

Product brief

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

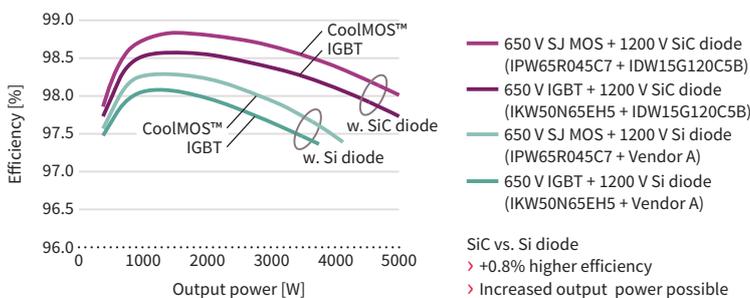
New level of system efficiency and reliability

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

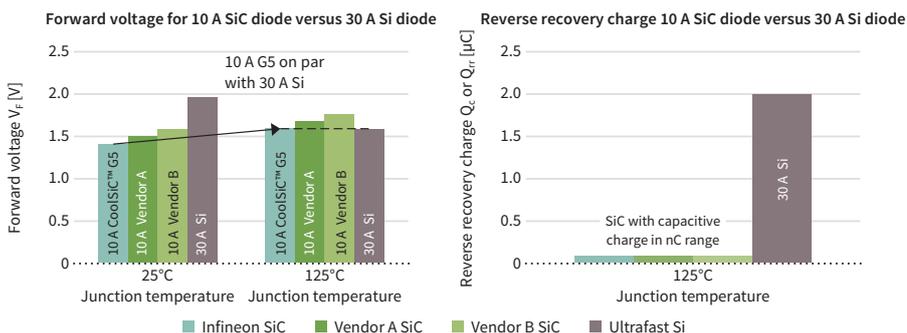
650 V Si IGBT/Si SJ MOS and 1200 V SiC diode/ultrafast Si diode in a Vienna rectifier topology $f_{sw} = 48$ kHz



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

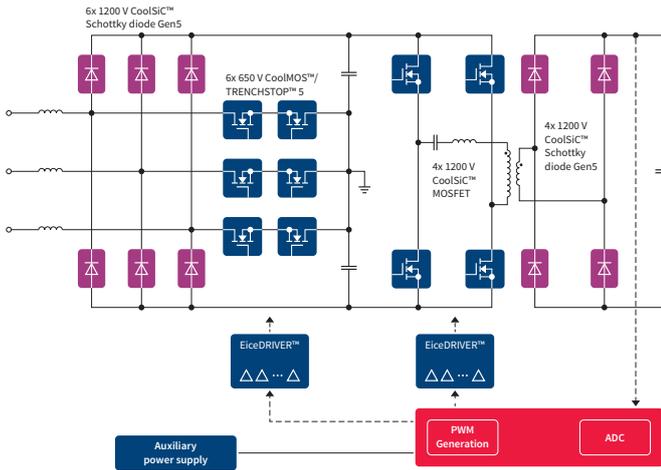
Generation 5's lowest forward voltage (V_F) and its mild temperature dependency ensures lowest static losses over entire load range among SiC diodes on the market, as well as an attractive cross-referencing to Si diodes with a 10 A CoolSiC™ matching forward voltage of a 30 A rated Si ultrafast diode.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



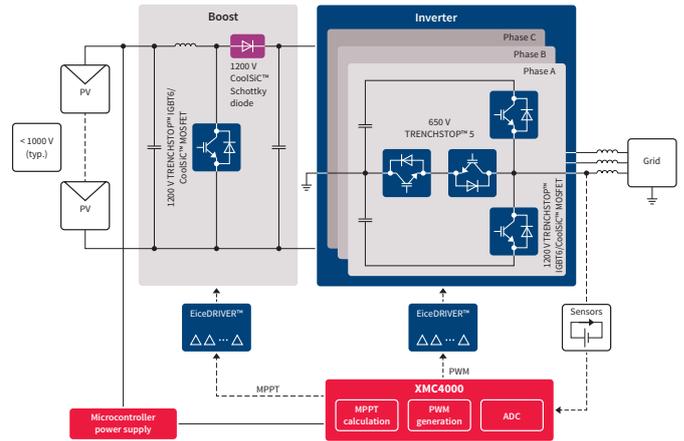
1200 V CoolSiC™ Schottky diode G5 in TO-247 two-pin package

New level of system efficiency and reliability

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: Pin 1 o, Pin 2 o, Pin 3 o, Case

Published by
Infineon Technologies AG
81726 Munich, Germany

© 2019 Infineon Technologies AG.
All Rights Reserved.

Please note!

THIS DOCUMENT IS FOR INFORMATION PURPOSES ONLY AND ANY INFORMATION GIVEN HEREIN SHALL IN NO EVENT BE REGARDED AS A WARRANTY, GUARANTEE OR DESCRIPTION OF ANY FUNCTIONALITY, CONDITIONS AND/OR QUALITY OF OUR PRODUCTS OR ANY SUITABILITY FOR A PARTICULAR PURPOSE. WITH REGARD TO THE TECHNICAL SPECIFICATIONS OF OUR PRODUCTS, WE KINDLY ASK YOU TO REFER TO THE RELEVANT PRODUCT DATA SHEETS PROVIDED BY US. OUR CUSTOMERS AND THEIR TECHNICAL DEPARTMENTS ARE REQUIRED TO EVALUATE THE SUITABILITY OF OUR PRODUCTS FOR THE INTENDED APPLICATION.

WE RESERVE THE RIGHT TO CHANGE THIS DOCUMENT AND/OR THE INFORMATION GIVEN HEREIN AT ANY TIME.

Additional information

For further information on technologies, our products, the application of our products, delivery terms and conditions and/or prices, please contact your nearest Infineon Technologies office (www.infineon.com).

Warnings

Due to technical requirements, our products may contain dangerous substances. For information on the types in question, please contact your nearest Infineon Technologies office.

Except as otherwise explicitly approved by us in a written document signed by authorized representatives of Infineon Technologies, our products may not be used in any life-endangering applications, including but not limited to medical, nuclear, military, life-critical or any other applications where a failure of the product or any consequences of the use thereof can result in personal injury.