

Silicon Carbide for Solar Energy

Energy efficiency is at the forefront of Solar technology and making the inverter more efficient decreases the payback period of designs, reduces thermal stresses, and increases lifetime.

SemiQ has the products that will enable designers to achieve higher efficiency, smaller size, and longer reliability.

Silicon Carbide power devices have many application slots within a solar inverter, as can be seen in this schematic.

Benefits of SemiQ QSiC™ in Solar Technology



High Efficiency
as high as 98% with SiC



Reduced Heat Loss



More Compact Designs

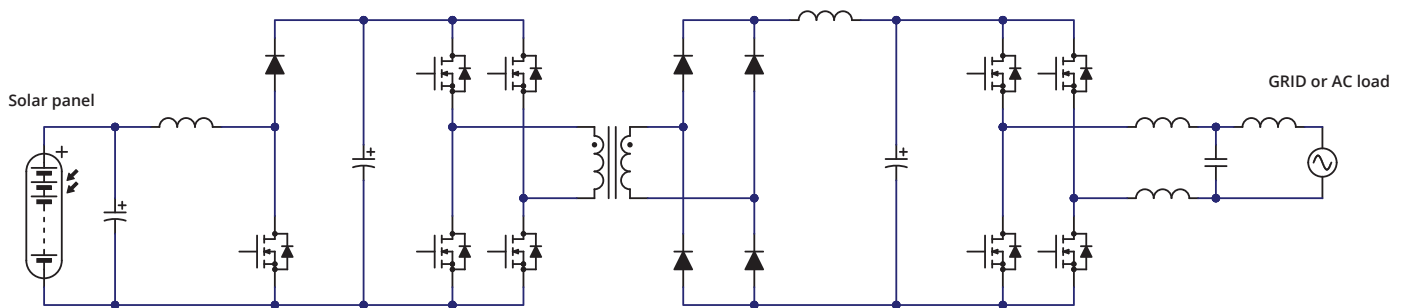


Better Thermal Stability



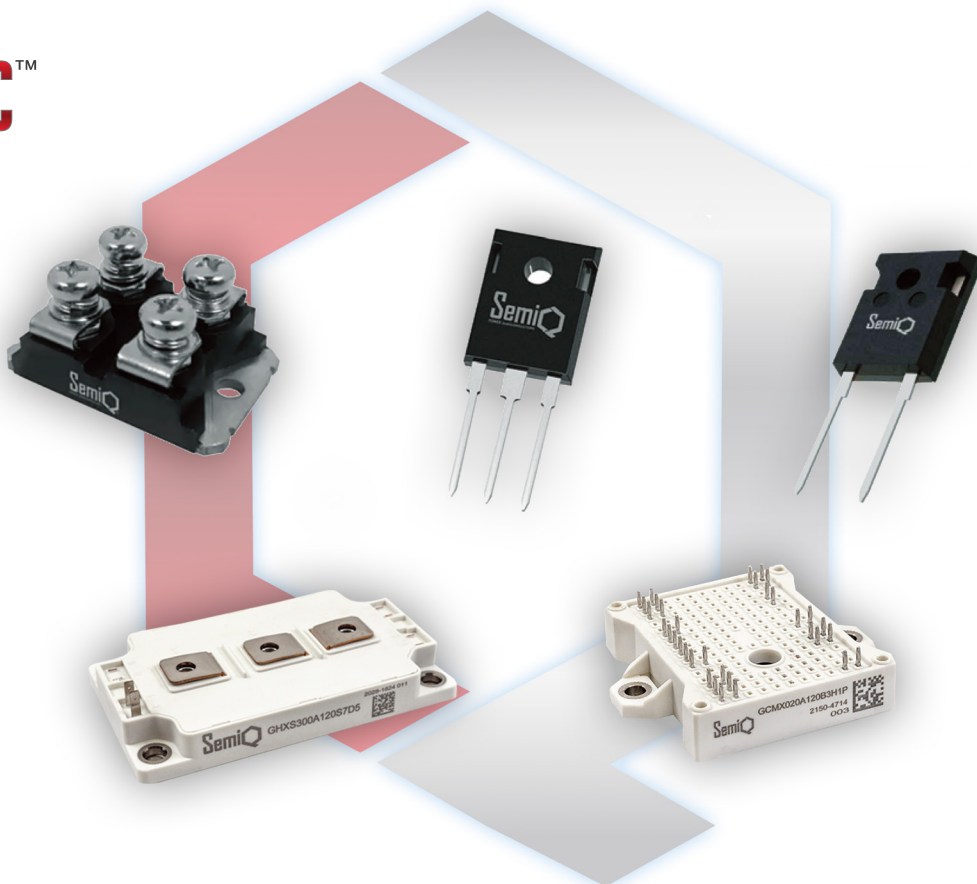
Over 54M Hours of
HTRB/H3TRB Testing

Typical Single Phase Solar Inverter Schematic



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Silicon Carbide (SiC) semiconductors offer compelling advantages in the solar industry, particularly in photovoltaic (PV) systems. Their high efficiency and superior thermal conductivity make them ideal for power conversion and management in solar inverters. SiC devices exhibit lower power losses, enabling higher energy conversion rates and ultimately increasing the overall efficiency of solar panels. Moreover, SiC's ability to withstand high temperatures and harsh environmental conditions enhances the durability and reliability of solar power systems, reducing maintenance requirements and operational downtime. By harnessing the benefits of SiC semiconductors, the solar industry can significantly improve the performance, longevity, and cost-effectiveness of solar energy generation, contributing to the widespread adoption of renewable energy sources.



SemiQ specializes in providing high-quality, efficient standard, and custom Silicon Carbide (SiC) Power Semiconductors for high-voltage applications. Our product portfolio includes MOSFETs and diodes, available in discrete, module and bare die that combine high-performance with industry-leading reliability.