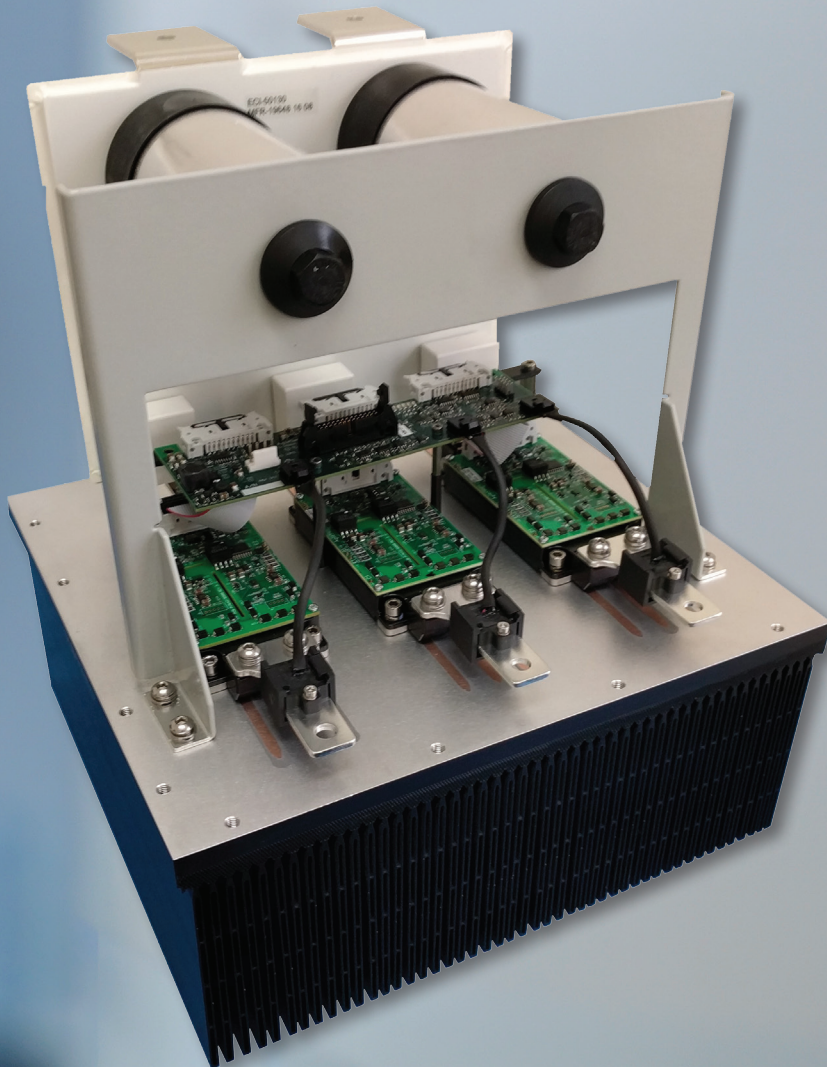
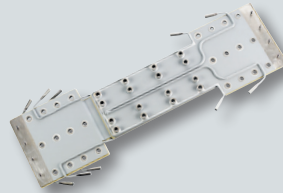
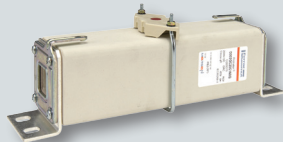
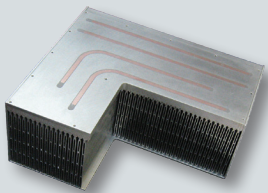




SAFETY,  
RELIABILITY  
AND PROTECTION  
FOR SILICON  
CARBIDE (SiC)  
INVERTERS



**Serving the Power  
Electronics Market**

- **Cooling**
- **Bus Bars**
- **Fuses**

# SOLUTIONS FOR POWER MANAGEMENT FROM MERSEN

## MERSEN, YOUR SOLUTION PARTNER FOR SILICON CARBIDE (SiC) APPLICATIONS

The next generation of Power Conversion Systems Enabled by SiC Power Devices is now a reality. As the global trends promote greener energy with more strict regulations and standards, newer and more efficient switching devices such as Silicon Carbide (SiC) devices are gaining acceptance in various markets from transportation to solar industries.

Compared to silicon devices, SiC devices switching can exceed several 100's of kHz, offering substantial improvements in efficiency. SiC devices also provide enhanced power density and higher operating temperature, making them a very attractive alternative to bigger and less efficient silicon family of devices. As the overall footprint of inverters with SiC devices shrink, the cooling aspect of the system becomes a new challenge. Mersen has been preparing for this challenge and has developed embedded heat-pipe heat sinks to extract concentrated heat from areas under the SiC devices and to disperse that heat over a larger surface area before the heat is passed on to the ambient environment.

Mersen's patented Swaged Fins technology is a glue-less, metal on metal fabrication process to affix fins to heatsink base plate, providing a final product that can withstand

much higher temperatures compared to conventional bonded or glued fin heatsinks. As SiC devices can operate at much higher switching frequencies, parasitic inductance and "skin effect" phenomena become crucial considerations for bus bar designs. Mersen engineering teams can work closely with customers to design bus bars to compensate for "skin effect" and to build the most efficiently cooled power bus bar solution.

When it comes to protection of SiC devices against electrical overcurrents, the most effective means is the high speed semiconductor protection fuse (SPF). SPF has a significantly faster clearing time to prevent catastrophic semiconductor device failure.

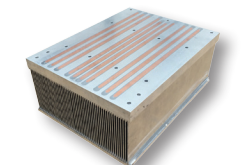
If you are ready to switch to SiC devices, Mersen is the right partner for your cooling, bus bars and electrical protection.



HIGH-FREQUENCY WELDING BUS BAR



HIGH FREQUENCY INVERTER BUS BAR



EMBEDDED HEAT PIPE HEATSINKS



SWAGED DUAL SIDED COPPER HEATSINK



HIGH VOLTAGE SEMICONDUCTOR PROTECTION FUSES



ALTERNATIVE ENERGY



TRANSPORTATION



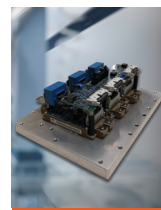
INDUSTRIAL



DESIGN • SIMULATIONS • TESTING •



MILITARY



SOLUTIONS FOR SiC APPLICATIONS

Mersen is your supplier of choice for power management solutions for various industries. Contact us at [ep.mersen.com](http://ep.mersen.com) for more information.