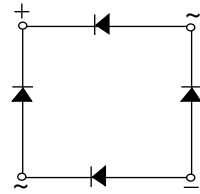
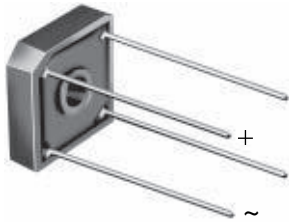




Glass Passivated Single-Phase Bridge Rectifier



Case Style GBPC6

FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- Typical I_R less than 0.5 μA
- High surge current capability
- High case dielectric strength 1500 V_{RMS}
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

| PRIMARY CHARACTERISTICS | |
|-------------------------|---|
| Package | GBPC6 |
| $I_{F(AV)}$ | 6 A |
| V_{RRM} | 50 V, 100 V, 200 V, 400 V, 600 V, 800 V, 1000 V |
| I_{FSM} | 175 A |
| I_R | 5 μA |
| V_F at $I_F = 3.0 A$ | 1.0 V |
| T_J max. | 150 °C |
| Diode variations | Quad |

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: GBPC6

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

Terminals: Silver plated leads, solderable per J-STD-002 and JESD22-B102

Polarity: As marked, positive lead by beveled corner

Mounting Torque: 10 cm-kg (8.8 in-lbs) maximum

Recommended Torque: 5.7 cm-kg (5 in-lbs) maximum

| MAXIMUM RATINGS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted) | | | | | | | | | | |
|--|----------------|---|----------|----------|----------|----------|----------|----------|------------------|---|
| PARAMETER | SYMBOL | GBPC 6005 | GBPC 601 | GBPC 602 | GBPC 604 | GBPC 606 | GBPC 608 | GBPC 610 | UNIT | |
| Maximum repetitive peak reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V | |
| Maximum RMS bridge input 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 at | $I_{F(AV)}$ | $T_C = 50\text{ }^\circ\text{C}$ (1)(2) | | | | | | | 6.0 | A |
| | | $T_A = 40\text{ }^\circ\text{C}$ (3) | | | | | | | 3.0 | |
| Peak forward surge current single sine-wave superimposed on rated load | I_{FSM} | 175 | | | | | | | A | |
| Rating for fusing ($t = 8.3\text{ ms}$) | I^2t | 127 | | | | | | | A^2s | |
| Operating junction and storage temperature range | T_J, T_{STG} | - 55 to + 150 | | | | | | | $^\circ\text{C}$ | |

Notes

- (1) Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #6 screw
- (2) Unit mounted on 5.5" x 6.0" x 0.11" thick (14 cm x 15 cm x 0.3 cm) aluminum plate
- (3) Unit mounted on PCB at 0.375" (9.5 mm) lead length with 0.5" x 0.5" (12 mm x 12 mm) copper pads



| ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | | | |
|--|----------------|-------------------------|-----------|----------|----------|----------|----------|----------|----------|------|----|
| PARAMETER | SYMBOL | TEST CONDITIONS | GBPC 6005 | GBPC 601 | GBPC 602 | GBPC 604 | GBPC 606 | GBPC 608 | GBPC 610 | UNIT | |
| Maximum instantaneous forward voltage drop per diode | V _F | 3.0 A | 1.0 | | | | | | | | V |
| Maximum DC reverse current at rated DC blocking voltage per diode | I _R | T _A = 25 °C | 5.0 | | | | | | | | μA |
| | | T _A = 125 °C | 500 | | | | | | | | |
| Typical junction capacitance per diode | C _J | 4.0 V, 1 MHz | 186 | | | | 90 | | | pF | |

| THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted) | | | | | | | | | | |
|---|------------------|-----------|----------|----------|----------|----------|----------|----------|------|--|
| PARAMETER | SYMBOL | GBPC 6005 | GBPC 601 | GBPC 602 | GBPC 604 | GBPC 606 | GBPC 608 | GBPC 610 | UNIT | |
| Typical thermal resistance (1) | R _{θJA} | 22 | | | | | | | °C/W | |
| | R _{θJC} | 7.3 | | | | | | | | |

Notes

- (1) Bolt down on heat-sink with silicone thermal compound between bridge and mounting surface for maximum heat transfer with #6 screw
- (2) Unit mounted on 5.5" x 6.0" x 0.11" thick (14 cm x 15 cm x 0.3 cm) aluminum plate
- (3) Unit mounted on PCB at 0.375" (9.5 mm) lead length with 0.5" x 0.5" (12 mm x 12 mm) copper pads

| ORDERING INFORMATION (Example) | | | | |
|--------------------------------|-----------------|--------------|---------------|---------------|
| PREFERRED P/N | UNIT WEIGHT (g) | PACKAGE CODE | BASE QUANTITY | DELIVERY MODE |
| GBPC606-E4/51 | 3.2 | 51 | 100 | Paper box |

