

1700V SiC Schottky Diode Module

Description

The SiC Schottky Diode Module G1 package devices are optimized to reduce losses and switching noise in high frequency power conditioning electrical systems.

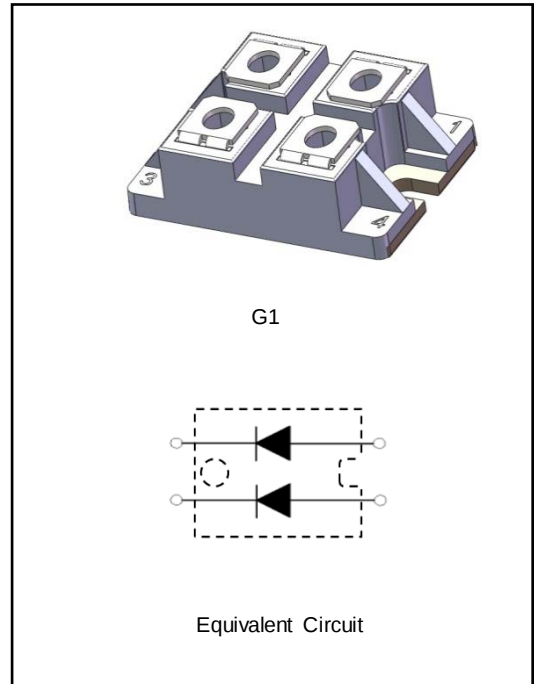
These SiC Schottky Diode Module series are ideally suited for Energy Storage, High Power inverters, Power Quality Management and other applications where switching losses are significant portion of the total losses.

Features

- Revolutionary semiconductor material - Silicon Carbide
- Temperature independent switching behavior
- Excellent thermal performance
- High reliability
- Isolation Type Package

Applications

- High Speed & High Power Converters, Inverter Welders
- Power Quality Management
- Energy Storage



Absolute Maximum Ratings ($T_C=25^\circ\text{C}$, unless otherwise noted)

Symbol	Parameter			Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage			1700	V
V_R	DC Blocking Voltage			1700	V
$I_{F(AV)}$	Average Rectified Forward Current	Per Diode	$T_C \leq 140^\circ\text{C}$	50	A
		Per Package	$T_C \leq 140^\circ\text{C}$	100	
I_{FSM}	Non-repetitive Peak Surge Current (Per Diode) 60Hz Single Half-sine Wave, $t_p=8.3\text{ms}$			400	A
P_D	Maximum Power Dissipation			468	W
T_J	Junction Temperature			-55 ~ +175	$^\circ\text{C}$
T_{STG}	Storage Temperature Range			-45 ~ +150	$^\circ\text{C}$
	Mounting Torque (M4)			1.45	N.m
	Terminal Torque (M4)			1.45	N.m
	Weight			32.5	g

Electrical Characteristics (Per Diode, $T_C=25\text{ }^{\circ}\text{C}$, unless otherwise noted)

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
V_F	Diode Forward Voltage	$I_F=50\text{A}$	-	1.50	1.90	V
		$I_F=50\text{A}$, $T_C=175^{\circ}\text{C}$	-	2.0	2.8	V
I_R	Reverse Current	$V_R=1700\text{V}$	-	-	100	μA
		$V_R=1700\text{V}$, $T_J=175^{\circ}\text{C}$	-	-	500	μA
Q_C	Total Capacitive Charge	$V_R=1700\text{V}$, $f=1\text{MHz}$	-	210	-	nC
C	Total Capacitance	$V_R=1700\text{V}$, $I_F=20\text{A}$, $di/dt=200\text{A}/\mu\text{s}$	-	400	-	pF

Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th(J-C)}$	Thermal Resistance, Junction to case	0.32	$^{\circ}\text{C}/\text{W}$

