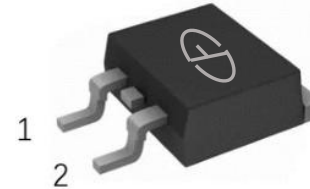


12A, 650V Silicon Carbide Schottky Diode

Features

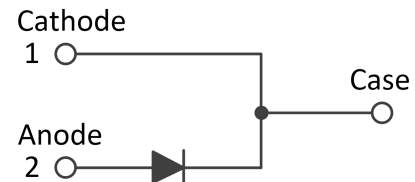
- High-Frequency Operation
- Zero Reverse Recovery Current
- Temperature-Independent Switching
- Extremely Fast Switching
- Plastic package has underwriters Laboratory Flammability Classification 94V
- Halogen-free according to IEC 61249-2-21



TO-263-2

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 800 units per plastic tube

Maximum Ratings & Electrical Characteristics (T_A=25°C unless otherwise noted)

Parameter	Symbol	GS12D065SW	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	30	A
	T _C =135°C	15	
	T _C =151°C	12	
Peak forward surge current, t _p =10ms, Half Sine Pulse	I _{FSM}	90	A
Power dissipation	T _C =25°C	92	W
	T _C =110°C	40	
Operating junction temperature range	T _J	-55 to +175	°C
Storage temperature range	T _{STG}	-55 to +175	°C

Electrical Specifications (T_A=25°C unless otherwise noted)

Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage	V _F	I _F =12A, T _J =25°C	1.35	1.55	V
		I _F =12A, T _J =175°C	1.5	-	
Reverse leakage current @rated V _R	I _R	V _R =650V, T _J =25°C	5	50	μA
		V _R =650V, T _J =175°C	10	100	
Total capacitive charge	Q _C	V _R =400V, T _J =25°C	27	-	nC
Total capacitance	C	V _R =400V, T _J =25°C, f=1MHz	43	-	pF

