

20A, 650V Silicon Carbide Schottky Diode

Features

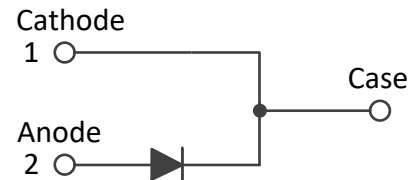
- High-Frequency Operation
- Zero Reverse Recovery Current
- Temperature-Independent Switching
- Extremely Fast Switching
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-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 _A =25°C unless otherwise noted)				
Parameter	Symbol	GS20D650SP	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	55	A	
	T _C =135°C	24		
	T _C =145°C	20		
Peak forward surge current, t _p =10ms, Half Sine Pulse	I _{FSM}	160	A	
Power dissipation	T _C =25°C	166	W	
	T _C =110°C	72		
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 =20A, T _J =25°C	1.47	1.70	V
		I _F =20A, T _J =175°C	1.65	2.40	
Reverse leakage current @rated V _R	I _R	V _R =650V, T _J =25°C	10	100	μA
		V _R =1200V, T _J =175°C	50	300	
Total capacitive charge	Q _C	V _R =400V, I _F =20A, T _J =25°C	68	-	nC
Total capacitance	C	V _R =400V, T _J =25°C, f=1MHz	111	-	pF

Thermal-Mechanical Specifications (T _A =25°C unless otherwise noted)				
Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	R _{θJC}	0.90	-	°C /W

