



## A

- A Ampere (AC rms or DC)
- a Ampere (peak)
- ABS Antilock braking system
- AC Alternating current
- AC/DC Alternating current or direct current
- ADC Analog-to-digital converter
- Adj Adjustment
- ADSL Asymmetric Digital Subscriber Line
- AF Audio frequency
- AFC Automatic frequency control
- AFC Automatic flow controller
- AFT Automatic fine tuning
- AGC Automatic Gain Control
- Ah Ampere hour
- ALU Arithmetic logic unit
- AM/FM Amplitude modulation or Frequency modulation
- AMM Analog multimeter
- Antilog Antilogarithm
- APC Automatic phase control
- ASCII American Standard Code for Information Interchange
- AVC Automatic Volume Control
- AWG American Wire Gauge

## B

- B Base electrode
- BATT Battery
- BCD Binary Coded Decimal
- BICMOS Bipolar Complementary Metal-Oxide Semiconductor
- BIFET Bipolar Field-Effect Transistor
- BIMOS Bipolar Metal-Oxide Semiconductor
- BJT Bipolar junction transistor
- BNC Bayonet Nut Coupling
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- BPF Band Pass Filter
- BTS Base Transceiver Station
- BV Breakdown Voltage
- BVCEO Breakdown voltage, collector-to-emitter junction reverse biased (base open)
- BVCEB Breakdown voltage, collector-to-emitter junction reverse biased (specified resistance)
- BVCES Breakdown voltage, collector-to-emitter junction reverse biased (base shorted)
- BVCEX Breakdown voltage, collector-to-emitter junction reverse biased (base-emitter back biased)
- BVCOB Breakdown voltage, collector-to-base junction reverse biased (emitter open)
- BW Bandwidth

## C

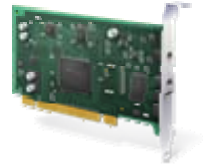
- c Centi (10<sup>-2</sup>)
- C Capacitance or capacitor
- C Capacitance; collector electrode
- C (Q) Coulomb
- C(dep) Depletion layer capacitance
- C(dif) Diffusion capacitance
- CAD Computer aided design
- cal CALIBER
- CAM Computer aided manufacture
- cap CAPACITY
- CATV Cable TV
- CB Common base configuration
- CB Citizen's band
- C-band 4-6 GHz (3.7-4.2 downlink, 5.925-6.425 uplink)
- CC Common collector
- CCD Charged Coupled Device
- CCIR International Radio Consultative Committee
- CCITT International Telegraph Consultative Committee
- CCTV Closed Circuit Television
- CCW Counter Clock Wise
- CE Common emitter



- Ce Internal collector junction capacitance.
- Cib Input Capacitance, common base
- CL Load capacitance
- CLC Circuit Close Loop
- cm Centimeter
- cmil Circular mil
- CMOS Complementary Metal Oxide Semiconductor
- CNC Computer Numerical Control
- Cob Output capacitance, common base
- Coe Output capacitance, common emitter
- CPU Central Processing Unit
- CR Junction diode
- CRO Cathode Ray Oscilloscope
- CRT Cathode Ray Tube
- CT Total capacitance
- cw Continuous transmission

## D

- d Deci (10<sup>-1</sup>)
- D/A or D-A Digital to analog
- D/L Downlink
- dBm DeciBell based on power (milliwatt)
- DBM Double Balanced Mixer
- DC Direct current
- Di or Di Change in current
- DIL Dual In Line
- DIN Deutsches Institute fuer Normen
- DIP Dual Inline Package
- DMM Digital multimeter
- DPDT Double pole double throw
- Dt or Dt Change in time
- DTL Diode transistor logic
- DTMF Dual Tone Multi-Frequency
- Dv or Dv Change in voltage
- DVB Digital Video Broadcasting
- DVD Digital Video Disc
- DVI Digital Video Interactive
- DVM Digital voltmeter



## E

- E Emitter electrode
- E DC or Erms Difference in potential
- E1 2,048 Mb/s
- ec electron-capture
- ECG Electrocardiogram
- ECL Emitter Coupled Logic
- ECU Electronic Control Unit
- EHF Extremely High Frequency
- EHV Extra high voltage
- ELF Extremely low frequency
- EMF Electromotive force
- EMI Electro magnetic interference
- EW Electronic warfare

