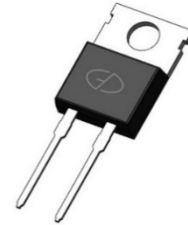


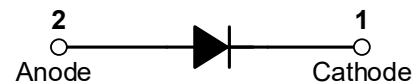
## 5A, 1200V Silicon Carbide Schottky Diode

### 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-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

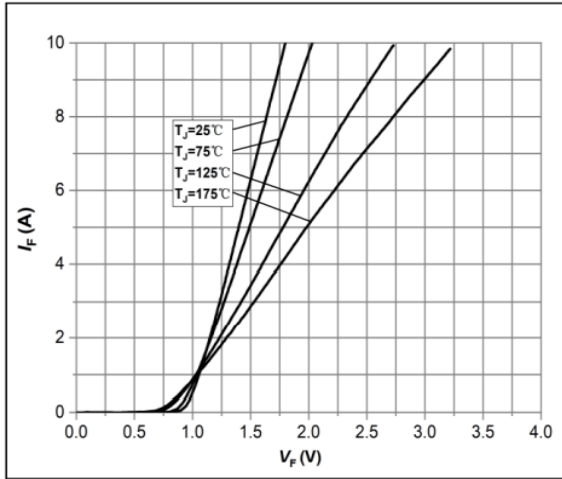
<b>Maximum Ratings &amp; Electrical Characteristics</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)				
Parameter	Symbol	GS05D120ST	Unit	
Maximum repetitive peak reverse voltage	$V_{RRM}$	1200	V	
Working peak reverse voltage	$V_{RWM}$	1200	V	
Maximum DC blocking voltage	$V_{DC}$	1200	V	
Maximum average forward rectified current	$T_C=25^{\circ}\text{C}$	20	A	
	$T_C=135^{\circ}\text{C}$	9.7		
	$T_C=158^{\circ}\text{C}$	5		
Peak forward surge current, $t_p=10\text{ms}$ , Half Sine Pulse	$I_{FSM}$	55	A	
Power dissipation	$T_C=25^{\circ}\text{C}$	117	W	
	$T_C=110^{\circ}\text{C}$	51		
Operating junction temperature range	$T_J$	-55 to +175	$^{\circ}\text{C}$	
Storage temperature range	$T_{STG}$	-55 to +175	$^{\circ}\text{C}$	

<b>Electrical Specifications</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage	$V_F$	$I_F=5\text{A}, T_J=25^{\circ}\text{C}$	1.40	1.70	V
		$I_F=5\text{A}, T_J=175^{\circ}\text{C}$	2.00	2.50	
Reverse leakage current @rated $V_R$	$I_R$	$V_R=1200\text{V}, T_J=25^{\circ}\text{C}$	1	100	$\mu\text{A}$
		$V_R=1200\text{V}, T_J=175^{\circ}\text{C}$	11	300	
Total capacitive charge	$Q_C$	$V_R=800\text{V}, I_F=5\text{A}, T_J=25^{\circ}\text{C}$	37	-	nC
Total capacitance	C	$V_R=800\text{V}, T_J=25^{\circ}\text{C}, f=1\text{MHz}$	26	-	pF

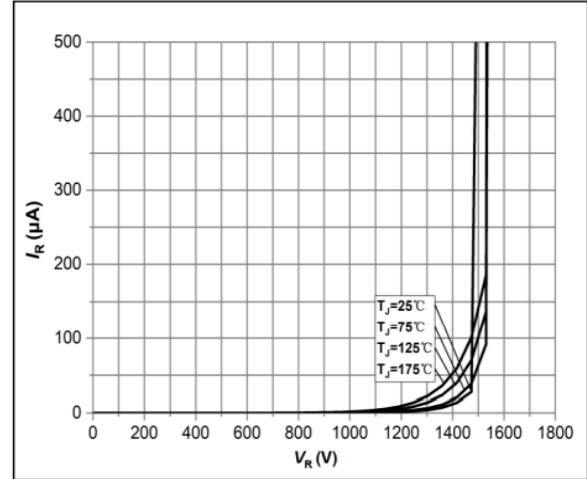
<b>Thermal-Mechanical Specifications</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)				
Parameter	Symbol	Typ	Max	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.28	-	$^{\circ}\text{C}/\text{W}$

## Ratings and Characteristics Curves

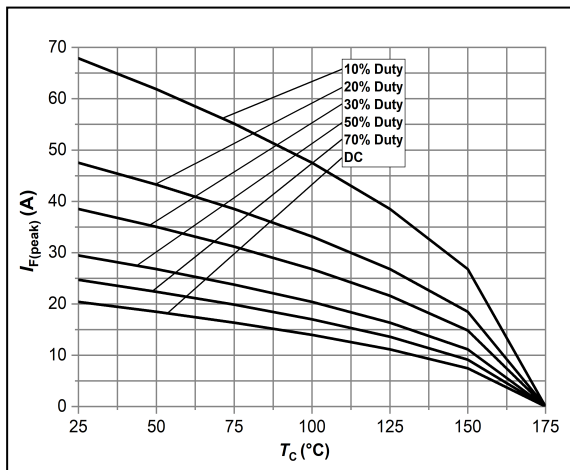
( $T_A = 25^\circ\text{C}$  unless otherwise noted)



