

BCH120S20D2

Silicon Carbide Schottky Diode

1200V, 20A

Description

BCH120S20D2 utilizes Bestirpower's advanced silicon carbide diode technology. This technology combines the benefits of excellent low forward voltage and robustness. Consequently, the family is suitable for application requiring high power efficiency

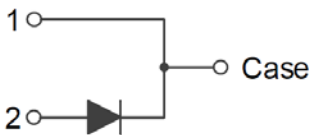
Applications

- Power Factor Correction
- EV charging station
- Solar Inverter, UPS

Features

V_{RRM}	I_F	T_C	Q_C
1200 V	20 A	150 °C	121 nC

- No reverse recovery current
- Low forward voltage
- 175°C Max junction temperature
- High surge current capability
- Switching behavior independent of temperature
- Halogen Free and RoHS compliant



Absolute Maximum Ratings ($T_C = 25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter		Value	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		1200	V
I_F	Forward Current	$T_C=25^\circ\text{C}$	65	A
		$T_C=135^\circ\text{C}$	30	A
		$T_C=155^\circ\text{C}$	20	A
$I_{F,SM}$	Non-Repetitive Forward Surge Current	$T_C=25^\circ\text{C}, t_p=10\text{ms}$	135	A
		$T_C=110^\circ\text{C}, t_p=10\text{ms}$	115	A
$I_{F,Max}$	Non-Repetitive Peak Forward Current	$T_C=25^\circ\text{C}, t_p=10\mu\text{s}$	1180	A
		$T_C=150^\circ\text{C}, t_p=10\mu\text{s}$	980	A
I^2dt value	$\int I^2 dt$	$T_C=25^\circ\text{C}, t_p=10\text{ms}$	91	A^2s
		$T_C=150^\circ\text{C}, t_p=10\text{ms}$	66	A^2s
P_{tot}	Power Dissipation	$T_C=25^\circ\text{C}$	333	W
T_J, T_{STG}	Operating Junction and Storage Temperature		-55 to +175	$^\circ\text{C}$

Thermal Characteristics

Symbol	Parameter	Value	Unit
$R_{\theta JC}$	Thermal Resistance, Junction to Case, Max.	0.45	$^{\circ}C/W$

Electrical Characteristics ($T_C = 25^{\circ}C$ unless otherwise noted)

Symbol	Parameter	Test Conditions	Min	Typ	Max	Unit
V_F	Forward Voltage	$I_F=20A, T_C=25^{\circ}C$		1.39	1.70	V
		$I_F=20A, T_C=175^{\circ}C$		1.8	-	
I_R	Reverse Current	$V_R=1200V, T_C=25^{\circ}C$		10	100	μA
		$V_R=1200V, T_C=175^{\circ}C$		-	300	
Q_C	Total Capacitive Charge	$V_R=800V, T_C=25^{\circ}C$		121		nC
C	Total Capacitance	$V_R=1V, f=100Khz$		1357		pF
		$V_R=800V, f=100Khz$		85		
E_C	Capacitance Stored Energy	$V_R=800V, T_C=25^{\circ}C$		34		μJ

Package Marking and Ordering Information

Part Number	Top Marking	Package	Packing Method	Quantity
BCH120S20D2	BCH120S20D2	TO220-2	Tube	50 units

