

## 5A, 1200V Silicon Carbide Schottky Diode

### Features

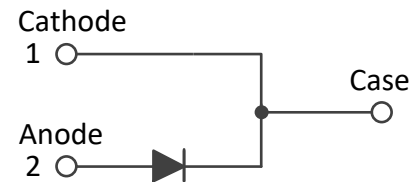
- High-Frequency Operation
- Zero Reverse Recovery Current
- Temperature-Independent Switching
- Extremely Fast Switching
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



**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 50 units per plastic tube

Maximum Ratings & Electrical Characteristics (T <sub>A</sub> =25°C unless otherwise noted)				
Parameter		Symbol	GS05D120SP	Unit
Maximum repetitive peak reverse voltage		V <sub>RRM</sub>	1200	V
Working peak reverse voltage		V <sub>RWM</sub>	1200	V
Maximum DC blocking voltage		V <sub>DC</sub>	1200	V
Maximum average forward rectified current	T <sub>C</sub> =25°C	I <sub>F(AV)</sub>	20	A
	T <sub>C</sub> =135°C		9.7	
	T <sub>C</sub> =158°C		5	
Peak forward surge current, t <sub>p</sub> =10ms, Half Sine Pulse		I <sub>FSM</sub>	55	A
Power dissipation	T <sub>C</sub> =25°C	P <sub>tot</sub>	99	W
	T <sub>C</sub> =110°C		42	
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 <sub>A</sub> =25°C unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage	V <sub>F</sub>	I <sub>F</sub> =5A, T <sub>J</sub> =25°C	1.38	1.70	V
		I <sub>F</sub> =5A, T <sub>J</sub> =175°C	2.00	2.50	
Reverse leakage current @rated V <sub>R</sub>	I <sub>R</sub>	V <sub>R</sub> =1200V, T <sub>J</sub> =25°C	2	100	μA
		V <sub>R</sub> =1200V, T <sub>J</sub> =175°C	11	300	
Total capacitive charge	Q <sub>C</sub>	V <sub>R</sub> =800V, I <sub>F</sub> =5A, T <sub>J</sub> =25°C	37	-	nC
Total capacitance	C	V <sub>R</sub> =800V, T <sub>J</sub> =25°C, f=1MHz	26	-	pF

<b>Thermal-Mechanical Specifications</b> (T <sub>A</sub> =25°C unless otherwise noted)				
Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	1.52	-	°C /W