Typical Performance Characteristics

Fig. 1. Forward Characteristics

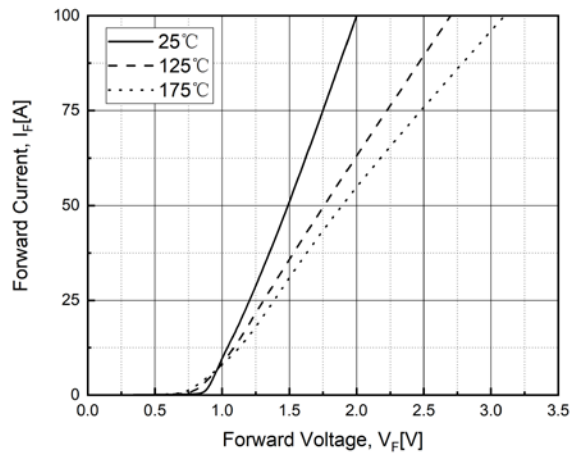


Fig. 2. Reverse Characteristics

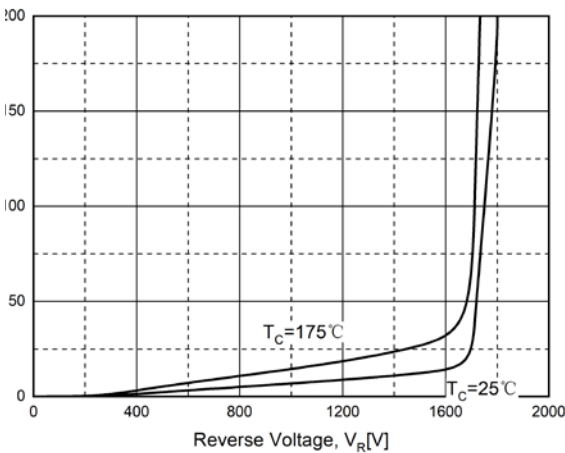


Fig. 3. Total Capacitance vs. Reverse Voltage

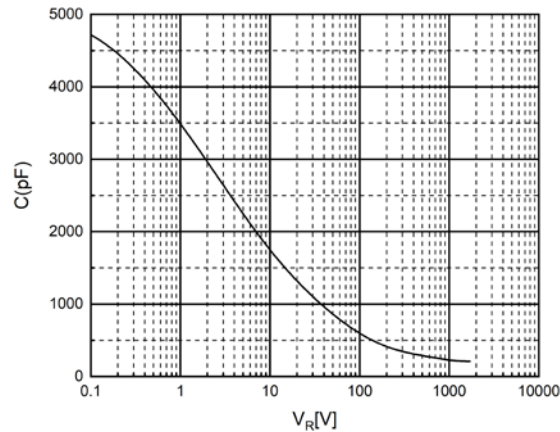
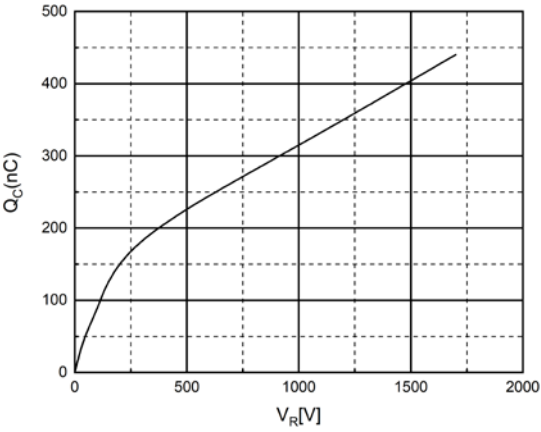
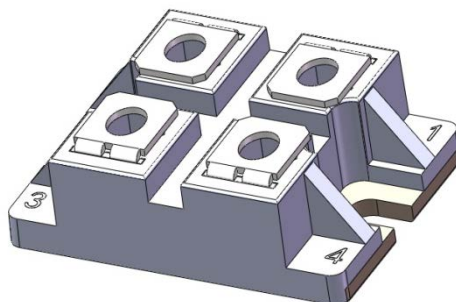


Fig. 4. Total Capacitive Charge vs. Reverse Voltage



Package Dimensions

G1



(Dimensions in Millimeters)

