

DC circuits

Ohm's law, series and parallel parts, dividers, sources and bridges. Most other pages lean on these.

Ohm's law

$$V = I R$$

Symbols	V	voltage across the part (V)
	I	current through it (A)
	R	resistance (Ω)

Example A 2.2 k Ω resistor carries 4 mA. What voltage is across it?

$$V = 4 \text{ mA} \times 2.2 \text{ k}\Omega = 8.8 \text{ V}$$

Lesson: Ohm's Law · electronicsinfoline.com/fundamentals/electricity-basics/ohms-law/
Also used in 83 more lessons.

Conductance as the reciprocal of resistance

$$G = 1/R$$

Symbols	G	conductance (S)
	R	resistance (Ω)

Example What is the conductance of a 470 Ω resistor?

$$G = 1 / (470 \Omega) = 2.13 \text{ mS}$$

Lesson: Resistivity & Conductance · electronicsinfoline.com/fundamentals/electricity-basics/resistivity-conductance/
Also used in 3 more lessons.

Three resistances in series

$$R_s = R_1 + R_2 + R_3$$

Symbols	R_s	total series resistance (Ω)
	R_1	first resistance (Ω)
	R_2	second resistance (Ω)
	R_3	third resistance (Ω)

Example Resistors of 1 k Ω , 2.2 k Ω and 4.7 k Ω are wired end to end. What is the total?

$$R_s = 1 \text{ k}\Omega + 2.2 \text{ k}\Omega + 4.7 \text{ k}\Omega = 7.9 \text{ k}\Omega$$

Lesson: Series Circuits · electronicsinfoline.com/fundamentals/dc-circuits/series-circuits/
Also used in 11 more lessons.