

A - See Ampere

AC - Abbreviation for alternating current. See Alternating Current

AC coupling - Circuit that passes an AC signal while blocking a DC voltage.

AC/DC - Equipment that will operate from an AC or DC power source.

AC generator - Device that transforms mechanical energy into AC electrical power.

AC load line - A graph representing all possible combinations of AC output voltage and current for an amplifier.

AC power supply - Power supply that delivers AC voltage.

Active component - A component that changes the amplitude of a signal between output and input.

Active filter - A filter that uses an amplifier as well as reactive components to pass or reject selected frequencies.

Active region - The region of BJT (bipolar junction transistor) operation between saturation and cutoff used for linear amplification.

AC voltage - A voltage with alternating polarity

ADC - Analog to Digital Converter

Admittance - Measure (in Siemens) of how easily AC will flow through a circuit. Admittance is the reciprocal of impedance. Symbol = Y.

AF - Audio Frequency

Alkaline cell - Also known as an "alkaline manganese cell", a primary cell that delivers more current than a carbon-zinc cell.

Alligator clip - Spring clip on the end of a test lead for making temporary connections.

Alternating current - An electric current that rises to a maximum in one direction, falls back to zero and then rises to a maximum in the opposite direction and then repeats. Abbreviation = AC.

Alternator - another name for an AC generator (device used to transform mechanical energy into AC electrical power).

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

AM - see amplitude modulation

Ammeter - A meter used to measure current.

Ampere - a unit of electrical current, also referred to as amp.

Amplifier - A circuit that increases the voltage, current, or power of a signal.

Amplitude - Magnitude or size of a signal voltage or current.

Amplitude modulation - The encoding of a carrier wave by variation of its amplitude in accordance with an input signal. Abbreviation = AM

Analog - Information represented as continuously varying voltage or current rather than in discrete levels as opposed to digital data varying between two discrete levels.

Anode - A positively charged electrode, as of an electrolytic cell, storage battery, or electron tube.

Apparent power - Power attained in an AC circuit as a product of effective voltage and current which reach their peak at different times.

Autotransformer - A single winding transformer where the output is taken from taps on the winding.

AWG - Abbreviation for "American wire gauge". A gauge that assigns a number value to the diameter of a wire.

Balanced bridge - Condition that occurs when a bridge circuit is adjusted to produce a zero output. ([Back to top](#))

Band-pass filter - A tuned circuit designed to pass a band of frequencies between a lower cut-off frequency (f1) and a higher cut-off frequency (f2). Frequencies above and below the pass band are heavily attenuated.

Band-stop filter - A tuned circuit designed to stop frequencies between a lower cut-off frequency (f1) and a higher cut-off frequency (f2) of the amplifier while passing all other frequencies.

Bandwidth - The numerical difference between upper and lower frequencies of a band of electromagnetic radiation. Abbreviation = BW

Base - The region that lies between the emitter and collector of a bipolar junction transistor (BJT).

Battery - A DC voltage source containing two or more cells that convert chemical energy to electrical energy.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Baud - A unit of signaling speed equal to the number of signal events per second. Not necessarily the same as bits per second.

Bias - A DC voltage applied to a device to control its operation.

Binary - A number system having only two symbols, 0 and 1. A base 2 number system.

Bipolar junction transistor - (BJT), A three terminal device in which emitter to collector current is controlled by base current.

Bits per second - A measure of data speed for the number of bits transmitted or received each second.

Breakdown voltage - Voltage at which the breakdown of a dielectric or insulator occurs.

Breakover voltage - Minimum voltage required to cause a DIAC to break down and conduct.

Bridge rectifier - A circuit using four diodes to provide full wave rectification. Converts an AC voltage to a pulsating DC voltage.

Buffer - An amplifier used to isolate a load from a source.

BW - See Bandwidth.

Byte - Group of eight binary digits or bits.

Cable - Group of two or more insulated wires. ([Back to top](#))

CAD - Abbreviation for "computer aided designs"

Calibration - To adjust the correct value of a reading by comparison to a standard.

Capacitance - The ability of a capacitor to store an electrical charge. The basic unit is a Farad.

Capacitor - An electronic component having capacitive reactance.

Carbon-film resistor - Device made by depositing a thin carbon film on a ceramic form.

Carbon microphone - Microphone whose operation depends on pressure variation in carbon granules causing a change in resistance.

Carbon resistor - Resistor of fixed value made by mixing carbon granules with a binder which is molded and then baked.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Cathode - A negatively charged electrode, as of an electrolytic cell, a storage battery, or an electron tube.

Center tap - Midway connection between the two ends of a winding.

