

Glossary of Automotive Electronic Terms—SAE J1213

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Active Element—A component capable of producing power gain such as a transistor, tunnel diode, thyristor, etc. Also active device, active component.

Active Filter—A device employing passive network elements and amplifiers used for transmitting or rejecting signals in certain frequency ranges or for controlling the relative output of signals as a function of frequency. (GRAF)

Ambient Conditions—The conditions (pressure, temperature, etc.) of the surrounding medium.

American Wire Gauge—Abbreviated AWG. System of numerical designations for wire size, based on specified ranges of circular mil area. American Wire Gauge starts with 4/0 (0000) at the largest size going to 3/0 (000), 2/0 (00), 1/0 (0), 1, 2, and up to 40 and beyond for the smallest sizes.

Ampere (A)—The standard unit for measuring the strength of an electric current. The rate of flow of a charge in a conductor or conducting medium of one coulomb per second.

Amplifier—A device, circuit, or component which produces as an output an enlarged reproduction of the essential features of its input.

Amplitude Modulation (AM)—Modulation in which the amplitude of a wave is the characteristic subject to variation. (GRAF)

Anode—The positive pole (+) in batteries, galvanic cells, or plating apparatus. In diodes, the positive lead.

Analog—Of or pertaining to the general class of devices or circuits in which the output varies as a continuous function of the input.

Analog Computer—A computer which represents numerical quantities as electrical and physical variables and manipulates these variables in accomplishing solutions to mathematical problems.

And Gate—A combinational logic element such that the output channel is in its one state, if and only if each input channel is in its one state.

Avalanche Breakdown—In a semiconductor diode, a nondestructive breakdown caused by the cumulative multiplication of carriers through field-induced impact ionization. (GRAF)

Avalanche Diode—Also called breakdown diode. A silicon diode that has a high ratio of reverse-to-forward resistance until avalanche breakdown occurs. After breakdown the voltage drop across the diode is essentially constant and is independent of the current. Used for voltage regulating and voltage limiting. Originally called zener diode before it was found that the Zener effect had no significant role in the operation of diodes of this type.

Bandwidth—The range within the limits of a Band. The least frequency interval of a wave form. The range of frequencies of a device, within which its performance, with respect to some characteristic, conforms to a specified standard.

Bit—The smallest element of information in binary language. A contraction of Binary digit. These characters in system (computer) language signify "on" and "off" (1 and 0). Word length, memory capacity, etc. can be expressed in number of "bits".

B-Multiplier—See Darlingtong Amplifier.

Barrier Layer—See Depletion Layer.

Base—(transistor) A region that lies between an emitter and a collector of a transistor and into which minority carriers are injected. (IEEE)

Base Resistance—Resistance in series with the base lead in the common T equivalent circuit of a transistor. (GRAF)

Battery—A DC voltage source which converts chemical, nuclear, thermal or solar energy into electrical energy. (GRAF)

Bidirectional Diode-Thyristor—A two-terminal thyristor having substantially the same switching behavior in the first and third quadrants of the principal voltage-current characteristic. (IEEE)

Bias—To influence or dispose to one direction, as, for example, with a direct voltage or with a spring. (IEEE)

Binary—A characteristic or property involving a selection, choice, or condition, in which there are but two possible alternatives.

Bipolar—Having to do with a device in which both majority and minority

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carriers are present. In connection with ICs, the term describes a specific type of construction; Bipolar and MOS are the two most common types of IC construction. (GRAF)

Bleeder Resistor—A resistor used to draw a fixed current. Also used to discharge a filter capacitor after the circuit is de-energized. (GRAF)

Boolean Algebra—The Algebra of Logic named for mathematician George Boole using alphabetic symbols to stand for logical variables and "zero" and "one" to represent states. AND, OR, NOT, are the three basic logic operations in this Algebra. NAND and NOR are combinations of the three basic operations.

Breakdown Voltage—See dielectric strength.

Capacitance (C)—In a system of conductors and dielectrics, that property which permits the storage of electrically separated charges when potential differences exist between the conductors.

Its value is expressed as the ratio of a quantity of electricity to a potential difference (Q/V). (IEEE)

Capacitor—(condenser) A device consisting of two electrodes separated by a dielectric, which may be air, for introducing capacitance into an electric circuit. (IEEE)

Carrier—An AC voltage having a frequency suitably high to be modulated by electrical signals.

Cascade—An arrangement of two or more similar circuits or amplifying stages in which the output of one provides the input of the next. (GRAF)

Cathode—A general name for any negative electrode. (GRAF)

Cathode-Ray Tube—An electron-beam tube in which the beam can be focused to a small cross section on a luminescent screen and varied in position and intensity to produce a visible pattern. (IEEE)

Chip—A single substrate on which all the active and passive elements of an electronic circuit have been fabricated. A chip is not ready for use until it is packaged and provided with terminals for connection to the outside world. Also called a die. (GRAF)

Chip Sets—A term describing the microprocessor chip in addition to RAMs, ROMs, and interface I/O devices. Chip sets, mounted on a board, are also referred to as the CPU portion of the microcomputer.

Clock—A device that generates periodic signals used for synchronization. (IEEE)

Coil—See Inductor.

Collector—(transistor) A region through which primary flow of charge carriers leaves the base. (IEEE)

Common Collector Amplifier—A transistor amplifier in which the collector element is common to both the input and output circuit. Also known as an emitter-follower and a grounded-collector amplifier. (GRAF)

Common Mode Rejection—A measure of how well a differential amplifier ignores a signal which appears simultaneously and is in phase at both input terminals. Also, called in-phase rejection. (GRAF)

Complementary MOS—Pertaining to n- and p-channel enhancement-mode devices fabricated compatibly on a silicon chip and connected into push-pull complementary digital circuits. These circuits offer low quiescent power dissipation and potentially high speeds, but they are more complex than circuits in which only one channel type is used. Abbreviated CMOS. (GRAF)

Computer—Any device capable of accepting information, applying prescribed processes to the information, and supplying the results of the process.

Conductivity—The ability to transmit heat or electricity. Electrical conductivity is expressed in terms of the current per unit of applied voltage. The reciprocal of resistivity.

Constant Current Source—A regulated source which acts to keep its output current constant in spite of changes in load, line, or temperature while the output voltage changes by whatever amount is necessary to maintain the constant output current. (GRAF)

Continuous Rating—The rating applicable to specified operation for a specific uninterrupted length of time.

Central Processing Unit (CPU)—The section of a computer that contains