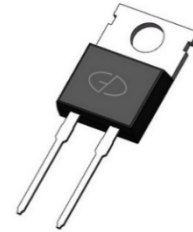


20A, 650V Silicon Carbide Schottky Diode

Features

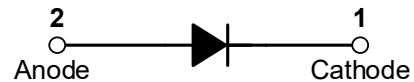
- High-Frequency Operation
- Zero Reverse Recovery Current
- Temperature-Independent Switching
- Extremely Fast Switching
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-220AC

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	GS20D065ST	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	I _{F(AV)}	T _C =25°C	63
		T _C =135°C	28
		T _C =152°C	20
Peak forward surge current, t _p =10ms, Half Sine Pulse	I _{FSM}	160	A
Power dissipation	P _{tot}	T _C =25°C	214
		T _C =110°C	92
Operating junction temperature range	T _J	-55 to +175	°C
Storage temperature range	T _{STG}	-55 to +175	°C

Electrical Specifications ($T_A=25^\circ\text{C}$ unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage	V_F	$I_F=20\text{A}, T_J=25^\circ\text{C}$	1.40	1.70	V
		$I_F=20\text{A}, T_J=175^\circ\text{C}$	1.65	2.40	
Reverse leakage current @rated V_R	I_R	$V_R=650\text{V}, T_J=25^\circ\text{C}$	10	100	μA
		$V_R=650\text{V}, T_J=175^\circ\text{C}$	50	300	
Total capacitive charge	Q_C	$V_R=400\text{V}, I_F=20\text{A}, T_J=25^\circ\text{C}$	75	-	nC
Total capacitance	C	$V_R=400\text{V}, T_J=25^\circ\text{C}, f=1\text{MHz}$	11	-	pF

Thermal-Mechanical Specifications ($T_A=25^\circ\text{C}$ unless otherwise noted)				
Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	0.70	-	$^\circ\text{C}/\text{W}$