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

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	1.62	-	°C /W

Ratings and Characteristics Curves

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

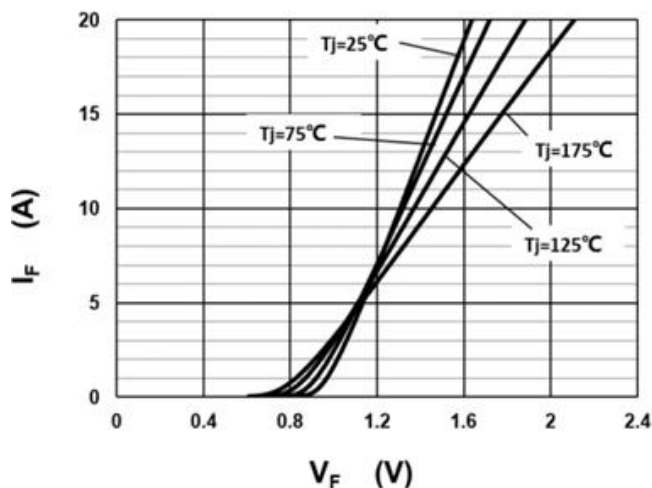


Fig.1 –Forward Characteristics

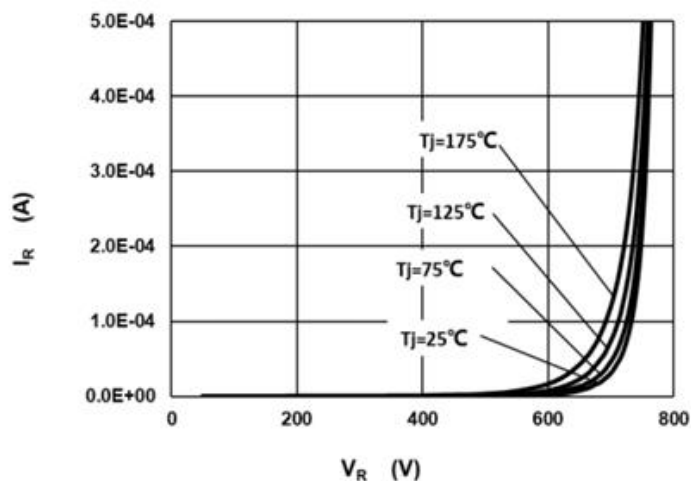


Fig.2 –Reverse Characteristics

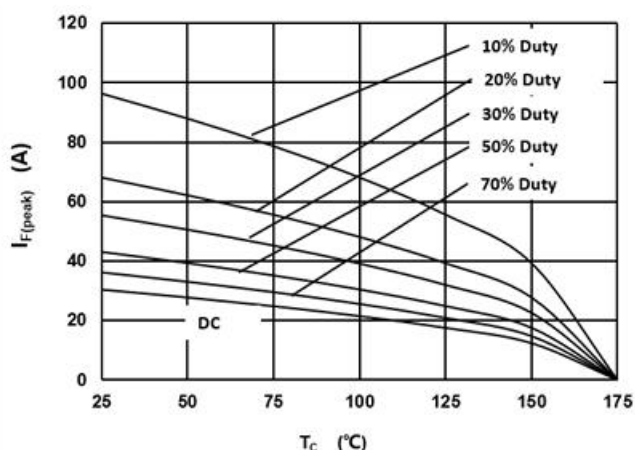


Fig.3 –Current Derating

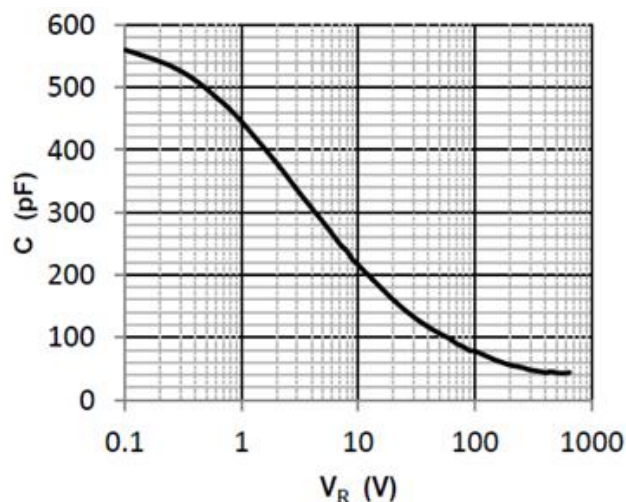


Fig.4 –Capacitance vs. Reverse Voltage

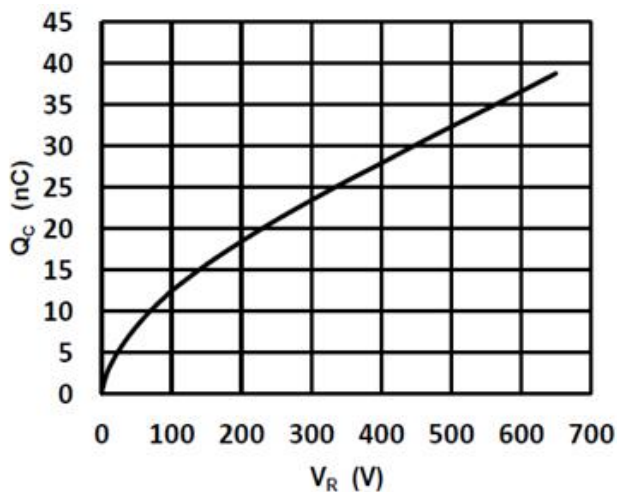


Fig.5 –Total Capacitance Charge vs. Reverse Voltage

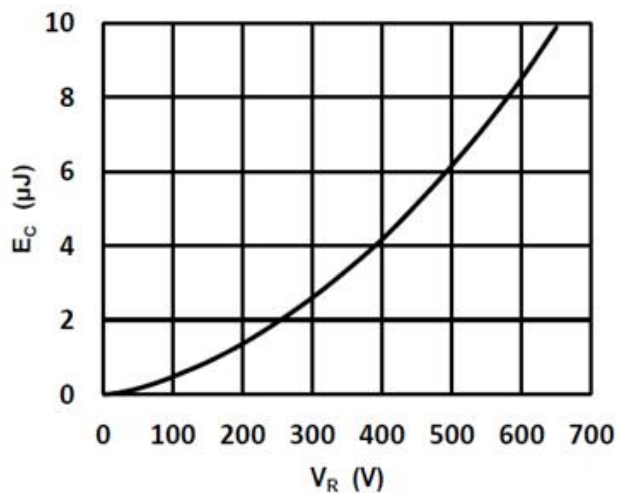
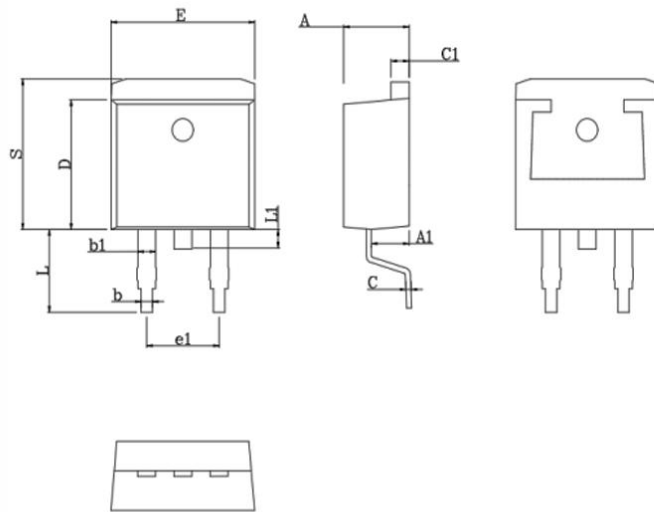


Fig.6 –Typical Capacitance Stored Energy

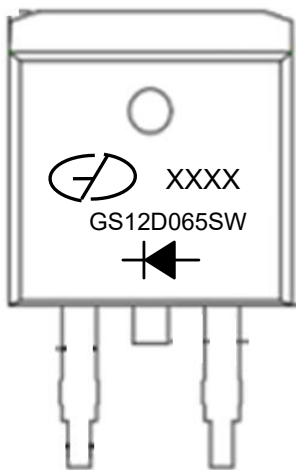
Package Outline Dimensions (Unit: millimeters)

TO-263-2



SYMBOL	mm		
	Min	Nom	Max
A	4.55	4.60	4.65
A1	2.60	2.65	2.70
C	0.33	0.38	0.50
C1	1.22	1.27	1.37
E	10.00	10.12	10.30
D	8.50	8.60	8.70
S	9.80	10.00	10.20
L	4.80	5.0	5.20
L1	1.20	1.30	1.40
b	0.76	0.81	0.86
b1	1.20	1.25	1.30
e1	4.93	5.08	5.23

Marking Outline



1. Logo Mark: 
2. Data code: XXXX
3. Part Name: GS12D065SW
4. Polarity : 

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