Center tapped rectifier - A circuit that make use of a center tapped transformer and two diodes to provide full wave rectification.

Center tapped transformer - A transformer with a connection at the electrical center of a winding.

Ceramic capacitor - Capacitor in which the dielectric is ceramic.

Charge - Quantity of electrical energy.

Charge current - Current that flows to charge a capacitor or battery when voltage is applied.

Chassis - Metal box or frame to mount components.

Chassis ground - Connection to a chassis.

Choke - Inductor used to oppose the flow of alternating current.

Circuit - Interconnection of components to provide an electrical path between two or more components.

Circuit breaker - A protective device used to open a circuit when current exceeds a maximum value. In effect a reusable fuse.

Clock - A square waveform used for synchronizing and timing of several circuits.

Closed circuit - Circuit having a complete path for current flow.

Coaxial cable - Transmission line in which the signal carrying conductor is covered by a dielectric and another conductor.

Collector - The semiconductor region in a bipolar junction transistor (BJT) through which a flow of charge carriers leaves the base region.

Color code - Set of colors used to indicate value of a component.

Common-anode display - A multi-segment light emitting diode (LED) with a single positive voltage input connection. Separate cathode connections are provided for each individual segment.

Common cathode display - A multi-segment light emitting diode (LED) with a single

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

negative voltage input connection. Separate anode connections are provided for each individual segment.

Comparator - An op-amp circuit that compares two inputs and provides a DC output indicating the polarity relationship between the inputs.

Computer aide design - Software used to create 2D or 3D computer models.

Constant current circuit - Circuit used to maintain constant current to a load having resistance that changes.

Contact - Current carrying part of a switch, relay or connector.

Continuity - Occurs when a complete path for current exists.

Conventional current flow - Concept of current produced by the movement of positive charges towards the negative terminal of a source.

Copper loss - Power lost in transformers, generators, connecting wires and other parts of a circuit due to current flow through the resistance of copper conductors.

Coupling - To electronically connect two circuits so that signal will pass from one to the other.

Crowbar - Circuit used to protect the output of a source from a short circuited load. Load current is limited to a value the source can deliver without damage.

Crystal - Natural or synthetic piezoelectric or semiconductor material with atoms arranged with some degree of geometric regularity.

Crystal-controlled oscillator - Oscillator that uses a quartz crystal in its feedback path to maintain a stable output frequency.

Current - Measured in amps, it is the flow of electrons through a conductor. Also know as electron flow.

Cutoff - Condition when an active device is biased such that output current is near zero or beyond zero.

Cycle - When a repeating wave rises from zero to a positive maximum then back to zero and on to a negative maximum and back to zero it is said to have completed one cycle.

DAC - Abbreviation for "digital to analog converter." ([Back to top](#))

Damping - Reduction in magnitude of oscillation due to energy being dissipated as heat.

Darlington pair - An amplifier consisting of two bipolar junction transistors with their

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

collectors connected together and the emitter of one connected to the base of the other. Circuit has an extremely high current gain and input impedance.

DC - Abbreviation for Direct Current. See direction current.

DC load line - A graph representing all possible combinations of voltage and current for a given load resistor in an amplifier.

DC offset - The change in input voltage required to produce a zero output voltage when no signal is applied to an amplifier.

DC power supply - Any source of DC power for electrical equipment.

Dead short - Short circuit having zero resistance.

Decade - A frequency factor of ten.

Decibel - (dB) a logarithmic representation of gain or loss.

Delay time - The time for collector current to reach 10% of its maximum value in a BJT switching circuit.

DIAC - A diode that conducts electrical only after its breakover voltage has been reached.

Differential amplifier - An amplifier in which the output is in proportion to the differences between voltages applied to its two inputs.

Digital - Relating to devices or circuits that have outputs of only two discrete levels. Examples: 0 or 1, high or low, on or off, true or false etc.

Diode - A two terminal device that conducts in only one direction.

DIP - Abbreviation for "dual in line package".

Direct coupling - Where the output of an amplifier is connected directly to the input of another amplifier or to a load. Also known as DC coupling because DC signals are not blocked.

Direct current - Current that flows in only one direction.

Discharge - Release of energy stored in either a battery or a capacitor.

Discrete component - Package containing only a single component as opposed to an integrated circuit containing many components in a single package.

Dry cell - DC voltage generating chemical cell using a non liquid (paste) electrolyte.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Dual in-line package - Integrated circuit package having two rows of connecting pins. Abbreviation = DIP ([Back to top](#))

Eddy current - An electric current induced within the body of a conductor when that conductor either moves through a non-uniform magnetic field or is in a region where there is a change in magnetic flux.

