

Single Phase Bridge Rectifier

Features

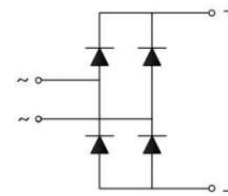
- Glass passivated chip
- Ideal for printed circuit boards
- High surge current capability
- Reverse Voltage : 200 to 1200V
- Forward Current : 50A
- High temperature soldering : 265 °C/10s at terminals



GBPC-W

Applications

- Single phase rectifiers for power supplies
- Rectifiers for DC motor field supplies
- Industrial automation equipment
- Input rectifiers for inverter



Module Type

Type	VRRM	VRSM
GBPC5002W	200V	300V
GBPC5004W	400V	500V
GBPC5006W	600V	700V
GBPC5008W	800V	900V
GBPC5010W	1000V	1100V
GBPC5012W	1200V	1300V

Maximum Ratings

Item	Conditions	Symbol	Values	Unit
Output Current	Single Phase, Sin Full Wave $T_c=55^\circ\text{C}$	I_D	50	A
Surge Forward Current	$T_j=25^\circ\text{C}$, $t=50\text{Hz}(10\text{ms})$, $V_R=0\text{V}$	I_{FSM}	450	A
Circuit Fusing Consideration	$t=10\text{ms}$ $T_j=25^\circ\text{C}$	I^2t	1012	A^2s
Isolation Breakdown Voltage	AC 50Hz/60Hz; R.M.S; 1min	V_{ISO}	2000	V
Operating Junction Temperature		T_j	-40 to +150	$^\circ\text{C}$
Storage Temperature		T_{stg}	-40 to +125	$^\circ\text{C}$
Mounting Torque	To Heatsink(M5)	M_s	2.5~3	N·m
Module (Approximately)		Weight	12	g

Thermal Characteristics

Item	Conditions	Symbol	Values	Unit
Thermal Impedance, Max	Junction to Case(Per Total)	$R_{th(j-c)}$	0.9	$^{\circ}C/W$
	Junction to Case(Per Diode)		3.6	$^{\circ}C/W$

Electrical Characteristics

Item	Conditions	Symbol	Values			Unit
			Min	Typ	Max	
Forward Voltage Drop, Max	$T_j = 25^{\circ}C, I_F = 25A$	V_{FM}	-	-	1.1	V
Repetitive Peak Reverse Current, Max	$T_j = 25^{\circ}C, V_R = V_{RRM}$	I_{RRM}	-	-	5	μA
	$T_j = 150^{\circ}C, V_R = V_{RRM}$		-	-	0.5	mA
Threshold Voltage, for power loss calculation only	$T_j = 125^{\circ}C$	V_{T0}	0.75			V
Slope Resistance, for power loss calculation only	$T_j = 125^{\circ}C$	r_T	3.9			m Ω

