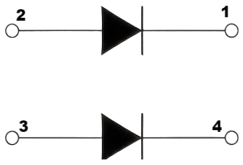
SiC Schottky Diode Module

Parameter	Value	Unit
V_{RRM}	1700	V
I_F	80	A



Features

- SiC Schottky Diode
- High Blocking Voltage,VBR=1700V
- 175℃ maximum junction temperature
- Fast,temperature-independent switching
- Positive Temperature Coefficient on VF

Applications

- Motor drives
- Solar/ Wind inverters
- Boost diode in PFC
- UPS applications
- EV and DC fast charging
- Induction heating and welding

Module Type

Parameter	Condition	Value	Unit
Isolation Voltage	RMS, f =50Hz, t =1s	3.0	kV
Material of module baseplate	-	Cu	-
Creepage distance	terminal to heatsink terminal to terminal	114.5 13	mm
Clearance	terminal to heatsink terminal to terminal	8 7	mm
CTI	-	>400	-
Mounting torque for module mounting	M4	1.1 to 1.5	Nm
Weight	-	30	g

Maximum Ratings

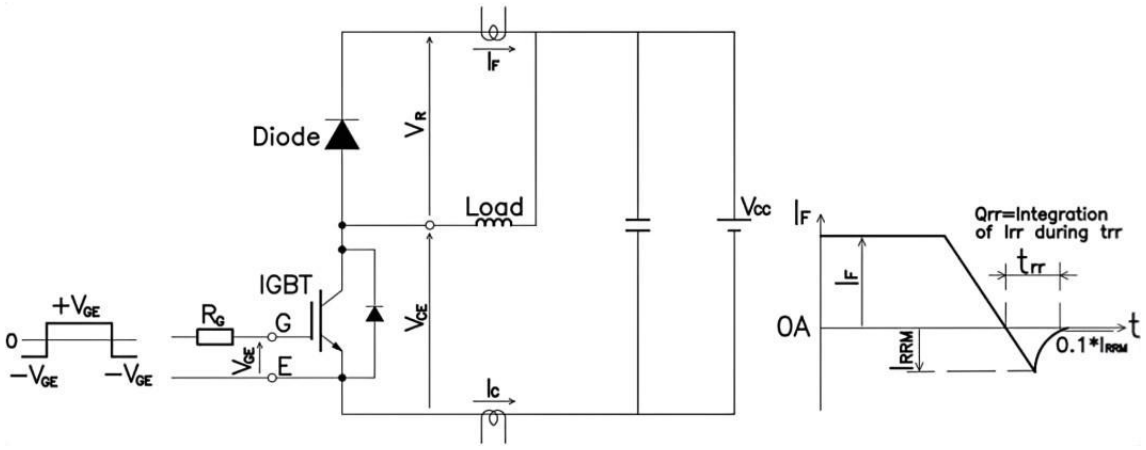
Symbol	Parameter	Condition	Ratings	Unit
V_{RRM}	Repetitive peak reverse voltage	T_j =25°C	1700	V
I_F	Forward Current per diode	T_c=100°C	80	A
I_{FSM}	Pulse Forward Current per diode	tp=10 ms, Half Sine Pulse, Note1	740	A
$I_{F,max}$	Repetitive peak forward current	tp=10 ms, f=0.1Hz, 100 cycles, Half Sine Pulse	580	A
T_j	junction temperature	-	-55 to 175	°C
T_{stg}	Storage temperature	-	-55 to 175	°C