Electric charge - Electric energy stored on the surface of a material. Also known as a static charge.

Electron - A subatomic particle of an atom, with a negative charge, that orbits the positively-charged nucleus.

Electron flow - Electrical current produced by the movement of free electrons toward a positive terminal; the direction of electron flow is opposite to that of current.

Electric polarization - A displacement of bound charges in a dielectric when placed in an electric field.

Electrolytic capacitor - A capacitor having an electrolyte between the two plates. A thin layer of oxide is deposited on only the positive plate. The oxide acts as the dielectric for the capacitor. Electrolytic capacitors are polarized and so must be connected in correct polarity to prevent breakdown.

Electromagnet - A coil of wire usually wound on a soft iron or steel core. When current is passed through the coil a magnetic field is generated. The core provides an easy path for the magnetic lines of force. This concentrates the field in the core.

Emitter - The semiconductor region from which charge carriers are injected into the base of a bipolar junction transistor.

Enhancement-mode MOSFET - A field effect transistor in which there are no charge carriers in the channel when the gate source voltage is zero.

Farad - The basic unit of capacitance. ([Back to top](#))

Ferrite - A powdered, compressed and sintered magnetic material having high resistivity. The high resistance makes eddy current losses low at high frequencies.

Ferrite bead - Ferrite composition in the form of a bead. Running a wire through the bead increases the inductance of the wire.

Ferrite-core inductor - An inductor wound on a ferrite core.

Ferrites - Compound composed of iron oxide, a metallic oxide and ceramic. The metal oxides include zinc, nickel, cobalt or iron.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Fiber optics - Laser's light output carries information that is conveyed between two points by thin glass optical fibers.

Field effect transistor - A voltage controlled transistor in which the source to drain conduction is controlled by gate to source voltage. Abbreviation = FET.

Filament - Thin thread of carbon or tungsten which produces heat or light with the passage of current.

Filter - Network consisting of capacitors, resistors and/or inductors used to pass certain frequencies and block others.

Flip flop - A bistable multivibrator. A circuit which has two output states and is switched from one to the other by means of an external signal (trigger). Abbreviation = FF

Flux - Material used to remove oxide films from the surface of metals in preparation for soldering.

Forward bias - A PN junction bias which allows current to flow through the junction. Forward bias decreases the resistance of the depletion layer.

Frequency - Rate of recurrence of a periodic wave. Measured in Hertz (cycles per second).

Full wave rectifier - Rectifier that makes use of the full AC wave in both the positive and negative half cycles.

Function generator - Signal generator that can produce sine, square, triangle and saw tooth output waveforms.

Fuse - A protective device in the current path that melts or breaks when current exceeds a predetermined maximum value.

Generator - Device used to convert mechanical energy to electrical energy. ([Back to top](#))

Giga - Metric prefix for 1 billion.

Ground - An intentional or accidental conducting path between an electrical system or circuit and the earth or some conducting body acting in place of the earth. A ground is often used as the common wiring point or reference in a circuit.

Half wave rectifier - A diode rectifier that converts AC to pulsating DC by eliminating either the negative or the positive alternation of each input AC cycle.

Henry - The basic unit of inductance.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Hertz - Unit of frequency equal to one cycle per second. Abbreviation = Hz.

IC - Abbreviation for integrated circuit. See intergrated circuit.

IC voltage regulator - Three terminal device used to hold the output voltage of a power supply constant over a wide range of load variations.

IGFET - Insulated gate field effect transistor. Another name for a "MOSFET."

Impedance - The total opposition to the flow of current offered by a circuit. Impedance consists of the vector sum of resistance and reactance. Measured in ohms (Z).

Incandescence - State of a material when heated to the point where it emits light (red hot or white hot).

Inductor - Length of conductor used to introduce inductance into a circuit. The conductor is usually wound into a coil to concentrate the magnetic lines of force and maximize the inductance. While any conductor has inductance, in common usage the term inductor usually refers to a coil.

Infrared - Electromagnetic heat radiation whose frequencies are above the microwave frequency band and below red in the visible band.

Input impedance - Opposition to the flow of signal current at the input of a circuit or load.

Insulated - When a non conducting material is used to isolate conducting materials from one another.

Insulating material - Material that will prevent the flow of current due to its chemical composition.

Insulation resistance - Resistance of insulating material. The greater the insulation resistance, the better the insulation.

Intergrated circuit - Also known as a chip, a small electrical device made of semiconductor material.

Internal resistance - Every source has some resistance in series with the output current. When current is drawn from the source some power is lost due to the voltage drop across the internal resistance. Usually called output impedance or output resistance.

