

50A, 1200V Silicon Carbide Schottky Diode

Features

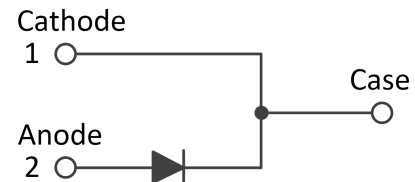
- High-Frequency Operation
- Zero Reverse Recovery Current
- Temperature-Independent Switching
- Extremely Fast Switching
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-247AC

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 30 units per plastic tube

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

Parameter	Symbol	GS50D120SP	Unit
Maximum repetitive peak reverse voltage	V _{RRM}	1200	V
Working peak reverse voltage	V _{RWM}	1200	V
Maximum DC blocking voltage	V _{DC}	1200	V
Maximum average forward rectified current	I _{F(AV)}	T _C =25°C	145
		T _C =135°C	75
		T _C =156°C	50
Peak forward surge current, t _p =10ms, Half Sine Pulse	I _{FSM}	350	A
Power dissipation	P _{tot}	T _C =25°C	714
		T _C =110°C	305
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 =50A, T _J =25°C	1.45	1.8	V
		I _F =50A, T _J =175°C	2.2	-	
Reverse leakage current @rated V _R	I _R	V _R =1200V, T _J =25°C	15	100	μA
		V _R =1200V, T _J =175°C	40	200	
Total capacitive charge	Q _C	V _R =800V, T _J =25°C	269	-	nC
Total capacitance	C	V _R =800V, T _J =25°C, f=1MHz	203	-	pF

