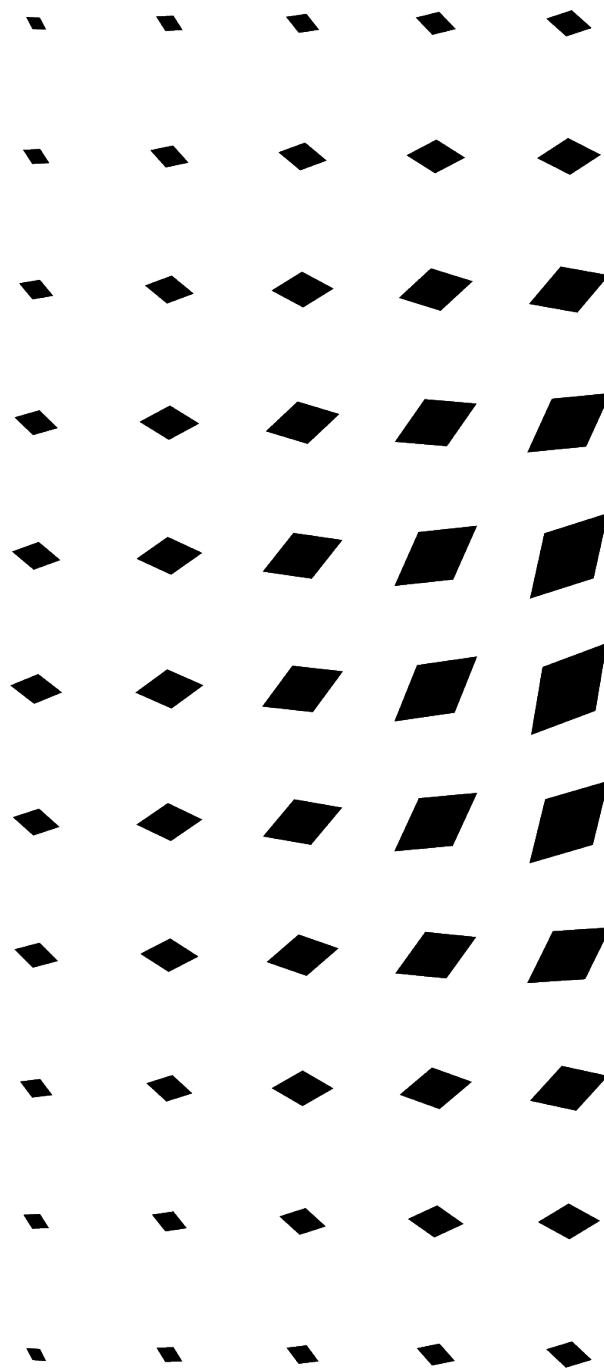


Recommended SiC MOSFET Chips for Automotive and Industrial Applications



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- For each application, the key performance requirements are evaluated using a three-level ranking system (◎, ○, △). Recommended Mitsubishi Electric SiC MOSFET chips are also provided for reference.
- Trench-Gate SiC MOSFETs are designed with a strong emphasis on low ON-resistance, enabling reduced conduction losses and improved system efficiency. Due to their high cell-density structure, however, gate charge (Qg) tends to increase and susceptibility to unintended turn-on under high dv/dt conditions may become a design consideration. Therefore, appropriate gate-driver design, including the use of negative gate bias and optimization of gate resistance, is important to fully leverage device performance.
- Planar-Gate SiC MOSFETs are designed to provide a balanced trade-off between conduction loss and switching loss. They are particularly well suited for high-switching-frequency applications, such as On-Board Chargers (OBCs) and industrial power supplies, where overall system efficiency and switching performance are both critical.

Priority Level: ◎ High / ○ Medium / △ Low

Key Items		Automotive		Industry	
		Traction inverter	On-Board-Charger	Motor drive	UPS for Data Center
Customer Requirements	Conduction loss	◎	○	◎	◎
	Switching loss	○	◎	△	◎
	Recovery loss	○	◎	○	◎
	dV/dt immunity	◎	○	◎	○
Recommendation		Trench-gate	Trench-gate Planar-gate	Trench-gate	Trench-gate Planar-gate

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