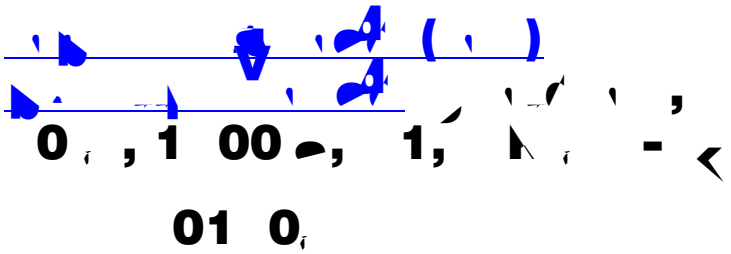


Description

Silicon Carbide (SiC) Schottky Diodes use a completely new

© Semiconductor Components Industries, LLC, 2018

ABSOLUTE MAXIMUM RATINGS (T_C = 25°C unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{RRM}	Peak Repetitive Reverse Voltage		1200	V
E_{AS}	Single Pulse Avalanche Energy (Note 1)		200	mJ
I_F	Continuous Rectified Forward Current @ T_C < 157°C		20	A
	Continuous Rectified Forward Current @ T_C < 135°C		32	
$I_{F, Max}$	Non-Repetitive Peak Forward Surge Current	T_C = 25°C, 10 μs	1190	A
		T_C = 150°C, 10 μs	990	A
$I_{F,SM}$	Non-Repetitive Forward Surge Current	Half-Sine Pulse, t_p = 8.3 ms	135	A
$I_{F,RM}$	Repetitive Forward Surge Current	Half-Sine Pulse, t_p = 8.3 ms	74	A
Ptot	Power Dissipation	T_C = 25°C	333	W
		T_C = 150°C	55	W
T_J, T_{STG}	Operating and Storage Temperature Range		−55 to +175	°C

Stresses exceeding those listed in the Maximum Ratings table may damage the device. If any of these limits are exceeded, device functionality should not be assumed, damage may occur and reliability may be affected.

1. E_{AS} of 200 mJ is based on starting T_J = 25°C, L = 0.5 mH, I_{AS} = 29 A, V = 50 V.

THERMAL CHARACTERISTICS

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Thermal Resistance, Junction to Case, Max	0.45	°C/W

ELECTRICAL CHARACTERISTICS (T_C = 25°C unless otherwise noted)

Symbol	Parameter	Test Condition	Min	Typ	Max	Unit
V_F	Forward Voltage	I_F = 20 A, T_C = 25°C				

TYPICAL CHARACTERISTICS

TEST CIRCUIT AND WAVEFORMS

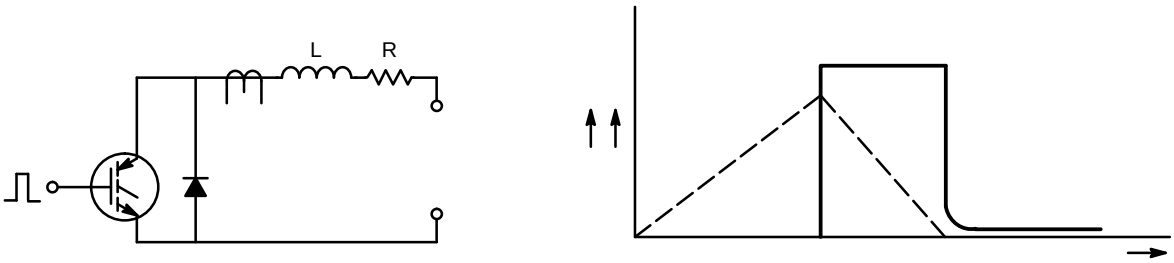


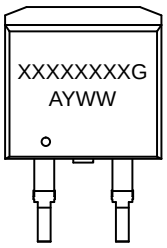
Figure 9. Unclamped Inductive Switching Test Circuit & Waveform

D²PAK2 (TO−263−2L)
CASE 418BK
ISSUE O

DATE 02 AUG 2018

DETA

GENERIC
MARKING DIAGRAM*



XXX = Specific Device Code
A = Assembly Location
Y = Year
WW = Work Week
G = Pb−Free Package

*This information is generic. Please refer to device data sheet for actual part marking. Pb−Free indicator, “G” or microdot “ ▪”, may or may not be present. Some products may not follow the Generic Marking.

onsemi, , and other names, marks, and brands are registered and/or common law trademarks of Semiconductor Components Industries, LLC dba “**onsemi**” or its affiliates and/or subsidiaries in the United States and/or other countries. **onsemi** owns the rights to a number of patents, trademarks, copyrights, trade secrets, and other intellectual property. A listing of **onsemi**’s product/patent coverage may be accessed at www.onsemi.com/site/pdf/Patent−Marking.pdf. **onsemi** reserves the right to make changes at any time to any products or information herein, without notice. The information herein is provided “as−is” and **onsemi** makes no warranty, representation or guarantee regarding the accuracy of the information, product features, availability, functionality, or suitability of its products for any particular purpose, nor does **onsemi** assume any liability arising out of the application or use of any product or circuit, and specifically disclaims any and all liability, including without limitation special, consequential or incidental damages. Buyer is responsible for its products and applications using **onsemi**