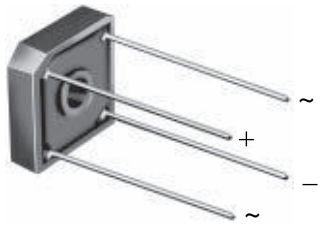
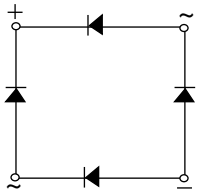
Glass Passivated Single-Phase Bridge Rectifier





Case Style GBPC1

FEATURES

- UL recognition, file number E54214
- Ideal for printed circuit boards
- Typical I_R less than 0.1 µA
- High case dielectric strength
- High surge current capability
- 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 switching power supply, home appliances, office equipment, industrial automation applications.

MECHANICAL DATA

Case: GBPC1

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

Terminals: Silver plated leads, solderable per J-STD-002 and JESD22-B102

Polarity: As marked, positive lead by belevled corner

Mounting Torque: 10 cm-kg (8.8 inches-lbs) max.

Recommended Torque: 5.7 cm-kg (5 inches-lbs)

PRIMARY CHARACTERISTICS	
Package	GBPC1
$I_{F(AV)}$	3 A
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
I_{FSM}	60 A
I_R	5 µA
V_F at I_F = 1.5 A	1.0 V
T_J max.	150 °C
Diode variations	Quad

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

PARAMETER		SYMBOL	GBPC 1005	GBPC 101	GBPC 102	GBPC 104	GBPC 106	GBPC 108	GBPC 110	UNIT
Maximum repetitive peak reverse voltage		V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS bridge input 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 at	T_C = 60 °C (1)	$I_{F(AV)}$	3.0							A
	T_A = 25 °C (2)		2.0							
Peak forward surge current single sine-wave superimposed on rated load		I_{FSM}	60							A
Rating for fusing (t < 8.3 ms)		I^2t	15							A^2s
Operating junction and storage temperature range		T_J, T_{STG}	- 55 to + 150							°C

Notes

(1) Unit mounted on 4.0" x 4.0" x 0.11" thick (10.5 cm x 10.5 cm x 0.3 cm) aluminum plate

(2) Unit mounted on P.C.B. at 0.375" (9.5 mm) lead length with 0.5" x 0.5" (12 mm x 12 mm) copper pads

ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)										
PARAMETER	**TEST CONDITIONS**	**SYMBOL**	**GBPC 1005**	**GBPC 101**	**GBPC 102**	**GBPC 104**	**GBPC 106**	**GBPC 108**	**GBPC 110**	**UNIT**
Maximum instantaneous forward voltage drop per diode	I_F = 1.5 A	V_F	1.0							V
Maximum DC reverse 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	4.0 V, 1 MHz	C_J	21							pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PARAMETER	**SYMBOL**	**GBPC 1005**	**GBPC 101**	**GBPC 102**	**GBPC 104**	**GBPC 106**	**GBPC 108**	**GBPC 110**	**UNIT**
Typical thermal resistance (1)	$R_{\theta JA}$	12							°C/W
	$R_{\theta JC}$	8.0							

Note

(1) Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #6 screw

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
GBPC106-E4/51	2.5	51	100	Paper box