Inverting amplifier - An amplifier that has a 180° phase shift from input to output.

Inverting input - In an operational amplifier (op amp) the input that is marked with a minus sign. A signal applied at the inverting input will be given 180° phase shift between

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

input and output.

Jack - Socket or connector into which a plug may be inserted. ([Back to top](#))

JFET - Abbreviation for "junction field effect transistor".

Joule - The unit of work and energy.

Junction - Contact or connection between two or more wires or cables. The area where the p-type material and n-type material meet in a semiconductor.

Junction diode - A semiconductor diode in which the rectifying characteristics occur at a junction between the n-type and p-type semiconductor materials.

Kilo - Metric prefix for 1000.

Kilovolt-ampere - 1000 volts at 1 ampere.

Kilowatt-hour - 1000 watts for 1 hour.

Kilowatt-hour meter - A meter used by electric utility companies to measure the amount of electric power used by a customer.

Kinetic energy - Energy associated with motion.

Kirchhoff's current law - The sum of the currents flowing into a point in a circuit is equal to the sum of the currents flowing out of that same point.

Kirchhoff's voltage law - The algebraic sum of the voltage drops in a closed path circuit is equal to the algebraic sum of the source voltages applied.

Lead-acid cell - Cell made up of lead plates immersed in a sulphuric acid electrolyte. An automobile battery usually consists of six lead-acid cells.

Leakage - Small undesirable flow of current through an insulator or dielectric. ([Back to top](#))

Light-emitting diode (LED) - A semiconductor diode that converts electric energy into electromagnetic radiation at a visible and near infrared frequencies when its pn junction is forward biased.

Limitter - Circuit or device that prevents some portion of its input from reaching the output. A clipper.

Linear - Relationship between input and output in which the output varies in direct proportion to the input.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Linear scale - A scale in which the divisions are uniformly spaced.

Line regulation - The ability of a voltage regulator to maintain a constant voltage when the regulator input voltage varies.

Load - A source drives a load. Whatever component or piece of equipment is connected to a source and draws current from a source is a load on that source.

Load current - Current drawn from a source by a load.

Load impedance - Vector sum of reactance and resistance in a load.

Loading effect - Large load impedance will draw a small load current and so loading of the source is small (light load). A small load impedance will draw a large load current from the source (heavy load).

Load regulation - The ability of a voltage regulator to maintain a constant output voltage under varying load currents.

Load resistance - Resistance of a load.

Logic - Science of dealing with the principle and applications of gates, relays and switches.

Maxwell - Unit of magnetic flux. One maxwell equals one magnetic line of force. ([Back to top](#))

Mercury cell - Primary cell using a mercuric oxide cathode, a zinc anode and a potassium hydroxide electrolyte.

Metal film resistor - A resistor in which a film of metal oxide or alloy is deposited on an insulating substrate.

Metal Oxide Semiconductor Field Effect Transistor - A field effect transistor in which the insulating layer between the gate electrode and the channel is a metal oxide layer. Abbreviation = MOSFET.

Metal oxide resistor - A metal film resistor in which an oxide of metal (such as tin) is deposited as a film onto the substrate.

Meter - Any electrical or electronic measuring device. In the metric system, it is the unit of length equal to 39.37 inches.

Mica capacitor - Capacitor using mica as the dielectric.

Microphone - Electro acoustic transducer that converts sound energy into electric energy.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Modulation - Process by which an information signal (audio for example) is used to modify some characteristic of a higher frequency wave known as a carrier (radio for example).

MOSFET - Abbreviation for "metal oxide field effect transistor" (also known as an "insulated gate field effect transistor"). See metal oxide field effect transistor.

Multimeter - Electronic test equipment that can perform multiple tasks. Typically one capable of measuring voltage, current and resistance. More sophisticated modern digital multimeters also measure capacitance, inductance, current gain of transistors and/or anything else that can be measured electronically.

Multi segment display - Device made of several light emitting diodes arranged in a numeric or alphanumeric pattern. By lighting selected segments numeric or alphabet characters can be displayed.

Mutual inductance - Ability of one inductor's lines of force to link with another inductor.

Network - Combination of interconnected components, circuits or systems. ([Back to top](#))

Neutral - A terminal, point or object with balanced charges. Neither positive or negative.

Neutral atom - An atom in which the number of negative charges (electrons in orbit) is equal to the number of positive charges (protons in the nucleus).

Neutral wire - The conductor of a polyphase circuit or a single-phase three wire circuit that is intended to have a ground potential. The potential difference between the neutral and each of the other conductors are approximately equal in magnitude and equally spaced in phase.