Typical Performance Characteristics

Figure 1. Power Derating

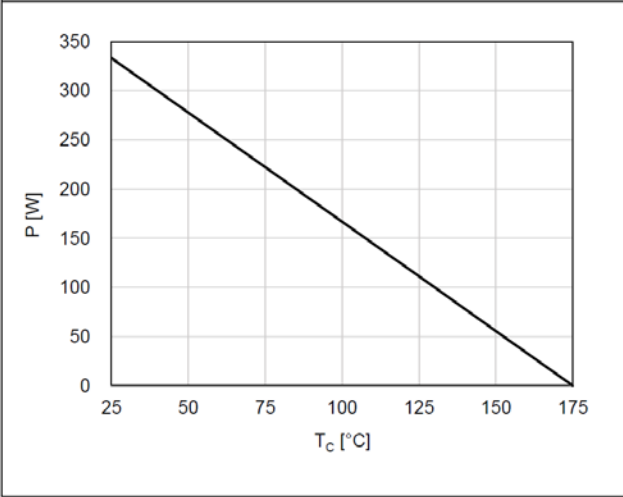


Figure 2. Current Derating

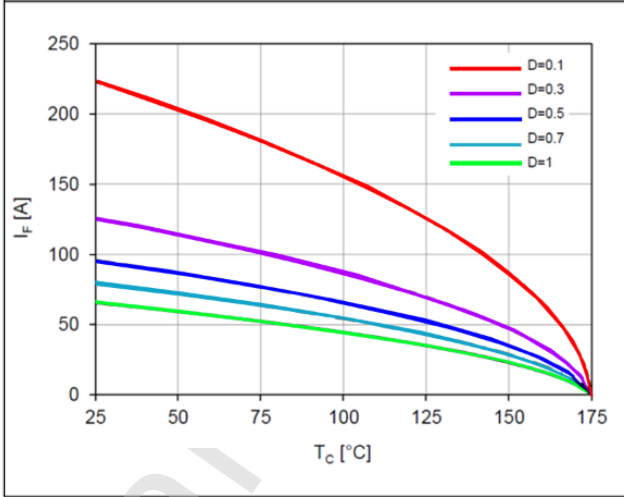


Figure 3. Forward Characteristics