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

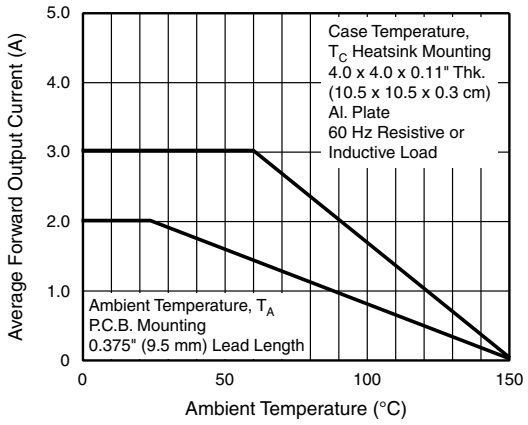


Fig. 1 - Derating Curve Output Rectified Current

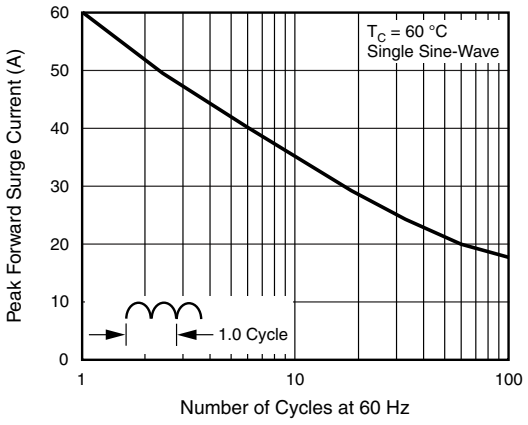


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

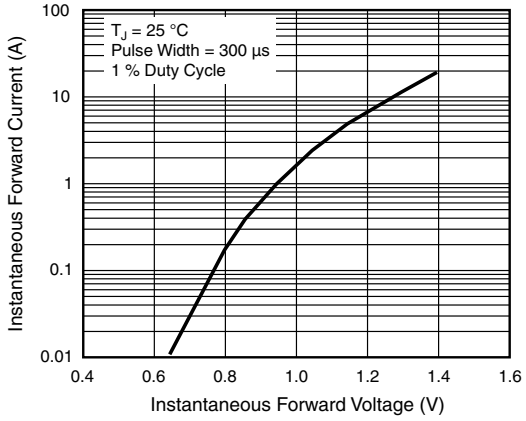


Fig. 3 - Typical Forward Characteristics Per Diode

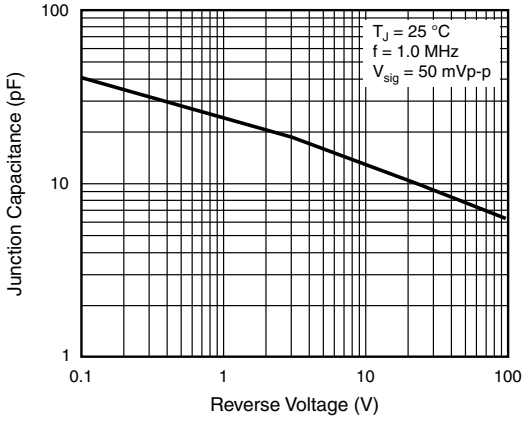


Fig. 5 - Typical Junction Capacitance Per Diode

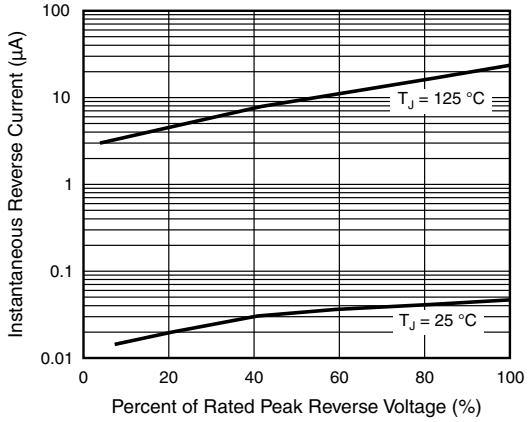


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

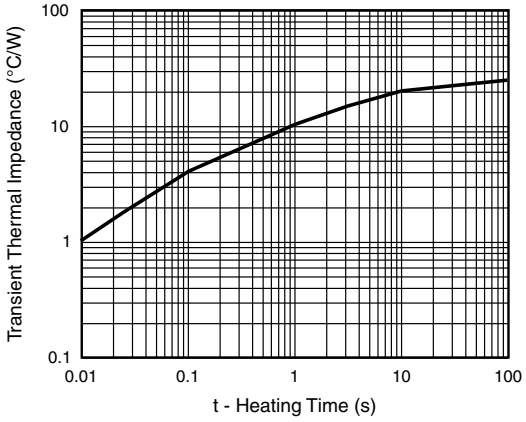
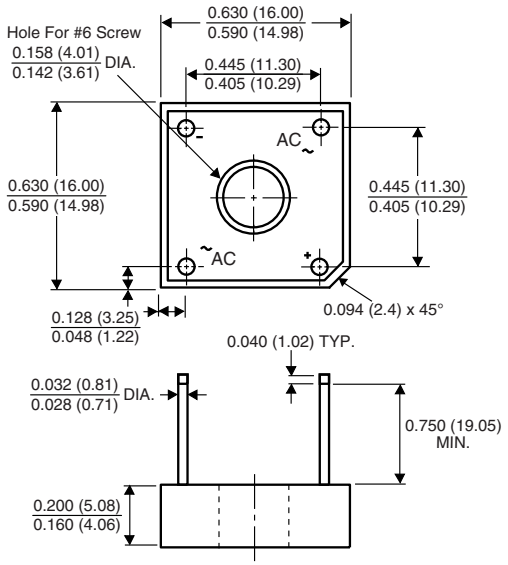


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Style GBPC1



Polarity shown on side of case: Positive lead by beveled corner

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