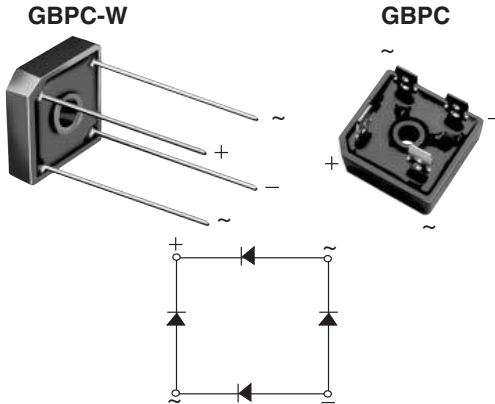


## Glass Passivated Single-Phase Bridge Rectifier



### FEATURES

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



**RoHS**  
COMPLIANT

### 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 beveled corner

**Mounting Torque:** 20 inches-lbs. max.

### PRIMARY CHARACTERISTICS

$I_{F(AV)}$	12 A, 15 A, 25 A, 35 A
$V_{RRM}$	50 V to 1000 V
$I_{FSM}$	200 A, 300 A, 300 A, 400 A
$I_R$	$5 \mu\text{A}$
$V_F$	1.1 V
$T_J$ max.	$150^\circ\text{C}$

### MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	GBPC12, 15, 25, 35							UNIT
		005	01	02	04	06	08	10	
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
Maximum average forward rectified output current (Fig. 1)	GBPC12	12							A
	GBPC15	15							
	GBPC25	25							
	GBPC35	35							
Peak forward surge current single sine-wave superimposed on rated load	GBPC12	200							A
	GBPC15	300							
	GBPC25	300							
	GBPC35	400							
Rating (non-repetitive, for t greater than 1 ms and less than 8.3 ms) for fusing	GBPC12	160							A <sup>2</sup> s
	GBPC15	375							
	GBPC25	375							
	GBPC35	660							
RMS isolation voltage from case to leads	$V_{ISO}$	2500							V
Operating junction storage temperature range	$T_J, T_{STG}$	- 55 to + 150							$^\circ\text{C}$

ELECTRICAL CHARACTERISTICS (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
Maximum instantaneous forward drop per diode	GBPC12	I <sub>F</sub> = 6.0 A	V <sub>F</sub>	1.1						V
	GBPC15	I <sub>F</sub> = 7.5 A								
	GBPC25	I <sub>F</sub> = 12.5 A								
	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		I <sub>R</sub>	5.0						μA
	T <sub>A</sub> = 125 °C			500						
Typical junction capacitance per diode	4 V, 1 MHz		C <sub>J</sub>	300						pF

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

**Notes**

(1) 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

## RATINGS AND CHARACTERISTICS CURVES

( $T_A = 25^\circ\text{C}$  unless otherwise noted)