## Ratings and Characteristics Curves

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

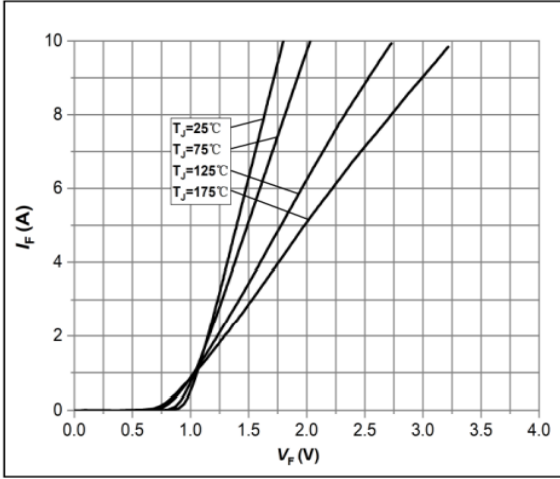


Fig.1 -Forward Characteristics

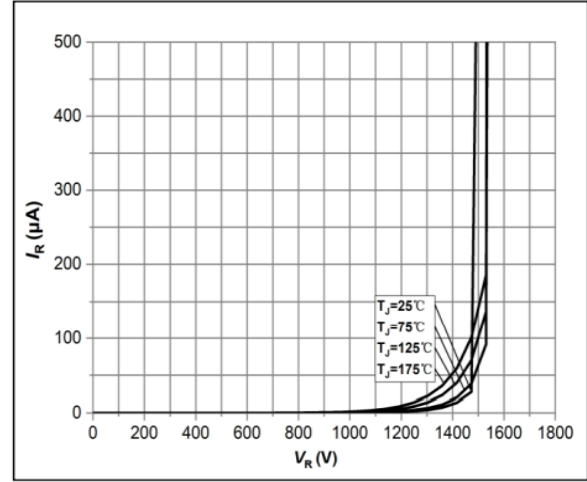


Fig.2 -Reverse Characteristics

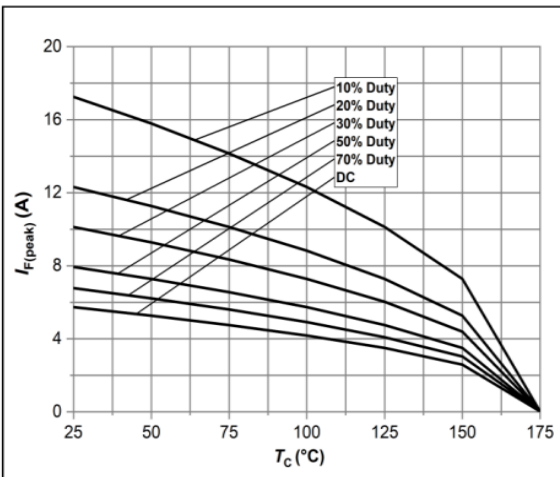


Fig.3 -Current Derating

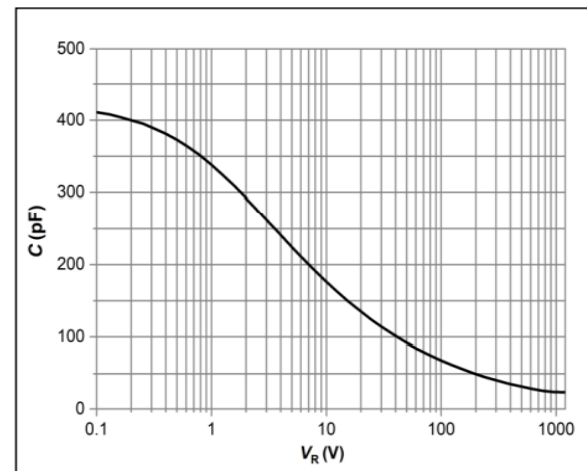


Fig.4 -Capacitance vs. Reverse Voltage

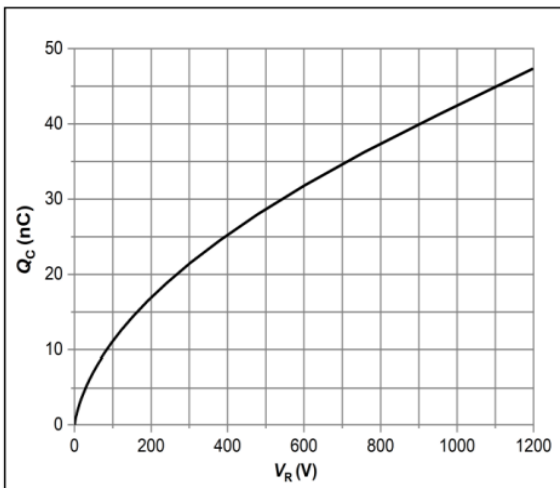


Fig.5 -Total Capacitance Charge vs. Reverse Voltage

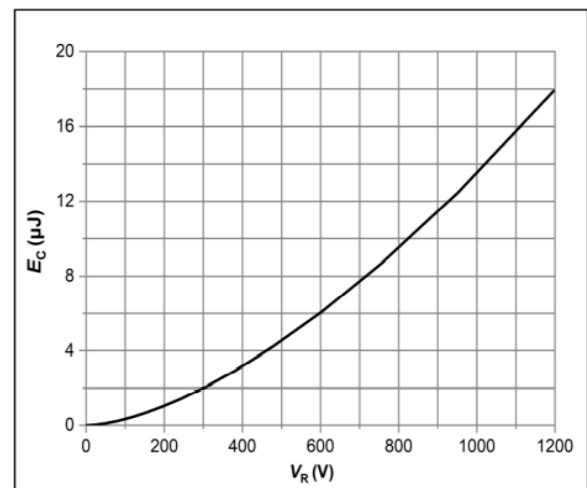
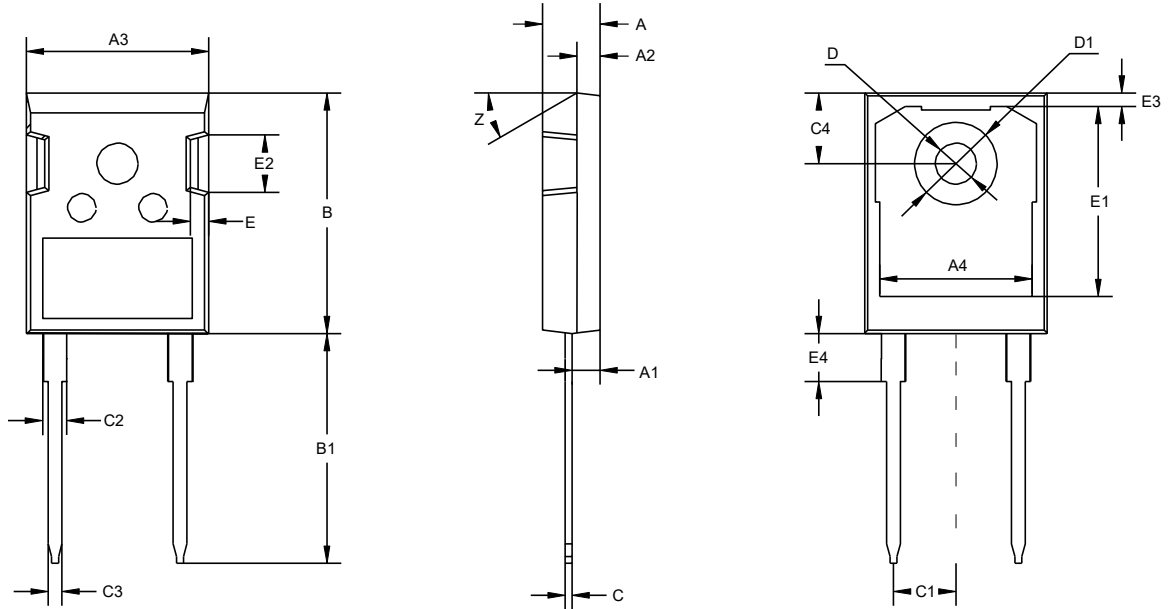


Fig.6 -Typical Capacitance Stored Energy

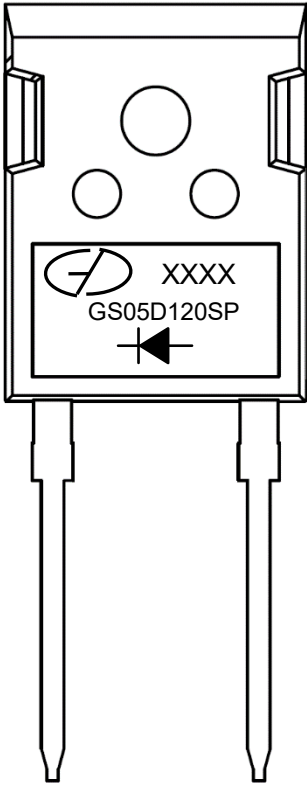
**Package Outline Dimensions** (Unit: millimeters)


**TO-247AC**



TO-247AC							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	4.7	5	5.2	C3	1.1	1.2	1.3
A1	2.3		2.5	C4	6.04	6.15	6.30
A2	1.9	2	2.1	D	3.5	3.6	3.7
A3	15.48	15.88	16.28	D1	7	7.19	7.4
A4	13.06	13.26	13.56	E	1.5	1.6	1.7
B	20.8	20.95	21.1	E1		16.55	
B1	19.8	20	20.32	E2	4.9	5.0	5.1
C	0.5	0.6	0.7	E3	0.95	1.17	1.35
C1	5.34	5.44	5.54	E4		4.17	4.5
C2		2		Z		30°	

**Marking Outline**



1. Logo Mark: 
2. Data code: XXXX
3. Part Name:GS05D120SP
4. Polarity : 

**Revision History**

Document Version	Date of release	Description of changes
Rev.A	2022.06.22	Preliminary Datasheet

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