

Silicon Carbide (SiC) Schottky Diode – EliteSiC, 8 A, 650 V, D2, D2PAK-2L

FFSB0865B

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 33 mJ
- High Surge Current Capacity
- Positive Temperature Coefficient
- Ease of Paralleling
- No Reverse Recovery / No Forward Recovery
- These Devices are Pb Free, Halogen Free/BFR Free and are RoHS Compliant

Applications

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

MAXIMUM RATINGS (T_J = 25 C unless otherwise noted)

Parameter	Symbol	Value	Unit	
Peak Repetitive Reverse Voltage	V _{RRM}	650	V	
Single Pulse Avalanche Energy (T _J = 25 C, I _{L(pk)} = 11.5 A, L = 0.5 mH, V = 50 V)	E _{AS}	33	mJ	
Continuous Rectified Forward Current	@ T _C < 147	I _F	8.0	A
	@ T _C < 135		10.1	
Non Repetitive Peak Forward Surge Current	T _C = 25 C t _p = 10 μs	I _{FM}	577	A
	T _C = 150 C t _p = 10 μs		533	
Non Repetitive Forward Surge Current (Half Sine Pulse)	T _C = 25 C t _p = 8.3 ms	I _{FSM}	56	A
Power Dissipation	T _C = 25 C	P _{tot}	73	W
	T _C = 150 C		12	
Operating Junction and Storage Temperature Range	T _J , T _{stg}	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.



D²PAK2 (TO 263 2L)
 CASE 418BK

MARKING DIAGRAM

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THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Unit
Thermal Resistance, Junction to Case, Max.	$R_{\theta JC}$	2.05	C/W

ELECTRICAL CHARACTERISTICS ($T_J = 25\text{ C}$ unless otherwise noted)

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
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ON CHARACTERISTICS

Forward Voltage	V_F	$I_F = 8.0\text{ A}, T_J = 25\text{ C}$		1.39	1.7	V
		$I_F = 8.0\text{ A}, T_J = 125\text{ C}$		1.55	2.0	
		$I_F = 8.0\text{ A}, T_J = 175\text{ C}$		1.71	2.4	

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TYPICAL CHARACTERISTICS

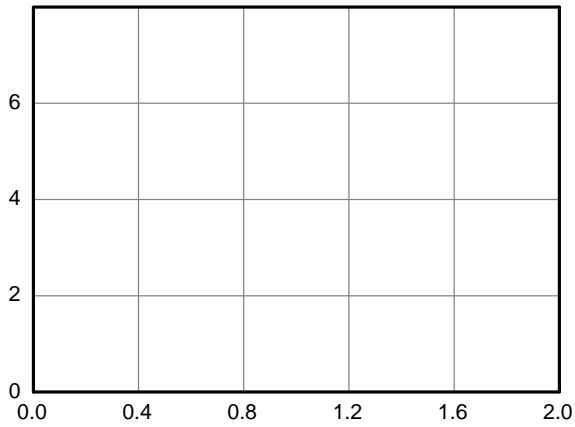


Figure 1. Forward Characteristics

Figure 2. Reverse Characteristics

Figure 3. Current Derating

Figure 4. Power Derating

Figure 5. Capacitive Charge vs. Reverse Voltage

Figure 6. Capacitance vs. Reverse Voltage

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TYPICAL CHARACTERISTICS

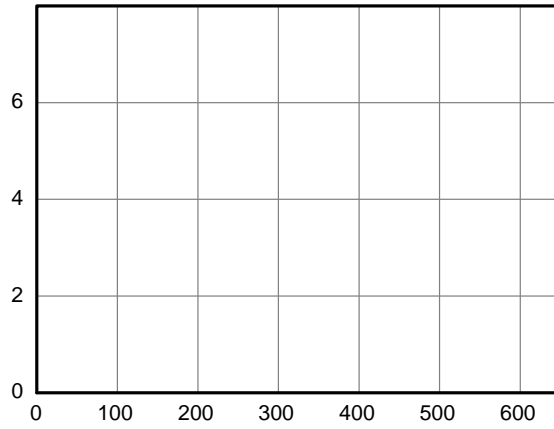
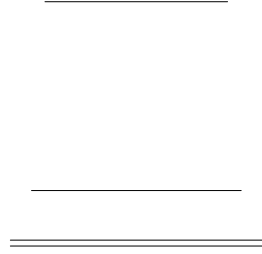
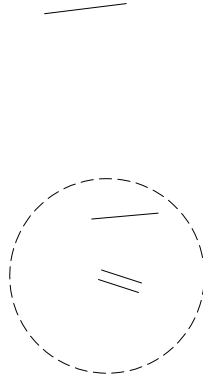


Figure 7. Capacitance Stored Energy

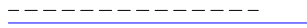
Figure 8. Junction to Case Transient Thermal Response

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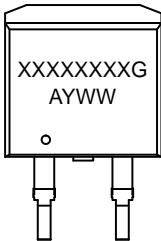
DATE 02 AUG 2018



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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