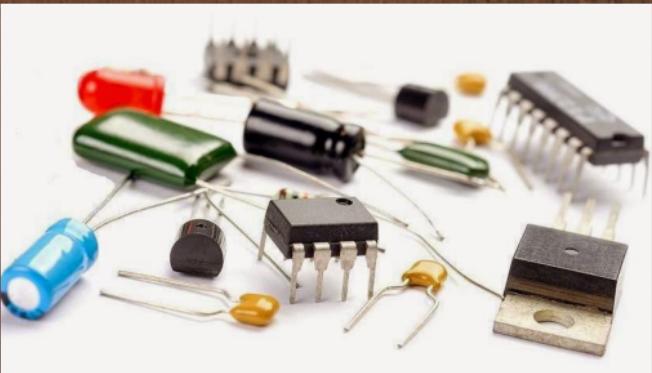




Electronic Technocrat
SECRET GURU



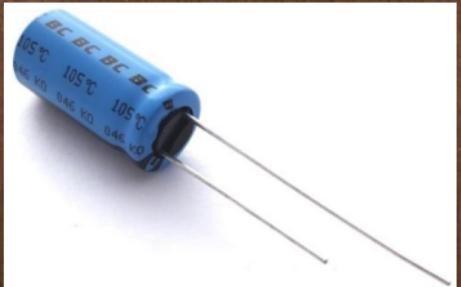
ELECTRONICS SNIPPETS- CAPACITORS





Capacitor is also known as condenser. This is one of the passive components like resistor. Capacitor is generally used to store the charge. In capacitor the charge is stored in the form of “electrical charge”.

This electrical charge in capacitor produces a potential difference across its two plates.





- Generally a capacitor has two parallel metal plates which are not connected or not touching each other.
- The two plates in the capacitor are separated by non conducting medium (insulating medium) this medium is commonly known as Dielectric.
- Some examples of dielectric materials are ceramic, waxed paper, mica, plastic or some form of a liquid gel.
- There are different types and different shapes of capacitors are available from very small capacitors which are used in resonance circuits to large capacitors for power factor correction process.





Electronic Technocrat
secret guy

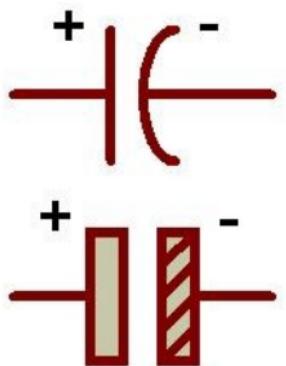


- But all capacitors are doing the same work that is storing the electrical charge.
- The shape of a capacitor is rectangular, square, circular, cylindrical or spherical shape.
- Capacitors are mainly used as one of the parts in many common electrical and electronic devices.
- Unlike a resistor, an ideal capacitor does not dissipate energy.
- If a capacitor is fully charged then it blocks the flow of DC current through it even though the supply voltage is connected to it.
- At this time the supply voltage is equal to the charging voltage of a capacitor.





Electronic Technocrat
secret group



Polarised



Non - polarised





- When AC supply voltage is applied to the capacitor, AC current passes through the capacitor with small amount of resistance or with no resistance.
- Mainly the electrical charge is two types, they are positive charge (+ve) which has protons and negative charge (-ve) which has electrons.
- When a direct voltage (DC) is applied to the capacitor then the positive charge ($+Q$) is accumulate on one of the metal plates of a capacitor and the negative charge ($-Q$) is accumulates on another plate of capacitor.



- The capacitance value (C) of a capacitor is equal to the ratio of the total charge (Q) stored on a capacitor to the potential difference (V) produced across the plates.
- The capacitance value is measured in “Farads”. The expression is shown below,

$$Q = C * V$$

- Charging current defines as the flow of electrons onto the plates of a capacitor which continues to flow until the voltage across both the metal plates is equal to the applied voltage V .
- The capacitor is ‘fully charged’ with electrons at this time.

