

## 600V 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.

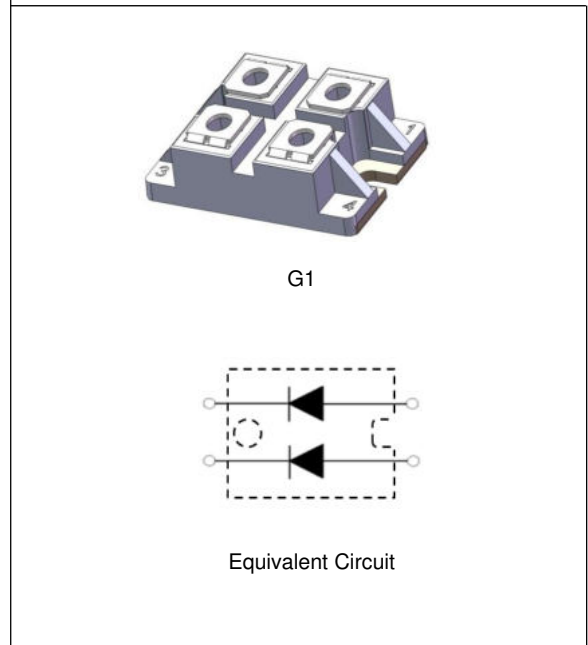
These SiC Schottky Diode Module series are ideally suited for Energy Storage ,High Power inverters, Power Quality Management and other applications where switching losses are significant portion of the total losses.

### Features

- Revolutionary semiconductor material - Silicon Carbide
- No reverse recovery current
- Temperature independent switching behavior
- Excellent thermal performance
- High reliability
- Isolation Type Package

### Applications

- Power Quality Management
- Energy Storage



### Absolute Maximum Ratings (at $T_c=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Conditions	Ratings	Unit
$V_{RRM}$	Repetitive Peak Reverse Voltage		600	V
$V_{DC}$	DC Blocking Voltage		600	V
$I_{F(AVG)}$	Average Forward Current	$T_c \leq 145^\circ\text{C}$	100	A
$I_{FSM}$	Non-Repetitive Forward Current , $t_p=8.3\text{ms}$ , Half Sine Wave		600	A
$P_D$	Maximum Power Dissipation		500	W
$T_J$	Operating Junction Temperature Range		-55~+175	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range		-55~+150	$^\circ\text{C}$
$V_{iso}$	Isolation Voltage	AC 1minute	2500	V
	Mounting screw Torque: M6		4	N.M
	Weight		300	g

### Thermal Characteristics

Symbol	Parameter	Ratings	Unit
$R_{th(J-C)}$ (Diode)	Thermal Resistance, Junction to case for Diode	0.3	$^\circ\text{C}/\text{W}$

**Electrical Characteristics of Diode** @ $T_C=25\text{ }^\circ\text{C}$  unless otherwise noted

Symbol	Parameter	Conditions	Min.	Typ.	Max.	Unit
$V_F$	Diode Forward Voltage	$I_F=100\text{A}$	-	1.5	1.8	V
		$I_F=100\text{A}, T_J=175^\circ\text{C}$	-	1.8	2.3	V
$I_R$	Reverse Current	$V_R=600\text{V}$			100	$\mu\text{A}$
		$V_R=600\text{V}, T_J=175^\circ\text{C}$			200	$\mu\text{A}$
$Q_C$	Total Capacitive Charge	$V_R=600\text{V}, I_F=100\text{A}, di/dt=200\text{A}/\mu\text{s}$		220		nC
C	Total Capacitance	$V_R=400\text{V}, f=1\text{MHz}$		450		pF