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

Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	0.21	-	°C /W

Ratings and Characteristics Curves

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

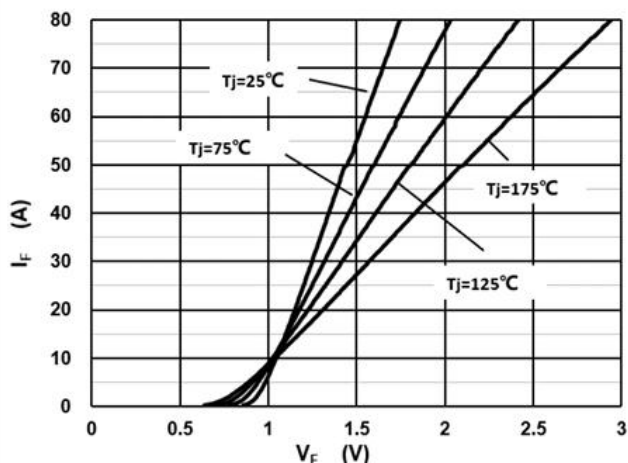


Fig.1 –Forward Characteristics

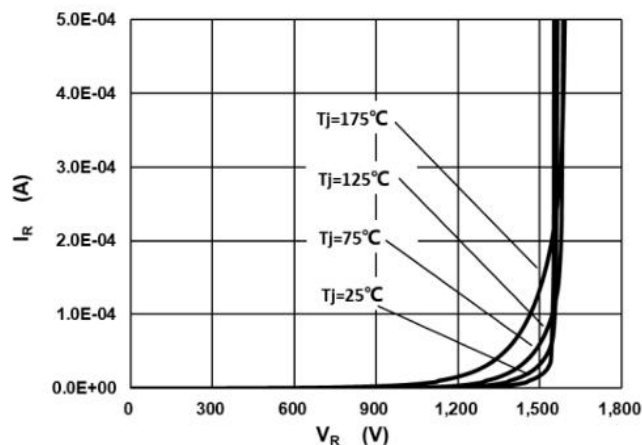


Fig.2 –Reverse Characteristics

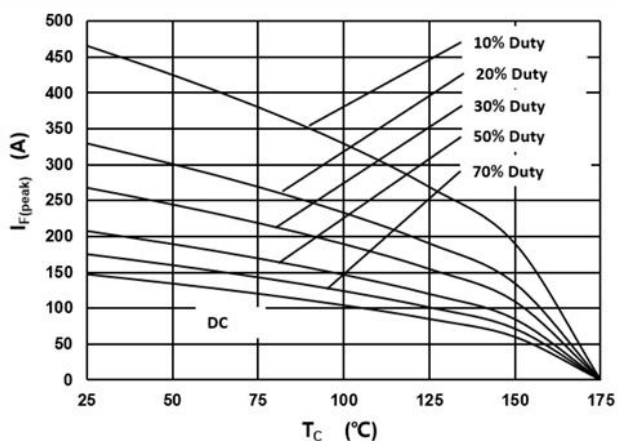


Fig.3 –Current Derating

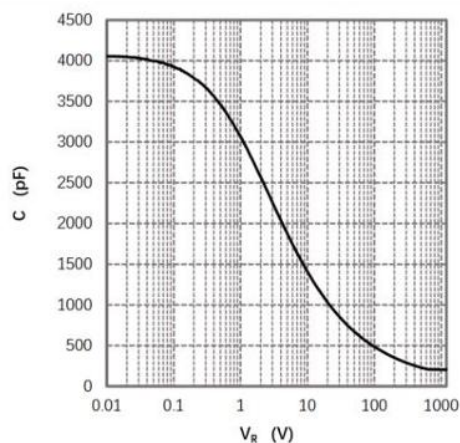


Fig.4 –Capacitance vs. Reverse Voltage

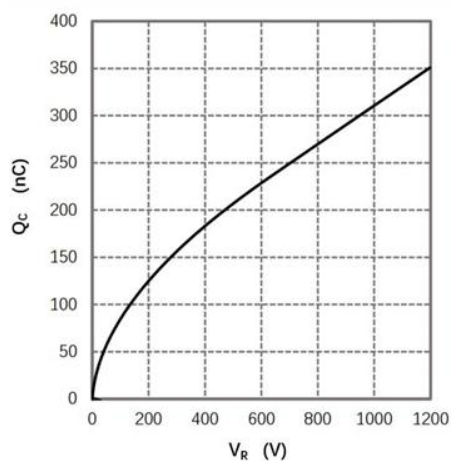


Fig.5 –Total Capacitance Charge vs. Reverse Voltage

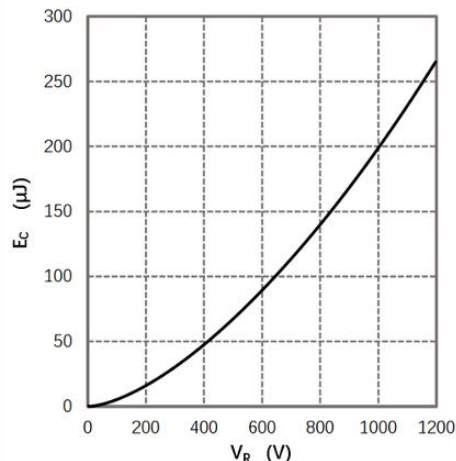
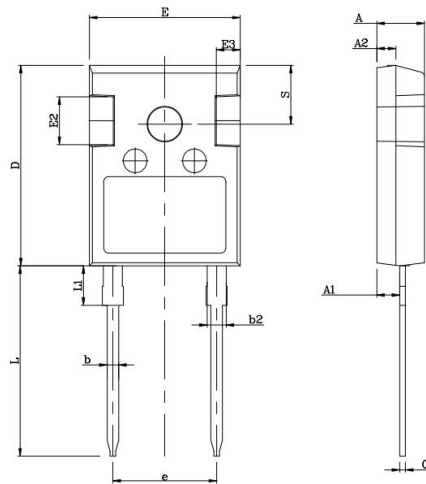


Fig.6 –Typical Capacitance Stored Energy

Package Outline Dimensions (Unit: millimeters)

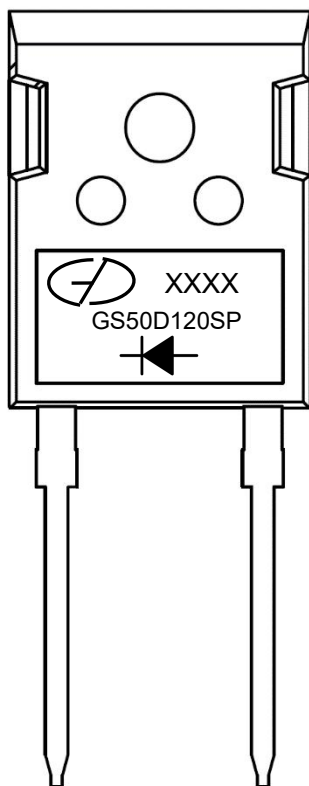
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COMMON DIMENSIONS

SYMBOL	mm		
	Min	Nom	Max
A	4.80	5.00	5.20
A1	2.23	2.41	2.59
A2	1.85	2.00	2.15
b	1.11	1.21	1.36
b2	1.91	2.01	2.21
c	0.51	0.61	0.75
D	20.80	21.00	21.30
D1	16.25	16.55	16.85
E	15.50	15.80	16.10
E1	13.00	13.26	13.56
E2	4.80	5.00	5.20
E3	2.30	2.50	2.70
e	10.88BSC		
L	19.82	19.92	20.22
L1	3.94	4.12	4.30
OP	3.66	3.68	3.75
OP1	7.08	7.19	7.30
S	6.15BSC		

Marking Outline



1. Logo Mark: 
2. Data code: XXXX
3. Part Name: GS50D120SP
4. Polarity : 

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