Ratings and Characteristics Curves

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

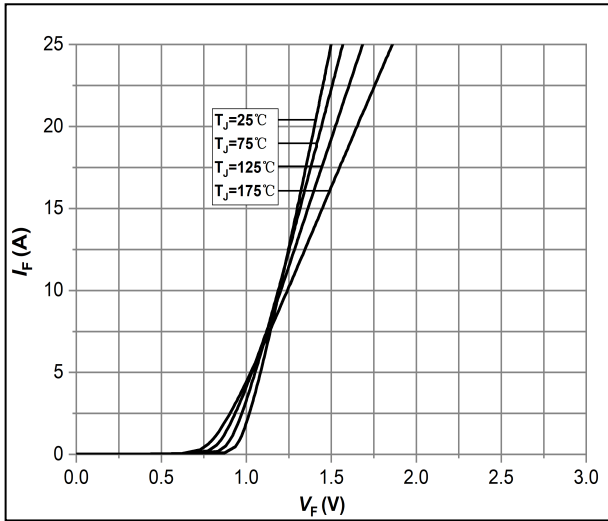


Fig.1 -Forward Characteristics

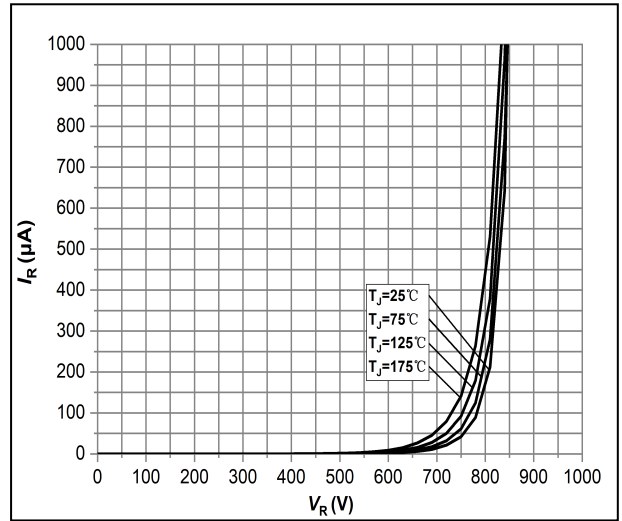


Fig.2 -Reverse Characteristics

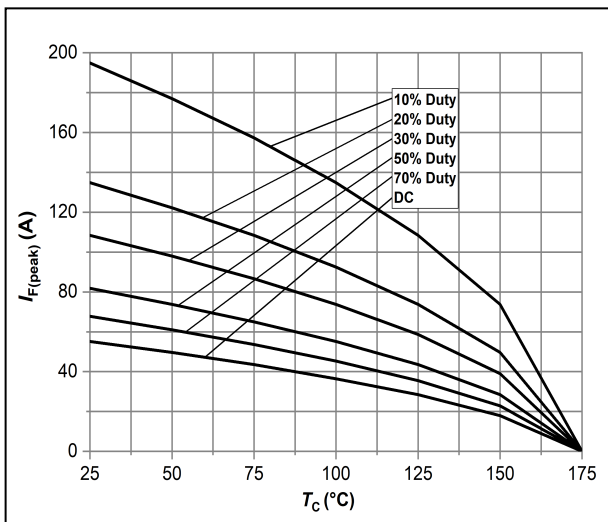


Fig.3 -Current Derating

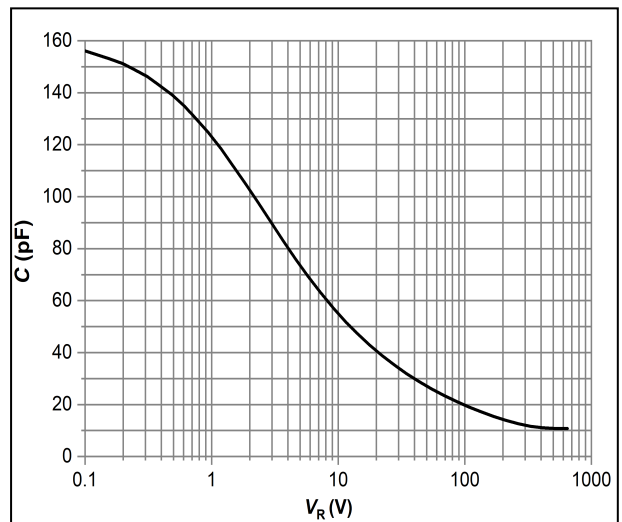


Fig.4 -Capacitance vs. Reverse Voltage

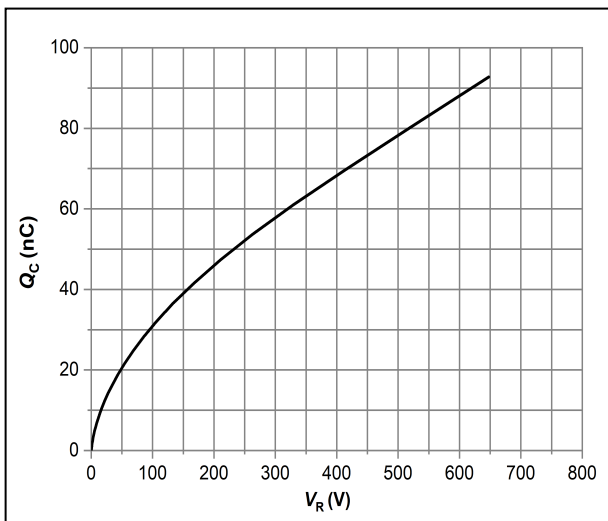


