

GLOSSARY OF TECHNICAL TERMS

This glossary contains explanations of certain technical terms used in this Document. As such, these terms and their meanings may not correspond to standard industry meanings or usage of these terms.

“AI”	artificial intelligence, the capability of computational systems to perform tasks typically associated with human intelligence, such as learning, reasoning, problem-solving, perception, and decision-making
“blocking voltage”	a key parameter for power devices to block energy transfer between circuits, usually referring to the maximum voltage that a device can withstand in its off-state
“BMS”	battery management system, a device used to monitor and manage the state of a battery
“Codec” or “codec”	a device or program that can transform a signal or a data stream
“DPPM”	defective parts per million, a measure of quality performance, calculated as the number of defective units in a sample size of one million units
“dV/dt”	the rate of change of voltage (V) with respect to time (t)
“electromagnetic interference”	electronic noise that interferes with cable signals and degrades signal integrity, typically generated by electromagnetic radiation sources such as motors and machinery
“EMI”	electromagnetic interference, a disturbance generated by an external source that affects an electrical circuit by electromagnetic induction, electrostatic coupling, or conduction
“EV”	electric vehicle, a general term referring to all vehicles that use electricity as their primary driving energy source
“FRD”	fast recovery diode, a semiconductor diode with excellent switching characteristics and a short reverse recovery time
“GFA”	Gross Floor Area, a term used in real estate and construction to describe the total floor area of a building, measured from the exterior faces of the exterior walls
“HVAC”	heating, ventilation, and air conditioning systems of automobiles
“HVDC”	high-voltage direct current, a method of transmitting electrical power over long distances using direct current

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“IC” or “ICs”	integrated circuit, a miniature electronic device or component
“IDM”	integrated device manufacturer, an operating model in the semiconductor industry that integrates the entire process from chip design, manufacturing, packaging and testing to sales
“IGBT”	insulated gate bipolar transistor, a composite power semiconductor device that combines the characteristics of high input impedance and low drive power consumption from metal-oxide-semiconductor field-effect transistors (MOSFETs), as well as the advantages of high current density and low on-resistance loss from bipolar junction transistors (BJTs)
“MEMS”	Micro-Electro-Mechanical Systems, a miniature intelligent system that integrates micro-mechanical structures, micro-sensors, micro-actuators, and signal processing & control circuits through microfabrication technology
“MOSFET” or “MOSFETs”	metal-oxide-semiconductor field-effect transistor, a voltage-controlled semiconductor device whose core function is to control the turn-on and turn-off of current by applying a voltage signal
“NEV”	vehicles that either use unconventional vehicle fuels as their power source, or adopt new types of power devices while using conventional fuels
“OBC”	On-Board Charger, a device installed in new energy vehicles that converts external alternating current (AC) energy into direct current (DC) energy acceptable to the vehicle’s traction battery, and enables safe charging
“ON-resistance”	a core parameter reflecting the conductive performance of a diode in its on-state, whose value is equal to the ratio of the voltage across the device to the current flowing through it when the diode is conducting
“power device”	a type of semiconductor device capable of achieving high-voltage and high-current control and conversion
“robustness”	the ability of a system, device, or algorithm to maintain stable performance and achieve intended functions when faced with external interference, internal parameter fluctuations, or non-ideal operating conditions
“R _{sp} ”	Specific On-Resistance, the on-resistance per unit area when a device is in the on-state

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“SGT”	shielded gate transistor, a shielded gate trench-type power MOSFET designed for medium and low voltages
“Si”	silicon, the most widely used basic material in the current semiconductor industry
“SiC”	silicon carbide, a semiconductor material used in various electronic applications
“signal-to-noise ratio”	a core indicator for measuring the relative relationship between effective signal strength and background noise strength, which directly reflects the purity and identifiability of a signal
“SoC”	System on Chip, an integrated circuit that combines most or all key components of a computer or electronic system onto a single microchip
“SJ”	super junction, an advanced structural technology for power MOSFETs
“Trench”	a “recessed trench structure” formed on the surface of solid materials through processes such as etching and excavation
“UPS”	uninterruptible power supply, a type of continual power system that provides automated backup electric power to a load when the input power source or mains power fails
“Vcesat”	collector-emitter saturation voltage, the voltage drop between the collector (Collector, C) and the emitter (Emitter, E) when the device is operating in the “saturation conduction state”
“wafer”	a thin slice of semiconductor material, used in the manufacture of ICs and other microelectronic devices
“ZCU”	zonal control unit, an on-vehicle controller in the Automotive Electrical and Electronic Architecture (EEA) that centrally manages I/O, power distribution, and communication according to the physical zones of the vehicle body