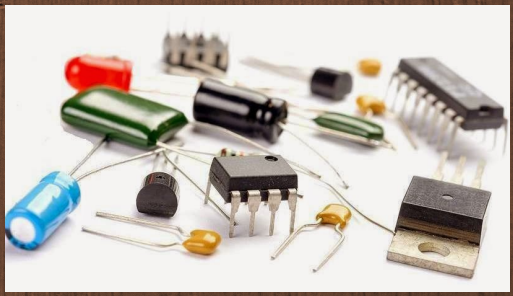
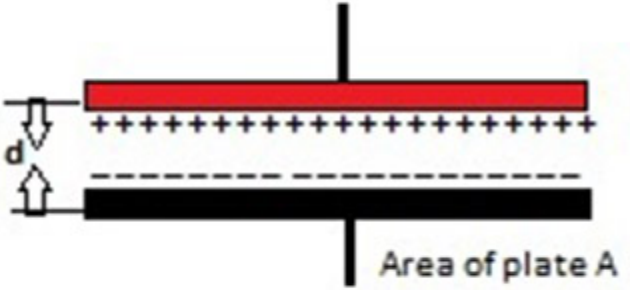
Electronics snippets- Capacitors



The capacitance of a Parallel Plate Capacitor


d
Area of plate A

- The above figure shows a parallel plate capacitor.
- We know that the capacitance of a parallel plate capacitor is proportional to the area (A) of the metal plates and inversely proportional to their distance or separation or thickness of dielectric constant (d) giving us a value for capacitance,

$$C = \varepsilon\ A/dC = k\ \varepsilon 0\ A/d$$

- Where ‘k’ is the Dielectric constant for the non conducting material and ‘ε0’ is the permittivity of free space which is equal to 8.8542*10 -12 F/m.
- But in the free space, k=1So, the capacitance C = 8.8542*10 -12 (F/m)*(A/d)