Neutron - Subatomic particle in the nucleus of an atom and having no electrical charge.

Nickel-cadmium cell - A secondary cell that uses a nickel oxide positive electrode and a cadmium negative electrode.

Node - Junction or branch point in a circuit.

Noise - Unwanted electromagnetic radiation within an electrical or mechanical system.

Normally closed - Designation which states that the contacts of a switch or relay are closed or connected when at rest. When activated, the contacts open or separated.

Normally open - Designation which states that the contacts of a switch or relay are normally open or not connected. When activated the contacts close or become connected.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

npn transistor - A bipolar junction transistor in which a p-type base element is sandwiched between an n-type emitter and an n-type collector.

Nucleus - Core of an atom. The nucleus contains both positive (protons) and neutral (neutrons) subatomic particles.

Ohm - Unit of resistance symbolized by the Greek capital letter omega (Ω). ([Back to top](#))

Op-amp - Abbreviation for operational amplifier. See operational amplifier.

Open loop gain - The gain of an amplifier when no feedback is present.

Open loop mode - An amplifier circuit having no means of comparing the output with the input. (No feedback.)

Operational amplifier - A high gain DC amplifier that has a high input impedance and a low output impedance. Op-amps are the most basic type of linear integrated circuits.

Oscilloscope - An instrument used to display a signal graphically. Shows signal amplitude, period and wave shape in addition to any DC voltage present. A multiple trace oscilloscope can show two or more waveforms at the same time for phase comparison and timing measurements.

Output - Terminal at which a component, circuit or piece of equipment delivers current, voltage or power.

Output impedance - Impedance measured across the output terminals of a device without a load connected.

Output power - Amount of power a component, circuit or system can deliver to a load.

Overload - Condition that occurs when the load is greater than the system was designed to handle. (Load resistance too small, load current too high.) Overload results in waveform distortion and/or overheating. Overload protection - Protective device such as a fuse or circuit breaker that automatically disconnects a load when current exceeds a predetermined value.

Parallel - Circuit having two or more paths for current flow. Also called shunt. ([Back to top](#))

Peak inverse voltage - (PIV) The maximum rated value of an AC voltage acting in the direction opposite to that in which a device is designed to pass current.

Peak to peak - Difference between the maximum positive and maximum negative values of an AC waveform.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Period - Time to complete one full cycle of a periodic or repeating waveform.

Phase - Angular relationship between two waves.

Phase angle - Phase difference between two or more waves, normally expressed in degrees.

Phase shift - Change in phase of a wave form between two points, expressed as degrees of lead or lag.

Phase shift oscillator - An oscillator that uses three RC networks in its feedback path to produce the 180° phase shift required for oscillation.

Phosphor - Luminescent material applied to the inner face of a cathode ray tube that when bombarded with electrons will emit light of various colors.

Photoconductive cell - Material whose resistance decreases or conductance increases when exposed to light.

Photoconduction - A process by which the conductance of a material is change by incident electromagnetic radiation in the visible light spectrum.

Photo detector - Component used to detect or sense light.

Photodiode - A semiconductor diode that changes its electrical characteristics in response to illumination.

Photon - Discrete portion of electromagnetic energy. A small packet of light.

Photoresistor - Also known as a photoconductive cell or light dependent resistor (LDR). See photoconductive cell.

Piezoelectric crystal - Crystal material that will generate a voltage when mechanical pressure is applied and conversely will undergo mechanical stress when subjected to a voltage.

Piezoelectric effect - The production of a voltage between opposite sides of a piezoelectric crystal as a result of pressure or twisting. Also the reverse effect which the application of a voltage to opposite sides causes a deformation to occur at the frequency of the applied voltage. (Converts mechanical energy into electrical energy and electrical energy into mechanical energy.)

Plastic film capacitor - Capacitor in which alternate layers of aluminum foil are separated by thin films of plastic dielectric.

pnp transistor - A bipolar junction transistor with an n-type base and p-type emitter and

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

collector.

Polarity - The property of having a positive or negative charge.

Polarized - A component which must be connected in correct polarity to function and/or prevent destruction. Example: Electrolytic capacitor.

Potential difference - Voltage difference between two points which will cause current to flow in a closed circuit.

Potential energy - Energy that has potential to do work because of its position relative to others.

Potentiometer - A variable resistor with three terminals. Mechanical turning of a shaft can be used to produce variable resistance and potential. Example: A volume control is usually a potentiometer.

Power - Amount of energy converted by a circuit or component in a unit of time, normally seconds. Measured in units of watts (joules/second).

