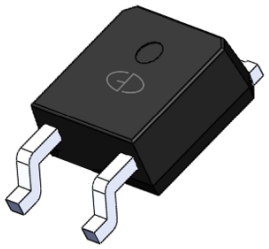
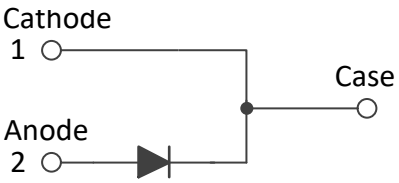
4A, 650V Silicon Carbide Schottky Diode

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_A=25℃ unless otherwise noted)

Parameter		Symbol	GS04D065SD	Unit
Maximum repetitive peak reverse voltage		V_{RRM}	650	V
Working peak reverse voltage		V_{RWM}	650	V
Maximum DC blocking voltage		V_{DC}	650	V
Maximum average forward rectified current	T_C=25°C	$I_{F(AV)}$	13	A
	T_C=125°C		6	
	T_C=153°C		4	
Peak forward surge current，tp=10ms,Half Sine Pulse		I_{FSM}	34	A
Power dissipation	T_C=25°C	P_{tot}	51	W
	T_C=110°C		22	
Operating junction temperature range		T_J	-55 to +175	°C
Storage temperature range		T_{STG}	-55 to +175	°C

Electrical Specifications (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage	V_F	I_F=4A, T_J=25℃	1.40	1.65	V
		I_F=4A, T_J=175℃	1.80	2.40	
Reverse leakage current @rated V_R	I_R	V_R=650V, T_J=25℃	2	30	μA
		V_R=650V, T_J=175℃	10	100	
Total capacitive charge	Q_C	V_R=400V, I_F=4A, T_J=25℃	11	-	nC
Total capacitance	C	V_R=400V, T_J=25℃, f=1MHz	17	-	pF

Thermal-Mechanical Specifications (T_A=25℃ unless otherwise noted)

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.90	-	℃ /W

Ratings and Characteristics Curves

(T_A = 25℃ unless otherwise noted)

