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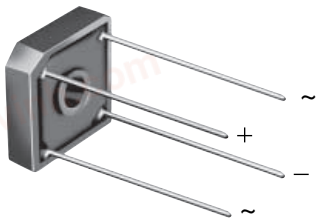
GBPC12, GBPC15, GBPC25, GBPC35

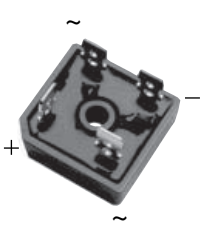
Vishay General Semiconductor

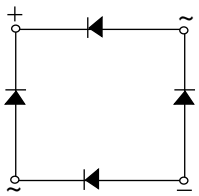
Glass Passivated Single-Phase Bridge Rectifier

GBPC-W



GBPC





FEATURES

- UL recognition file number E54214
- Universal 3-way terminals: snap-on, wire wrap-around, or PCB mounting
- Typical I_R less than 0.3 µA
- High surge current capability
- Low thermal resistance
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for power supply, home appliances, office equipment, industrial automation applications.

MECHANICAL DATA

Case: GBPC, GBPC-W
Molding compound meets UL 94 V-0 flammability rating Base P/N-E4 - RoHS-compliant, commercial grade

Terminals: Nickel plated on faston lugs or silver plated on wire leads, solderable per J-STD-002 and JESD 22-B102. Suffix letter "W" added to indicate wire leads (e.g. GBPC12005W).

Polarity: As marked, positive lead by beveled corner

Mounting Torque: 20 inches-lbs. max.

LINKS TO ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	12 A, 15 A, 25 A, 35 A
V_{RRM}	50 V to 1000 V
I_{FSM}	200 A, 300 A, 300 A, 400 A
I_R	5 µA
V_F at I_F	1.1 V
T_J max.	150 °C
Package	GBPC, GBPC-W
Circuit configuration	Quad

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER		SYMBOL	GBPC12, 15, 25, 35							UNIT
			005	01	02	04	06	08	10	
Maximum repetitive peak reverse voltage		V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage		V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage		V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified output current (Fig. 1)	GBPC12	$I_{F(AV)}$	12							A
	GBPC15		15							
	GBPC25		25							
	GBPC35		35							
Peak forward surge current single sine-wave superimposed on rated load	GBPC12	I_{FSM}	200							A
	GBPC15		300							
	GBPC25		300							
	GBPC35		400							
Rating (non-repetitive, for t greater than 1 ms and less than 8.3 ms) for fusing	GBPC12	I^2t	160							A^2s
	GBPC15		375							
	GBPC25		375							
	GBPC35		660							
RMS isolation voltage from case to leads		V_{ISO}	2500							V
Operating junction storage temperature range		T_J, T_{STG}	-55 to +150							°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)											
PARAMETER		**TEST CONDITIONS**	**SYMBOL**	**GBPC12, 15, 25, 35**							**UNIT**
				005	**01**	**02**	**04**	**06**	**08**	**10**	
Maximum instantaneous forward drop per diode	GBPC12	I_F = 6.0 A	V_F	1.1							V
	GBPC15	I_F = 7.5 A									
	GBPC25	I_F = 12.5 A									
	GBPC35	I_F = 17.5 A									
Maximum reverse DC current at rated DC blocking voltage per diode		T_A = 25 °C	I_R	5.0							μA
		T_A = 125 °C		500							
Typical junction capacitance per diode		4 V, 1 MHz	C_J	300							pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)										
PARAMETER		**SYMBOL**	**GBPC12, 15, 25, 35**							**UNIT**
			005	**01**	**02**	**04**	**06**	**08**	**10**	
Typical thermal resistance	GBPC12 to GBPC25	$R_{\theta JC}$ (1)	1.9							°C/W
	GBPC35		1.4							

Notes

(1) With heatsink

(2) Bolt down on heatsink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #10 screw

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
GBPC1206-E4/51	15.79	51	100	Paper box
GBPC1506-E4/51	15.79	51	100	Paper box
GBPC2506-E4/51	15.79	51	100	Paper box
GBPC3506-E4/51	15.79	51	100	Paper box
GBPC1206W-E4/51	13.8	51	100	Paper box
GBPC1506W-E4/51	13.8	51	100	Paper box
GBPC2506W-E4/51	13.8	51	100	Paper box
GBPC3506W-E4/51	13.8	51	100	Paper box