Power amplifier - An amplifier designed to deliver maximum power output to a load. Example: In an audio system, it is the power amplifier that drives the loudspeaker.

Power dissipation - Amount of heat energy generated by a device in one second when current flows through it.

Power factor - Ratio of actual power to apparent power.

Power loss - Ratio of power absorbed to power delivered.

Power supply - Electrical equipment used to deliver either AC or DC voltage.

Power supply rejection ratio - A measure of an op-amps ability to maintain a constant output when the supply voltage varies.

Primary - First winding of a transformer. Winding that is connected to the source as opposed to secondary which is a winding connected to a load.

Primary cell - Cell that produces electrical energy through an internal electrochemical action. Once discharged a primary cell cannot be reused.

Printed circuit board - Insulating board containing conductive tracks for circuit connections.

Programmable UJT - Unijunction transistor with a variable intrinsic stand-off ratio.

Protoboard - Board with provision for attaching components without solder. Also called

<p style="text-align: right;">Electronics Glossary (jameco.com) https://www.jameco.com/Jameco/workshop/learning-center/glossary.html</p>
<p style="text-align: right;">Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' (interfacebus.com) http://www.interfacebus.com/Glossary-of-Terms.html</p>

a breadboard. Primarily used for constructing experimental circuits.

Pulse - Rise and fall of some quantity (usually voltage) for a period of time.

Pulse fall time - Time for a pulse to decrease from 90% of its peak value to 10% of its peak value.

Pulse width - Time interval between the leading edge and trailing edge of a pulse at a point where the amplitude is 50% of the peak value.

Radar - Acronym for "radio detection and ranging". A system that measures the distance and direction of objects. ([Back to top](#))

RC time constant - Product of resistance and capacitance in seconds.

Reactance - Opposition to current flow without the dissipation of energy. Example: The opposition provided by inductance or capacitance to AC current. Symbol "X".

Reactive power - The power value in "volt amps" obtained from the product of source voltage and source current in a reactive circuit. Also called imaginary power or wattles power.

Receiver - Unit or piece of equipment used to receive information.

Recombination - Process by which a conduction band electron gives up energy (in the form of heat or light) and falls into a valence band hole.

Rectangular coordinates - A Cartesian coordinate of a Cartesian coordinate system whose straight-line axes or coordinate planes are perpendicular.

Rectangular wave - Also known as a pulse wave. A repeating wave that only operates between two levels or values and remains at one of these values for a small amount of time relative to the other value.

Rectification - Process that converts alternating current to direct current.

Rectifier - Diode circuit that converts alternating current into pulsating direct current.

Regulated power supply - Power supply that maintains a constant output voltage under changing load conditions.

Regulator - Device or circuit that maintains a desired output under changing conditions.

Relay - Electromechanical device that opens or closes contacts when a current is passed through a coil.

Relative - Not independent. Compared with or with respect to some other measured

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

quantity.

Relaxation oscillator - Free running circuit that outputs pulses with a period dependent on one or more RC time constants.

Reluctance - Resistance to the flow of magnetic lines of force.

Resistance - Opposition to current flow and dissipation of energy in the form of heat. Symbolized "R" and measured in ohms.

Resistive power - Amount of power dissipated as heat in a circuit containing resistive and reactive components. True power as opposed to reactive power.

Resistor - Component made of material that opposes flow of current and therefore has some value of resistance.

Resistor color code - Coding system of colored stripes on a resistor to indicate the resistor's value and tolerance.

Resonance - Circuit condition that occurs at the frequency where inductive reactance (XL) equals capacitive reactance (XC).

Reverse bias - Bias on a PN junction that allows only leakage current (minority carriers) to flow. Positive polarity on the n-type material and negative polarity to the p-type material.

Reverse breakdown voltage - Amount of reverse bias that will cause a PN junction to break down and conduct in the reverse direction.

RF - Abbreviation for "radio frequency."

Rheostat - Two terminal variable resistors used to control current.

RL differentiator - An RL circuit whose output voltage is proportional to the rate of change of the input voltage.

RL filter - Selective circuit of resistors and inductors that offers little or no opposition to certain frequencies while blocking or attenuating other frequencies.

RL integrator - RL circuit with an output proportionate to the integral of the input signal.

rms - Abbreviation for "root mean square"

rms value - rms value of an AC sine wave is 0.707 times the peak value. This is the effective value of an AC sine wave. The rms value of a sine wave is the value of a DC voltage that would produce the same amount of heat in a heating element.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Rotary switch - Electromechanical device that has a rotating shaft connected to one terminal capable of making or breaking a connection to one or more other terminals.