Note1: Pulse width limited by maximum junction temperature

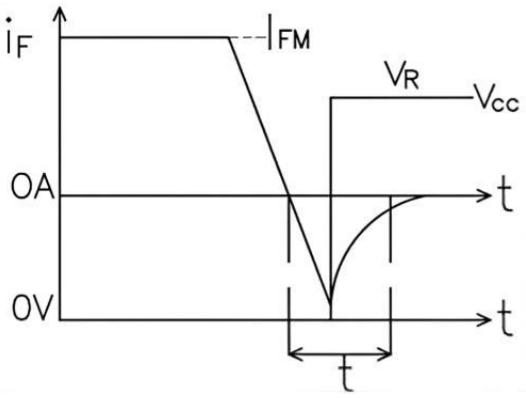
Electrical Characteristics

Symbol	Item	Condition		Value			Unit
				Min.	Typ.	Max.	
V_{DC}	DC blocking Voltage	Tj =25°C		1700	-	-	V
V_F	Diode forward Voltage	IF =80A	Tj =25°C	-	1.45	1.75	V
			Tj =125°C	-	1.9	-	
			Tj =175°C	-	2.3	-	
I_R	Reverse Current	VR =1700V	Tj =25°C	-	8	600	μA
			Tj =125°C	-	48	-	
			Tj =175°C	-	200	-	
Q_C	Total capacitive charge	VR =1700V	Tj =25°C	-	808	-	nC
C	Total capacitance	VR =800V, f =1MHz	Tj =25°C	-	356	-	pF
		VR =1200V, f =1MHz	Tj =25°C	-	332	-	
		VR =1700V, f =1MHz	Tj =25°C	-	316	-	
$R_{th(j-c)}$	SiC SBD Thermal Resistance	Junction to Case		-	TBD	-	K/W

Test Conditions



Q_{rr} / t_{rr} test circuit and waveform



Reverse recovery energy test waveform

Characteristics Diagrams

Fig1. IF vs VF

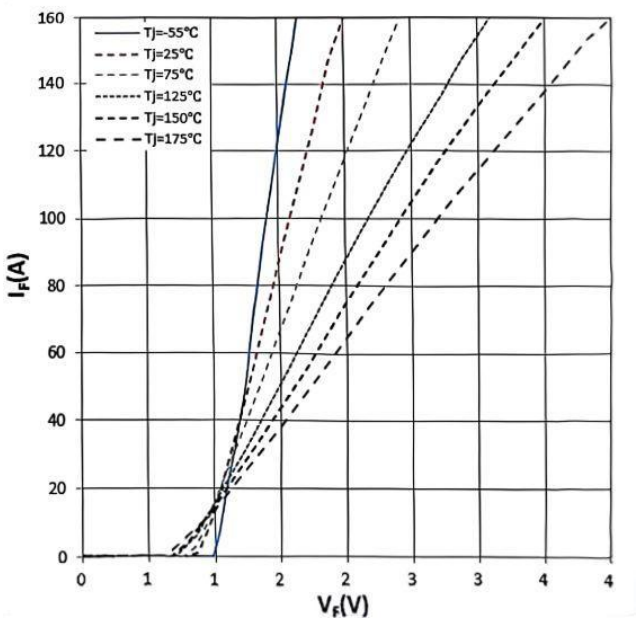
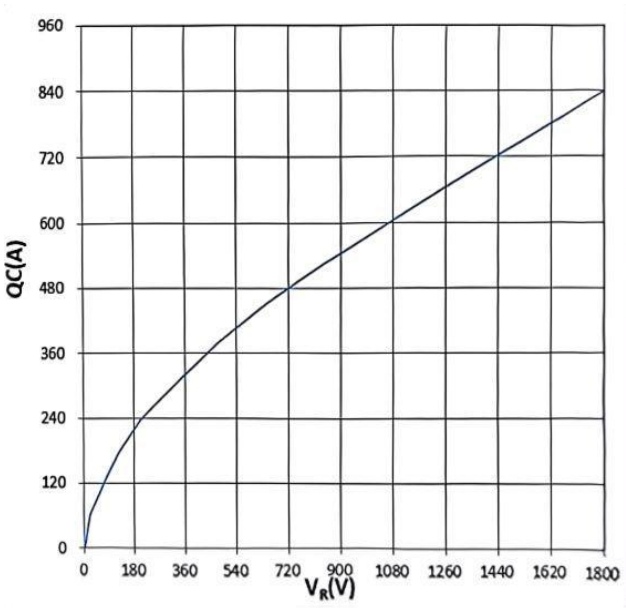
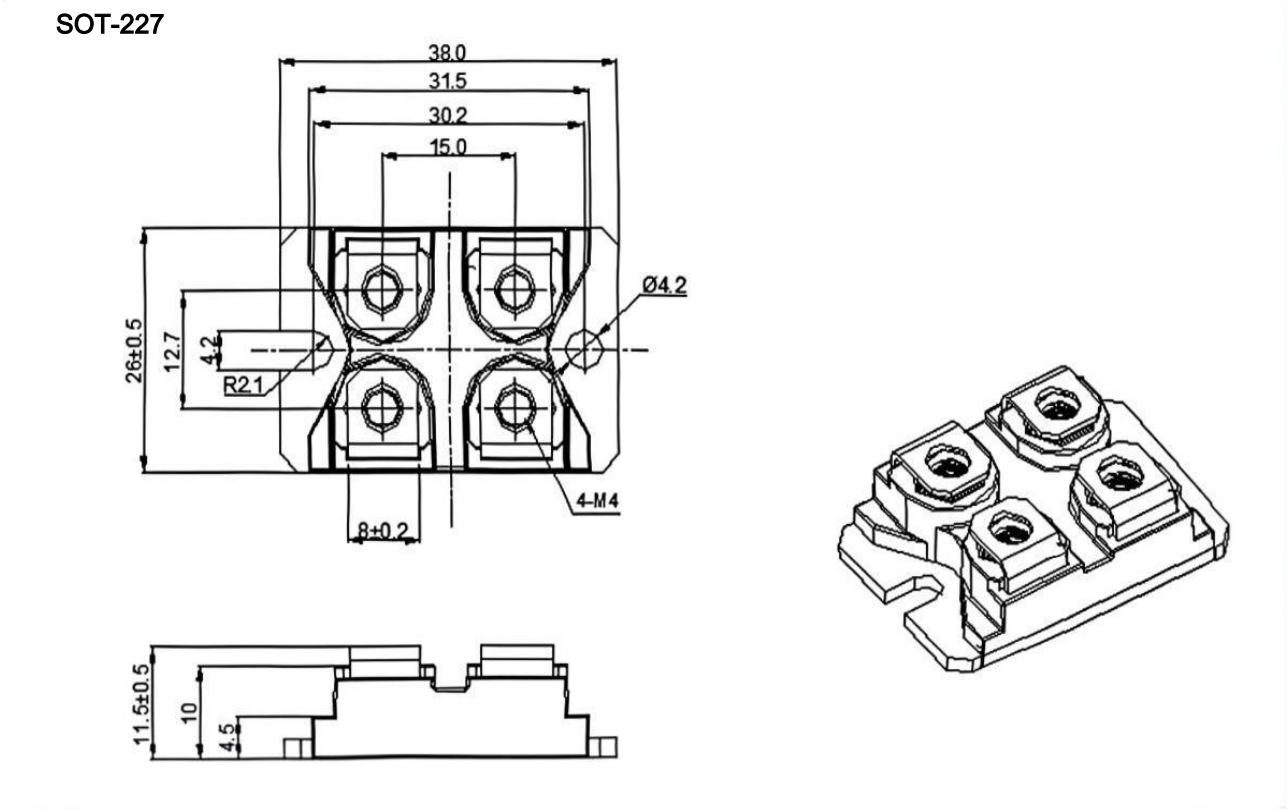


Fig2. QC vs VR, Tj =25°C



Package Outlines

SOT-227



***Important Usage Information and Disclaimer**

The specifications of Zhuhai Hypersemi Co., Ltd. products are not guarantees of product characteristics. They reflect typical performance expected in standard applications, which may vary with specific uses. Users must conduct prior testing for their applications and make necessary adjustments.

Users are responsible for the safety of applications utilizing our products and must implement adequate safety measures to prevent physical injury, fire, or other risks in case of product failure. It is the user's duty to ensure that application designs comply with all applicable laws and standards. Our products must not be used in any applications where a product failure could reasonably result in personal injury, unless specifically authorized in a signed document by Zhuhai Hypersemi Co., Ltd.

No representations or warranties are made regarding the accuracy or completeness of this information, including any claims of non-infringement of third-party intellectual property rights. Zhuhai Hypersemi Co., Ltd. assumes no liability for any applications or uses of its products and does not grant any licenses to its intellectual property rights or those of others. We also make no claims regarding non-infringement of third-party intellectual property rights that may arise from applications.

Due to technical requirements, our products may contain hazardous substances. For details, please contact your nearest sales office. This document replaces all previous information and may be updated. We reserve the right to make changes.