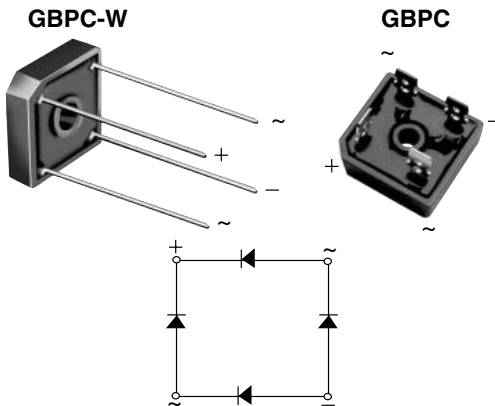


Glass Passivated Single-Phase Bridge Rectifier



FEATURES

- UL recognition file number E54214
- Universal 3-way terminals: snap-on, wire wrap-around, or P.C.B. mounting
- Typical I_R less than $0.3 \mu A$
- High surge current capability
- Low thermal resistance
- Solder dip $260^\circ C$, 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.

| 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 | $5 \mu A$ |
| V_F | 1.1 V |
| $T_J \text{ max.}$ | $150^\circ C$ |

MECHANICAL DATA

Case: GBPC, GBPC-W

Epoxy meets UL 94V-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.

| MAXIMUM RATINGS ($T_A = 25^\circ C$ 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) | $I_{F(AV)}$ | GBPC12: 12 GBPC15: 15 GBPC25: 25 GBPC35: 35 | | | | | | | A |
| Peak forward surge current single sine-wave superimposed on rated load | I_{FSM} | GBPC12: 200 GBPC15: 300 GBPC25: 300 GBPC35: 400 | | | | | | | A |
| Rating (non-repetitive, for t greater than 1 ms and less than 8.3 ms) for fusing | I^2t | GBPC12: 160 GBPC15: 375 GBPC25: 375 GBPC35: 660 | | | | | | | A^2s |
| RMS isolation voltage from case to leads | V_{ISO} | 2500 | | | | | | | V |
| Operating junction storage temperature range | T_J, T_{STG} | - 55 to + 150 | | | | | | | $^\circ C$ |

GBPC12, GBPC15, GBPC25 & GBPC35

Vishay General Semiconductor



| ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ 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 GBPC15 GBPC25 GBPC35 | $I_F = 6.0\text{ A}$ $I_F = 7.5\text{ A}$ $I_F = 12.5\text{ A}$ $I_F = 17.5\text{ A}$ | V_F | 1.1 | | | | | | V |
| Maximum reverse DC current at rated DC blocking voltage per diode | $T_A = 25\text{ }^\circ\text{C}$ $T_A = 125\text{ }^\circ\text{C}$ | I_R | 5.0 500 | | | | | | μA | |
| Typical junction capacitance per diode | 4 V, 1 MHz | C_J | 300 | | | | | | pF | |

| THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | |
|---|---------------------|--------------------|------------|----|----|----|----|------|--------------------|
| PARAMETER | SYMBOL | GBPC12, 15, 25, 35 | | | | | | UNIT | |
| | | 005 | 01 | 02 | 04 | 06 | 08 | | 10 |
| Typical thermal resistance ⁽¹⁾ | GBPC12-25 GBPC35 | $R_{\theta JC}$ | 1.9 1.4 | | | | | | $^\circ\text{C/W}$ |