Saturation - Condition in which a further increase in one variable produces no further increase in the resultant effect. In a bipolar junction transistor, the condition when the emitter to collector voltage is less than the emitter to base voltage. This condition puts forward bias on the base to collector junction. ([Back to top](#))

Saw tooth wave - Repeating waveform that rises from zero to maximum value linearly drops back to zero and repeats. A ramp waveform.

Schematic diagram - Illustration of an electrical or electronic circuit with the components represented by their symbols.

Schmitt trigger - Circuit to convert a given waveform to a square wave output.

Schottky diode - Also known as a "hot-carrier diode" or "surface barrier diode", a high speed diode that has very little junction capacitance.

Secondary - Output winding of a transformer. Winding that is connected to a load.

Secondary cell - Electrolytic cell used to store electricity. Once discharged may be restored by recharging by putting current through the cell in the direction opposite to that of discharge current.

Self biasing - Gate bias for a field effect transistor in which source current through a resistor produces the voltage for gate to source bias.

Semiconductor - An element which is neither a good conductor nor a good insulator, but rather lies somewhere between the two. Characterized by a valence shell containing four electrons. Silicon, germanium and carbon are the semiconductors most frequently used in electronics.

Series circuit - Circuit in which the components are connected end to end so that current has only one path to follow through the circuit.

Seven segment display - Device made of several light emitting diodes arranged in a numeric or alphanumeric pattern. By lighting selected segments numeric or alphabet characters can be displayed.

Shield - Metal grounded cover used to protect a wire, component or piece of equipment from stray magnetic and/or electric fields.

Short circuit - Low resistance connection between two points in a circuit typically causing excessive current. Also called a "short."

Silicon-controlled rectifier - (SCR) Three terminal active device that acts as a gated

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

diode. The gate terminal is used to turn the device on allowing current to pass from cathode to anode.

Silicon controlled switch - An SCR with an added terminal called an anode gate. A positive pulse either at the anode gate or the cathode gate will turn the device on.

Silicon transistor - A bipolar junction transistor using silicon as the semi conducting material.

Silver mica capacitor - Mica capacitor with silver deposited directly onto the mica sheets instead of using conductive metal foil.

Single in-line package - Package containing several electronic components (generally resistors) with a single row of connecting pins.

Single pole double throw - (SPDT) Three terminal switch in which one terminal can be connected to either one of the other terminals.

Single pole single throw - (SPST) Two terminal switch or relay that can open or close one circuit.

Single throw switch - Switch containing only one set of contacts which can be either opened or closed.

Sink - Device such as a load that consumes power or conducts away heat.

Sinusoidal - Varying in proportion to the sine of an angle or time function. AC voltage in which the instantaneous value is equal to the sine of the phase angle times the peak value.

SIP - Abbreviation for "single in-line package." See single in-line package.

Solder - Metallic alloy used to join two metal surfaces.

Soldering - Process of joining two metallic surfaces to make an electrical contact by melting solder (usually tin and lead) across them.

Soldering iron - Tool with an internal heating element used to heat surfaces being soldered to the point where the solder becomes molten.

SPDT - Abbreviation for single pole double throw. See single pole double throw.

SPST - Abbreviation for single pole single throw. See single pole single throw.

Square wave - Wave that alternates between two fixed values for an equal amount of time.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Step-down transformer - Transformer in which the output AC voltage is less than the input AC voltage.

Step-up transformer - Transformer in which the output AC voltage is greater than the input AC voltage.

Supply voltage - Voltage provided by a power source.

Switch - Electrical device having two states, on (closed) or off (open). Ideally having zero impedance when closed and infinite impedance when open.

Switching transistor - transistor designed to change rapidly between saturation and cut-off. ([Back to top](#))

Tantalum capacitor - Electrolytic capacitor having a tantalum foil anode. Able to have a large capacity in a small package.

Temperature coefficient of frequency - Rate at which frequency changes with temperature.

Tera - (T) Metric prefix that represents 10¹².

Terminal - Point at which electrical connections are made.

Thermal stability - The ability of a circuit to maintain stable characteristics in spite of increased temperature.

Thermistor - Temperature sensitive semiconductor that has a negative temperature coefficient of resistance. As temperature increases, resistance decreases.

Thermocouple - Temperature transducer consisting of two dissimilar metals welded together at one end to form a junction that when heated will generate a voltage.

Thermometry - Relating to the measuring of temperature.

Thermostat - Device that opens or closes a circuit in response to changes in temperature.

Thick film capacitor - Capacitor consisting of two thick-film layers of conductive film separated by a deposited thick-layer dielectric film.