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

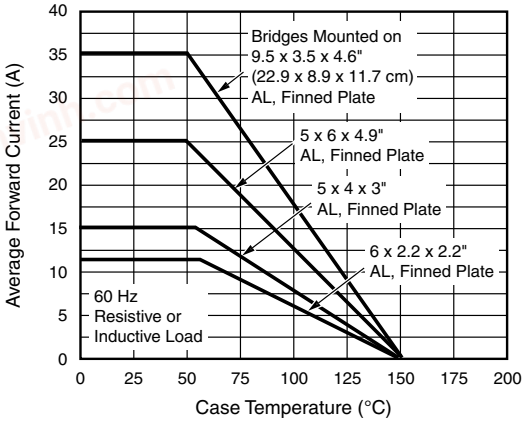

Fig. 1 - Maximum Output Rectified Current

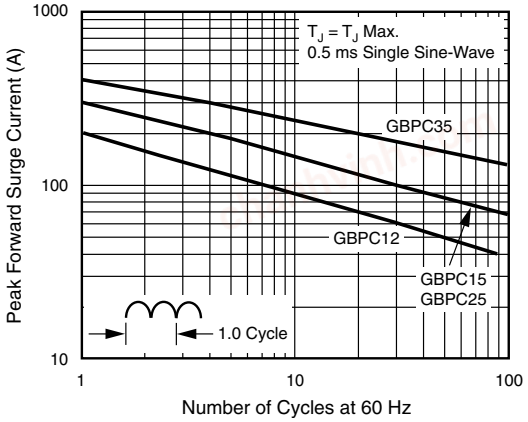

Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

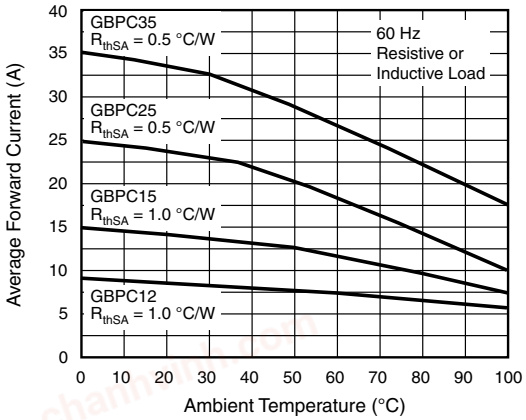

Fig. 2 - Maximum Output Rectified Current

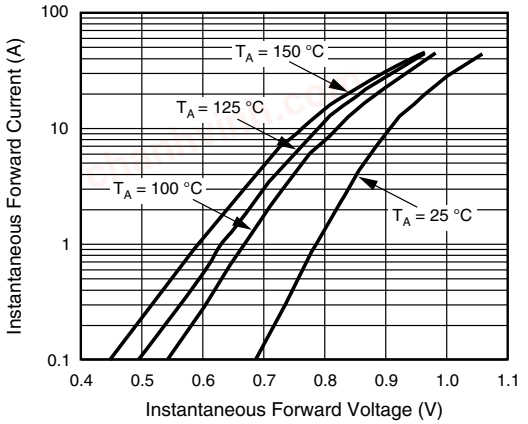

Fig. 5 - Typical Instantaneous Forward Characteristics Per Diode

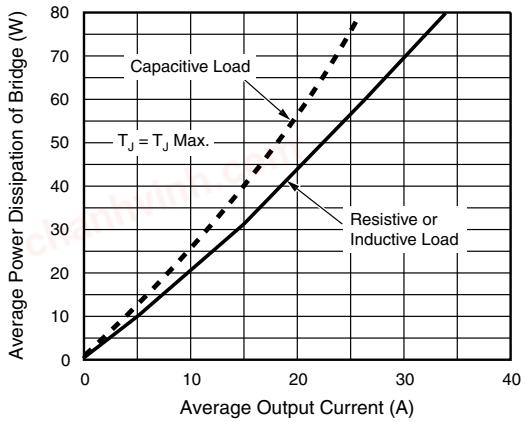

Fig. 3 - Maximum Power Dissipation

