

Variables

P = Power (Watt)

I = Current (amp)

R = Resistance (ohm)

W = Watt

J = Joule

S = Second

V = Voltage (volt)

Equations

Parallel Resistance $1 / R_{tot} = 1/R1 + 1/R2 \dots$

Voltage Divider $V_{out} = V_{in} * R2 / R1 + R2$ Voltage at Middle of divider

LED Resistor $R = (V_s - V_f) / I_f$ V_s = Source Voltage, V_f = LED Forward Voltage, I_f = LED desired Current

Capacitor Parallel $C_{tot} = C1 + C2 + C3 \dots$ Total values are additive

Capacitor Series $C_{tot} = 1/C1 + 1/C2 + 1/C3 \dots$

Power $P = I^2 * R$

Ohms Law (Voltage) $V = I * R$

Ohms Law (Resistance) $R = V / I$

Ohms Law (Current) $I = V / R$

Wattage $W = J / S$

Inverting Op Amp Gain $Gain = R_f / R_{in}$ R_{in} = input resistor value, R_f = output resistor value

Noninverting Op Amp Gain $Gain = 1 + R_f / R_{in}$ R_{in} = input resistor value, R_f = output resistor value

Conductance $G = 1 / R$

dB Gain Power $dB = 10 \log(\text{power ratio})$

db Gain Voltage $dB = 20 \log(\text{voltage ratio})$

Units

T tera 10^{12}

G giga 10^9

M mega 10^6

k kilo 10^3

m milli 10^{-3}

u micro 10^{-6}

n nano 10^{-9}

p pico 10^{-12}

f femto 10^{-15}



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