GeneSiC SEMICONDUCTOR **Electrical Datasheet*** **GA01PNS100-CAL**

Silicon Carbide
PiN Diode Chip

Features

- 10 kV blocking
- 250 °C operating temperature
- Fast turn off characteristics
- Soft reverse recovery characteristics
- Ultra-Fast high temperature switching

Advantages

- Industry's lowest conduction losses
- Reduced stacking
- Reduced system complexity/Increased reliability

Applications

- Voltage Multiplier
- Ignition/Trigger Circuits
- Oil/Downhole
- Lighting
- Defense

Maximum Ratings at T_j = 250 °C, unless otherwise specified

Parameter	Symbol	Conditions	Values	Unit
Repetitive peak reverse voltage	V_{RRM}		10	kV
Continuous forward current	I_F	$T_C \le 150$ °C	2	A
RMS forward current	$I_{F(RMS)}$	$T_C \le 150$ °C	1	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 = 2 A, T_j = 25 °C I_F = 2 A, T_j = 225 °C		4.4 4.1	4.8 4.5	V
Reverse current	I_R	V_R = 10 kV, T_j = 25 °C V_R = 10 kV, T_j = 225 °C		0.1	3 50	μA
Total reverse recovery charge	Q_{rr}	$I_F \le I_{F,MAX}$ dI_F/dt = 70 A/μs T_j = 225 °C V_R = 1000 V I_F = 1.5 A		558		nC
Switching time	t_s	V_R = 1000 V I_F = 1.5 A		< 236		ns
Total capacitance	C	V_R = 1 V, f = 1 MHz, T_j = 25 °C V_R = 400 V, f = 1 MHz, T_j = 25 °C V_R = 1000 V, f = 1 MHz, T_j = 25 °C		20 5 4		pF
Total capacitive charge	Q_C	V_R = 1000 V, f = 1 MHz, T_j = 25 °C		5.34		nC