## F

- f Frequency
- F Fast [IC logic series]
- fab Common base small-signal short-circuit forward current transfer-ratio cutoff frequency (emitter input)
- fae Common emitter small-signal short-circuit forward current transfer-ratio cutoff frequency
- FCC Federal Communications Commission
- FDD Floppy Disk Drive
- FDM Frequency Division Multiplexing
- FDMA Frequency Division Multiple Access
- FET Field Effect Transistor
- FF Flip Flop
- FIFO First-In First-Out
- FILO First- In Last- Out
- FM Frequency modulation
- fosc Maximum frequency of oscillation
- fpg Power gain cutoff frequency
- FPGA Field-Programmable Gate Array
- FPLA Field-Programmable Logic Array
- FPLF Field-Programmable Logic Family
- FPLS Field-Programmable Logic Switch
- fr Frequency at resonance
- fref Reference frequency



- FSD Full scale deflection
- FSK Frequency Shift Keying

## G

- G Gravitational force
- G Conductance
- G Giga (10<sup>9</sup>)
- Gb Power gain (common base).
- Gc Power gain (common collector)
- Ge Power gain (common emitter)
- Ge Germanium
- GHz GigaHertz
- gm Small-signal trans conductance
- gM, gFE Static or DC trans conductance
- GM, GFE Large-signal trans conductance
- GND Ground (voltage level)
- GPRS General Packet Radio Service
- GPS Global Positioning System
- GSM Group Special Mobile
- GTO Gate Turn Off (thyristor)

## H

- H Henry
- H Magnetic field intensity
- H Magnetizing flux
- h hecto (10<sup>2</sup>)
- h Hybrid
- H Henry
- HB-LED High Brightness LED
- HBT Hetero Junction Bipolar Transistor
- HC High speed CMOS
- HCT High speed CMOS/TTL
- HDTV High Definition Television
- HF High frequency



- $h_{fb}$  Common base small signal short-circuit forward current transfer-ratio
- $h_{fe}$  Common emitter small-signal short-circuit forward current transfer-ratio (base input)
- $h_{FE}$  Common emitter DC short-circuit forward current transfer-ratio current gain ( $I_C / I_B$ )
- $H_{FE}$  Common emitter large-signal short-circuit forward current transfer-ratio
- $h_{ib}$  Common base small-signal short-circuit input impedance (emitter input)
- $h_{ie}$  Common emitter small-signal short-circuit input impedance (base input)
- $h_{ob}$  Common base small-signal open-circuit output admittance (emitter input)
- $h_{oc}$  Common collector small-signal open-circuit output admittance (base input)
- $h_{oe}$  Common emitter small-signal open-circuit output admittance (base input)
- $hp$  Horsepower
- $h_{rb}$  Common base small signal open-circuit reverse transfer voltage ratio (emitter input)
- $h_{rc}$  Common collector small signal open-circuit reverse transfer voltage ratio (base input)
- $h_{re}$  Common emitter small signal open-circuit reverse transfer voltage ratio (base input)
- $Hz$  Hertz
- $Hz$  megahertz



## I

- I Current
- i Instantaneous current
- I/O Input/output
- I2C Interface IC
- IB Average base current (DC)
- Ib Instantaneous base current (AC rms)
- ib Base current (peak)
- IB DC Base current
- IC Integrated circuit
- IC Collector current (DC)
- Ic Collector current (AC rms)
- ic Collector current (peak)
- IC DC Collector current
- ICBO, ICO Collector cutoff current (emitter open)
- ICEO Collector cutoff current (base open)
- ICER Collector cutoff current (specified resistance base-emitter)
- ICERV Collector cutoff current (reverse voltage on base)
- IE Average emitter current (DC)
- Ie Instantaneous emitter current (AC rms)
- ie Instantaneous emitter current (peak)
- Ie Total emitter current
- IEBO Emitter cutoff current (collector open)
- IEEE Institute of Electrical and Electronics Engineers
- Ieff Effective current
- IF Intermediate frequency
- iF Forward current (DC)
- iFr Forward recovery current (specified instantaneous value)
- IGBT Insulated Gate Bipolar Transistor
- IGFET Insulated-Gate Field-Effect Transistor
- I<sub>max</sub> Maximum current
- I<sub>min</sub> Minimum current
- I<sub>min</sub> Minimum current
- IO Output current (DC)
- IR Infrared
- IR Reverse current (DC)
- iR Reverse current (peak)
- IR Resistor current
- iRr Reverse recovery current (specified instantaneous value)



- IS Secondary current
- ISO International Organization for Standardization
- isurge Surge current
- IT Total current
- IZ Average Zener current
- iZ Instantaneous Zener current (AC rms)
- IZK Zener knee current
- IZM Zener maximum current
- IZT Zener test current

