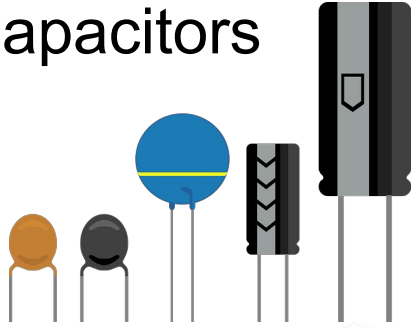


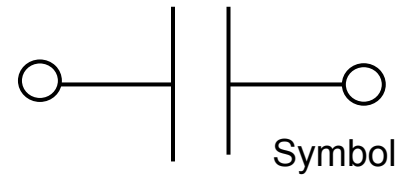
# Capacitors



$$1\mu\text{F} = 1 \times 10^{-6}\text{F}$$

$$1\text{nF} = 1 \times 10^{-9}\text{F}$$

Capacitors are two metal sheets separated by an insulator or air. Electric charge can be stored on the metal plates.



Capacitance is measured in Farads. One Farad tells us the capacitor can store one coulomb of electric charge when connected to source with potential difference of 1 volt.

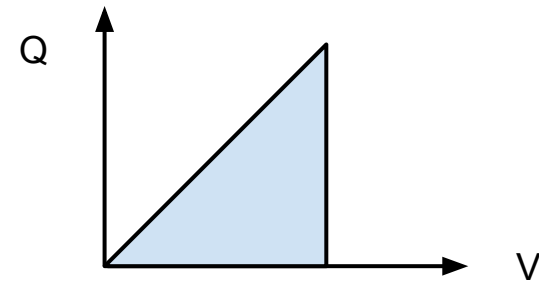
$$C = \frac{Q}{V}$$

capacitance                      charge  
potential diff



$$E = \frac{1}{2} QV \quad E = \frac{1}{2} CV^2 \quad E = \frac{1}{2} \frac{Q^2}{C}$$

The energy stored in a capacitor can be found by the area under the Charge and pd graph.



Capacitors are in heart defibrillators



Capacitors are in the camera flash lamps.



Capacitors block dc signals and let ac signals pass.