Fig.5 -Total Capacitance Charge vs. Reverse Voltage

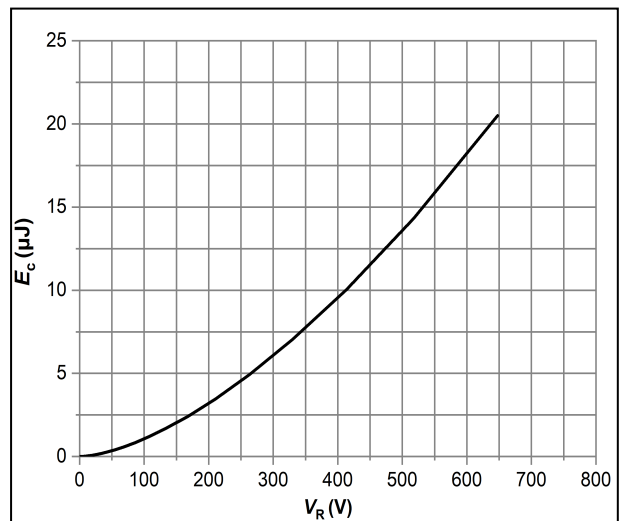
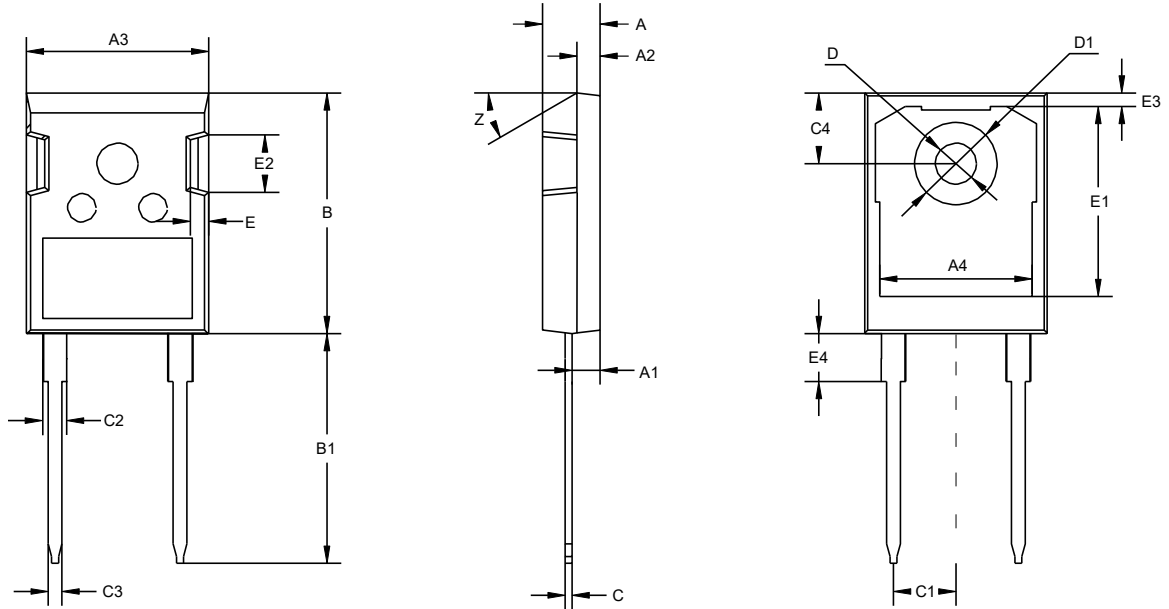


Fig.6 -Typical Capacitance Stored Energy

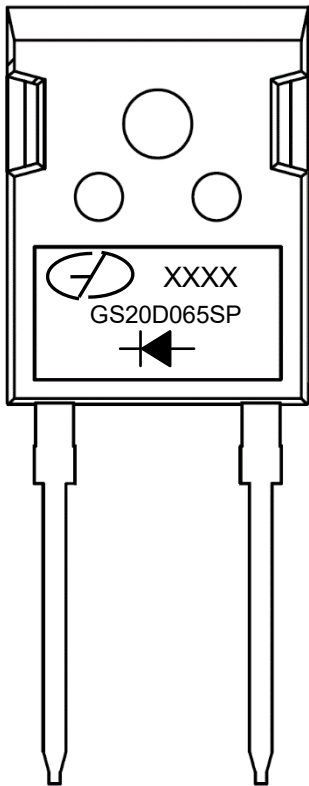
Package Outline Dimensions (Unit: millimeters)

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:GS20D065SP
4. Polarity : 

Revision History

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

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