

Electronic Communication

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.

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

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

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.

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

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.

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.

DC - Abbreviation for Direct Current. See direction current.

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

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

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

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.

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.

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

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.

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

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

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.

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

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.

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.

Rectification - Process that converts alternating current to direct current.

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

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

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

RF - Abbreviation for "radio frequency."

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.

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.

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.

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

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

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

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.

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

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.

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.

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.

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.

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 - (λ) 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.

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.