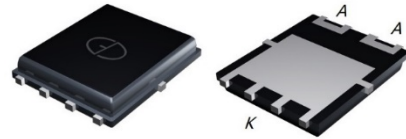


## 8A, 650V Silicon Carbide Schottky Diode

### Features

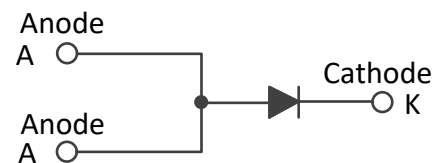
- High-Frequency Operation
- Zero Reverse Recovery Current
- Temperature-Independent Switching
- Extremely Fast Switching
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



PDFN56

### Applications

- Boost Diodes in PFC or DC/DC stages
- LED Lighting Power Supplies
- Power Factor Correction



### Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 3000 units per reel

### Maximum Ratings & Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

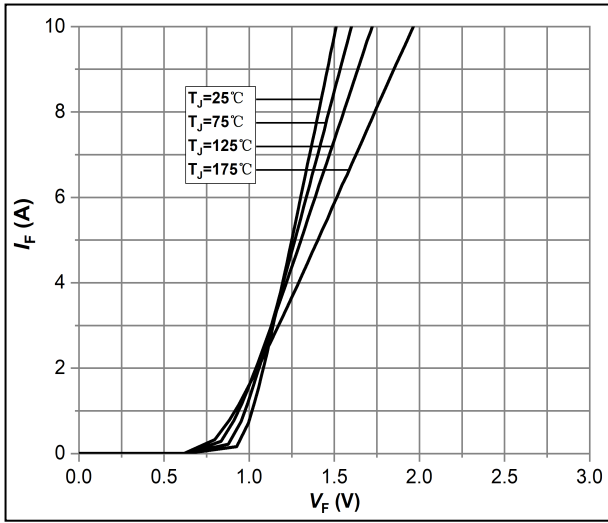
Parameter	Symbol	GS08D065SM	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	650	V
Working peak reverse voltage	V <sub>RWM</sub>	650	V
Maximum DC blocking voltage	V <sub>DC</sub>	650	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	T <sub>C</sub> =25°C	32
		T <sub>C</sub> =135°C	15
		T <sub>C</sub> =157°C	8
Peak forward surge current, t <sub>p</sub> =10ms, Half Sine Pulse	I <sub>FSM</sub>	64	A
Power dissipation	P <sub>tot</sub>	T <sub>C</sub> =25°C	150
		T <sub>C</sub> =110°C	65
Operating junction temperature range	T <sub>J</sub>	-55 to +175	°C
Storage temperature range	T <sub>STG</sub>	-55 to +175	°C

<b>Electrical Specifications</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage	$V_F$	$I_F=8\text{A}, T_J=25^{\circ}\text{C}$	1.40	1.65	V
		$I_F=8\text{A}, T_J=175^{\circ}\text{C}$	1.80	2.40	
Reverse leakage current @rated $V_R$	$I_R$	$V_R=650\text{V}, T_J=25^{\circ}\text{C}$	2	50	$\mu\text{A}$
		$V_R=650\text{V}, T_J=175^{\circ}\text{C}$	10	180	
Total capacitive charge	$Q_C$	$V_R=400\text{V}, I_F=8\text{A}, T_J=25^{\circ}\text{C}$	28	-	nC
Total capacitance	C	$V_R=400\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHz}$	42	-	pF

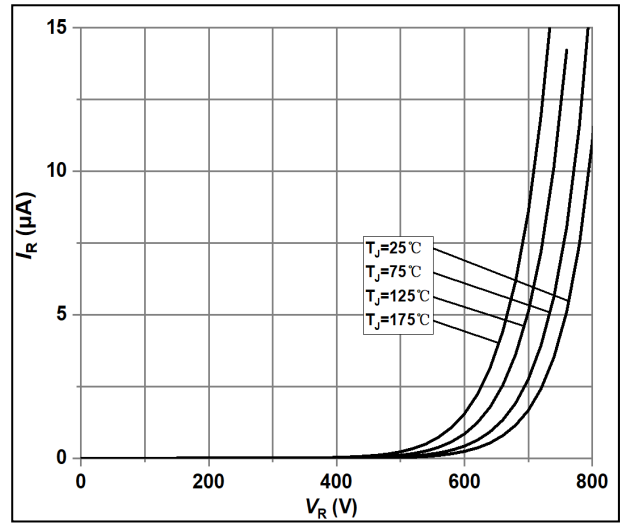
<b>Thermal-Mechanical Specifications</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)				
Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.00	-	$^{\circ}\text{C}/\text{W}$

