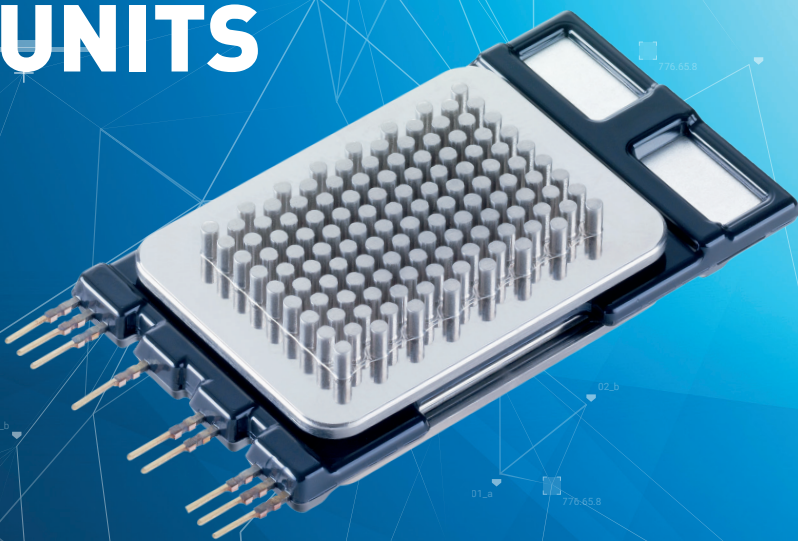


POWER MODULE FOR E-TRACTION UNITS



POWER MODULE FOR E-TRACTION UNITS

Rheinmetall's SiC MOSFET half-bridge power module is the cornerstone of advanced e-traction inverter technology, designed for the forefront of electric vehicle propulsion. This power module is uniquely scalable for vehicle specific voltage and power requirements, with configurations available for both 750V and 1,200V systems. The agnostic design of the MOSFET ensures adaptability and compatibility with a wide range of electric vehicles, reflecting our commitment to innovation and excellence in meeting the diverse needs of the e-mobility market.

BENEFITS

- Dual Sided Direct Cooling (DSDC): very efficient transistor cooling
- Parasitic impedance optimized electrical design: allowing for ultra fast switching with reduced losses
- Due to improved thermal budget smaller SiC MOSFET die area for same current rating: cost savings

TECHNICAL DATA

SiC MOSFET voltage rating	V_{DS}	750	1,200
Max AC phase current	$A_{RMS}^{1)}$	600	450
Normalized thermal resistance	$k \cdot cm^2/W^{2)}$	10	
Power loop inductance	nH	5	

¹⁾ +65 °C 50/50 WEG coolant at 3.33 LPM/power module, 10kHz_{FSW} 13V/ns_{dv/dt}

²⁾ RthJC normalized to effective SiC MOSFET transistor area per switch

RHEINMETALL POWER SYSTEMS DIVISION

Within Rheinmetall the Power Systems Division is a system provider for high-quality and innovative (mobility) solutions, control technologies and digital applications for the automotive and energy industries, among others.

With its Business Units and Business Areas, the Division stands for outstanding expertise in the following areas: air management, thermal management, e-mobility and digitalization, hydrogen technology, metallic plain bearings, composite materials and lightweight construction. The Power Systems Division also represents Rheinmetall's global after-market activities through the Trade Business Unit.

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