Key Terms

alternating current electric current whose direction alternates back and forth at regular intervals

ampere unit for electric current; one ampere is one coulomb per second ($1\ \mathrm{A} = 1\ \mathrm{C/s}$)

circuit diagram schematic drawing of an electrical circuit including all circuit elements, such as resistors, capacitors, batteries, and so on

conventional current flows in the direction that a positive charge would flow if it could move

direct current electric current that flows in a single direction

electric circuit physical network of paths through which electric current can flow

electric current electric charge that is moving

electric power rate at which electric energy is transferred in a circuit

equivalent resistor resistance of a single resistor that is the same as the combined resistance of a group of resistors

in parallel when a group of resistors are connected side by side, with the top ends of the resistors connected together by a wire and the bottom ends connected together by a different wire

in series when elements in a circuit are connected one after the other in the same branch of the circuit

nonohmic material that does not follow Ohm's law

Ohm's law electric current is proportional to the voltage applied across a circuit or other path

ohmic material that obeys Ohm's law

resistance how much a circuit element opposes the passage of electric current; it appears as the constant of proportionality in Ohm's law

resistor circuit element that provides a known resistance

steady state when the characteristics of a system do not change over time