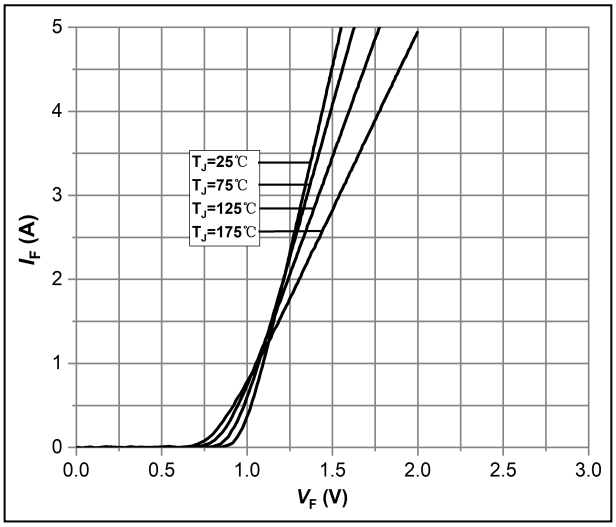


Fig.1 –Forward Characteristics

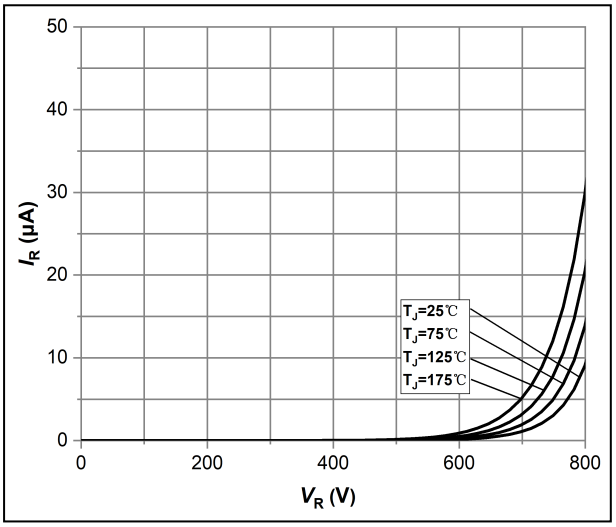


Fig.2 –Reverse Characteristics

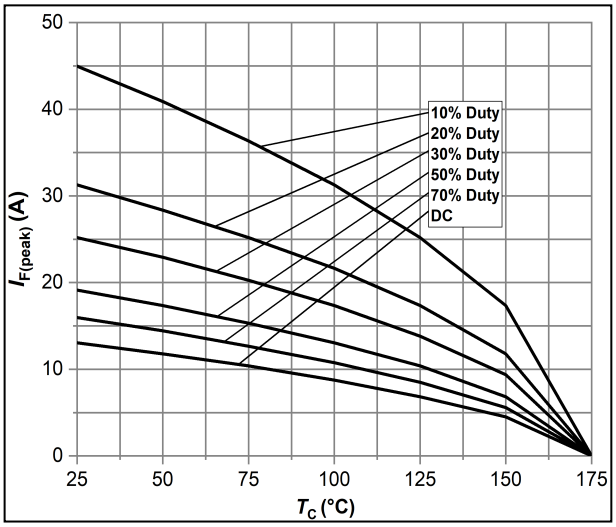


Fig.3 –Current Derating

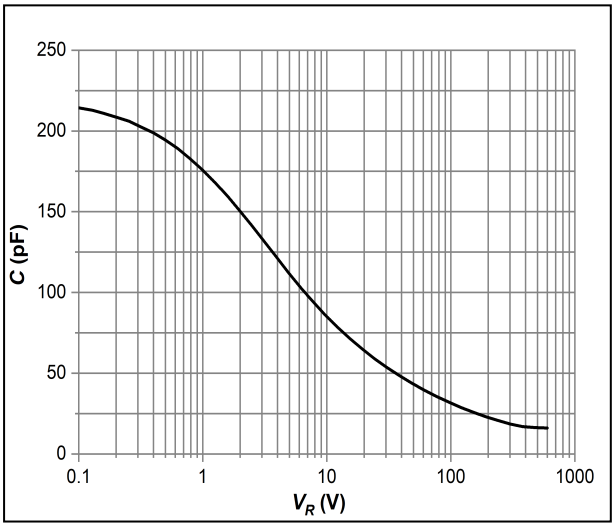


Fig.4 –Capacitance vs. Reverse Voltage

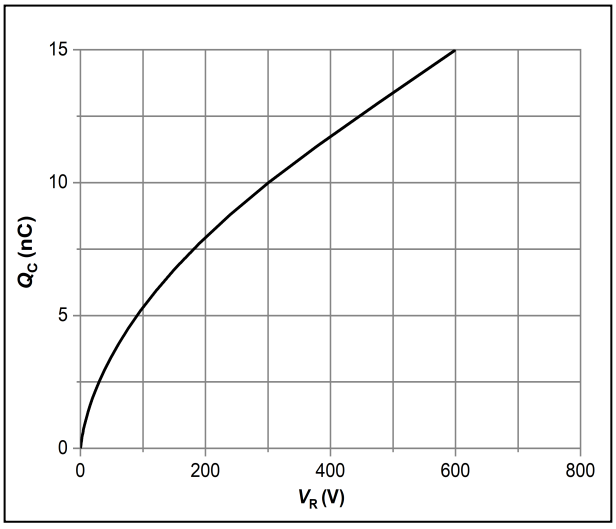


Fig.5 –Total Capacitance Charge vs. Reverse Voltage

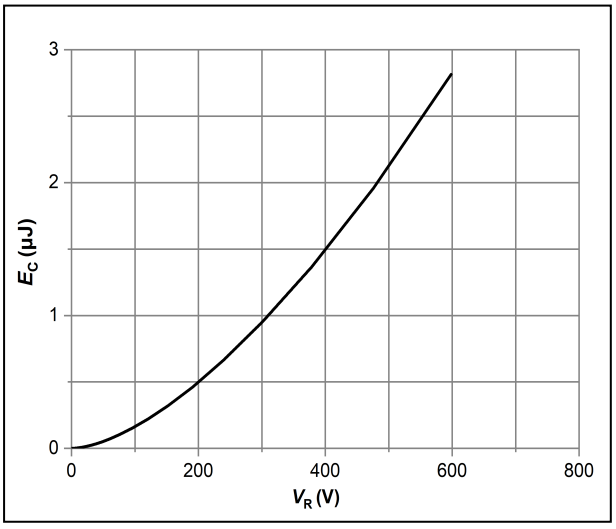
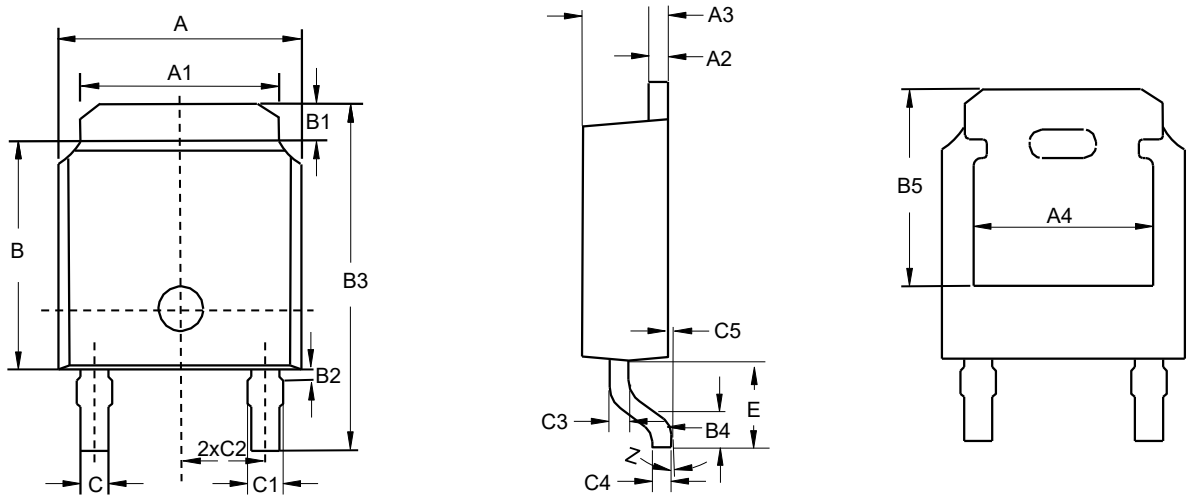


Fig.6 –Typical Capacitance Stored Energy

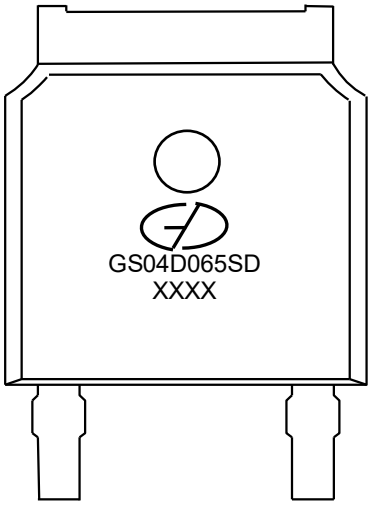
Package Outline Dimensions (Unit: millimeters)

TO-252（D-PAK）



TO-252							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	6.40	6.60	6.731	B5	5.21	--	--
A1	5.21	5.34	5.46	C	0.64	0.76	0.88
A2	0.46	0.50	0.58	C1	0.77	0.84	1.14
A3	2.20	2.30	2.38	C2	2.886BSC		
A4	4.40	--	--	C3	0.46	0.50	0.60
B	6.00	6.10	6.223	C4	0.508BSC		
B1	0.89	--	1.27	C5	0	--	0.127
B2	--	--	--	E	2.743REF		
B3	9.40	10.0	10.40	Z	0°		10°
B4	1.40	1.52	1.77				

Marking Outline



1. Logo Mark:
2. Part Name: GS04D065SD
3. Data code: XXXX

Revision History

Document Version	Date of release	Description of changes
Rev.A	2022.06.16	Preliminary Datasheet

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