

RC Circuit: Fundamentals

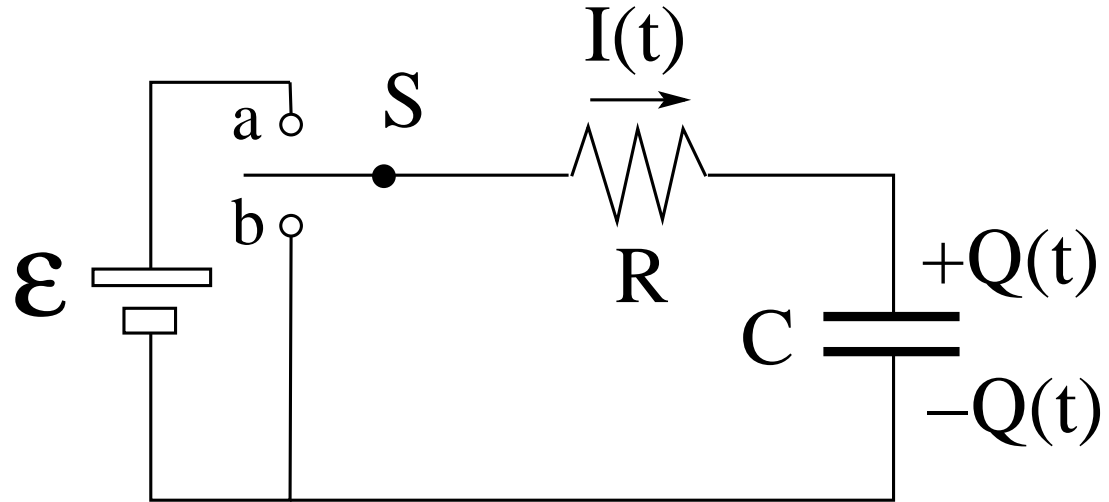


Specifications:

- \mathcal{E} (emf)
- R (resistance)
- C (capacitance)

Switch S :

- a: charging
- b: discharging



Time-dependent quantities:

- $Q(t)$: instantaneous charge on capacitor
- $I(t) = \frac{dQ}{dt}$: instantaneous current
- $V_R(t) = I(t)R$: instantaneous voltage across resistor
- $V_C(t) = \frac{Q(t)}{C}$: instantaneous voltage across capacitor