

GLOSSARY OF TECHNICAL TERMS

This glossary contains definitions of certain technical terms used in this document in connection with our business. These terms and their given meanings may not correspond to industry standard definitions or usages of these terms.

“A”	ampere, the standard unit of electric current
“AC”	alternating current
“AEC-Q”	standards established by the Automotive Electronics Council
“AFCI”	Arc Fault Circuit Interrupter, a safety device that detects dangerous electrical arcs in circuits and automatically disconnects power to prevent electrical fires
“AMR”	anisotropic magnetoresistance technology
“analog”	an analog signal is a voltage, current or physical quantity that continuously and infinitely varies in accordance with some time-varying parameter
“arcsecond”	an arcsecond is a unit of angular measurement equal to 1/3,600 of a degree
“ASIC”	application-specific IC, a type of integrated circuit that is customized to the needs of a specific application
“bare die chip”	an individual semiconductor chip that has been separated from a silicon wafer but not yet encased in protective packaging
“BDU”	Battery Disconnect Unit, a safety device that can isolate the high-voltage battery system from the rest of the vehicle’s electrical components, typically used for emergency shutdowns or maintenance procedures
“CAGR”	compound annual growth rate
“CMOS”	complementary metal-oxide semiconductor
“CMRR”	common-mode rejection ratio, a measure of how well a sensor can suppress unwanted signals while amplifying the desired differential signal. A higher CMRR indicates better performance in rejecting noise and other disturbances, making it crucial for precision measurement applications
“component soldering”	the process of joining electronic components to circuit boards
“DC”	direct current, an electric current that flows in one direction only

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“dry/wet etching”	semiconductor fabrication processes used to remove material from wafers; dry etching uses plasma or reactive gases to precisely remove material without liquid chemicals, while wet etching uses liquid chemical solutions to dissolve unwanted material
“EMC”	electromagnetic compatibility
“encoder”	electromechanical devices designed to convert mechanical motion into electrical signals, which can provide feedback on angular velocity and displacement
“EPS”	Electric Power Steering, a steering assistance system that uses an electric motor instead of hydraulic power to reduce the effort required to turn the steering wheel, improving fuel efficiency and enabling advanced driver assistance features
“fabless model(s)”	a business model where the entity focuses on R&D and design of ICs and outsources manufacturing to external parties
“foundry(ies)”	a semiconductor company that manufactures wafers containing semiconductor products designed by other companies that are used in end-market products not belonging to the foundry; pure-play foundries do not offer their own end-market products and hence do not compete with their customers, whereas IDMs that offer foundry service do have their own products that may or may not compete with those of the foundry customers
“GMR”	giant magnetoresistance technology
“Hall effect”	refers to the generation of a voltage difference across an electrical conductor when a magnetic field is applied perpendicular to the current, the foundation of many magnetic sensing technologies
“HV PDU”	High Voltage Power Distribution Unit, an electrical component that manages and distributes high-voltage power from the battery to various vehicle systems, incorporating safety features and monitoring capabilities
“IATF16949”	international recognised technical specification of automotive industry quality management system prepared by International Automotive Task Force (IATF) and ISO
“IC” or “integrated circuit”	a set of electronic circuits on one small plate of semiconductor material (a chip)
“ICE”	internal combustion engine

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“IDM”	integrated device manufacturer, a company that maintains control over the design and manufacturing process of semiconductor devices, while managing sales of the finished products. Some IDMs outsource standardized processes such as packaging and testing functions while others handle these functions in-house
“ISO”	the International Organization for Standardization, a worldwide federation of national standards bodies
“ISO26262”	an internationally recognised standard for the functional safety of electrical and electronic systems in production automobiles
“ISO45001”	an internationally recognised standard for the occupational health and safety management systems
“IT”	information technology
“kA”	Kiloampere, a unit of electric current equal to 1,000 ampere
“m”	meter
“mA”	milliampere, equal to one-thousandth of an ampere
“material deposition”	manufacturing processes used to deposit thin layers of materials onto semiconductor substrates, including techniques such as chemical vapor deposition and physical vapor deposition, essential for building the multiple layers that form integrated circuits
“MHz”	megahertz, which is a unit of frequency equal to one million hertz
“mm”	millimeter, a unit of length in the metric system equal to one-thousandth of a meter
“module(s)”	packaged components that include integrated circuits or other electronic components, which are used to build larger systems or devices, essential for enhancing performance, efficiency, and scalability in electronic products
“MPPT”	maximum power point tracking, a technique used in PV systems to optimize the power extraction from solar panels by continuously adjusting the electrical load to maintain the highest efficiency
“NEV”	new energy vehicles
“ns”	nanosecond, a unit of time that equals to one billionth of a second

