Energy storage lithium battery

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The leading source of lithium demand is the lithium-ion battery industry. Lithium is the backbone of lithium-ion batteries of all kinds, including lithium iron phosphate, NCA and NMC batteries. Supply of lithium...

There are different energy storage solutions available today, but lithium-ion batteries are currently the technology of choice due to their cost-effectiveness and high efficiency. Battery Energy Storage Systems, or...

Infineon"s unique expertise in energy generation, transmission, power conversion, and battery management makes us the natural partner to advance Energy Storage Solutions (ESS) in terms of efficiency, innovation, performance, and optimal cost. Our discrete OptiMOS(TM), CoolMOS(TM), andCoolSiC(TM) MOSFETs and IGBTs modules, as well as highly integrated 3-level Easy 1B/2B modules, functionally integrated EiceDRIVER(TM) gate driver ICs, XMC(TM)controllers and security solutions are ideal in a wide range of energy storage system designs.

Battery-based ESS technology can respond to power drop-outs in under a second, making use of clean energy sourced from collocated solar or wind plants. In such before-the-meter cases, ESS functions as bulk storage coupled with either renewables generation or transmission and distribution systems. In residential and commercial situations, ESS plays a role as behind-the-meter.

The boom in wind and solar PV leads to massive weather-dependent fluctuations and distributed generation. Hence the mismatch of supply and demand is growing. ESS is needed to smooth-out such fluctuations.

Installed in offices, factories, and supermarkets, mostly for self-consumption. Excessive non-self-consumed energy generated by rooftop PV is stored in batteries for later consumption or fed back to the grid.

Energy Storage Systems are structured in two main parts. The power conversion system (PCS) handles AC/DC and DC/AC conversion, with energy flowing into the batteries to charge them or being converted from the battery storage into AC power and fed into the grid. Suitable power device solutions depend on the voltages supported and the power flowing.

The battery management system (BMS) handles cell charging, balancing, and health monitoring, complemented by a microcontroller providing system control and communication. Essential elements to integrate ESS into larger systems.

We offer a comprehensive portfolio of application-specific, discrete products. Our best-in-class technologies for solar applications maximize customer value through products such asOptiMOS(TM),CoolMOS(TM),CoolSiC(TM)MOSFETs,CoolGaN(TM),CoolSiC(TM)Schottkydiodes,IGB

T TRENCHSTOP(TM)5,IGBT Highspeed3,TRENCHSTOP(TM)IGBT6technology.

Easy is our family of standard and tailor-made modules for Energy Storage Systems. It comprises a full portfolio of 3-level configurations up to 200+ kW of power, making it ideal for Energy Storage Application that could benefit from a three-level topology.

Every switch needs a driver, and the right driver makes a difference.EiceDRIVER(TM) 1EDBfamily is designed to drive Si, SiC and GaN power switches providing 3 kV isolationaccording to UL1577 and while EiceDRIVER(TM) 2EDi familyhas the flexibility to be configured as half-bridge driver or both high side driver with functional and reinforced isolation levels.

Our CoolSiC(TM) MOSFET cutting losses by 50% for extra energy. As the battery bank makes up the major portion of the total system costs for Energy Storage Systems, a change from super-junction MOSFET to CoolSiCTMMOSFET can lead to approx. two percent extra energy without increasing battery size.

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