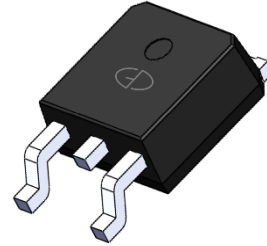


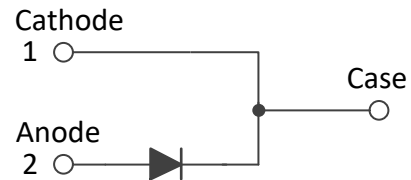
## 10A, 650V Silicon Carbide Schottky Diode

### 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



**TO-252(D-PAK)**



### 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 2500 units per reel

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

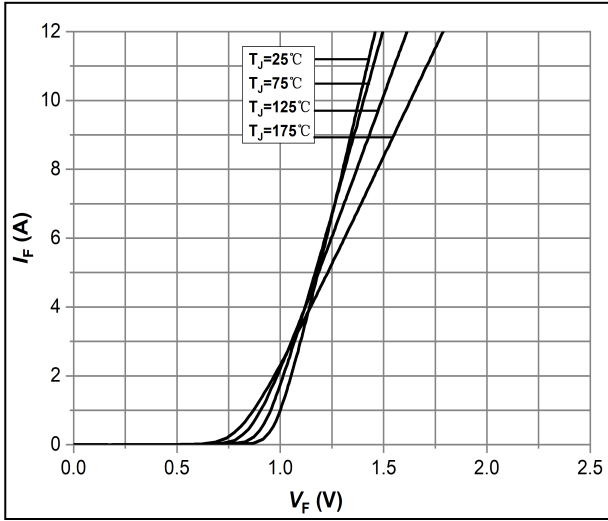
Parameter	Symbol	GS10D065SD	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	650	V
Working peak reverse voltage	V <sub>RWM</sub>	650	V
Maximum DC blocking voltage	V <sub>DC</sub>	650	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	T <sub>C</sub> =25°C	33
		T <sub>C</sub> =135°C	15
		T <sub>C</sub> =153°C	10
Peak forward surge current, t <sub>p</sub> =10ms, Half Sine Pulse	I <sub>FSM</sub>	70	A
Power dissipation	P <sub>tot</sub>	T <sub>C</sub> =25°C	75
		T <sub>C</sub> =110°C	32
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	$V_F$	$I_F=10\text{A}, T_J=25^\circ\text{C}$	1.40	1.70	V
		$I_F=10\text{A}, T_J=175^\circ\text{C}$	1.65	2.20	
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	200	
Total capacitive charge	$Q_C$	$V_R=400\text{V}, I_F=10\text{A}, T_J=25^\circ\text{C}$	36	-	nC
Total capacitance	C	$V_R=400\text{V}, T_J=25^\circ\text{C}, f=1\text{MHz}$	52	-	pF

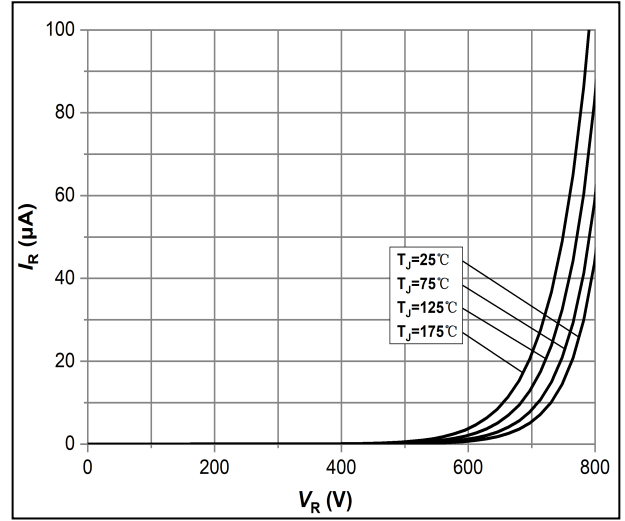
<b>Thermal-Mechanical Specifications</b> ( $T_A=25^\circ\text{C}$ unless otherwise noted)				
Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.0	-	$^\circ\text{C}/\text{W}$