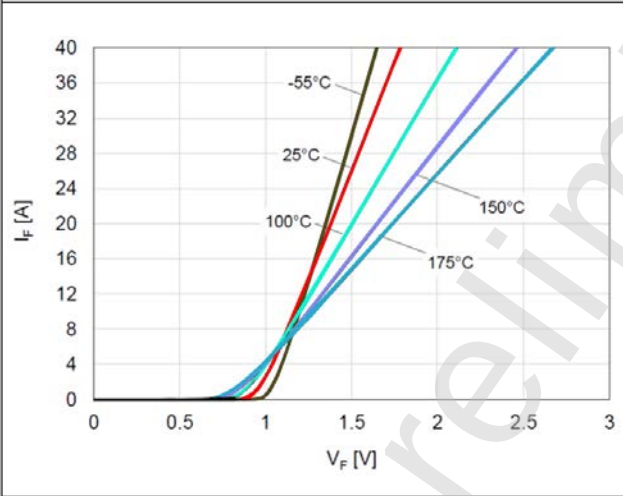


Figure 4. Reverse Characteristics

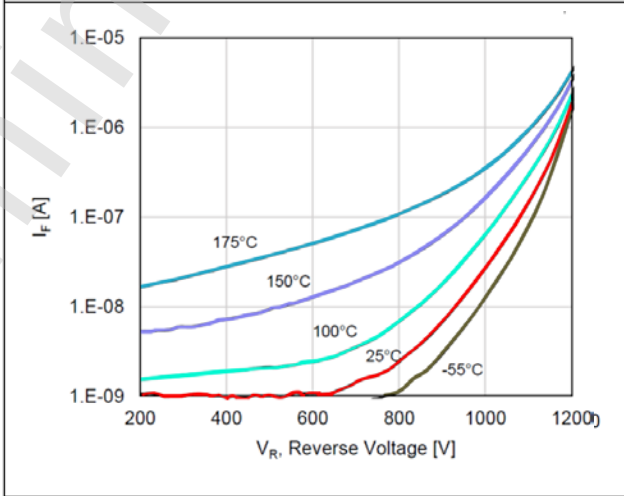


Figure 5. Capacitive Charge Characteristic

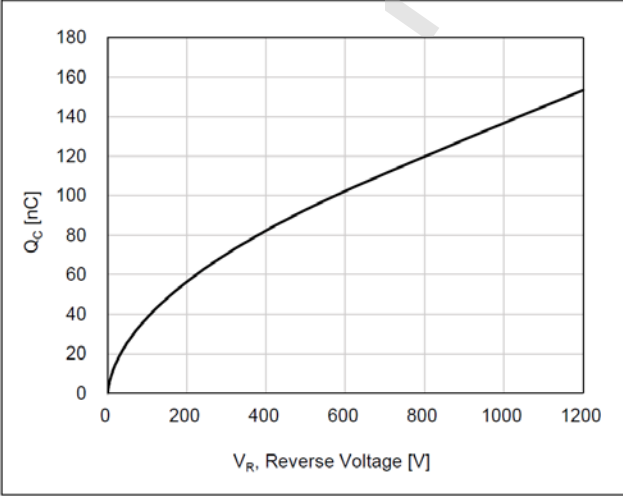
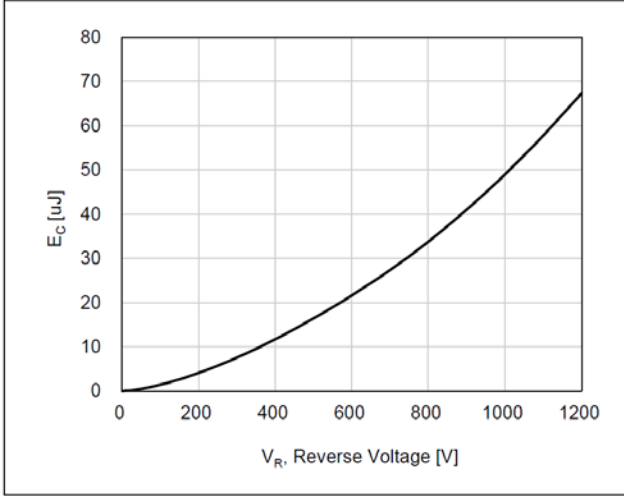


