Power conversion system pcs

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(Power Conversion System,PCS), ...

With the enormous amount of energy being consumed in today"s world and government policies to minimize carbon emissions, the shift to renewable energy makes reliably delivering energy where and when it is needed more challenging than ever. As a result, demand for energy storage systems is also on the rise. A critical component of any successful energy storage system is the power conversion system (PCS). The PCS is the intermediary device between the storage element, typically large banks of (DC) batteries, and the (AC) power grid.

Silicon Carbide CoolSiC(TM) MOSFET solutions are the next step towards an energy-smart world. Our CoolSiC(TM) MOSFETs can cut losses by 50% for extra energy. Since the battery bank is the largest part of the total system cost for energy storage systems, switching from silicon superjunction MOSFETs to CoolSiC(TM) MOSFETs can result in about 2% additional energy without increasing battery size.

We introduce a completely new family of tailor-made modules for Energy Storage Systems. For power conversion systems where a 3-level topology is of interest, Easy offers a full portfolio of 3-level configurations up to 200+ kW power level.

Infineon"s CoolGaN(TM) is a highly efficient GaN (gallium nitride) transistor technology for power conversion in the voltage range up to 600V. The high performance CoolGaN(TM) e-mode HEMTs are available in both top-coooled as well as bottom-cooled SMD packages. This enables highest efficiency and power density as well as optimal thermal behavior in the application.

Infineon"s OptiMOS(TM) N-Channel Power MOSFETs were developed to increase efficiency, power density, and cost-effectiveness. Designed for high-performance applications and optimized for high switching frequencies, OptiMOS(TM) products offer the industry"s best figure of merit. The CoolMOS(TM) N-Channel MOSFET product range offers highest reliability, a compact design and high performance.

The Infineon current sensors provide accurate and stable current measurement up to 120A. We offer eight different derivatives 25A, 50A, 75A as well as 120A - both, standard or UL certified versions. The sensors are intended for use in high-voltage industrial applications such as electric drives, photovoltaic inverters, power supplies or battery management systems.

The most important benefits ofPrimePACK(TM)3/3+include highreliability and lifetime demands, improved thermal properties, low stray inductance, wildrange of operating temperatures, integrated NTC with high isolation and pre-applied thermal interface.

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Energy storage systems with power below 10 kW are usually used in residential areas and homes. The systems are commonly applying two stages that need to operate in bi-directional mode: DCDC and ACDC stage fineon enables full system solutions with the highest efficiency and power density by applying market-leading Silicon Carbide (SiC) and Silicon (Si) MOSFETS as well as IGBT technologies paired with best-fit gate drivers.

Recommended products:

Having battery packs with a different state of charge (SOC) connected in series, this system is only able to operate until one pack reaches the minimum allowable charge level. At this point, the whole system is shutting down, even though other packs may still be sufficiently charged. In short, battery utilization is limited to the weakest battery pack.

To overcome this limitation, modularly cascaded, multilevel architectures have been developed that utilize the benefit of highly efficient, low-voltage MOSFETs such as Infineon"s market-leading OPTIMOS(TM)family. Each battery pack is connected to its own directional power converter and the outputs of these converters are then connected in series to create the high voltage DC-bus.

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