## Ratings and Characteristics Curves

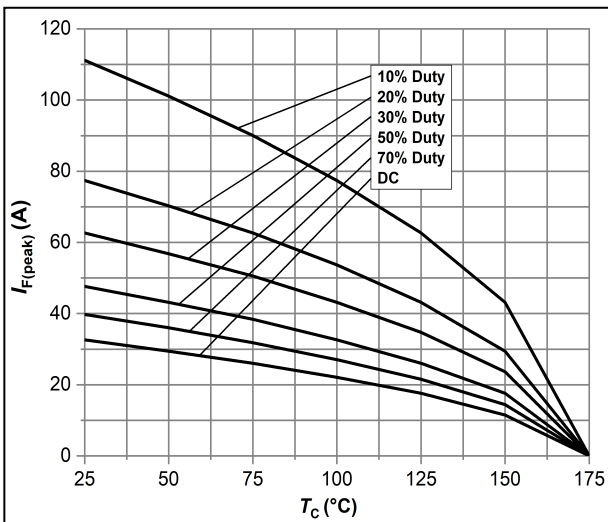
( $T_A = 25^\circ\text{C}$  unless otherwise noted)



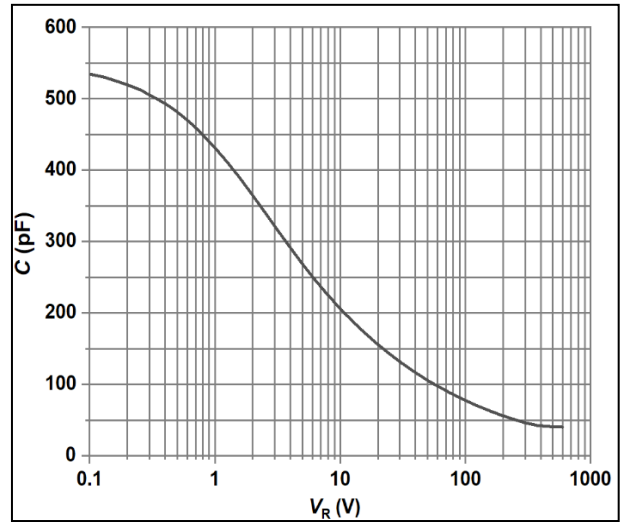
**Fig.1 -Forward Characteristics**



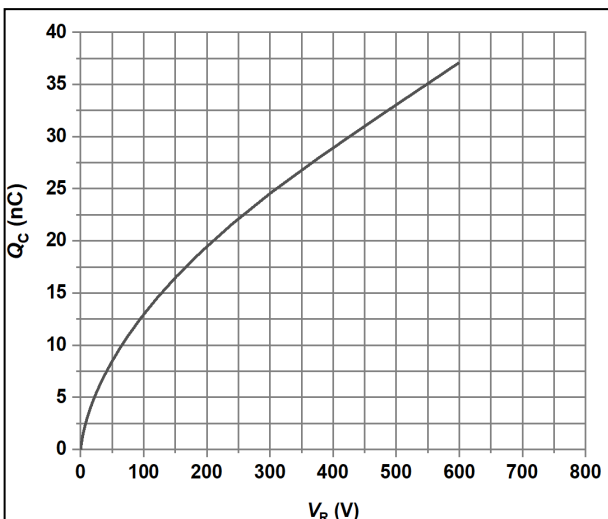
**Fig.2 -Reverse Characteristics**



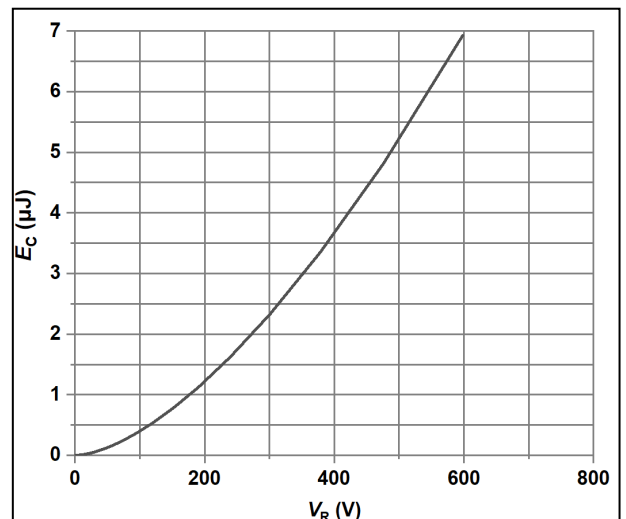
**Fig.3 -Current Derating**



**Fig.4 -Capacitance vs. Reverse Voltage**



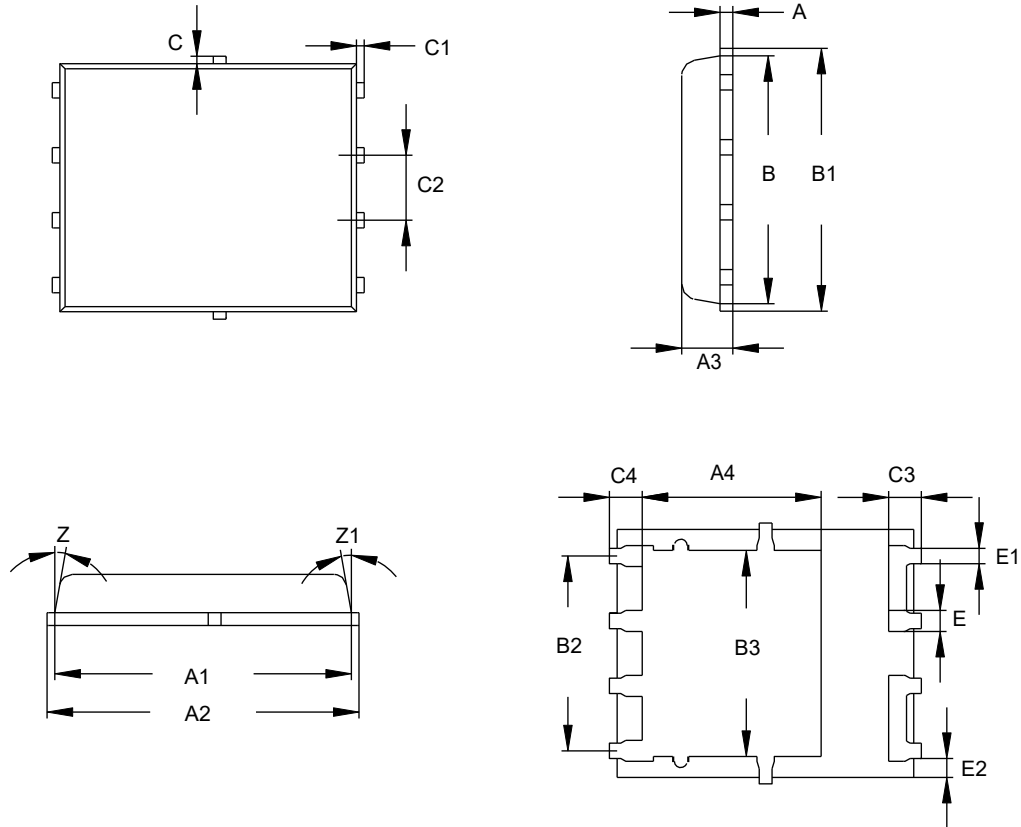
**Fig.5 -Total Capacitance Charge vs. Reverse Voltage**



**Fig.6 -Typical Capacitance Stored Energy**

**Package Outline Dimensions** (Unit: millimeters)



**PDFN56**



PDFN56							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	0.15	0.25	0.35	C1	0.05	0.15	0.25
A1	5.6	5.8	6.0	C2	1.17	1.27	1.37
A2	5.9	6.1	6.3	C3	0.53	0.63	0.73
A3	0.9	1	1.1	C4		0.63	
A4		3.5		E	0.31	0.41	0.51
B	4.7	4.9	5.1	E1	0.2	0.3	0.4
B1	5	5.2	5.4	E2	0.25	0.35	0.45
B2	3.71	3.81	3.91	Z	8°	10°	12°
B3		4		Z1	8°	10°	12°
C	0.05	0.15	0.25				

**Marking Outline**



1. Logo Mark: 
2. Part Name: GS08D065SM
3. Data Code: XXXX
4. Polarity : 

**Revision History**

Document Version	Date of release	Description of changes
Rev.A	2022.08.16	Preliminary Datasheet

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