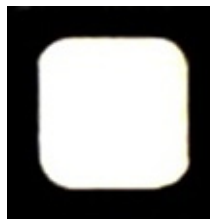


## Silicon Carbide Power Schottky Diode Chip

### Features

- 1200 V Schottky rectifier
- 250 °C maximum operating temperature
- Temperature independent switching behavior
- Superior surge current capability
- Positive temperature coefficient of  $V_F$
- Extremely fast switching speeds
- Superior figure of merit  $Q_C/I_F$



### Maximum Ratings at $T_J = 250\text{ °C}$ , unless otherwise specified

Parameter	Symbol	Conditions	Values	Unit
Repetitive peak reverse voltage	$V_{RRM}$		1200	V
Continuous forward current	$I_F$	$T_C \leq 215\text{ °C}$	5	A
RMS forward current	$I_{F(RMS)}$	$T_C \leq 215\text{ °C}$	8	A
Operating and storage temperature	$T_J, T_{stg}$		-55 to 250	°C

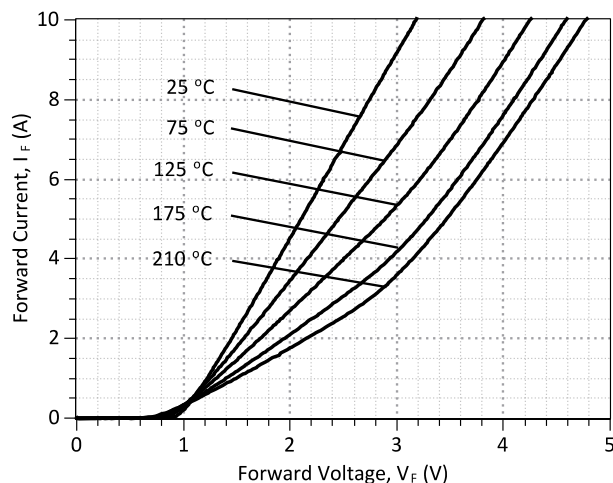
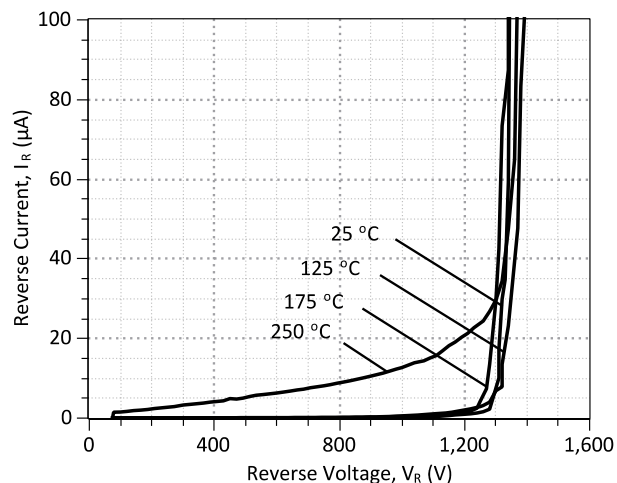
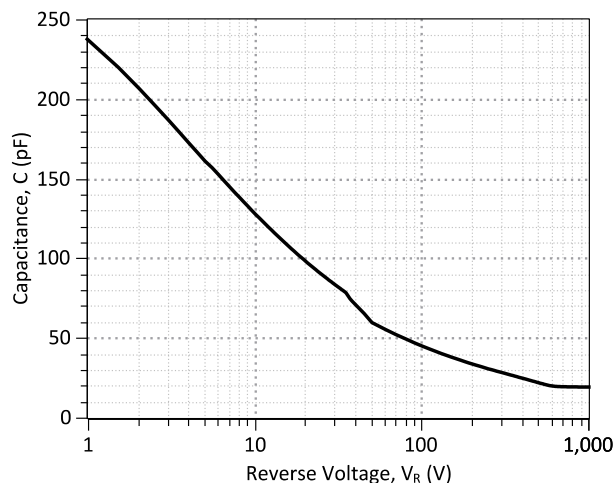
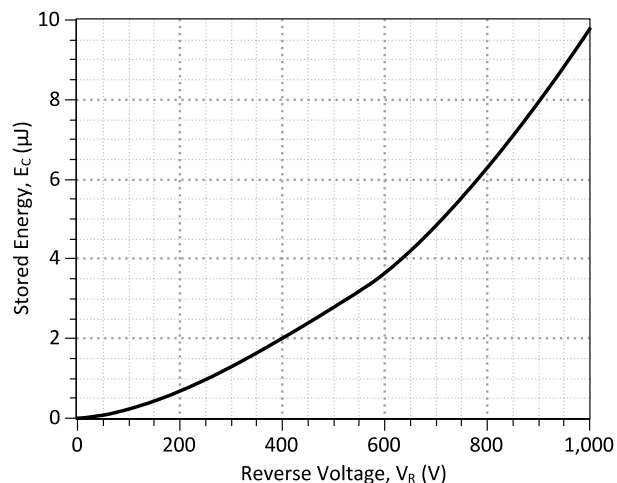
### Electrical Characteristics at $T_J = 250\text{ °C}$ , unless otherwise specified

Parameter	Symbol	Conditions	Values			Unit
			min.	typ.	max.	
Diode forward voltage	$V_F$	$I_F = 5\text{ A}, T_J = 25\text{ °C}$ $I_F = 5\text{ A}, T_J = 210\text{ °C}$		2.1 3.5		V
Reverse current	$I_R$	$V_R = 1200\text{ V}, T_J = 25\text{ °C}$ $V_R = 1200\text{ V}, T_J = 250\text{ °C}$		0.9 20.8	10 150	$\mu\text{A}$
Total capacitive charge	$Q_C$	$I_F \leq I_{F,MAX}$ $dI_F/dt = 200\text{ A}/\mu\text{s}$ $T_J = 210\text{ °C}$	$V_R = 400\text{ V}$		17	nC
			$V_R = 960\text{ V}$		29	
Switching time	$t_s$		$V_R = 400\text{ V}$ $V_R = 960\text{ V}$		< 25	ns
Total capacitance	C	$V_R = 1\text{ V}, f = 1\text{ MHz}, T_J = 25\text{ °C}$			237	pF
		$V_R = 400\text{ V}, f = 1\text{ MHz}, T_J = 25\text{ °C}$			25	
		$V_R = 1000\text{ V}, f = 1\text{ MHz}, T_J = 25\text{ °C}$			20	

### Thermal Characteristics

Thermal resistance, junction - case	$R_{thJC}$	Assuming TO-276 package	1.38	°C/W
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\*For chip size and metallization, please refer to the mechanical datasheet (must have a non-disclosure agreement with GeneSiC Semiconductor).


**Figure 1: Typical Forward Characteristics**

**Figure 2: Typical Reverse Characteristics**

**Figure 3: Typical Junction Capacitance vs Reverse Voltage Characteristics**

**Figure 4: Typical Switching Energy vs Reverse Voltage Characteristics**

#### Revision History

Date	Revision	Comments	Supersedes
2012/04/03	0	Initial release	

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