Figure 6. Capacitance Stored Energy



Typical Performance Characteristics

Figure 7. Capacitance Characteristic

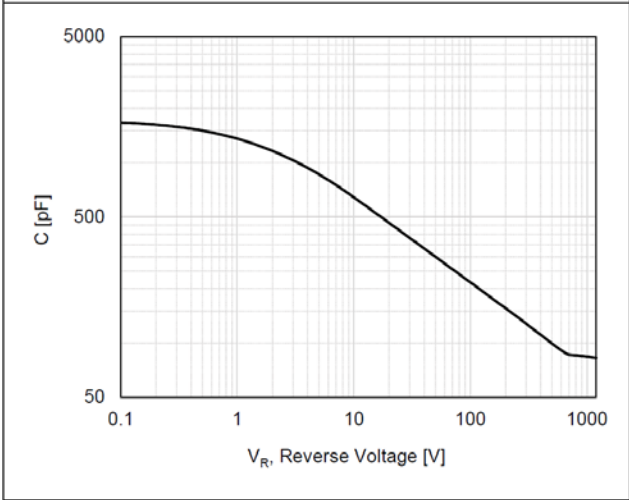
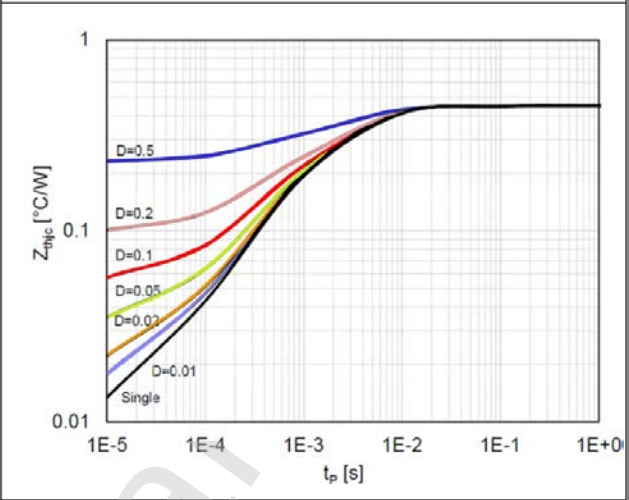
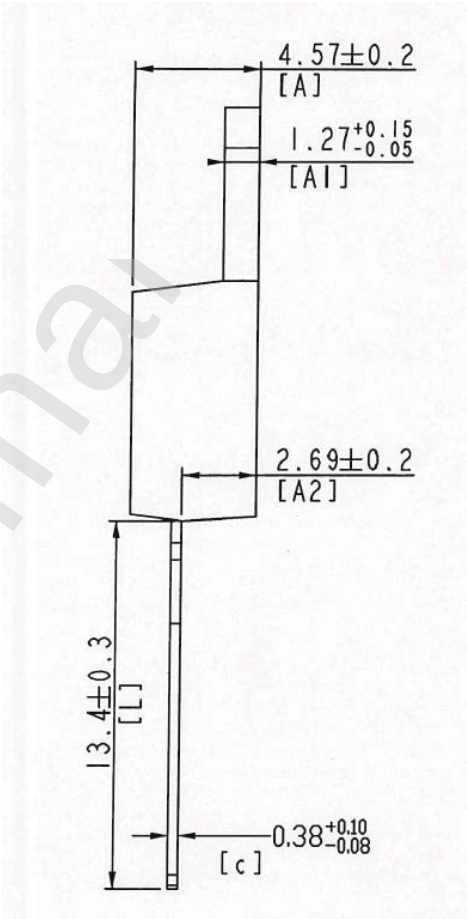
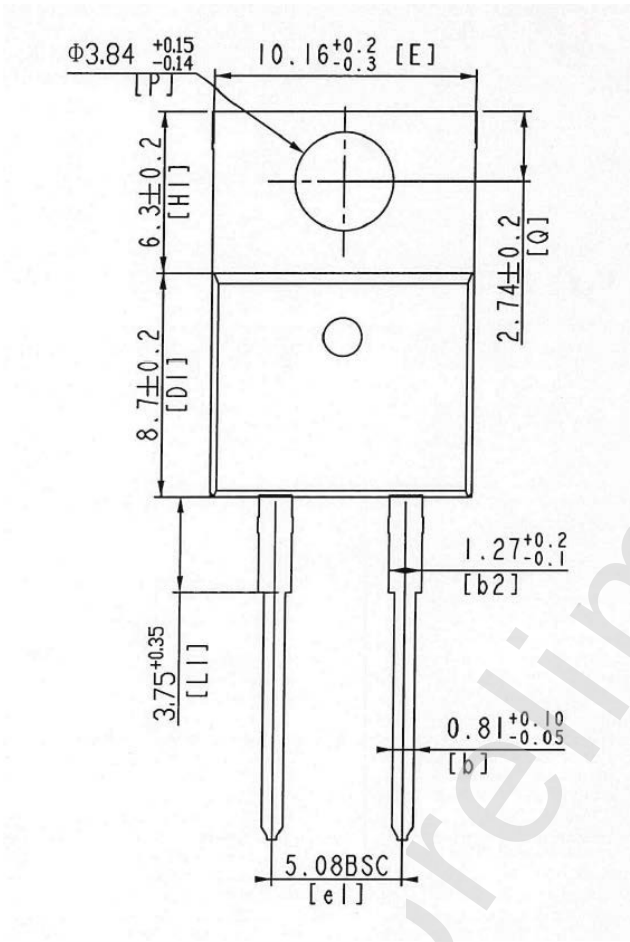


Figure 8. Transient Thermal Response Curve



Package Outlines
TO220-2



Disclaimer

Bestirpower reserve the right to make changes, corrections, enhancements, modifications, and improvements to Bestirpower products and/or to this document at any time without notice.

The information given in this document shall in no event be regarded as a guarantee of conditions or characteristics. Bestirpower does not assume any liability for infringement of patents, copyrights, or other intellectual property rights of third parties by or arising from the use of Products or technical information described in this document.

This document is the property of Bestirpower Co., LTD., and not allowed to copy or transformed to other format if not under the authority approval.

© 2024 bestirpower – All rights reserved