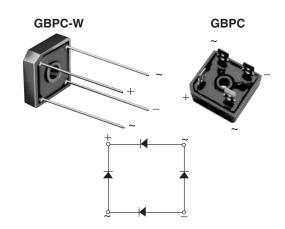


## GBPC12, GBPC15, GBPC25, GBPC35

Vishay General Semiconductor

## **Glass Passivated Single-Phase Bridge Rectifier**



PRIMARY CHARACTERISTICS								
I <sub>F(AV)</sub>	12 A, 15 A, 25 A, 35 A							
V <sub>RRM</sub>	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>	1.1 V							
T <sub>J</sub> max.	150 °C							

### FEATURES

- UL recognition file number E54214
- Universal 3-way terminals: snap-on, wire wrap-around, or PCB mounting
- Typical I<sub>R</sub> less than 0.3  $\mu$ A
- High surge current capability
- Low thermal resistance
- Solder dip 260 °C, 40 s
- Compliant to RoHS Directive 2002/95/EC and in accordance to WEEE 2002/96/EC

### **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 Epoxy meets UL 94 V-0 flammability rating

**Terminals:** Nickel plated on faston lugs or silver plated on wire leads, solderable per J-STD-002 and JESD22-B102. E4 suffix for consumer grade. Suffix letter "W" added to indicate wire leads (e.g. GBPC12005W).

Polarity: As marked, positive lead by belevled corner

Mounting Torque: 20 inches-lbs. max.

PARAMETER		SYMBOL -	GBPC12, 15, 25, 35									
			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 <sub>DC</sub>	50	100	200	400	600	800	1000	V		
	GBPC12					12						
Maximum average forward rectified	GBPC15	I <sub>F (AV)</sub>	15							A		
output current (Fig. 1)	GBPC25		25									
	GBPC35					35						
	GBPC12		200									
Peak forward surge current single	GBPC15		300							A		
sine-wave superimposed on rated load	GBPC25	I <sub>FSM</sub>	300									
	GBPC35					400						
	GBPC12					160						
Rating (non-repetitive, for t greater than	GBPC15	l <sup>2</sup> t	375									
1 ms and less than 8.3 ms) for fusing	GBPC25	1-1	375							A <sup>2</sup> s		
GBPC35			660									
RMS isolation voltage from case to leads		V <sub>ISO</sub>	2500							V		
Operating junction storage temperature ra	T <sub>J</sub> , T <sub>STG</sub>	- 55 to + 150						°C				



Document Number: 88612 Revision: 28-Mar-11

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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>A</sub> = 25 °C unless otherwise noted)											
PARAMETER		TEST CONDITIONS	SYMBOL	GBPC12, 15, 25, 35							UNIT
				005	01	02	04	06	08	10	UNIT
	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				
		T <sub>A</sub> = 125 °C	I <sub>R</sub>	500							μA
Typical junction capacitanc	e per diode	4 V, 1 MHz	CJ	300					pF		

<b>THERMAL CHARACTERISTICS</b> ( $T_A = 25 \text{ °C}$ unless otherwise noted)										
PARAMETER		SYMBOL	GBPC12, 15, 25, 35							
		STIVIDOL	005	01	02	04	06	08	10	
Turnical thermal registeres	GBPC12 to GBPC25	R <sub>θJC</sub> <sup>(1)</sup>				1.9				°C/W
Typical thermal resistance	GBPC35	Π <sub>θ</sub> JC (1)	1.4							

#### Notes

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

(2) 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					

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## GBPC12, GBPC15, GBPC25, GBPC35

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#### **RATINGS AND CHARACTERISTICS CURVES**

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

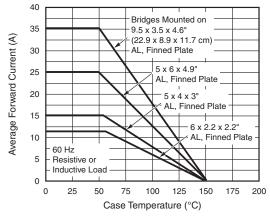


Fig. 1 - Maximum Output Rectified Current

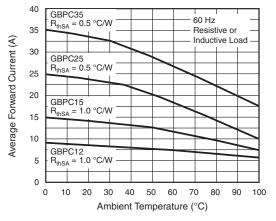


Fig. 2 - Maximum Output Rectified Current

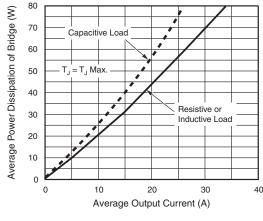


Fig. 3 - Maximum Power Dissipation

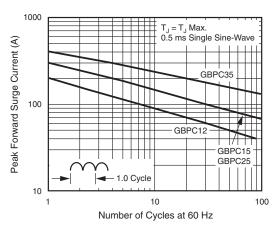


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

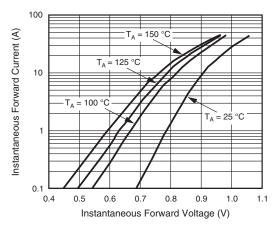
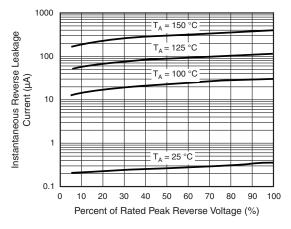


Fig. 5 - Typical Instantaneous Forward Characteristics Per Diode



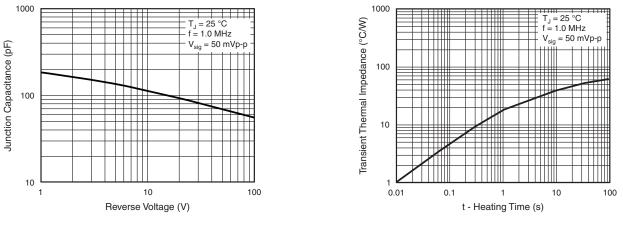


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# GBPC12, GBPC15, GBPC25, GBPC35

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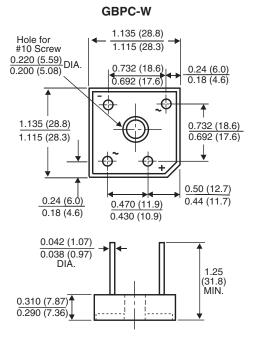


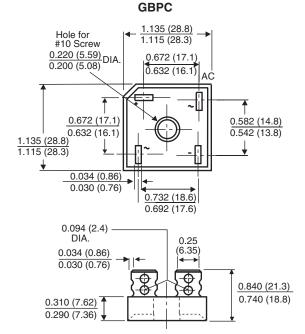




SHA

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





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