Thick film resistor - Fixed value resistor consisting of thick-film resistive element made from metal particles and glass powder.

Thin film capacitor - Capacitor in which both the electrodes and the dielectric are deposited in layers on a substrate.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Time constant - (t) Time required for a capacitor in an RC circuit to charge to 63% of the remaining potential across the circuit. Also time required for current to reach 63% of maximum value in an RL circuit. Time constant of an RC circuit is the product of R and C. Time constant of an RL circuit is equal to inductance divided by resistance.

Toggle switch - Spring-loaded switch that is put in one of two positions either on or off.

TO package - Cylindrical, metal can type of package of some semiconductor components.

Transducer - Device that converts energy from one form to another.

Transformer - Inductor with two or more windings. Through mutual inductance, current in one winding called a primary will induce current into the other windings called secondaries.

Transformer coupling - Also called inductive coupling. Coupling of two circuits by means of mutual inductance provided by a transformer.

Transistor - Term derived from "transfer resistor." Semiconductor device that can be used as an amplifier or as an electronic switch.

Transmission - Sending of information.

Transmitter - Equipment used to achieve transmission.

Triac - Bidirectional gate controlled thyristor similar to an SCR (silicon controlled resistor), but capable of conducting in both directions. Provides full wave control of AC power.

Triangular wave - A repeating wave that has equal positive going and negative going ramps. The ramps have linear rates of change with time.

Trigger - Pulse used to initiate a circuit action.

Trimmer - Small value variable capacitor, resistor or inductor used to fine tune a larger value.

UJT - Abbreviation for unijunction transistor. See unijunction transistor. ([Back to top](#))

Unijunction transistor - A three terminal device that acts as a diode with its own internal voltage divider biasing circuit. Abbreviation = UJT.

VA - Abbreviation for "volt ampere"

Variable capacitor - Capacitor whose capacitance can be change by varying the effective area of the plates or the distance between the plates.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Variable resistor - Resistor whose resistance can be changed by turning a shaft. See also "potentiometer and rheostat."

Volt - Unit of potential difference or electromotive force. One volt is the potential difference needed to produce one ampere of current through a resistance of one ohm.

Voltage - (V) Term used to designate electrical pressure or force that causes current to flow.

Voltage divider - Fixed or variable series resistor network connected across a voltage to obtain a desired fraction of that voltage.

Voltage drop - Voltage or difference in potential developed across a component due to current flow.

Voltage rating - Maximum voltage a component can withstand without breaking down.

Voltage regulator - Device or circuit that maintains constant output voltage (within certain limits) in spite of changing line voltage and/or load current.

Voltage source - Circuit or device that supplies voltage to a load.

Voltaic cell - Primary cell having two unlike electrodes immersed in a solution that chemically interacts to produce a voltage.

Volt-ampere - Unit of apparent power in an AC circuit containing capacitive or inductive reactance. Apparent power is the product of source voltage and current.

Voltmeter - Instrument used to measure difference in potential between two points.

Watt - Unit of electrical power required to do work at the rate of one joule per second. One watt of power is expended when one ampere of direct current flows through a resistance of one ohm. In an AC circuit, true power is the product of effective volts and effective amperes, multiplied by the power factor.

Wavelength - (l) Distance between two points of corresponding phase and is equal to waveform velocity divided by frequency.

Winding - One or more turns of a conductor wound in the form of a coil.

Wire - Single solid or stranded group of conductors having a low resistance to current flow. Used to make connections between circuits or points in a circuit.

Wire gauge - American wire gauge (AWG) is a system of numerical designations of wire diameters.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>

Wireless - Term describing radio communication that requires no wires between two communicating points.

Wire wound resistor - Resistor in which the resistive element is a length of high resistance wire or ribbon usually nichrome wound onto an insulating form.

Work - Work is done any time energy is transformed from one type to another. The amount of work done is dependent on the amount of energy transformed.

X - Symbol for reactance. See reactance.

Y - Symbol for admittance. See admittance.

Zener Diode - Semiconductor diodes in which reverse breakdown voltage current causes the diode to develop a constant voltage. Used as a clamp for voltage regulation.

[Electronics Glossary \(jameco.com\)](https://www.jameco.com/Jameco/workshop/learning-center/glossary.html)

<https://www.jameco.com/Jameco/workshop/learning-center/glossary.html>

[Dictionary of Electronic and Engineering Terms, Dictionary letter 'A' \(interfacebus.com\)](http://www.interfacebus.com/Glossary-of-Terms.html)

<http://www.interfacebus.com/Glossary-of-Terms.html>