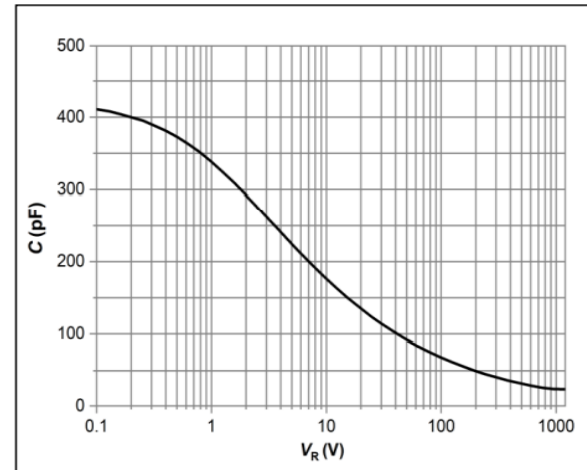
**Fig.1 -Forward Characteristics**



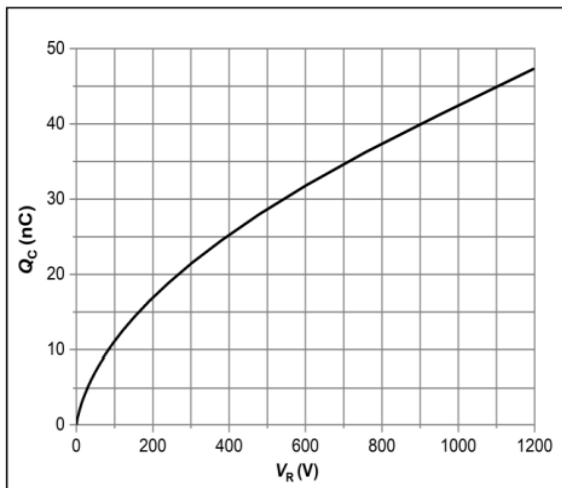
**Fig.2 -Reverse Characteristics**



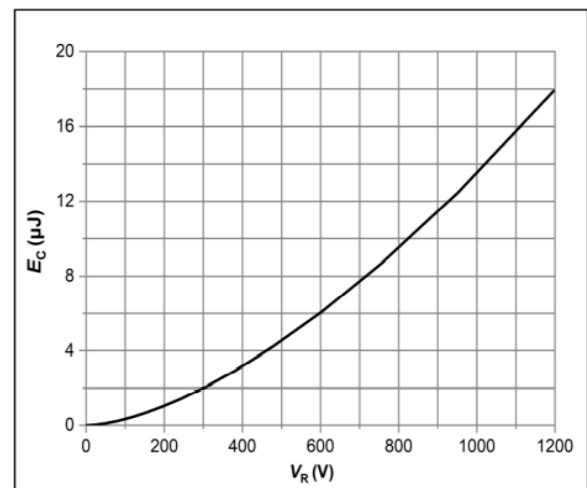
**Fig.3 -Current Derating**



**Fig.4 -Capacitance vs. Reverse Voltage**



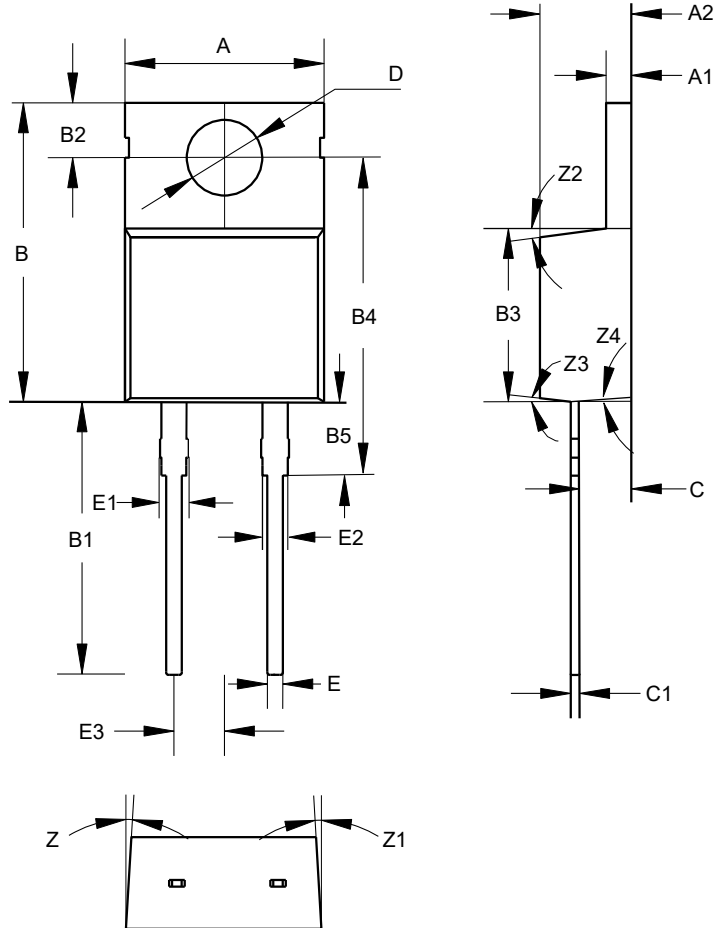
**Fig.5 -Total Capacitance Charge vs. Reverse Voltage**



**Fig.6 -Typical Capacitance Stored Energy**

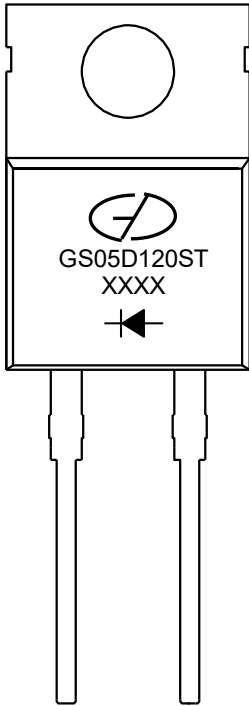
**Package Outline Dimensions** (Unit: millimeters)

**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: GS05D120ST
3. Data Code: XXXX
4. Polarity : 

## Revision History

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

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