## Ratings and Characteristics Curves

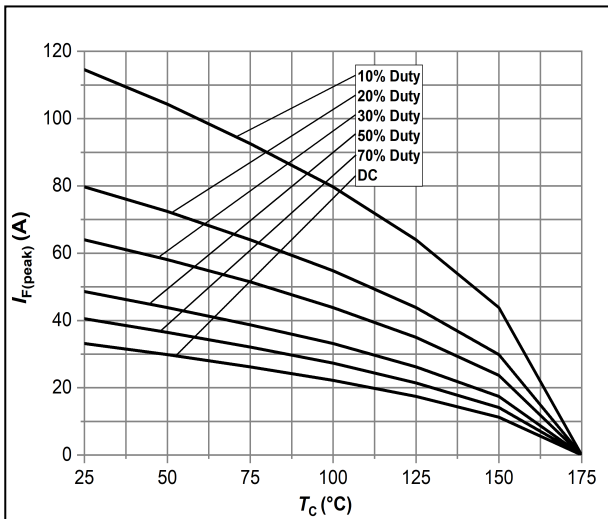
( $T_A = 25^\circ\text{C}$  unless otherwise noted)



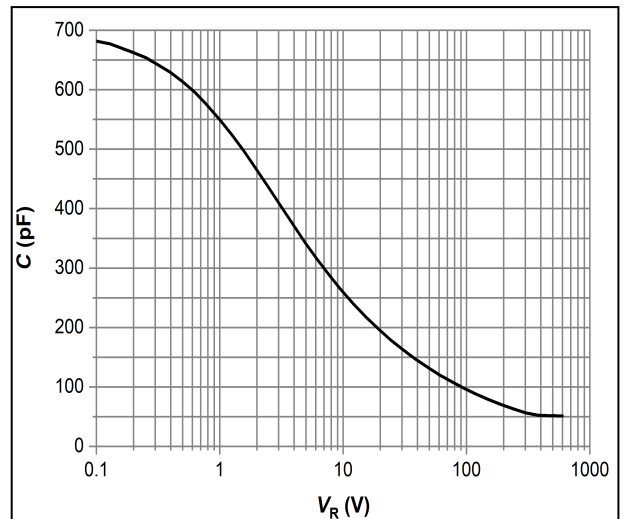
**Fig.1 -Forward Characteristics**



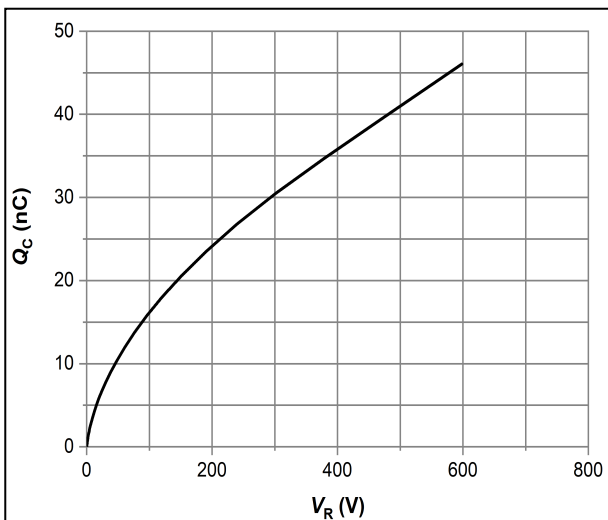
**Fig.2 -Reverse Characteristics**



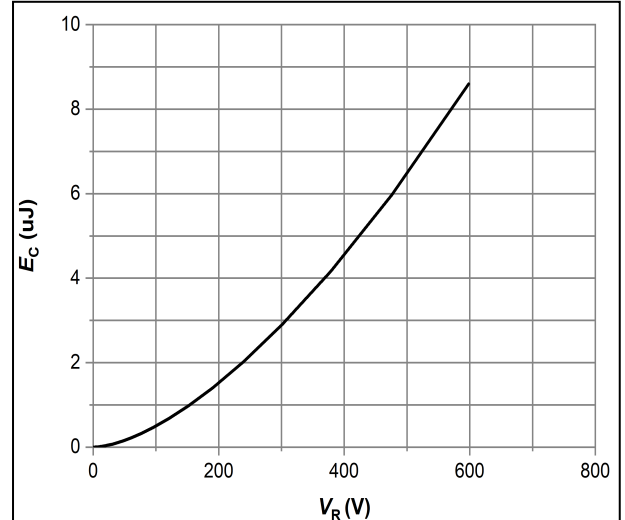
**Fig.3 -Current Derating**



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



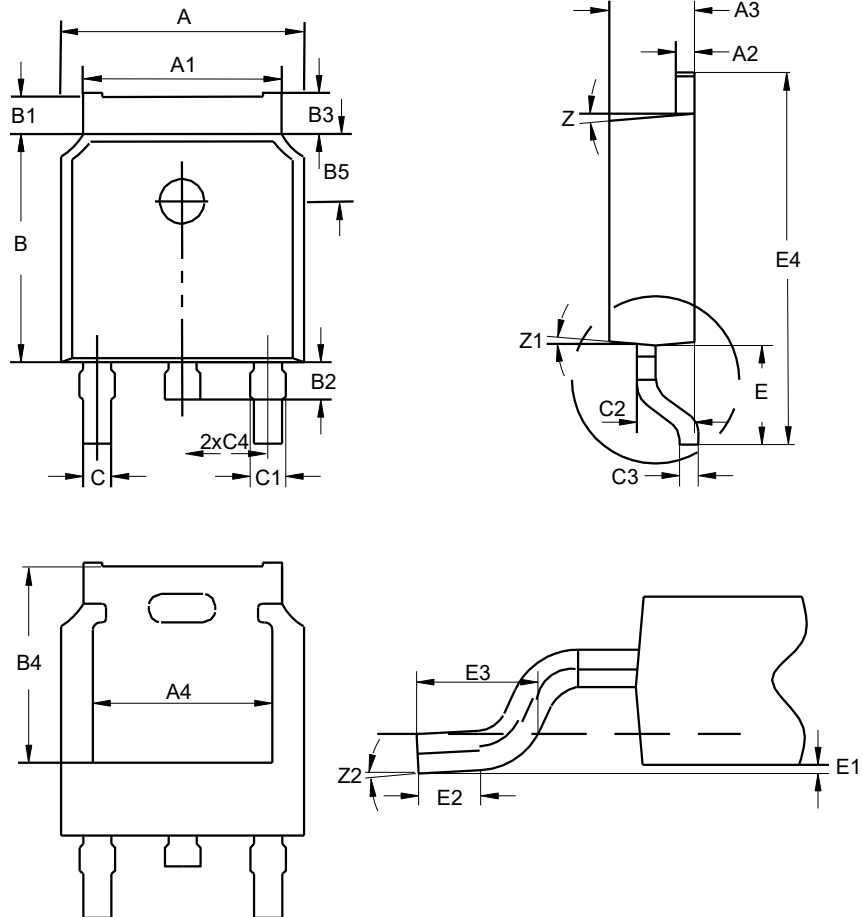
**Fig.5 -Total Capacitance Charge vs. Reverse Voltage**



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

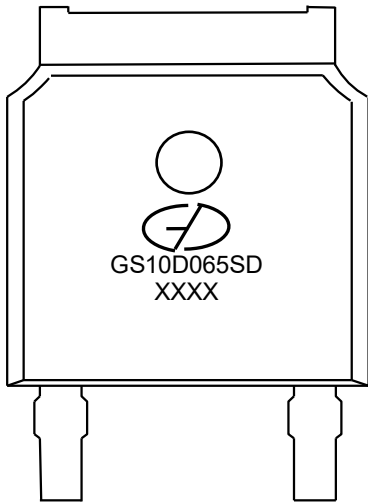
**Package Outline Dimensions** (Unit: millimeters)


**TO-252 (D-PAK)**



TO-252							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	6.34	6.54	6.74	C1	0.65	0.85	1.05
A1	5.1	5.3	5.5	C2	1.34	1.54	1.74
A2	0.4	0.5	0.6	C3	0.4	0.5	0.6
A3	2.08	2.28	2.48	C4	2.09	2.29	2.49
A4	4.6	4.8	5.0	E	2.6	2.9	3.2
B	5.8	6.1	6.4	E1	0		0.15
B1	0.82	1.02	1.22	E2	0.7		
B2	0.8	1	1.2	E3	1.3	1.6	1.9
B3	0.9	1.1	1.3	E4	9.8	10.1	10.4
B4	5.05	5.25	5.45	Z		7°	
B5	7.83	8.03	8.23	Z1		7°	
C	0.56	0.76	0.96	Z2	0°		10°

**Marking Outline**



1. Logo Mark: 
2. Part Name: GS10D065SD
3. Data code: XXXX

**Revision History**

Document Version	Date of release	Description of changes
Rev.A	2023.01.12	Preliminary Datasheet

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