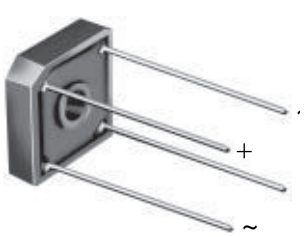
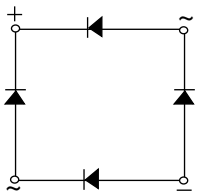
Glass Passivated Single-Phase Bridge Rectifier





Case Style GBPC6

FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- Typical I_R less than 0.5 µA
- High surge current capability
- High case dielectric strength 1500 V_{RMS}
- 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

LINKS TO ADDITIONAL RESOURCES

3D Models

TYPICAL APPLICATIONS

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

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	6 A
V_{RRM}	50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V
I_{FSM}	175 A
I_R	5 µA
V_F at I_F = 3.0 A	1.0 V
T_J max.	150 °C
Package	GBPC6
Circuit configuration	Quad

MECHANICAL DATA

Case: GBPC6

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 beveled corner

Mounting Torque: 10 cm-kg (8.8 in-lbs) maximum

Recommended Torque: 5.7 cm-kg (5 in-lbs) maximum

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

PARAMETER		SYMBOL	GBPC 6005	GBPC 601	GBPC 602	GBPC 604	GBPC 606	GBPC 608	GBPC 610	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 = 50 °C (1)(2)	$I_{F(AV)}$	6.0							A
	T_A = 40 °C (3)		3.0							
Peak forward surge current single sine-wave superimposed on rated load		I_{FSM}	175							A
Rating for fusing (t = 8.3 ms)		I^2t	127							A^2s
Operating junction and storage temperature range		T_J, T_{STG}	-55 to +150							°C

Notes

(1) Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #6 screw
(2) Unit mounted on 5.5" x 6.0" x 0.11" thick (14 cm x 15 cm x 0.3 cm) aluminum plate
(3) Unit mounted on PCB 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	**SYMBOL**	**TEST CONDITIONS**	**GBPC 6005**	**GBPC 601**	**GBPC 602**	**GBPC 604**	**GBPC 606**	**GBPC 608**	**GBPC 610**	**UNIT**
Maximum instantaneous forward voltage drop per diode	V_F	3.0 A	1.0							V
Maximum DC reverse current at rated DC blocking voltage per diode	I_R	T_A = 25 °C	5.0							µA
		T_A = 125 °C	500							
Typical junction capacitance per diode	C_J	4.0 V, 1 MHz	186				90			pF

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)									
PARAMETER	**SYMBOL**	**GBPC 6005**	**GBPC 601**	**GBPC 602**	**GBPC 604**	**GBPC 606**	**GBPC 608**	**GBPC 610**	**UNIT**
Typical thermal resistance (1)	$R_{\theta JA}$	22							°C/W
	$R_{\theta JC}$	7.3							

Notes

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

(2) Unit mounted on 5.5" x 6.0" x 0.11" thick (14 cm x 15 cm x 0.3 cm) aluminum plate

(3) Unit mounted on PCB at 0.375" (9.5 mm) lead length with 0.5" x 0.5" (12 mm x 12 mm) copper pads

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
GBPC606-E4/51	3.2	51	100	Paper box

