

Product brief

1200 V CoolSiC™ Schottky diode G5 in TO-247 two-pin package

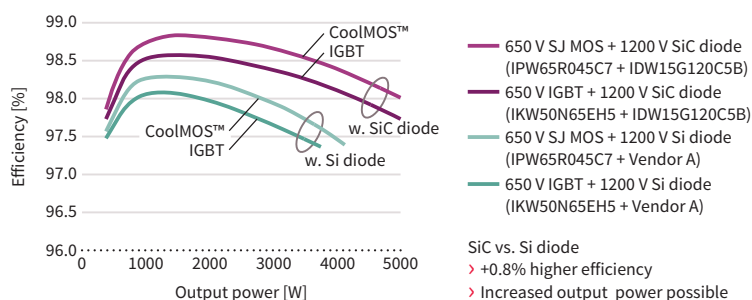
New level of system efficiency and reliability

CoolSiC™ Schottky diodes generation 5 in 1200 V class are now available in a TO-247 real 2-pin package, for easy exchange of bipolar silicon (Si) diodes commonly used today. The expanded 8.7 mm creepage and clearance distances in the new package offer extra safety in high-pollution environments. Combined with a Si IGBT or super-junction MOSFET, for example in a Vienna rectifier stage or PFC boost stage used in 3-phase conversion systems, a CoolSiC™ diode raises efficiency up to 1 percent compared to next best Si diode alternative. The output power of PFC and DC-DC stages can thus be substantially increased, by 40 percent or more. Other than negligible switching losses – the signature feature of SiC Schottkys – CoolSiC™ generation 5 products come with best-in-class forward voltage (V_F), the slightest increase of V_F with temperature and highest surge current capability. The result is a series of products delivering market-leading efficiency and more system reliability at an attractive cost point.

Key features

- › No reverse recovery current, no forward recovery voltage
- › Temperature-independent switching behavior
- › Low forward voltage even at high operating temperature
- › Tight forward voltage distribution
- › High surge current capability
- › Real two-pin package with 8.7 mm creepage and clearance distances

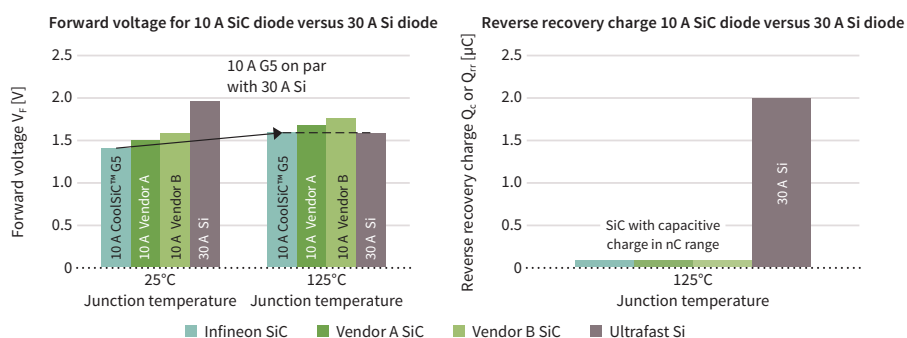
650 V Si IGBT/Si SJ MOS and 1200 V SiC diode/ultrafast Si diode in a Vienna rectifier topology $f_{sw} = 48 \text{ kHz}$



Key benefits

- › Easy plug and play with silicon diodes
- › System efficiency improvement over Si diodes
- › Enabling higher frequency/increased power density solutions
- › System reliability improvement

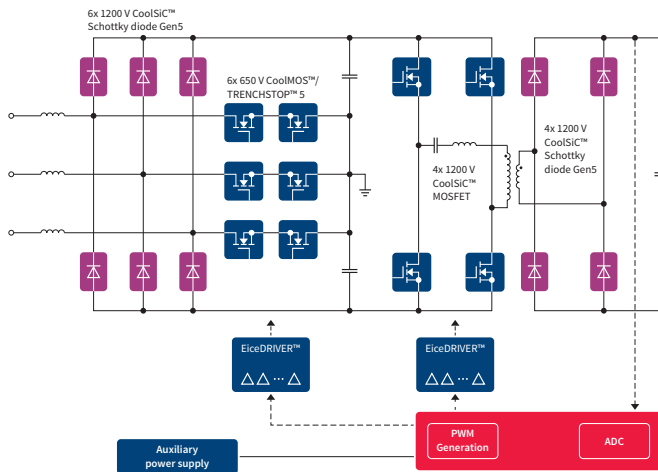
Generation 5's lowest forward voltage (V_F) and its mild temperature dependency ensures lowest static losses over entire load range among SiC diodes on the market, as well as an attractive cross-referencing to Si diodes with a 10 A CoolSiC™ matching forward voltage of a 30 A rated Si ultrafast diode. All while maintaining virtually zero reverse recovery charge.



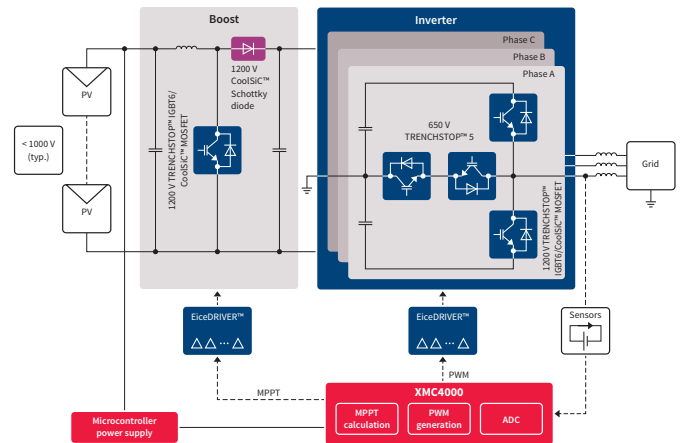
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Application example – 3-phase Vienna rectifier and
DC-DC output rectifier



Application example – 3-phase Power Factor
Correction (PFC)



Product portfolio

Forward currents up to 40 A in TO-247 and TO-247-2, 20 A in TO-220-2 and 10 A in DPAK target solar inverters, DC EV charging, SMPS, UPS, energy storage, motor drives, welding and CAV applications.

Continuous forward current, I_F [A]	TO-252-2	TO-220-2	TO-247-3	TO-247-2 NEW!
2	IDM02G120C5	IDH02G120C5		
5	IDM05G120C5	IDH05G120C5		
8	IDM08G120C5	IDH08G120C5		
10	IDM10G120C5	IDH10G120C5	IDW10G120C5B ¹⁾	IDWD10G120C5
15–16		IDH16G120C5	IDW15G120C5B ¹⁾	IDWD15G120C5
20		IDH20G120C5	IDW20G120C5B ¹⁾	IDWD20G120C5
30			IDW30G120C5B ¹⁾	IDWD30G120C5
40			IDW40G120C5B ¹⁾	IDWD40G120C5

1) „B“ refers to common-cathode configuration:

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