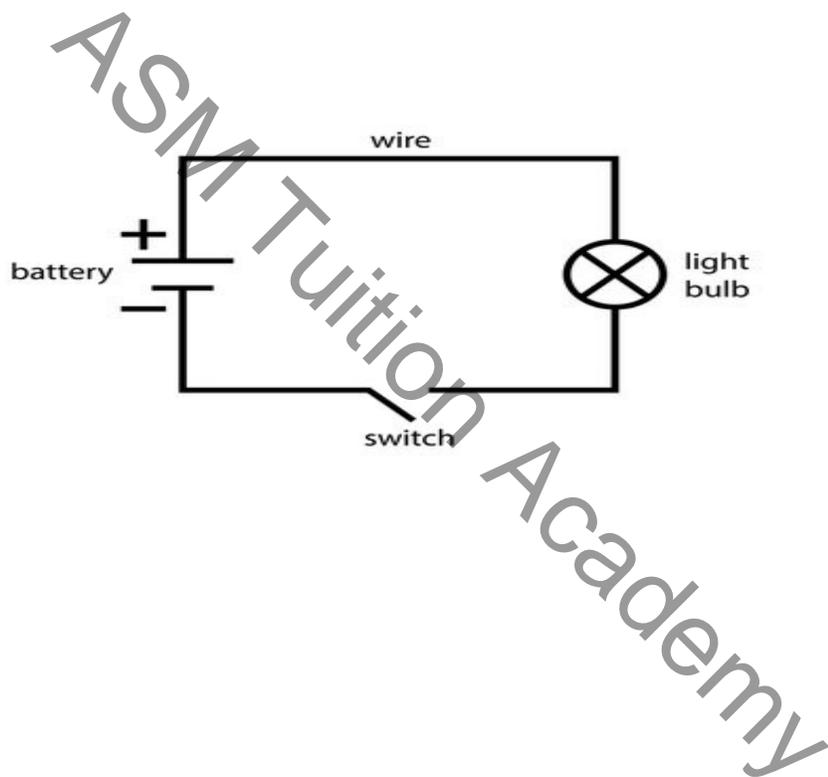
t = time, measured in seconds (s)

Circuit Diagram Symbol

When draw a circuit diagrams, there are a few important rules to remember:

1. Cables and wires in a circuit are drawn as straight lines.
2. Wires should not cross over each other.
3. We need to use the correct symbols for each component in the circuit.
4. When drawn, the circuit forms a closed loop. There should be no breaks in a complete circuit.

Here is simple diagram of Circuit



Symbol of circuit Diagrams

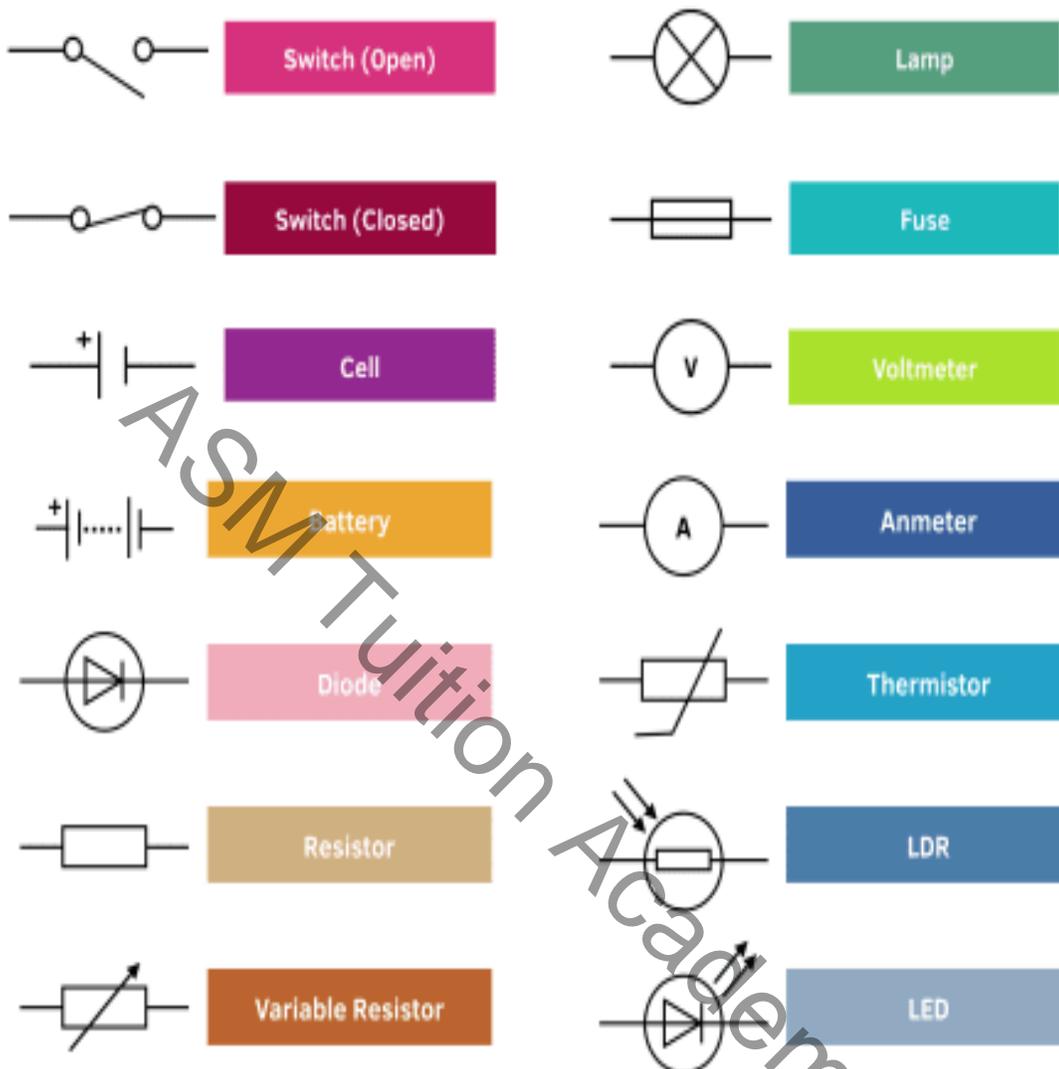


Fig 1. Circuit Symbols.