

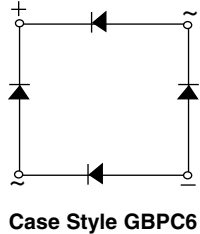
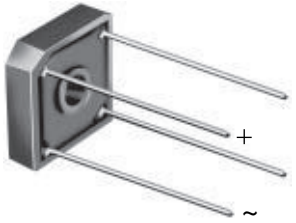


**THE DATASHEET OF  
GBPC608-E4/51**





## Glass Passivated Single-Phase Bridge Rectifier



### 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)



### LINKS TO ADDITIONAL RESOURCES



### 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

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 $\mu$ A
$V_F$ at $I_F = 3.0$ A	1.0 V
$T_J$ max.	150 °C
Package	GBPC6
Circuit configuration	Quad

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	$I_{F(AV)}$	$T_C = 50$ °C <sup>(1)(2)</sup>							6.0	A
		$T_A = 40$ °C <sup>(3)</sup>							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 <sup>2</sup> s
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



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^\circ\text{C}$ 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	$V_F$	3.0 A					1.0			V
Maximum DC reverse current at rated DC blocking voltage per diode	$I_R$	$T_A = 25\text{ }^\circ\text{C}$					5.0			$\mu\text{A}$
		$T_A = 125\text{ }^\circ\text{C}$					500			
Typical junction capacitance per diode	$C_J$	4.0 V, 1 MHz	186				90			pF

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

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<b>ORDERING INFORMATION</b> (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)

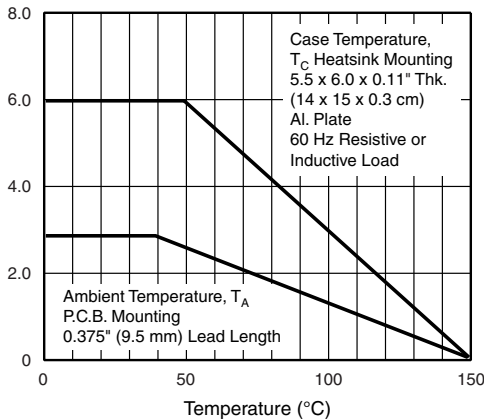


Fig. 1 - Derating Curve Output Rectified Current

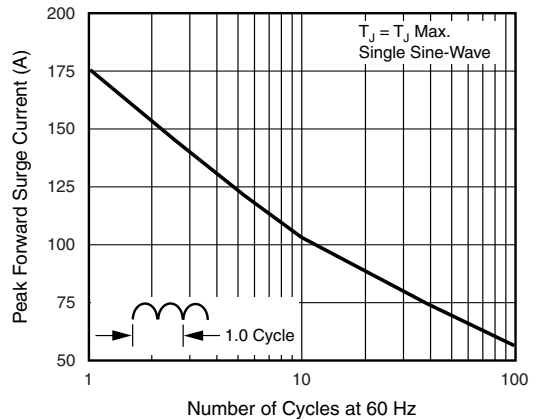


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

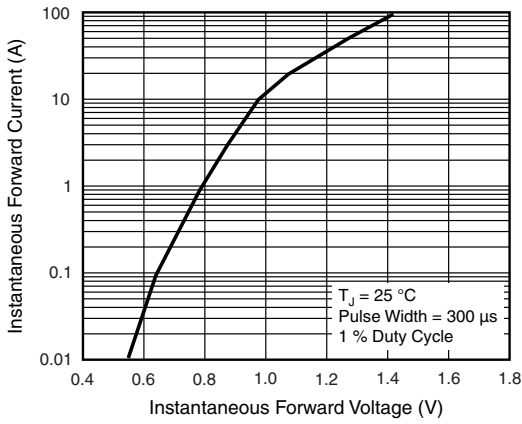


Fig. 3 - Typical Forward Characteristics Per Diode

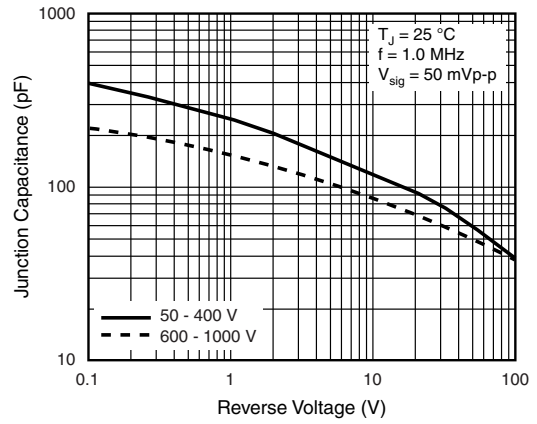


Fig. 5 - Typical Junction Capacitance Per Diode

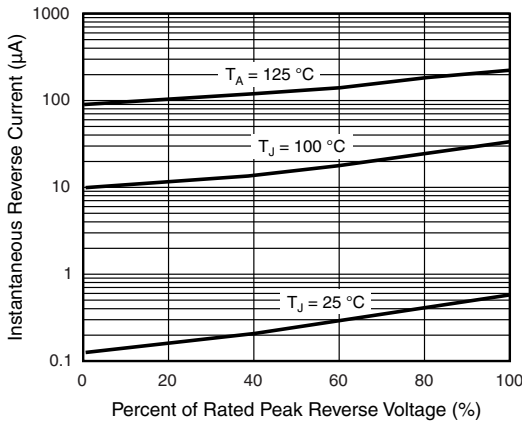


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

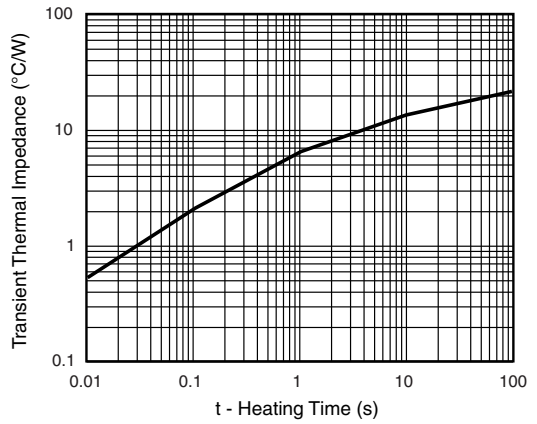
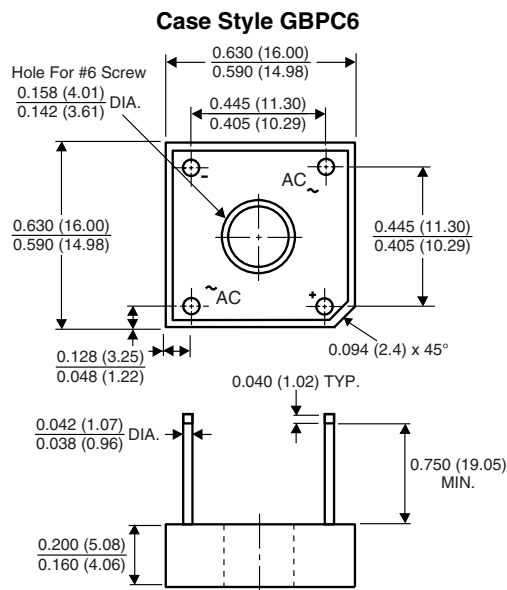


Fig. 6 - Typical Transient Thermal Impedance Per Diode

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



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



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