## J

- JFET Junction Field Effect Transistor
- JTAG Joint Test Action Group

## K

- k Kilo (10<sup>3</sup>)
- K Kilohm
- k kelvin
- k Boltzmann's constant
- K Frequency Band, 18.0GHz - 27.0GHz
- Ka Frequency Band, 27.0GHz - 40.0GHz
- kg kilogram
- kg•m•s Kilogram Meter Second
- kHz Kilohertz
- km kilo Meter
- kohm Kilo Ohm
- Ku Frequency Band, 12.0GHz - 18.0GHz
- kV Kilovolt
- kVA Kilovolt ampere
- kW Kilowatt
- KWH Kilo Watt Hours

## L

- L Coil, inductance
- LASER Light Amplification by Stimulated Emission of Radiation
- LC Inductance-capacitance
- LC Conversion loss





- LC Inductance-capacitance
- LCD Liquid Crystal Display
- LCIF Laser-Collision-Induced Fluorescence
- L-C-R Inductance-capacitance-resistance
- LCX Low voltage CMOS
- LDR Light-dependent resistor
- LED Light emitting diode
- LF Low frequency
- LM Mutual inductance
- LNA Low noise amplifier
- LO Local oscillator
- LSI Large scale integration
- LT Total inductance

## M

- M Mega (10<sup>6</sup>)
- M Mutual conductance
- m Milli (10<sup>-3</sup>)
- mA Milliampere
- ma Milliampere (peak)
- mAa-c Milliampere (AC rms)
- mAd-c Milliampere (DC)
- mag Magnetron
- max Maximum
- Mb Mega-Bit [1024 x 1024 bits]
- MB MegaByte [1024 x 1024 bytes]
- MCU MicroComputer Unit
- MCU Mobile Calibration Unit
- MF Medium frequency
- mH Millihenry
- MHz Megahertz
- MI Mutual inductance
- MIL Military
- MIL-STD Military Standard
- Min Minimum
- Mm Millimeter
- Mmf Magnetomotive force
- MMS MULTI MEDIA SERVIS



- MOS Metal oxide semiconductor
- MOS Marine Optical System or Marine Optical Spectrograph
- MOSFET Metal oxide semiconductor field effect transistor
- MOSFET Metal Oxide Semiconductor Field Effect Transistor
- MPU Microprocessor unit
- MSI Medium scale integrated circuit
- mV Milli volt
- mW Milli watt (Max., Average, or rms)
- mw Milli watt (peak)
- MW Microwave

## N

- N Number of turns in an inductor
- N Revolutions per minute
- N Nano (10<sup>-9</sup>)
- N Negative
- nA Nanoampere
- NC Normally closed
- NC No connection
- NC Not Connected [pin], Normally Closed [switch]
- NEG, neg Negative
- nF Nanofarad
- nH Nanohenry
- nm Nanometer
- NO Normally open
- NPN Negative-positive-negative
- Ns Nanosecond

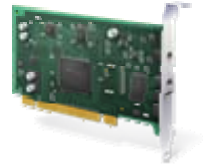
## O

- OC Open Collector
- OCVCXO Oven Controlled Voltage Controlled Crystal Oscillator
- OCXO Oven Controlled Crystal Oscillator
- OP AMP Operational amplifier
- OPA Optical Parametric Amplifier
- OPO Optical Parametric Oscillator



# P

- P Pico (10-12)
- P Power
- P Instantaneous power
- P Positive, also peak
- P Power dissipation of all terminals (average total)
- P Power dissipation of all terminals (peak)
- PA Public address or power amplifier
- pA Picoampere
- PAL Programmable Array Logic
- PAM, pam Pulse amplitude modulation
- Pap Apparent power
- Pav Average power
- Pb Power dissipation of base (average)
- pb Power dissipation of base (peak)
- Pc Power dissipation of collector (average)
- pc Power dissipation of collector (peak)
- PCB Print Circuit Board
- PCM Pulse Code Modulation
- Pd Power dissipation of device (average)
- PDM Pulse-duration modulation
- Pe Power dissipation of emitter (average)
- pe Power dissipation of emitter (peak)
- pF Picofarad
- PFC Power Factor Correction
- PIN Part Identifying Number
- PIV Peak inverse voltage
- PLC Programmable Logic Controller
- PLD Programmable Logic Device
- PLL Phase locked loop
- PM Phase modulation
- PNP Positive-negative-positive
- POT, pot Potentiometer
- P-P Peak to peak
- PPM Pulse-position modulation
- PRF Pulse repetition frequency
- PRT Pulse repetition time
- pw Pulse width



