



Concept	Formula / Notation	Key
Electric Current	$I = \frac{Q}{t}$	I is the current (in A) Q is the change (in C) t is the time (in s)
Electromotive force (e.m.f.)	$\varepsilon = \frac{W}{Q}$	ε is the electromotive force of the electrical energy source (in V) W is the work done (amount of non-electrical energy converted to electrical energy) (in J) Q is the amount of charge (in C)
Potential difference (p.d.)	$V = \frac{W}{Q}$	V is the potential difference or voltage across a component (in V) W is the work done (amount of electrical energy converted to other forms) (in J) Q is the amount of charge (in C)
Ohm's law	$I \propto V$	I is the current (in A) V is the potential difference (in V)
Resistance	$R = \frac{V}{I}$	R is the resistance of the component (in Ω) V is the potential difference across the component (in V) I is the current flowing through the component (in A)
Resistivity	$R = \rho \frac{l}{A}$	R is the resistance of the wire (in Ω) ρ is the resistivity of the wire's material (in $\Omega \text{ m}$) l is the length of the wire (in m) A is the cross-sectional area of the wire (in m^2)

END