Single Phase Bridge Rectifier Diode Module

Description

GBPC series is optimized to reduce losses, space and weight savings in your power conditioning electrical systems.
These diode modules are ideally suited for power converters, motors drives and other applications.

Features

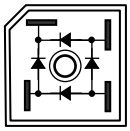
- Repetitive Reverse Voltage : V_{RRM} = 600V / 800V / 1000V
- Low Forward Voltage Drop : V_F(Max.) = 1.1V
- Average Forward Current : I_F(AV.) = 50A @ Tc = 55℃
- Glass passivation Chip Junction
- High Temperature Soldering guaranteed: 260℃/10 seconds
- High Efficiency
- Isolation Type Package

Applications

Input Rectifier for DC Motor Drives, PWM Power Converters and Welders.
Battery DC Power Supplies

Equivalent Circuit and Package

Equivalent Circuit



Package : GBPC Series

Please see the package Out line information

Ordering Information

Device Name	GBPC5006	GBPC5008	GBPC5010
Optional Information	600V / 50A	800V / 50A	1000V / 50A

Absolute Maximum Ratings @ T_j=25℃ (Per Leg)

Symbol	Parameter	Conditions	Ratings	Unit
V_{RRM}	Repetitive Peak Reverse Voltage		600/800/1000	V
$V_{R(DC)}$	Reverse DC Voltage		V_{RRM} * 0.8	V
$I_{F(AV)}$	Average Forward Current @ Tc = 25℃ @ Tc = 55℃	Resistive Load	60 50	A A
I_{FSM}	Surge(non-repetitive) Forward Current	One Half Cycle at 60Hz, Peak Value	450	A
I^2t	I^2t for Fusing	Value for One Cycle Current, t_w = 8.3ms, T_j = 25℃ Start	800	A^2s
T_j	Junction Temperature		-40 ~ 150	℃
T_{stg}	Storage Temperature		-40 ~ 125	℃
V_{isol}	Isolation Voltage	@ AC 1 minutes	2500	V
P_d	Maximum Power Dissipation		125	W
-	Mounting Torque	Typical Including Screws	2.0	N.m
-	Weight		15	g

Thermal Characteristics

Symbol	Parameter	Conditions	Values			Unit
			Min.	Typ.	Max.	
$R_{th(j-c)}$	Thermal Resistance	Junction to Case	-	-	1.0	℃/W

Thermal Resistance from Junction to Case per leg

Electrical Characteristics @ T_j=25℃ (unless otherwise specified)

Symbol	Parameter	Conditions		Values			Unit
				Min.	Typ.	Max.	
V_R	Cathode Anode Breakdown Voltage	I_R = 100uA	5006	600	-	-	V
			5008	800	-	-	V
			5010	1000	-	-	V
V_{FM}	Maximum Forward Voltage per leg	I_F = 25A, T_c = 25℃		-	-	1.1	V
I_{RRM}	Repetitive Peak Reverse Current per leg	T_C = 100℃, V_{RRM} applied		-	-	500	uA

Performance Curves

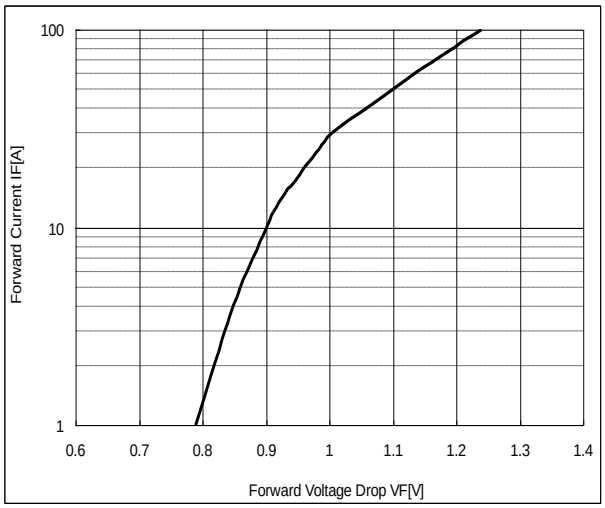


Fig. 1 : Typical Forward Voltage Drop vs. Instantaneous Forward Current

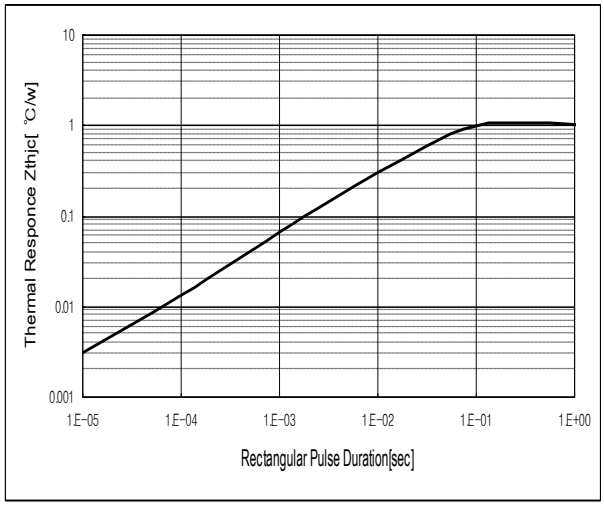


Fig. 2 : Transient Thermal Impedance(Z_{thjc}) Characteristics

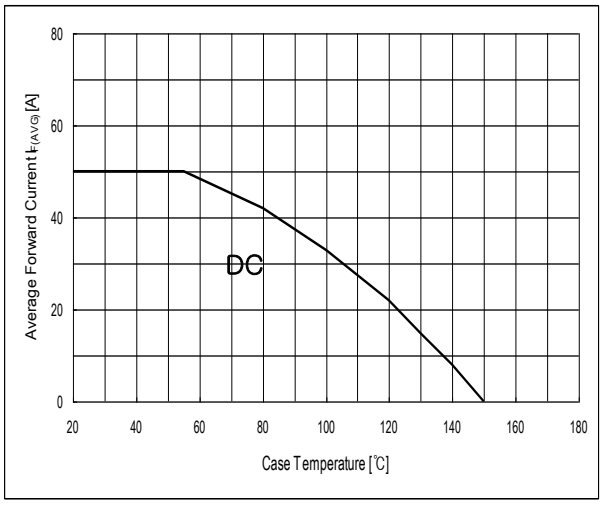


Fig. 3 : Forward Current Derating Curve

Package Out Line Information

GBPC Series

Dimensions in mm