

Capacitors and Resistors

Equations Review

Capacitors	Resistors
$C = \frac{Q}{V}$ $W = \frac{1}{2}QV$	$V = IR$ $P = IV$ $P = I^2R$
Series	
$\frac{1}{C_{eq}} = \frac{1}{C_1} + \frac{1}{C_2}$ $Q_1 = Q_2 = Q_T$ $V_1 + V_2 = V_T$ $W_1 + W_2 = W_T$	$R_1 + R_2 = R_T$ $I_T = I_1 = I_2$ $V_1 + V_2 = V_T$ $P_1 + P_2 = P_T$
Parallel	
$C_1 + C_2 = C_{eq}$ $V_1 = V_2 = V_T$ $Q_1 + Q_2 = Q_T$ $W_1 + W_2 = W_T$	$\frac{1}{R_T} = \frac{1}{R_1} + \frac{1}{R_2}$ $V_1 = V_2 = V_T$ $I_T = I_1 + I_2$ $P_1 + P_2 = P_T$
Miscellaneous	
$C = \frac{k\epsilon_o A}{d}$ <p>C = Capacitance K = constant ϵ_o = permittivity of free space A = area d = distance between plates</p>	$R = \rho \frac{l}{A}$ <p>R = resistance A = cross sectional area l = length ρ = resistivity</p>
All	

$$P = \frac{\text{energy}}{\text{time}}$$