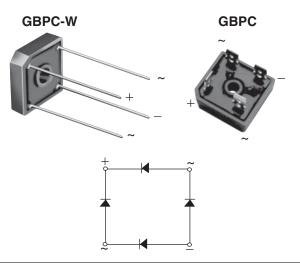


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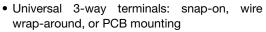
# Glass Passivated Single-Phase Bridge Rectifier



PRIMARY CHARACTERISTICS								
Package	GBPC, GBPC-W							
I <sub>F(AV)</sub>	12 A, 15 A, 25 A, 35 A							
$V_{RRM}$	50 V to 1000 V							
I <sub>FSM</sub>	200 A, 300 A, 300 A, 400 A							
I <sub>R</sub>	5 μΑ							
V <sub>F</sub> at I <sub>F</sub>	1.1 V							
T <sub>J</sub> max.	150 °C							
Diode variations	Quad							

### **FEATURES**







RoHS

 $\bullet$  Typical I<sub>R</sub> less than 0.3  $\mu A$ 

• High surge current capability

· Low thermal resistance

- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

#### 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: GBPC, GBPC-W

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

**Terminals:** Nickel plated on faston lugs or silver plated on wire leads, solderable per J-STD-002 and JESD22-B102. Suffix letter "W" added to indicate wire leads (e.g. GBPC12005W).

Polarity: As marked, positive lead by beveled corner

Mounting Torque: 20 inches-lbs. max.

<b>MAXIMUM RATINGS</b> (T <sub>A</sub> = 25 °C unless of parameter			GBPC12, 15, 25, 35							
		SYMBOL	005	01	02	04	06	08	10	UNIT
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	50	100	200	400	600	800	1000	V	
Maximum RMS 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
GBF		1				12	II.			
Maximum average forward rectified	GBPC15	- I <sub>F (AV)</sub> -	15							
output current (Fig. 1)	GBPC25		25							A
	GBPC35		35							
	GBPC12		200							
Peak forward surge current single sine-wave superimposed on rated load	GBPC15	] , [	300							
sine-wave superimposed on rated load	GBPC25	I <sub>FSM</sub>	300							
	GBPC35		400							]
	GBPC12		160							
Rating (non-repetitive, for t greater than 1 ms and less than 8.3 ms) for fusing	GBPC15	l <sup>2</sup> t	375							A <sup>2</sup> s
	GBPC25	]	375							
GBPC35			660							
RMS isolation voltage from case to leads		V <sub>ISO</sub>	2500							V
Operating junction storage temperature ra	$T_J$ , $T_{STG}$	- 55 to + 150						°C		



# GBPC12, GBPC15, GBPC25, GBPC35

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)											
PARAMETER		TEST	SYMBOL	GBPC12, 15, 25, 35							UNIT
		CONDITIONS	STMBOL	005	01	02	04	06	80	10	UNII
	GBPC12	I <sub>F</sub> = 6.0 A	- V <sub>F</sub>								
Maximum instantaneous forward drop per diode	GBPC15	I <sub>F</sub> = 7.5 A		1.1							V
	GBPC25	I <sub>F</sub> = 12.5 A									V
	GBPC35	I <sub>F</sub> = 17.5 A									
Maximum reverse DC current at rated DC blocking voltage per diode		T <sub>A</sub> = 25 °C		5.0 500							
		T <sub>A</sub> = 125 °C	I <sub>R</sub>								μA
Typical junction capacitance per diode 4 V, 1 MHz			CJ	300						•	pF

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER		SYMBOL	GBPC12, 15, 25, 35						LINIT	
			005	01	02	04	06	08	10	UNIT
GBPC12 to GB		R <sub>eJC</sub> (1)	1.9					°C AM		
Typical thermal resistance	GBPC35	H <sub>θ</sub> JC (1)	1.4							°C/W

#### **Notes**

<sup>(2)</sup> Bolt down on heatsink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #10 screw

ORDERING INFORMATION (Example)										
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE						
GBPC1206-E4/51	15.79	51	100	Paper box						
GBPC1506-E4/51	15.79	51	100	Paper box						
GBPC2506-E4/51	15.79	51	100	Paper box						
GBPC3506-E4/51	15.79	51	100	Paper box						
GBPC1206W-E4/51	13.8	51	100	Paper box						
GBPC1506W-E4/51	13.8	51	100	Paper box						
GBPC2506W-E4/51	13.8	51	100	Paper box						
GBPC3506W-E4/51	13.8	51	100	Paper box						

<sup>(1)</sup> With heatsink

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### **RATINGS AND CHARACTERISTICS CURVES**

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

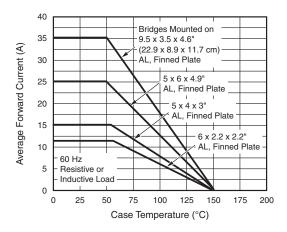


Fig. 1 - Maximum Output Rectified Current

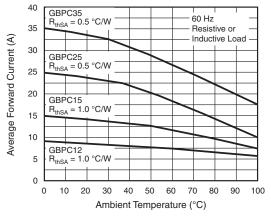


Fig. 2 - Maximum Output Rectified Current

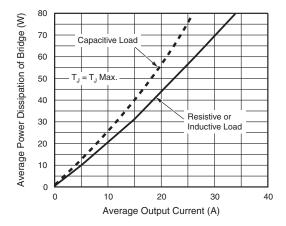


Fig. 3 - Maximum Power Dissipation

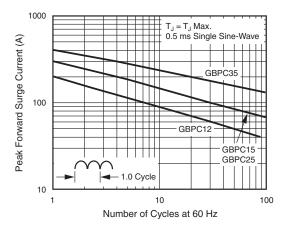


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

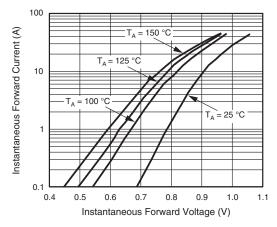


Fig. 5 - Typical Instantaneous Forward Characteristics Per Diode

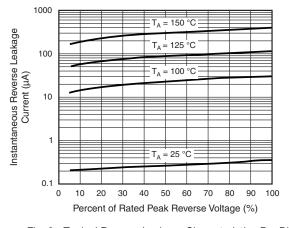


Fig. 6 - Typical Reverse Leakage Characteristics Per Diode





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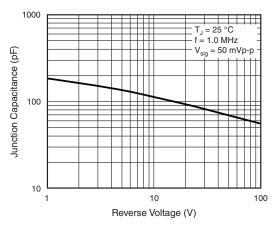


Fig. 7 - Typical Junction Capacitance Per Diode

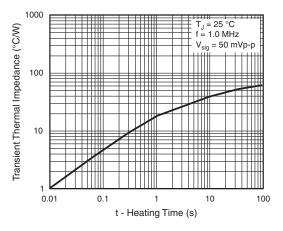
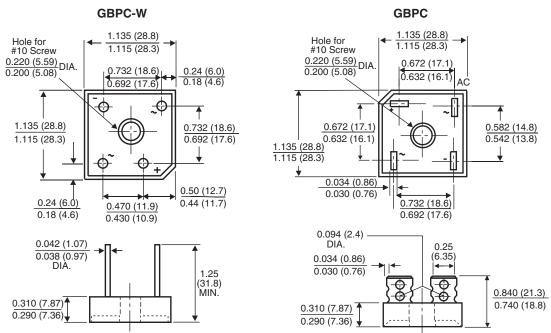


Fig. 8 - Typical Transient Thermal Impedance Per Diode

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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Revision: 13-Jun-16 1 Document Number: 91000