Ratings and Characteristics Curves

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

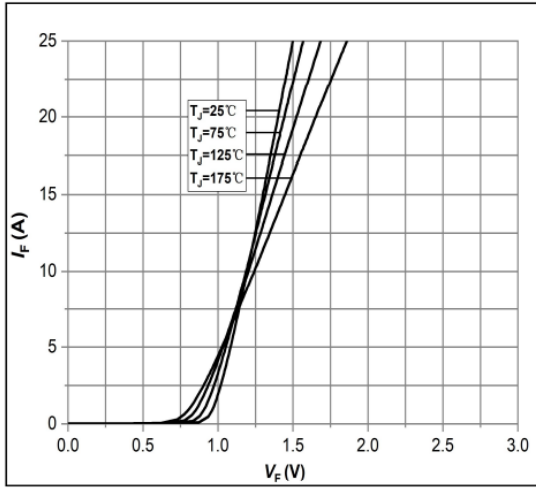


Fig.1 -Forward Characteristics

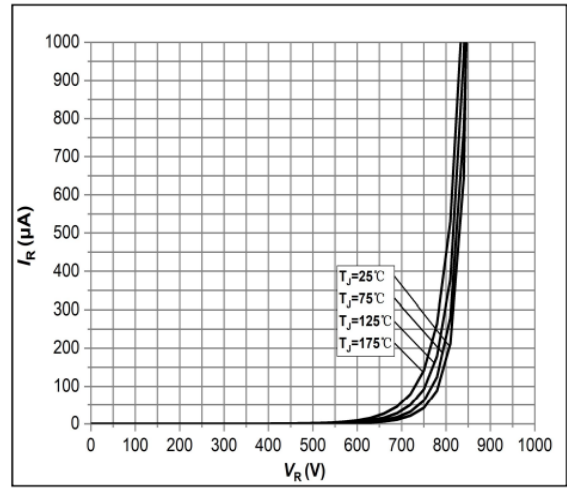


Fig.2 -Reverse Characteristics

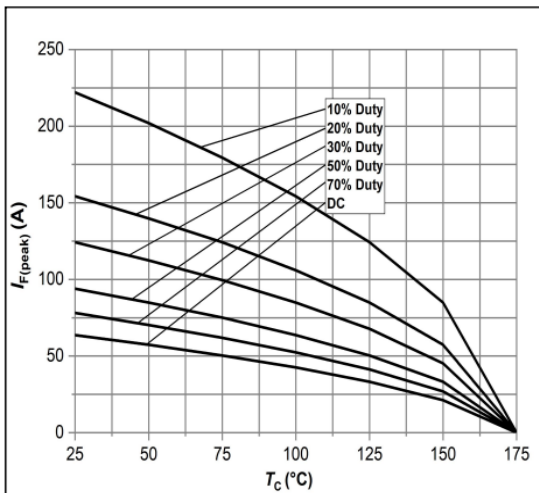


Fig.3 -Current Derating

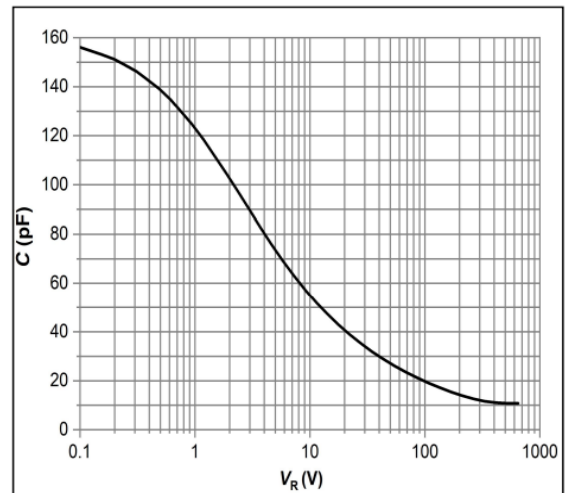


Fig.4 -Capacitance vs. Reverse Voltage

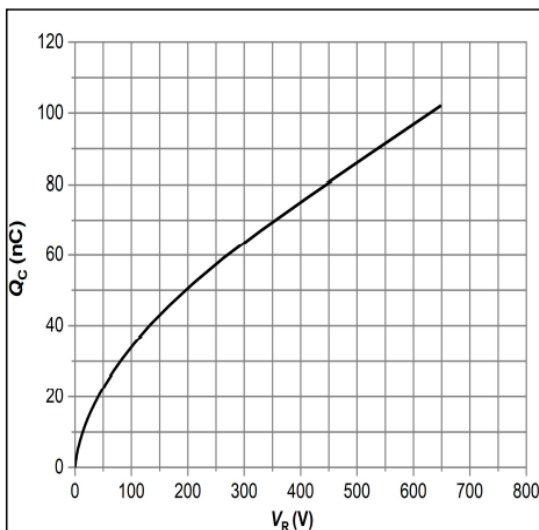


Fig.5 -Total Capacitance Charge vs. Reverse Voltage

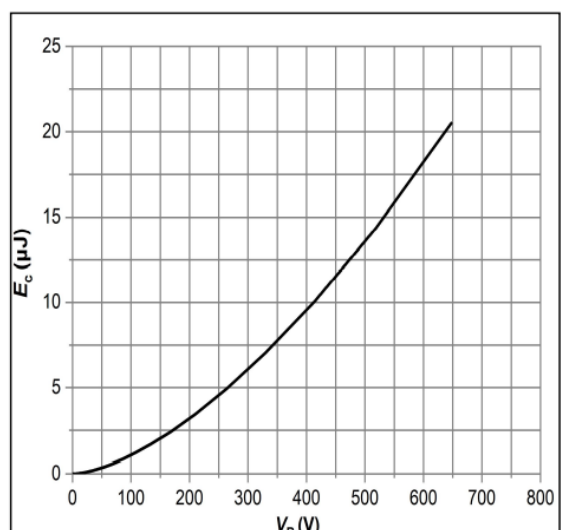
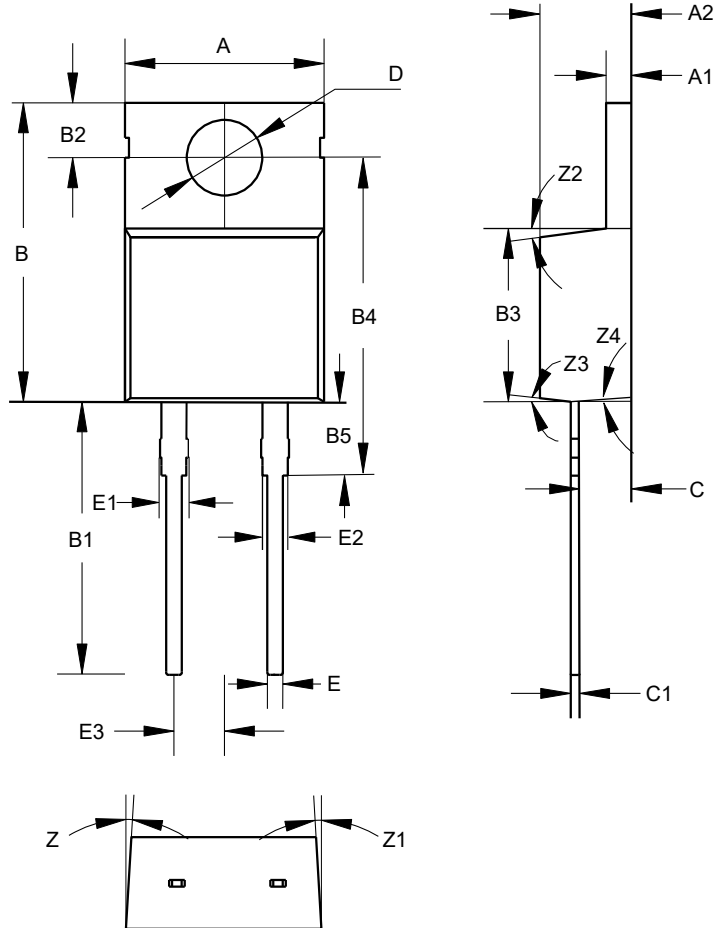


Fig.6 -Typical Capacitance Stored Energy

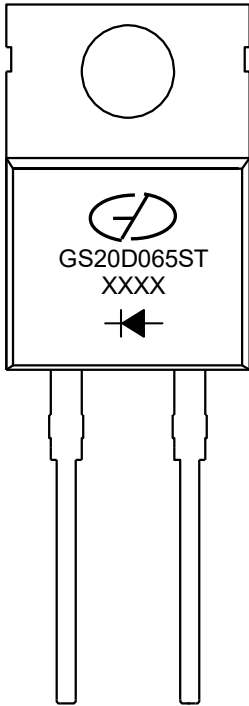
Package Outline Dimensions (Unit: millimeters)

TO-220AC



TO-220AC							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	9.8	10	10.2	D	3.7	3.8	3.9
A1	1.17	1.27	1.37	E	0.68	0.78	0.88
A2	4.5	4.6	4.7	E1	1.2	1.4	1.6
B	14.5	15	15.5	E2	1.17	1.27	1.37
B1	13.2	13.7	14.2	E3	2.44	2.54	2.64
B2	2.65	2.75	2.85	Z		3°	
B3	8.5	8.7	8.9	Z1		3°	
B4	15.5	16	16.5	Z2		7°	
B5	3.4	3.7	4.0	Z3		7°	
C	2.3	2.6	2.9	Z4		1.5°	
C1	0.28	0.38	0.48				

Marking Outline



1. Logo Mark: 
2. Part Name: GS20D065ST
3. Date Code: XXXX
4. Polarity : 

Revision History

Document Version	Date of release	Description of changes
Rev.A	2022.06.20	Preliminary Datasheet

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