- PWM Pulse Width Modulation

## Q

- Q Charge, also quality
- q Instantaneous charge
- Q Transistor

## R

- R Potentiometer
- RAM Random access memory
- RB External base resistance
- $rb'$ ,  $r_{BB}'$  Internal base spreading resistance
- RbXO Rubidium Crystal Oscillator
- RC Resistance-capacitance, also Radio controlled
- RC External collector resistance
- Rcvr Receiver
- RE External emitter resistance
- Rect Rectifier
- Ref Reference
- RFI Radio frequency interference
- RGB Red Green Blue
- RL Load resistor
- RL Resistance, load
- RLC Resistance-capacitance-inductance
- RMS, rms Root mean square
- ROM Read only memory
- Rpm Revolutions per minute
- RS-232 An IEEE Standard Bus
- Rsat Saturation resistance

## S

- SCR Silicon controlled rectifier
- SHF Super high frequency
- SI International System of Units
- SIP Single in-line package
- SMS Short Message Service
- SNR Signal-to-noise ratio



- SPDT Single pole double throw
- sq cm Square centimeter
- SRAM Static Random Access Memory
- SSB Single sideband
- SW Short wave
- SWR Standing-wave ratio
- SYNC, sync Synchronous

## T

- T Tera (10<sup>12</sup>)
- T Torque
- T Transformer
- T Time in seconds
- T Temperature
- T Time
- TA Temperature, ambient
- TC Time constant, also temperature coefficient
- TC Temperature, case
- TCBV Temperature coefficient of breakdown voltage
- TCP/IP Transmission Control Protocol/Internet Protocol
- TCXO Temperature Compensated Voltage Controlled Crystal Oscillator
- TCXO Temperature Compensated Crystal Oscillator
- TCXO Temperature Controlled Crystal Oscillator
- td Pulse delay time
- TDM Time Division Multiplexing
- TDMA Time Division Multiple Access
- TE Transverse electric
- temp Temperature
- tf Pulse fall time
- tfr Forward recovery time
- THz Terahertz
- Tj Junction temperature
- TM Transverse magnetic
- tP Pulse time
- TR Transmit-receive
- tr Pulse rise time



- ts Pulse storage time
- TTL Transistor-transistor logic
- TV Television
- TWT Travelling wave tube

## U

- UHF Ultra High Frequency 300MHz - 3GHz
- UHV Ultra high voltage
- UJT Unijunction transistor
- UV Ultraviolet

## V

- V Vacuum tube
- v Instantaneous voltage
- V Volt (DC)
- VA Volt ampere
- Va-c Volt (AC)
- VAR VARISTOR
- Vav Voltage (average value)
- VB Voltage Base
- VBB Base voltage (DC) supply
- VBE DC voltage base to emitter
- Vc Capacitive voltage
- VCC Collector voltage (DC) supply
- VCD Variable Capacitance Diode
- VCE DC voltage collector to emitter
- VCEsat Collector to emitter saturation voltage
- VCO Voltage controlled oscillator
- VCXO Voltage Controlled Crystal Oscillator
- VE Voltage Emitter
- VEC Emitter voltage (DC) (emitter to collector)
- VEE Emitter voltage (DC) supply
- VF Forward voltage drop
- VFC Voltage to Frequency Converter
- Vfe Floating potential
- VHF Very high frequency



- $V_{in}$  Input voltage
- $V_L$  Inductive voltage
- VLF Very low frequency
- $V_m, V_{max}$  Maximum voltage
- $V_O$  Output voltage (DC)
- VOM Volt ohm milliammeter
- $V_{out}$  Output voltage
- $V_p$  Primary voltage
- VPT Voltage, punch-through
- $V_R$  Reverse voltage (DC)
- $V_r$  Reverse voltage (peak)
- $V_S$  Source voltage
- VSWR Voltage standing wave ratio
- $V_T$  Total voltage
- $V_T$  Total voltage
- $V_Z$  Zener voltage

## W

- W Watt
- Wh Watt Hour
- WiMAX World Interoperability for Microwave Access
- WV Working Voltage
- WWW World Wide Web

## X

- X Reactance
- X-band 5.2GHz - 10.9GHz range
- XC Capacitive reactance
- XFET eXtra implanted junction FET
- XL Inductive Reactance
- XO Crystal Oscillator
- XOR Exclusive OR
- XTAL Crystal

## Y

- Y Admittance



# Z

- Z Impedance
- $Z_{in}$  Input impedance
- $Z_o$  Output Impedance
- $Z_p$  Primary impedance
- $Z_s$  Secondary impedance
- $Z_T$  Total impedance
- $Z_z$  Zener impedance
- $Z_{zk}$  Zener impedance, knee
- $Z_{zt}$  Zener impedance, test

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