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

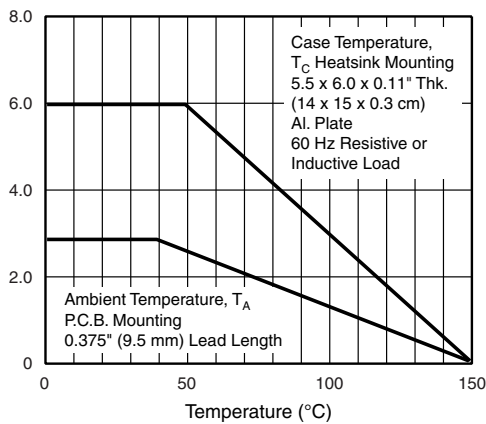


Fig. 1 - Derating Curve Output Rectified Current

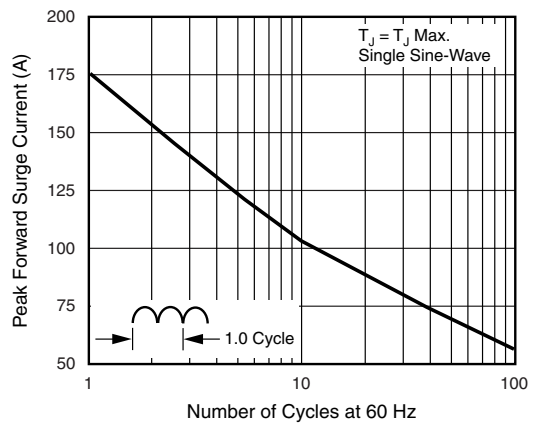


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current Per Diode

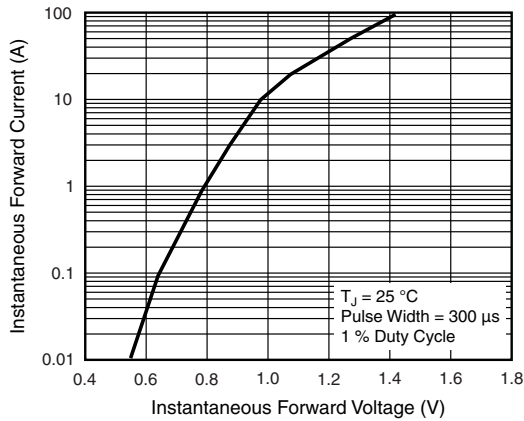


Fig. 3 - Typical Forward Characteristics Per Diode

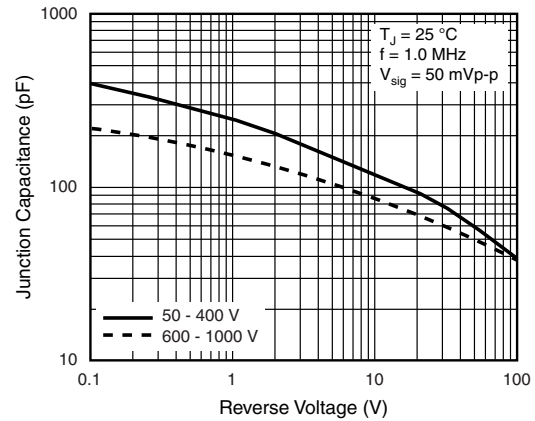


Fig. 5 - Typical Junction Capacitance Per Diode

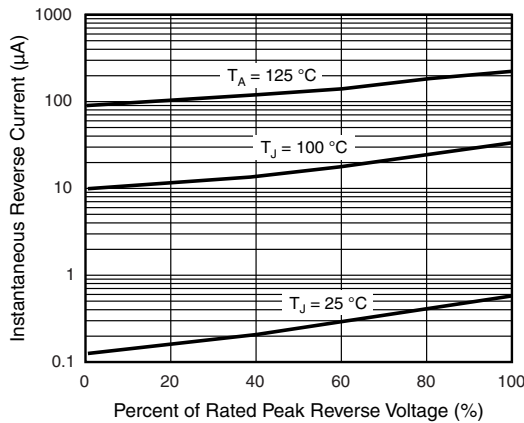


Fig. 4 - Typical Reverse Leakage Characteristics Per Diode

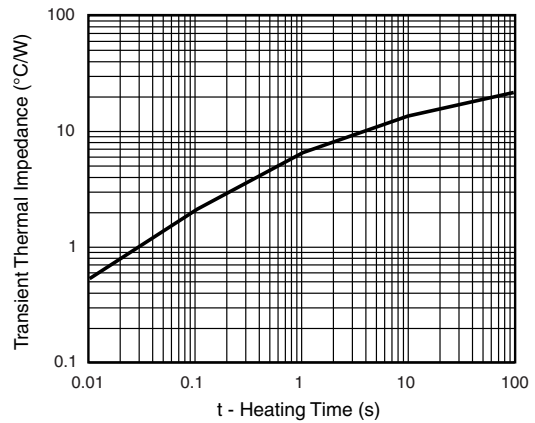
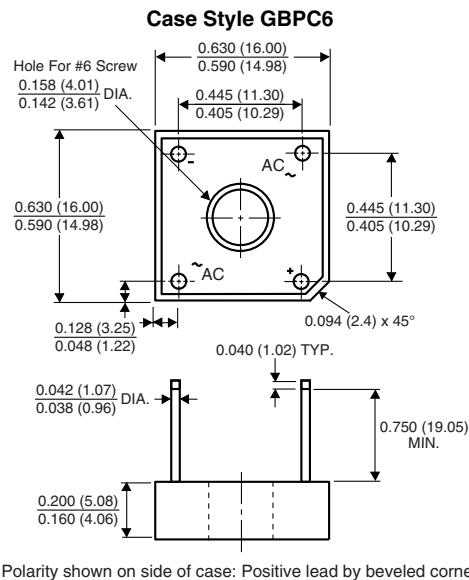


Fig. 6 - Typical Transient Thermal Impedance Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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