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

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

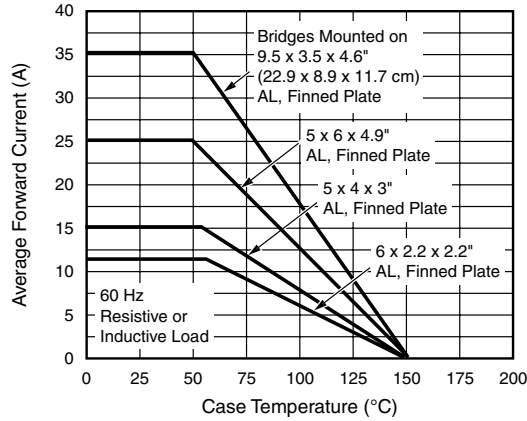


Figure 1. Maximum Output Rectified Current

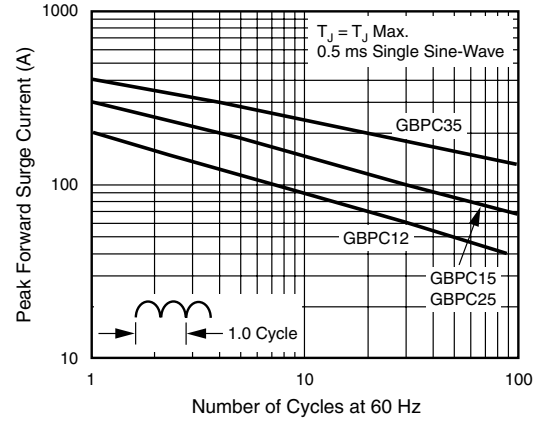


Figure 4. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

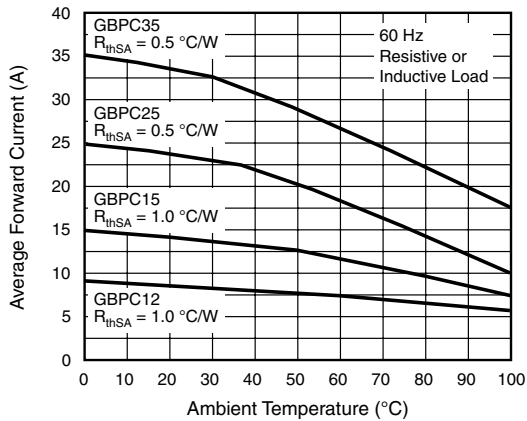


Figure 2. Maximum Output Rectified Current

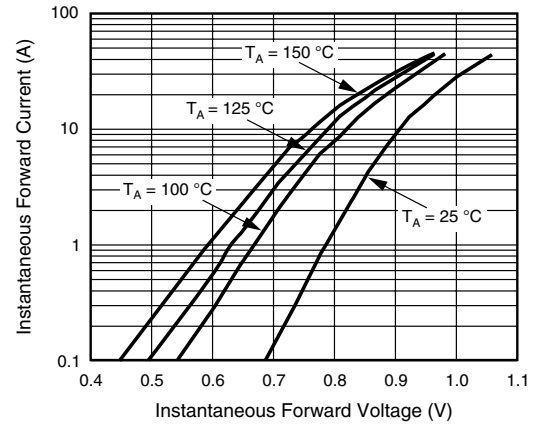


Figure 5. Typical Instantaneous Forward Characteristics Per Diode

