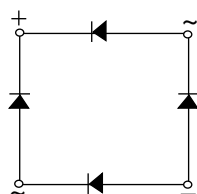
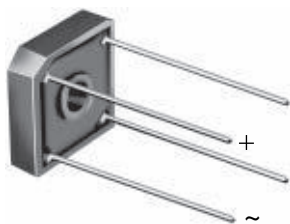




## Glass Passivated Single-Phase Bridge Rectifier



Case Style GBPC6

## FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- Typical  $I_R$  less than 0.5  $\mu A$
- 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](http://www.vishay.com/doc?99912)

RoHS  
COMPLIANT

## PRIMARY CHARACTERISTICS

Package	GBPC6
$I_{F(AV)}$	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 $\mu A$
$V_F$ at $I_F = 3.0$ A	1.0 V
$T_J$ max.	150 °C
Diode variations	Quad

## 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:** 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 <sub>RRM</sub>	50	100	200	400	600	800	1000	V
Maximum RMS bridge input voltage	V <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V <sub>DC</sub>	50	100	200	400	600	800	1000	V
Maximum average forward rectified output current at T <sub>C</sub> = 50 °C <sup>(1)(2)</sup> T <sub>A</sub> = 40 °C <sup>(3)</sup>	I <sub>F(AV)</sub>	6.0							A
		3.0							
Peak forward surge current single sine-wave superimposed on rated load	I <sub>FSM</sub>	175							A
Rating for fusing (t = 8.3 ms)	I <sup>2</sup> t	127							A <sup>2</sup> s
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	- 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** ( $T_A = 25\text{ }^{\circ}\text{C}$  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 <sub>F</sub>	3.0 A	1.0							V
Maximum DC reverse current at rated DC blocking voltage per diode	I <sub>R</sub>	T <sub>A</sub> = 25 °C	5.0							μA
		T <sub>A</sub> = 125 °C	500							
Typical junction capacitance per diode	C <sub>J</sub>	4.0 V, 1 MHz	186				90			pF

**THERMAL CHARACTERISTICS** ( $T_A = 25\text{ }^{\circ}\text{C}$  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 <sub>θJA</sub>	22							°C/W
	R <sub>θJC</sub>	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

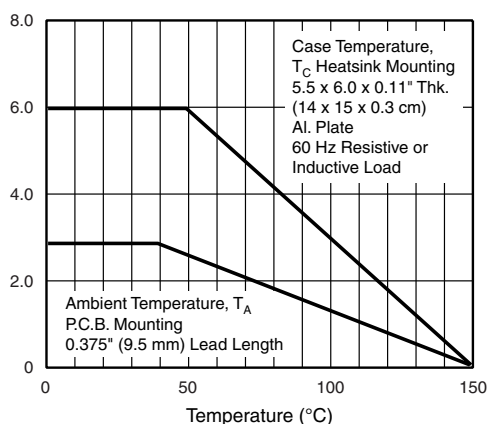
**RATINGS AND CHARACTERISTICS CURVES** ( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Fig. 1 - Derating Curve Output Rectified Current