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

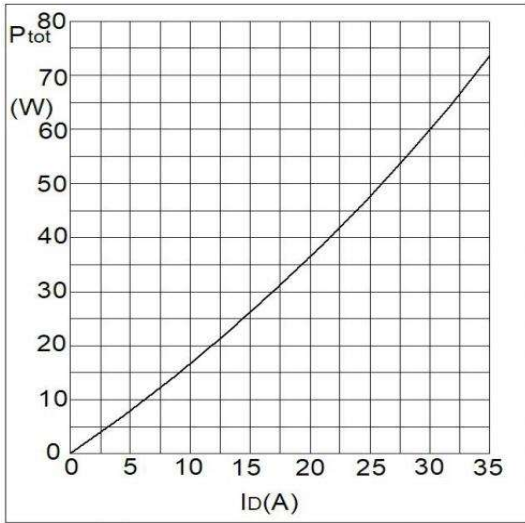


Fig1. Power Dissipation

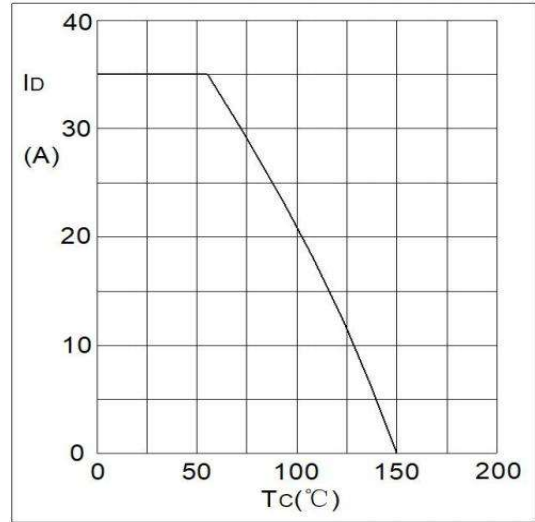


Fig2. Forward Current Derating Curve

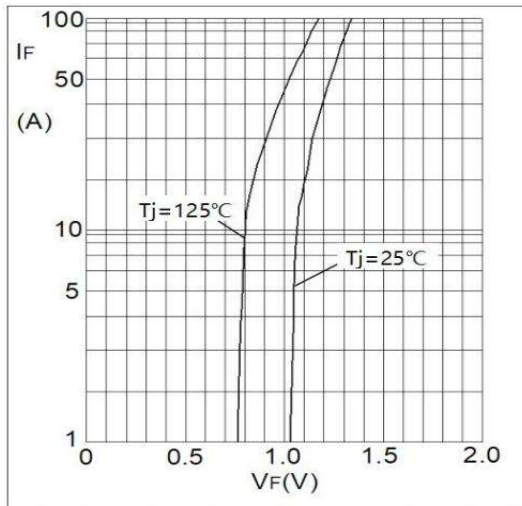


Fig3. Forward Characteristics

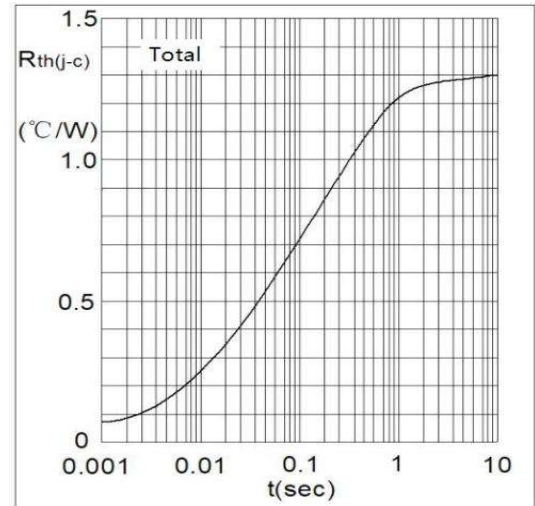


Fig4. Transient Thermal Impedance

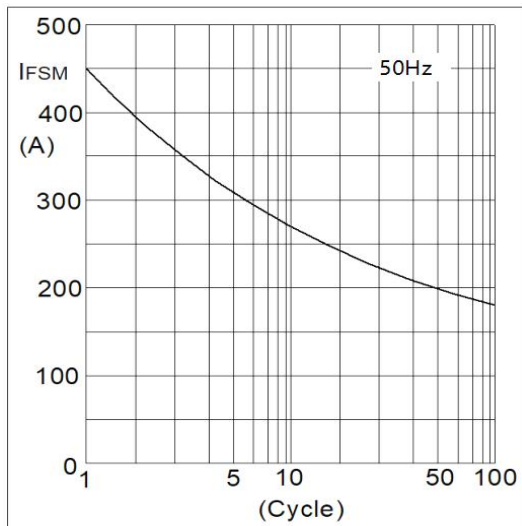
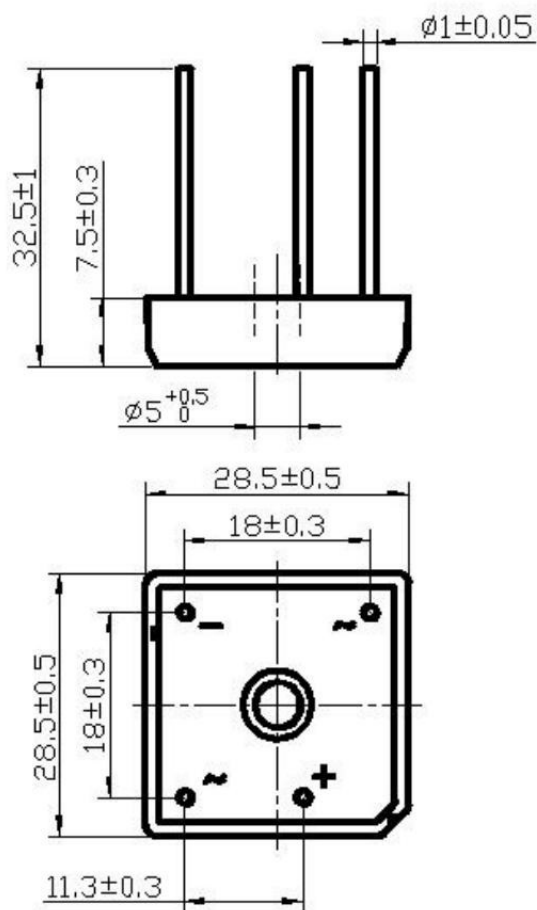


Fig5. Max Non-Repetitive Forward Surge Current

Package Outlines (Dimensions in mm)

Plastic surface mounted package(GBPC-W)



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