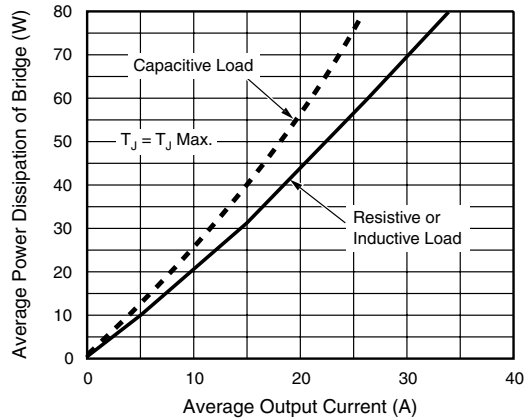


Figure 3. Maximum Power Dissipation

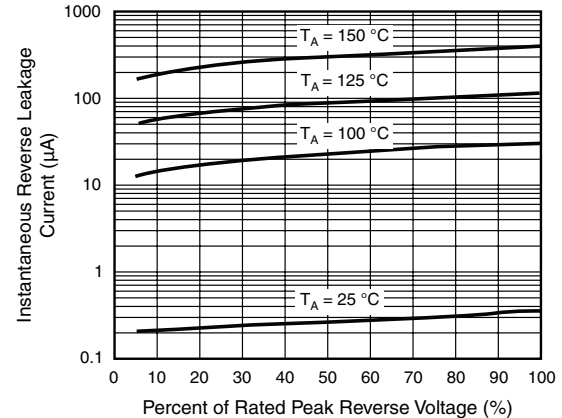


Figure 6. Typical Reverse Leakage Characteristics Per Diode

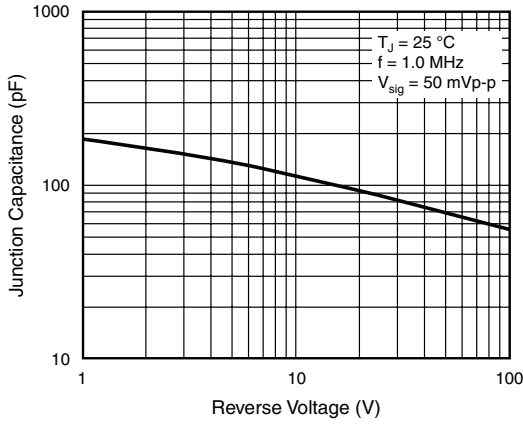


Figure 7. Typical Junction Capacitance Per Diode

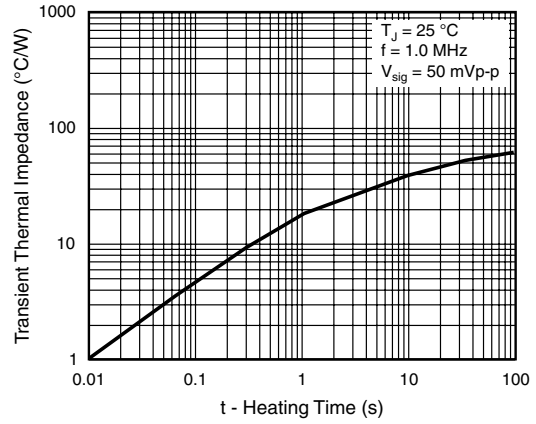
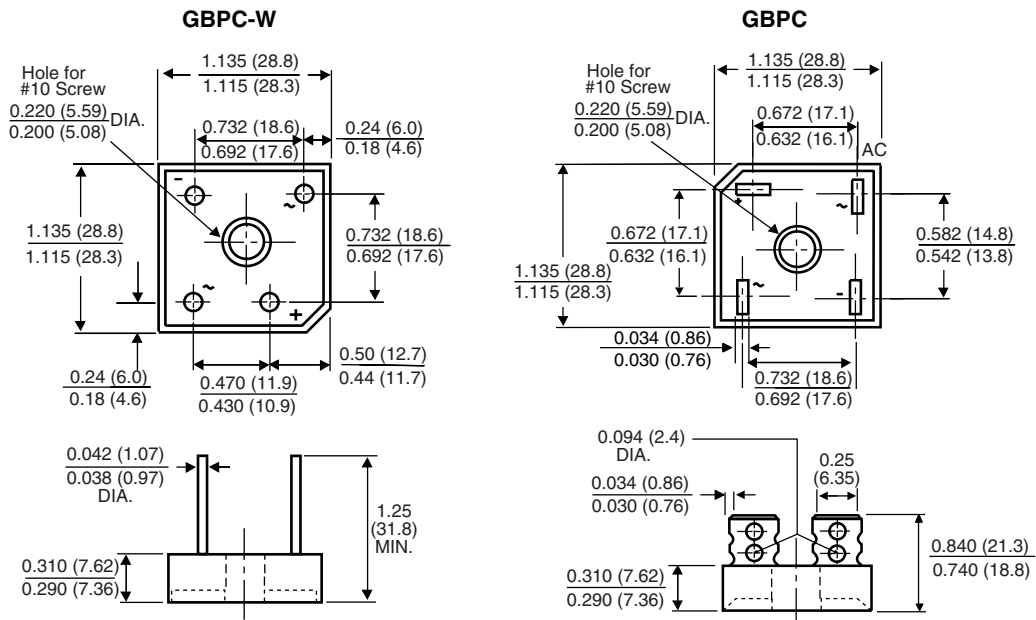


Figure 8. Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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