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“OEM”	acronym for “original equipment manufacturing”, whereby products are manufactured in accordance with a customer’s specifications for sale under the customer’s brand
“PCBs”	printed circuit board
“PCBA(s)”	printed circuit board assembly, a printed circuit board populated with electronic components
“PCB surface mounting”	a method of assembling electronic circuits where components are mounted directly onto the surface of printed circuit boards (PCBs) rather than through holes, enabling higher component density and automated assembly
“PCS”	Power Conversion System; an electronic system that converts electrical power between different forms (AC to DC or DC to AC) and manages bidirectional power flow in energy storage applications, enabling efficient charging and discharging of battery systems while maintaining grid compatibility
“PDU”	Power Distribution Unit, an electrical device that distributes power from a primary source to multiple loads or circuits, providing centralized power management, monitoring, and protection functions in energy storage and power conversion systems
“perovskite photovoltaics”	a type of solar cell that uses perovskite-structured materials as the light-absorbing layer
“photolithography”	a semiconductor manufacturing process that uses light to transfer geometric patterns from a photomask to a light-sensitive chemical photoresist on the substrate, enabling the precise creation of microscopic circuit patterns on semiconductor wafers
“photomask design”	the creation of templates containing geometric patterns used in photolithography to define the circuit layouts that will be transferred onto semiconductor wafers during chip manufacturing
“PV”	photovoltaic, the conversion of light into electricity using semiconducting materials
“PVD”	a vacuum deposition method that involves high temperature vacuum evaporation and sputtering to produce a metal vapor, which is then deposited on electrically conductive materials as a thin, highly adhered pure metal or alloy coating, a critical process in the manufacturing of semiconductor devices, enabling the creation of thin films and coatings on substrates
“R&D”	research and development

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“sensor”	a device that measures or detects physical world conditions, such as motion, heat or light, and converts the conditions into analog or digital representations
“SiC”	silicon carbide, a semiconductor material used in various electronic applications
“SMT”	acronym for “surface mount technology”, a method used to connect package microchip to PCBs where no through-holes in the board are required and package leads are soldered to the board surface
“sq.m.”	square meter(s)
“SWA”	Steering Wheel Angle, a sensor system that measures the rotational position of the steering wheel, providing critical input data for electronic stability control, lane keeping assistance, and other vehicle dynamics systems
“thermal shock”	testing procedures that subject electronic components and assemblies to rapid temperature changes to evaluate their ability to withstand thermal stress and ensure reliability under varying operating conditions
“third-generation semiconductor”	advanced semiconductor materials, primarily silicon carbide (SiC) and gallium nitride (GaN), that offer superior performance compared to traditional silicon semiconductors, including higher power efficiency, faster switching speeds, better thermal conductivity, and ability to operate at higher voltages and temperatures, making them ideal for power electronics, NEVs, green energy systems, and high-frequency applications
“TMR”	tunneling magnetoresistance technology
“vacuum coating”	the complex manufacturing process of creating semiconductor devices on thin slices of semiconductor material (wafers) through multiple steps including deposition, photolithography, etching, and doping
“wafer”	a thin slice of semiconductor material, on which arrays of integrated circuits or discrete devices are fabricated during the manufacturing process
“wafer fabrication”	the complex manufacturing process of creating semiconductor devices on thin slices of semiconductor material (wafers) through multiple steps including deposition, photolithography, etching, and doping

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“xMR”	a family of sensor technologies that detect changes in magnetic fields using the magnetoresistive effect, including AMR, GMR and TMR
“μm”	micrometer