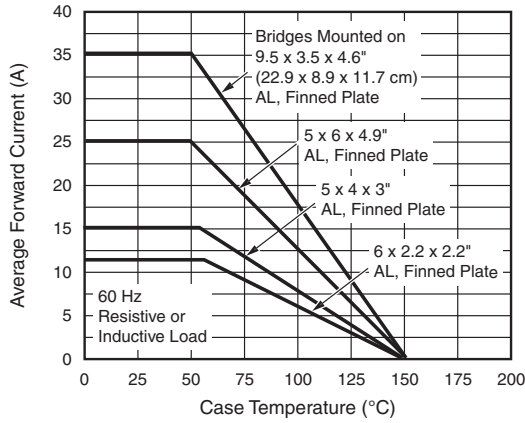


Fig. 1 - Maximum Output Rectified Current

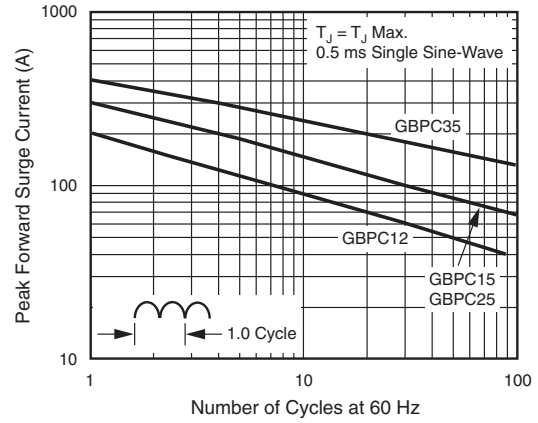


Fig. 4 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

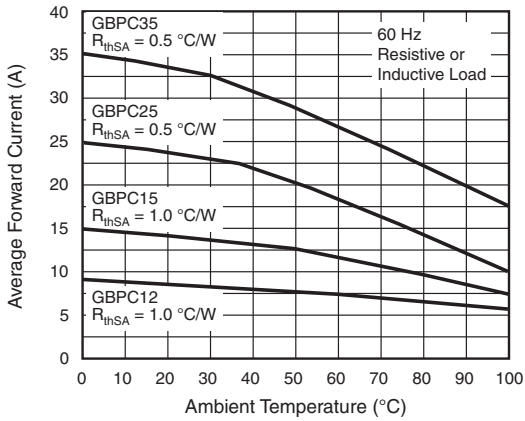


Fig. 2 - Maximum Output Rectified Current

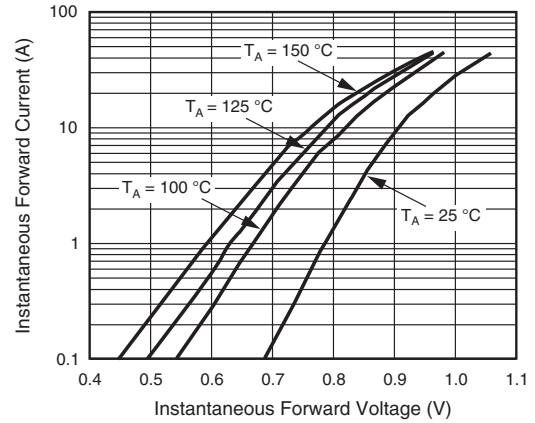


Fig. 5 - Typical Instantaneous Forward Characteristics Per Diode

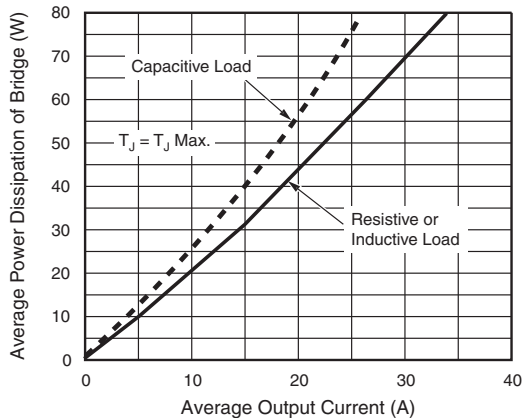


Fig. 3 - Maximum Power Dissipation

