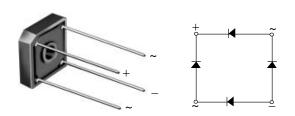


Vishay General Semiconductor

# Glass Passivated Single-Phase Bridge Rectifier

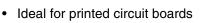


Case Style GBPC6

PRIMARY CHARACTERISTICS							
I <sub>F(AV)</sub> 6 A							
$V_{RRM}$	50 V to 1000 V						
I <sub>FSM</sub>	175 A						
I <sub>R</sub>	5 μΑ						
V <sub>F</sub>	1.0 V						
T <sub>J</sub> max.	150 °C						

#### **FEATURES**





Typical I<sub>R</sub> less than 0.5 μA

· High surge current capability

High case dielectric strength 1500 V<sub>BMS</sub>

Solder dip 260 °C, 40 s

 Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC





#### **TYPICAL APPLICATIONS**

General purpose use in ac-to-dc bridge full wave rectification for power supply, home appliances, office equipment, industrial automation applications.

#### **MECHANICAL DATA**

Case: GBPC6

Epoxy meets UL 94V-0 flammability rating

Terminals: Silver plated leads, solderable per

J-STD-002 and JESD22-B102 E4 suffix for consumer grade

**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)

MAXIMUM RATINGS (T <sub>A</sub> = 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 <sub>RMS</sub>	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	$V_{DC}$	50	100	200	400	600	800	1000	V
$ \begin{array}{ll} \mbox{Maximum average forward} & \mbox{$T_{C} = 50 \ ^{\circ}C$} \ ^{(1)(2)} \\ \mbox{rectified output current at} & \mbox{$T_{A} = 40 \ ^{\circ}C$} \ \end{array} $	I <sub>F(AV)</sub>	6.0 3.0					Α		
Peak forward surge current single sine-wave superimposed on rated load	I <sub>FSM</sub>	175				Α			
Rating for fusing (t < 8.3 ms)	l <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  $5.5 \times 6.0 \times 0.11$ " thick (14 x 15 x 0.3 cm) aluminum plate
- (3) Unit mounted on P.C.B. at 0.375" (9.5 mm) lead length with 0.5 x 0.5" (12 x 12 mm) copper pads

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER	TEST CONDITIONS	SYMBOL	GBPC 6005	GBPC 601	GBPC 602	GBPC 604	GBPC 606	GBPC 608	GBPC 610	UNIT
Maximum instantaneous forward voltage drop per diode	3.0 A	V <sub>F</sub>	1.0						٧	
Maximum DC reverse current at rated DC blocking voltage per diode	T <sub>A</sub> = 25 °C T <sub>A</sub> = 125 °C	I <sub>R</sub>	5.0 500					μΑ		
Typical junction capacitance per diode	4.0 V, 1 MHz	CJ	186 90					pF		

THERMAL CHARACTERISTICS (T <sub>A</sub> = 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)	$egin{array}{c} {\sf R}_{ heta {\sf JA}} \ {\sf R}_{ heta {\sf JC}} \end{array}$	22 7.3					°C/W		

#### 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 x 15 x 0.3 cm) aluminum plate
- (3) Unit mounted on P.C.B. at 0.375" (9.5 mm) lead length with  $0.5 \times 0.5$ " (12 x 12 mm) copper pads

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

### **RATINGS AND CHARACTERISTICS CURVES**

(T<sub>A</sub> = 25 °C unless otherwise noted)

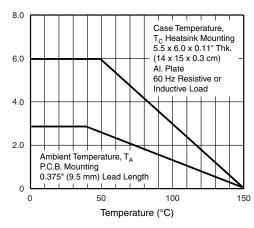


Figure 1. Derating Curve Output Rectified Current

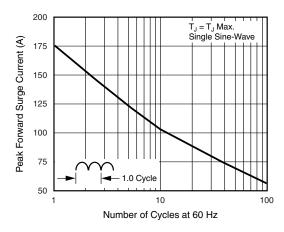


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

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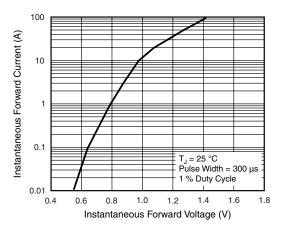
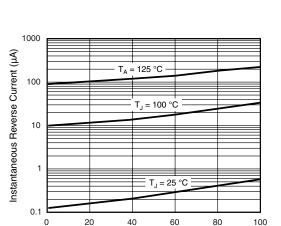


Figure 3. Typical Forward Characteristics Per Diode



Percent of Rated Peak Reverse Voltage (%)
Figure 4. Typical Reverse Leakage Characteristics Per Diode

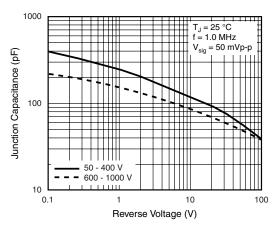


Figure 5. Typical Junction Capacitance Per Diode

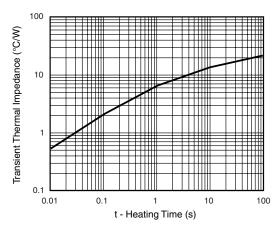
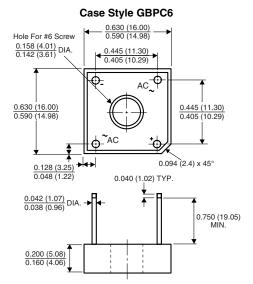


Figure 6. Typical Transient Thermal Impedance Per Diode

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



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



### **Legal Disclaimer Notice**

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