Electronics Equations Cheat Sheet

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Variables

P = Power (Watt)
I = Current (amp)
R = Resistance (ohm)
W = Watt
J = Joule
S = Second
V = Voltage (volt)

Equations

Parallel Resistance	1 / Rtot = 1/R1 + 1/R2	
Voltage Divider	Vout = Vin * R2 / R1 + R2	Voltage at Middle of divider
LED Resistor	R = Vs - Vf / If	Vs = Source Voltage, Vf = LED Forward Voltage, If = LED desired Current
Capacitor Parallel	Ctot = C1 + C2 + C3....	Total values are additive
Capacitor Series	Ctot = 1/C1 + 1/C2 + 1/C3...	
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 = Rf / Rin	Rin = input resistor value, Rf = output resistor value
Noninverting Op Amp Gain	Gain = 1 + Rf / Rin	Rin = input resistor value, Rf = output resistor value
Conductance	G = 1 / R	
dB Gain Power	dB = 10 log(power ratio)	
db Gain Voltage	dB = 20 log (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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