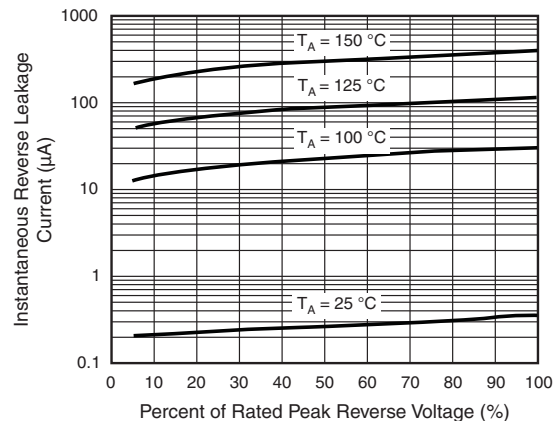


Fig. 6 - Typical Reverse Leakage Characteristics Per Diode

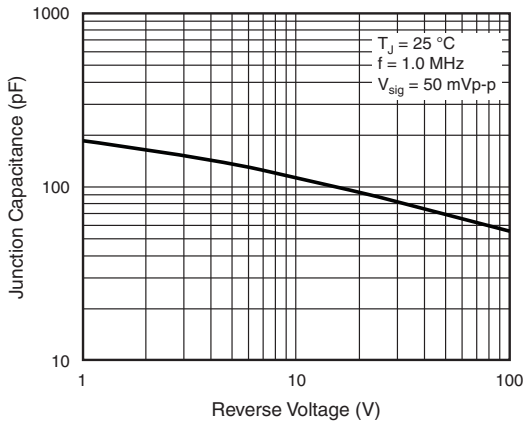


Fig. 7 - Typical Junction Capacitance Per Diode

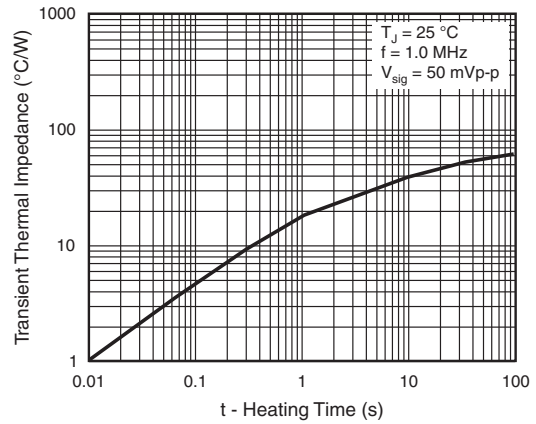
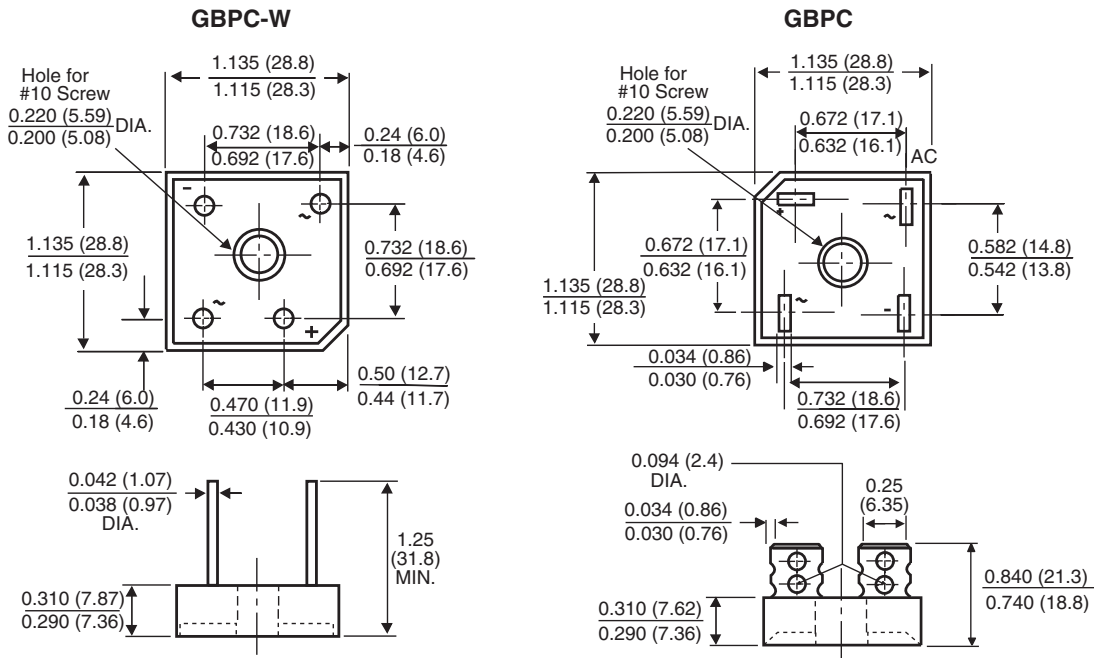


Fig. 8 - Typical Transient Thermal Impedance Per Diode

## PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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