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

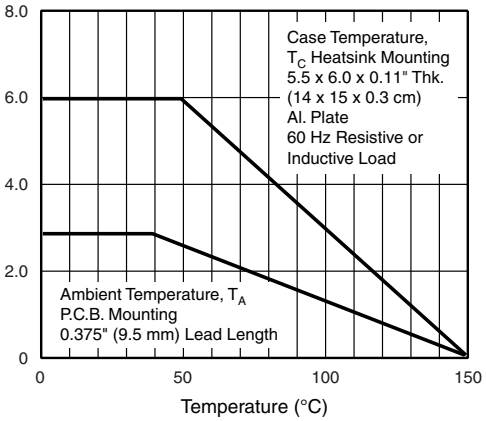


Fig. 1 - Derating Curve Output Rectified Current

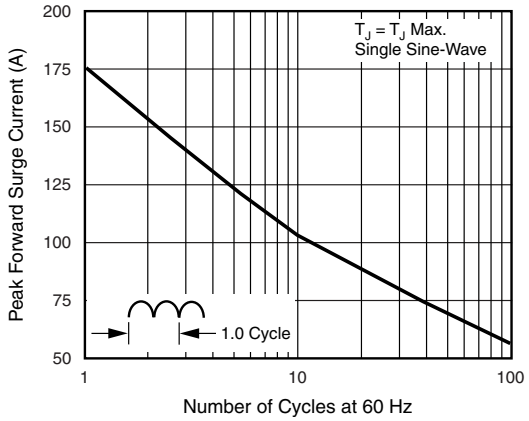


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

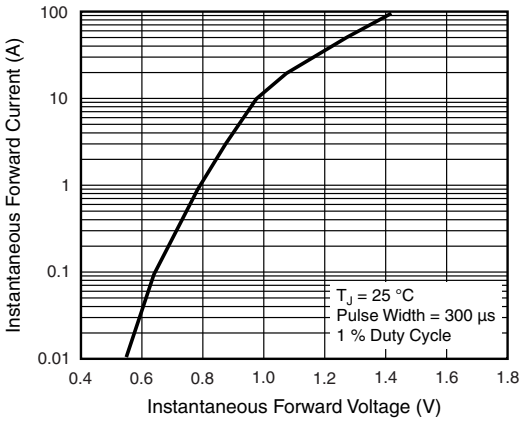


Fig. 3 - Typical Forward Characteristics Per Diode

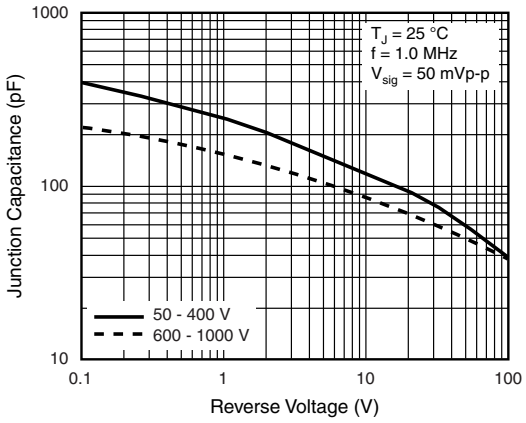


Fig. 5 - Typical Junction Capacitance Per Diode

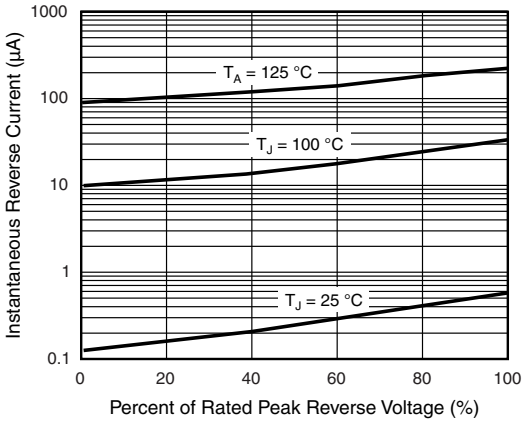


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

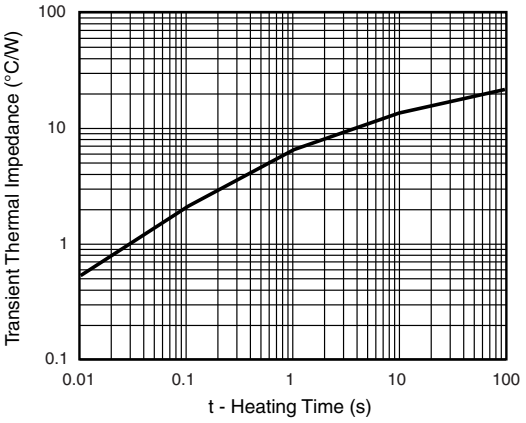
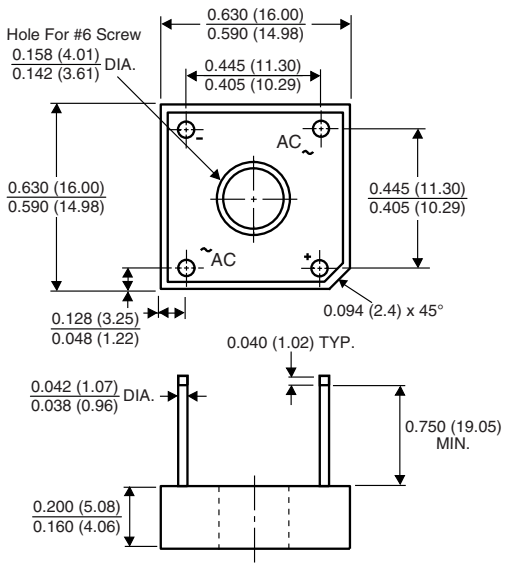


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

Case Style GBPC6



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

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