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 °C, unless otherwise specified

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

Electrical Characteristics at T_j = 250 °C, unless otherwise specified

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

Thermal Characteristics

Thermal resistance, junction - case	R_{thJC}	Assuming TO-276 package		1.38	°C/W

***For chip size and metallization, please refer to the mechanical datasheet (must have a non-disclosure agreement with GeneSiC Semiconductor).**

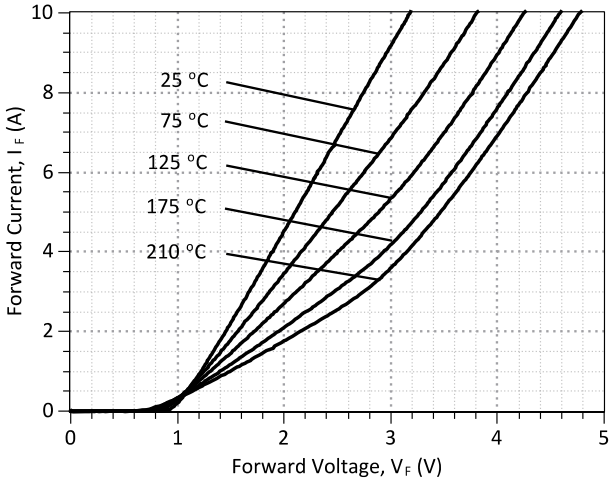

Figure 1: Typical Forward Characteristics

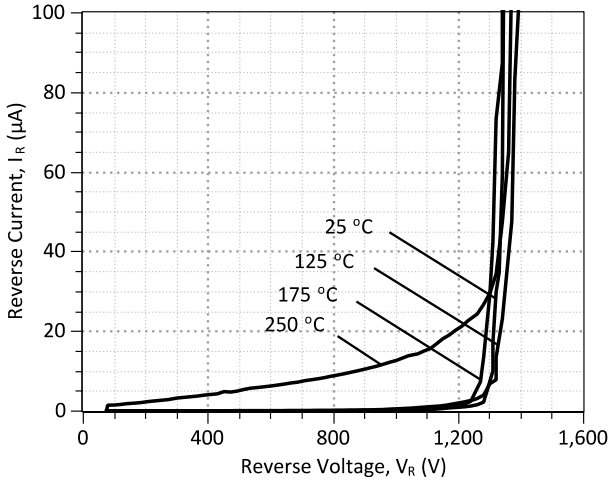

Figure 2: Typical Reverse Characteristics

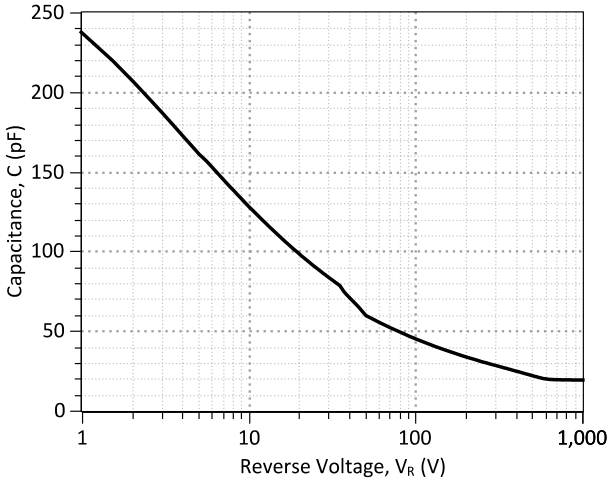

Figure 3: Typical Junction Capacitance vs Reverse Voltage Characteristics

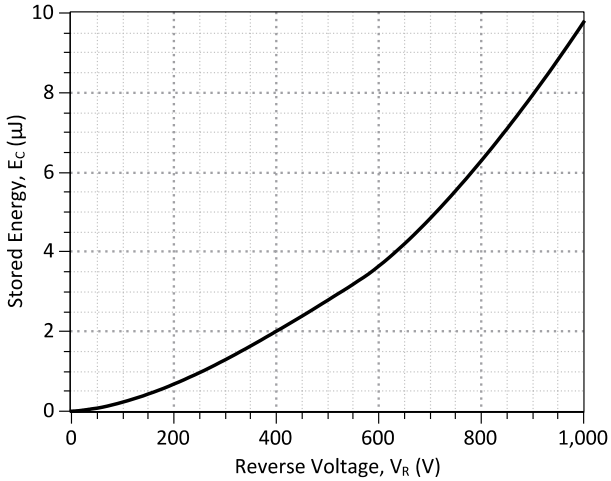

Figure 4: Typical Switching Energy vs Reverse Voltage Characteristics

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

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