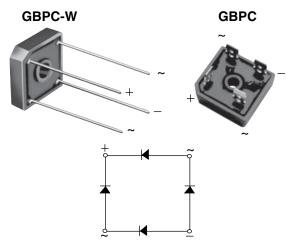


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# **Glass Passivated Single-Phase Bridge Rectifier**



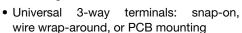
#### **LINKS TO ADDITIONAL RESOURCES**



PRIMARY CHARACTERISTICS								
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							
Package	GBPC, GBPC-W							
Circuit configuration	Quad							

#### **FEATURES**

• UL recognition file number E54214





Typical I<sub>R</sub> less than 0.3 μA

- · 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">www.vishay.com/doc?99912</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 JESD 22-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 otherwise noted)										
PARAMETER		SYMBOL	GBPC12, 15, 25, 35							LINUT
			005	01	02	04	06	08	10	UNIT
Maximum repetitive peak reverse voltage		$V_{RRM}$	50	100	200	400	600	800	1000	V
Maximum RMS 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
	GBPC12		12							
Maximum average forward rectified output current (Fig. 1)	GBPC15	I <sub>F (AV)</sub>	15							
	GBPC25		25							A A
	GBPC35		35							
	GBPC12		200							
Peak forward surge current single	GBPC15		300							_
sine-wave superimposed on rated load	GBPC25	I <sub>FSM</sub>	300							Α
	GBPC35		400							1
	GBPC12		160							
Rating (non-repetitive, for t greater than	GBPC15	l <sup>2</sup> t	375							A <sup>2</sup> s
1 ms and less than 8.3 ms) for fusing	GBPC25	1-1	375							
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		



# 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
PARAMETER		CONDITIONS	STIMBUL	005	01	02	04	06	08	10	UNII
	GBPC12	I <sub>F</sub> = 6.0 A									
Maximum instantaneous forward drop per diode	GBPC15	I <sub>F</sub> = 7.5 A	V <sub>F</sub>	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		T <sub>A</sub> = 25 °C		5.0							
DC blocking voltage per did	ode	T <sub>A</sub> = 125 °C	- I <sub>R</sub>	<sup>IR</sup> 500					μA		
Typical junction capacitanc	e per diode	4 V, 1 MHz	CJ	160				pF			

THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted)										
PARAMETER		SYMBOL	GBPC12, 15, 25, 35							LINUT
		STINIBUL	005	01	02	04	06	08	10	UNIT
GBPC12 to GBPC25		R <sub>eJC</sub> (1)	1.9							°C/W
Typical thermal resistance	GBPC35	⊔θJC (.)	1.4							C/VV

#### Notes

<sup>&</sup>lt;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)

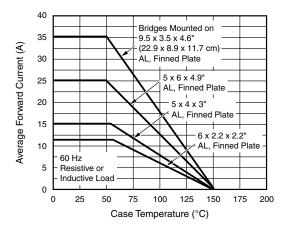


Fig. 1 - Maximum Output Rectified Current

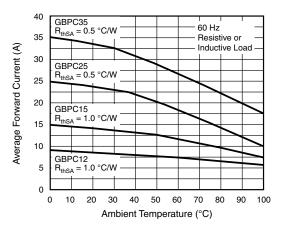


Fig. 2 - Maximum Output Rectified Current

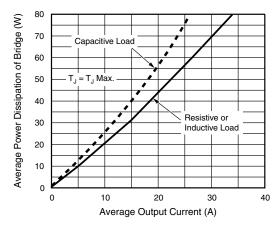


Fig. 3 - Maximum Power Dissipation

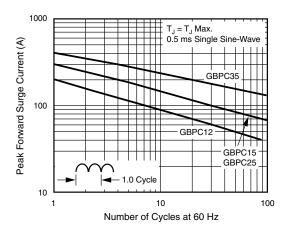


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

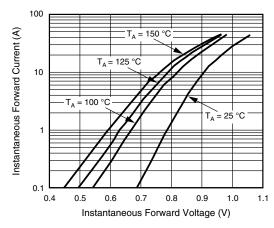


Fig. 5 - Typical Instantaneous Forward Characteristics Per Diode

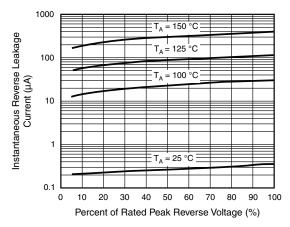


Fig. 6 - Typical Reverse Leakage Characteristics Per Diode

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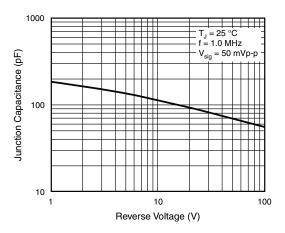


Fig. 7 - Typical Junction Capacitance Per Diode

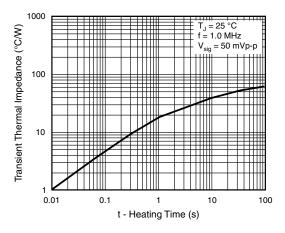
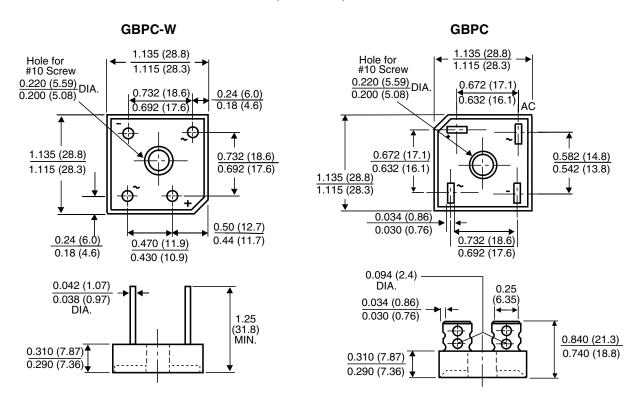


Fig. 8 - Typical Transient Thermal Impedance Per Diode

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





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