**Typical Performance Characteristics**

Fig. 1. Forward Characteristics

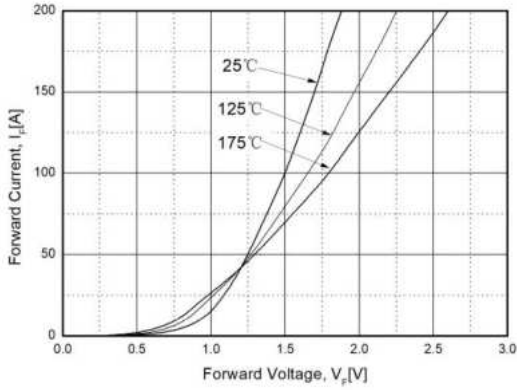


Fig. 2. Rate Current vs.  $T_C$

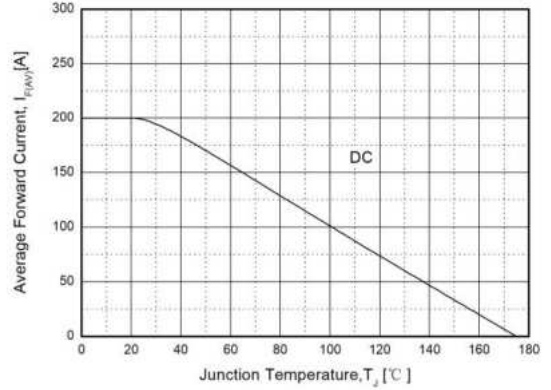


Fig. 3. Power Dissipation vs.  $T_J$

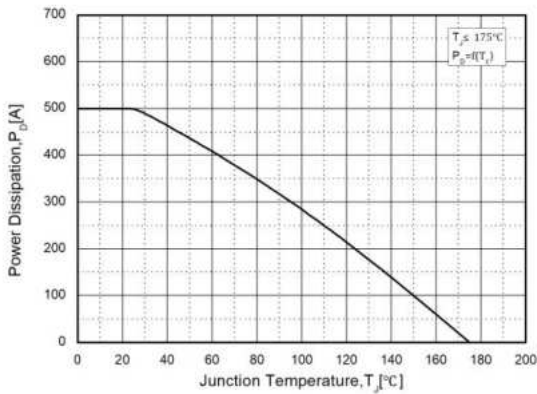


Fig. 4. Transient Thermal Impedance

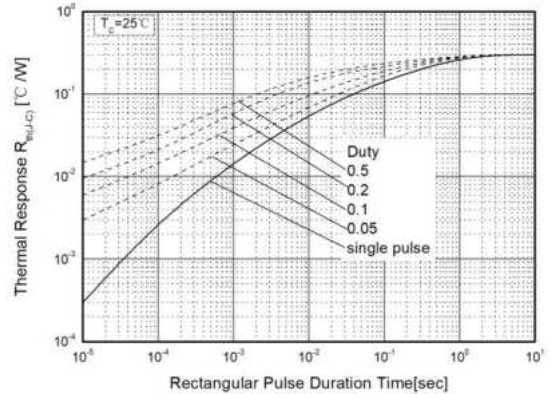


Fig. 5. Total Capacitance vs. Reverse Voltage

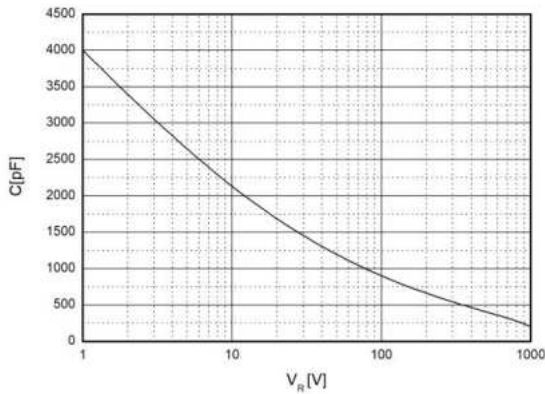
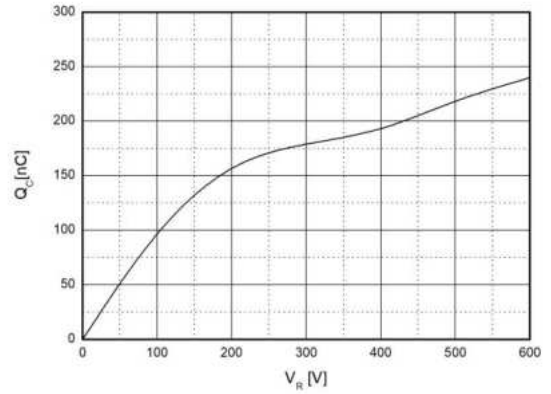
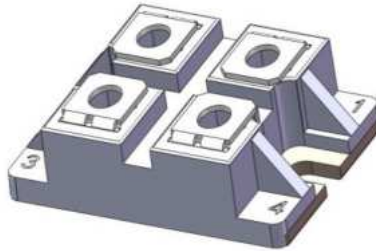


Fig. 6. Total Capacitive Charge vs. Reverse Voltage



**Package Dimensions**

**G1**



(Dimensions in Millimeters)