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

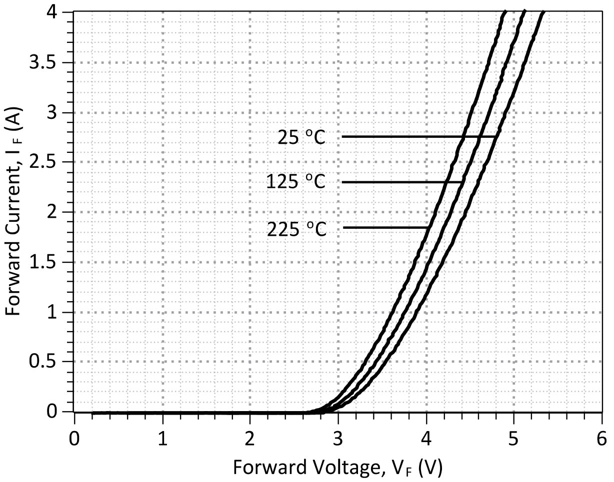

Figure 1: Typical Forward Characteristics

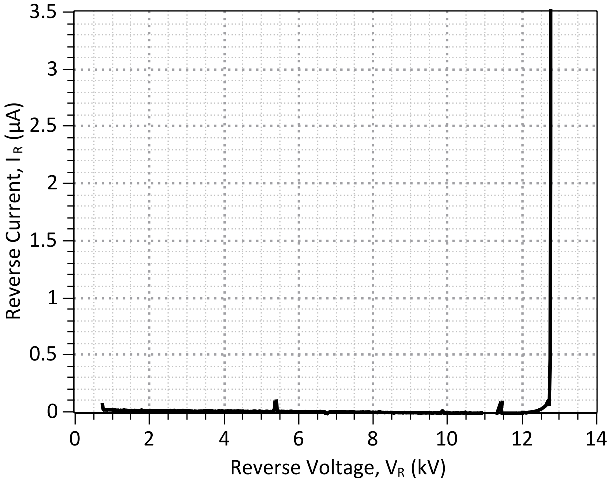

Figure 2: Typical Reverse Characteristics

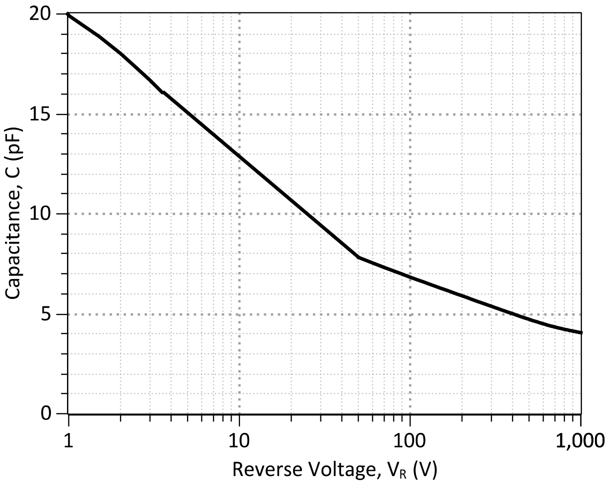

Figure 3: Typical Junction Capacitance vs Reverse Voltage Characteristics

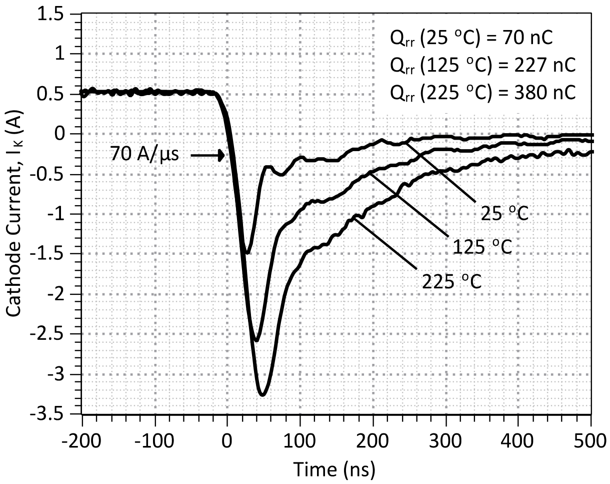

Figure 4: Typical Turn Off Characteristics at I_k = 0.5 A and V_R = 1000 V

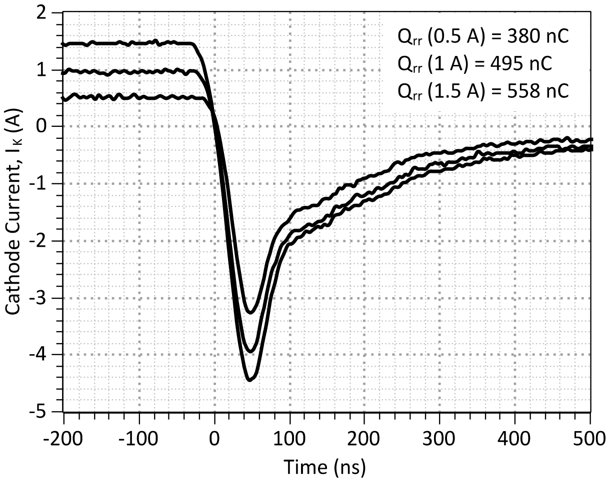

Figure 5: Typical Turn Off Characteristics at T_j = 225 °C and V_R = 1000 V

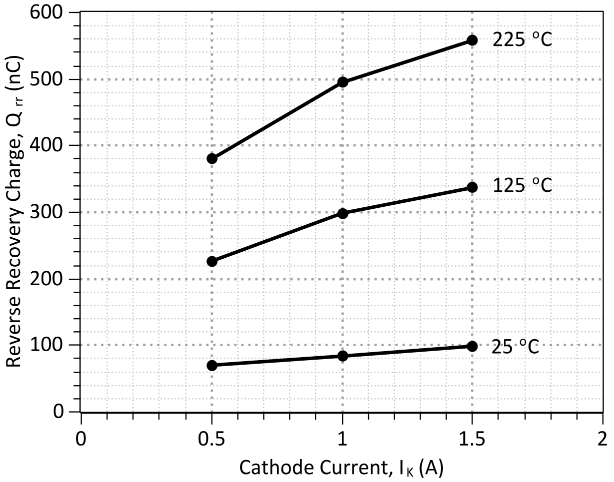

Figure 6: Reverse Recovery Charge vs Cathode Current

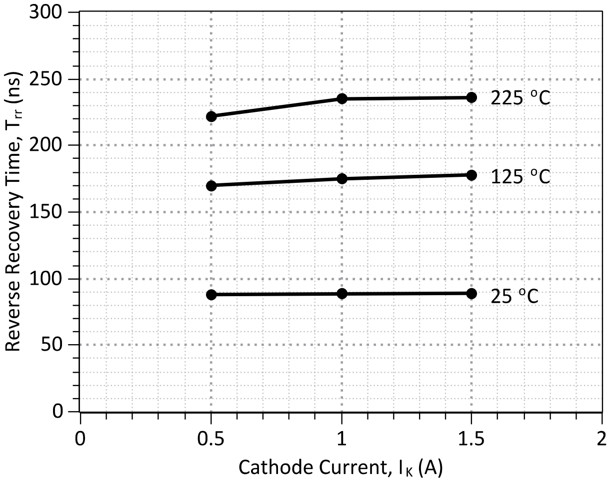

Figure 7: Reverse Recovery Time vs Cathode Current

Revision History

Date	Revision	Comments	Supersedes
2012/08/15	0	Initial release	

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43670 Trade Center Place Suite 155
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