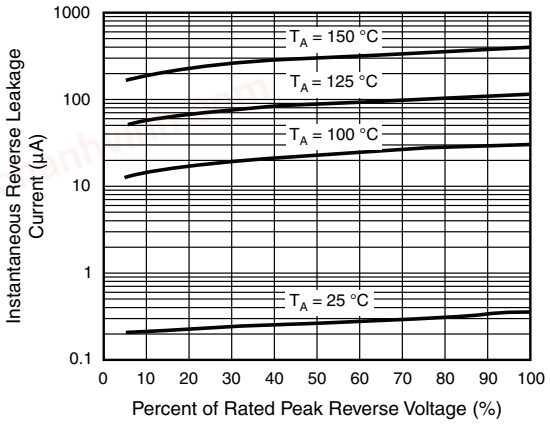

Fig. 6 - Typical Reverse Leakage Characteristics Per Diode

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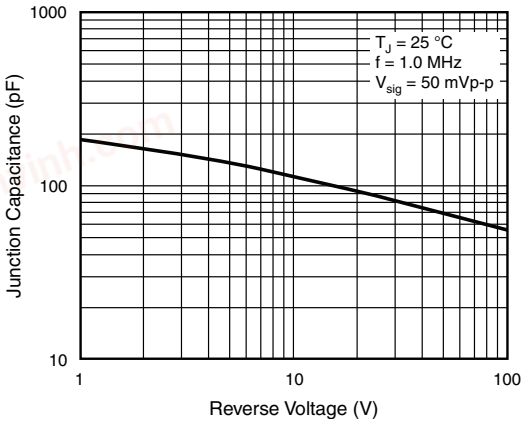


Fig. 7 - Typical Junction Capacitance Per Diode

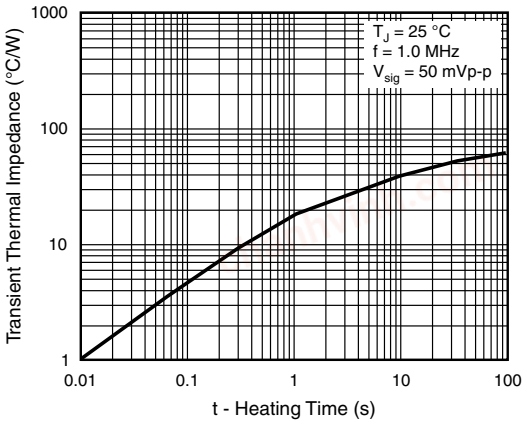
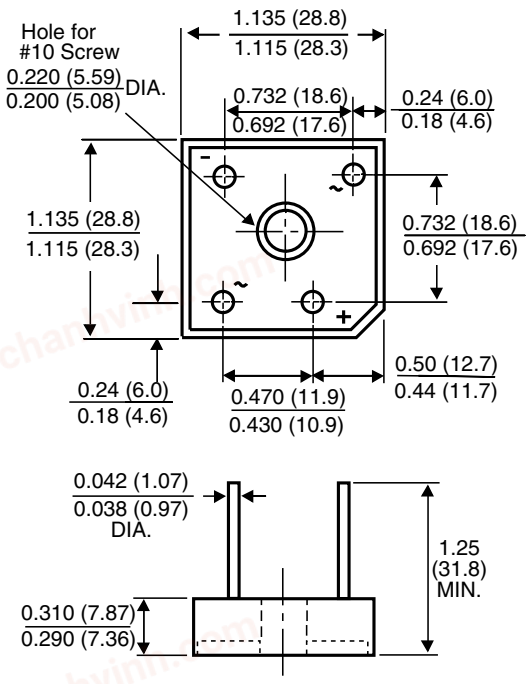


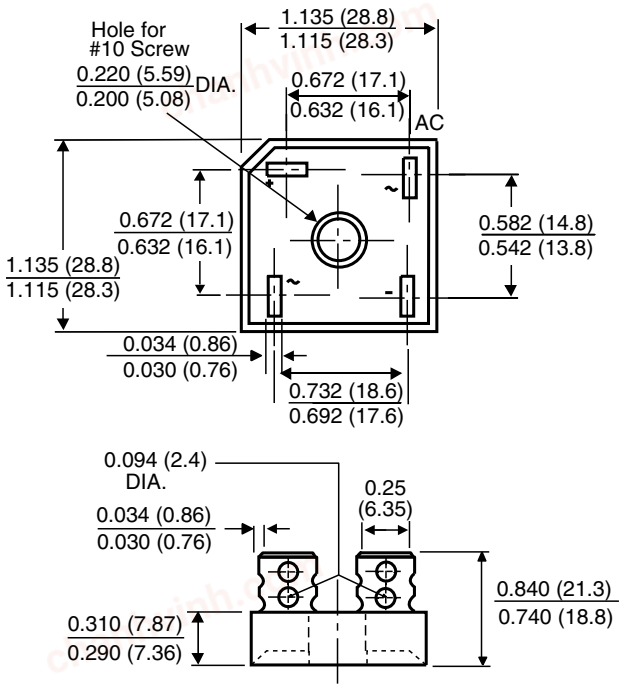
Fig. 8 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

GBPC-W



GBPC



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