

Silicon Carbide (SiC) Schottky Diode – EliteSiC, 4 A, 650 V, D1, D2PAK-2L

ELECTRICAL CONNECTION

FFSB0465A

Silicon Carbide (SiC) Schottky Diodes use a completely new technology that provides superior switching performance and higher reliability compared to Silicon. No reverse recovery current, temperature independent switching characteristics, and excellent thermal performance sets Silicon Carbide as the next generation of power semiconductor. System benefits include highest efficiency, faster operating frequency, increased power density, reduced EMI, and reduced system size and cost.

Features

- Max Junction Temperature 175 C
- Avalanche Rated 25 mJ
- High Surge Current Capacity
- Positive Temperature Coefficient
- Ease of Paralleling
- No Reverse Recovery/No Forward Recovery
- This Device is Pb Free, Halogen Free/BFR Free and RoHS Compliant

Applications

- General Purpose
- SMPS, Solar Inverter, UPS
- Power Switching Circuits

ABSOLUTE MAXIMUM RATINGS

(T_C = 25 C, unless otherwise specified)

Symbol	Parameter	Rating	Unit	
V _{RRM}	Peak Repetitive Reverse Voltage	650	V	
E _{AS}	Single Pulse Avalanche Energy (Note 1)	25	mJ	
		7.7		
I _{F, Max}	Non-Repetitive Peak Forward Surge Current	T _C = 25 C, 10 μs	360	A
		T _C = 150 C, 10 μs	330	
I _{F, SM}	Non-Repetitive Forward Surge Current	Half-Sine Pulse, t _p = 8.3 ms	38	A
I _{F, RM}	Repetitive Forward Surge Current	Half-Sine Pulse, t _p = 8.3 ms	18	A
P _{tot}	Power Dissipation	T _C = 25 C	63	W
		T _C = 150 C	10.5	
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 25 mJ is based on starting T_J = 25 C, L = 0.5 mH, I_{AS} = 10 A, V = 50 V.

D²PAK2 (TO 263 2L)
CASE 418BK

MARKING DIAGRAM

ORDERING INFORMATION

See detailed ordering and shipping information in the package dimensions section on page 2 of this data sheet.

THERMAL CHARACTERISTICS

Symbol

FFSB0465A

TYPICAL CHARACTERISTICS $T_J = 25\text{ C}$ UNLESS OTHERWISE NOTED (CONTINUED)

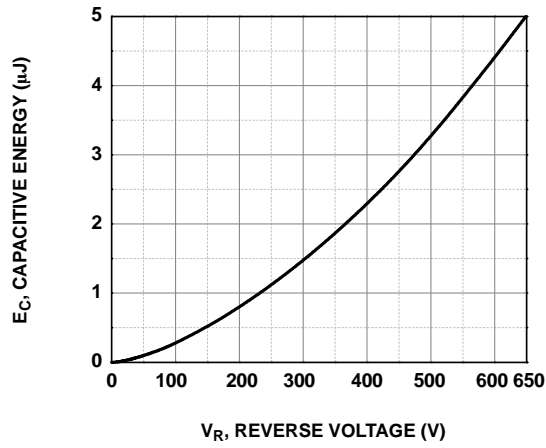


Figure 7. Capacitance Stored Energy

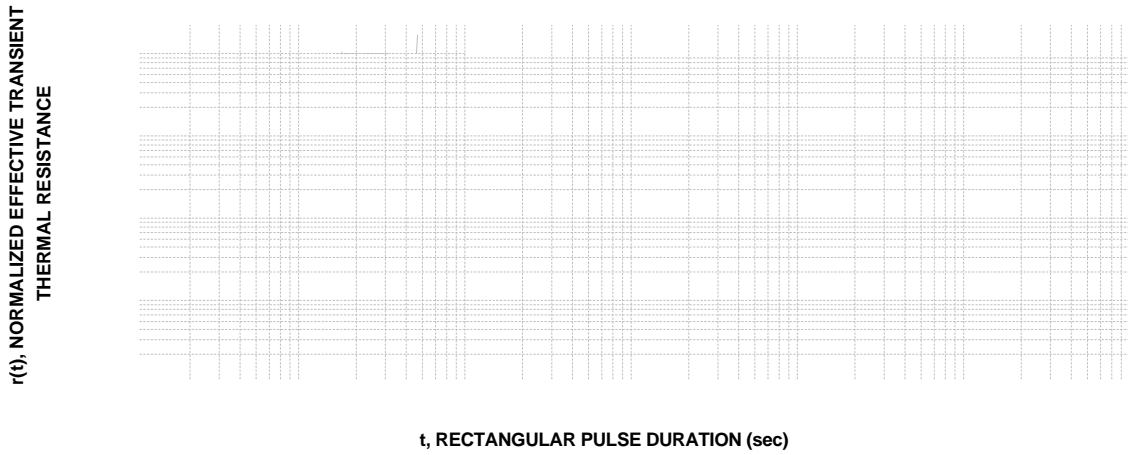
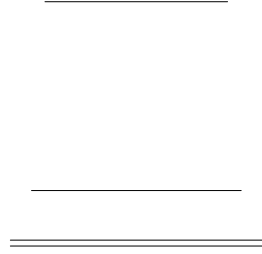
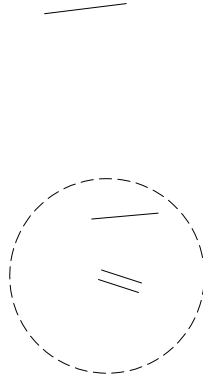


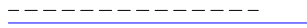
Figure 8. Junction to Case Transient Thermal Response Curve

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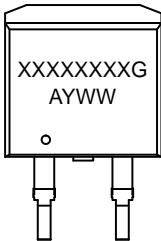
DATE 02 AUG 2018



DET/



**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.

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