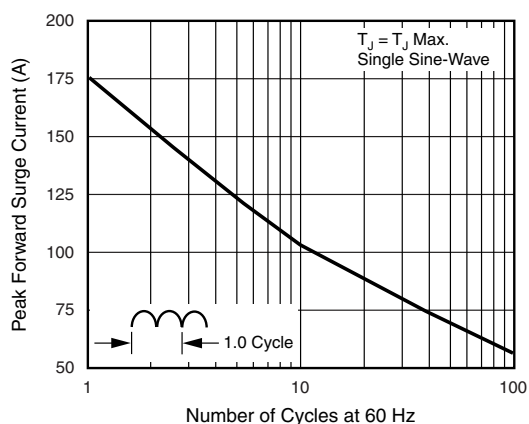


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

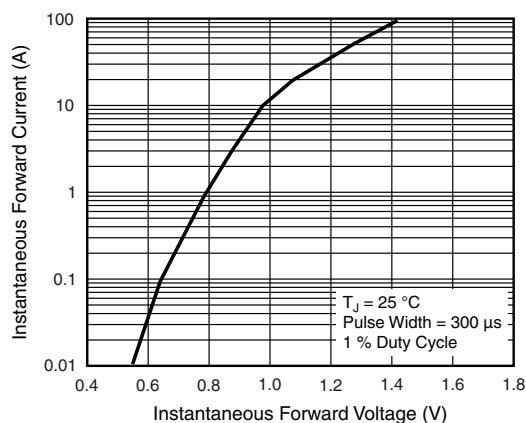


Fig. 3 - Typical Forward Characteristics Per Diode

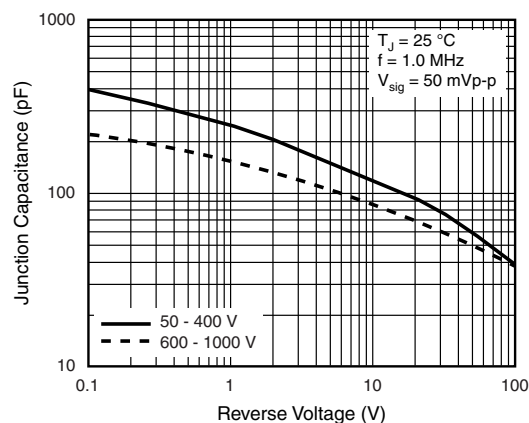


Fig. 5 - Typical Junction Capacitance Per Diode

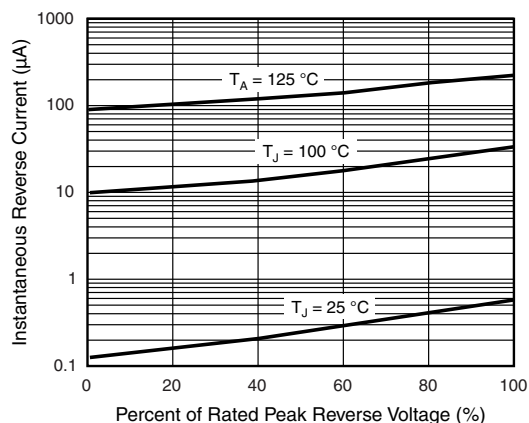


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

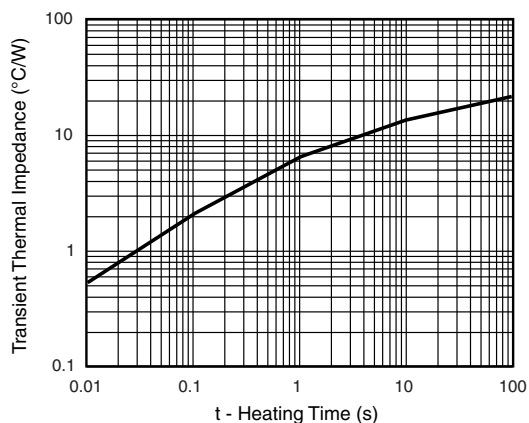
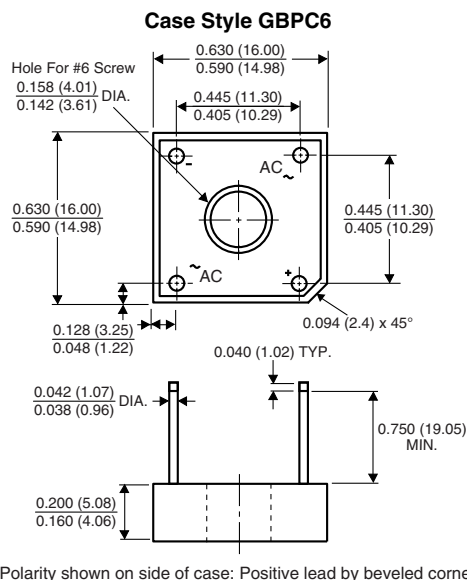


Fig. 6 - Typical Transient Thermal Impedance Per Diode

**PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)



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