

## Glass Passivated Bridge Rectifiers

### FEATURES

- Glass passivated junction
- Integrally molded heatsink provide very low thermal resistance for maximum heat dissipation
- Universal 4-way terminals: snap-on, wrap-around, solder or P.C. board mounting
- High surge current capability
- UL Recognized File # E-326243
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC


**GBPC40**

**GBPC40-M**


### MECHANICAL DATA

**Case:** GBPC40

Molding compound, UL flammability classification rating 94V-0

**Terminal:** Matte tin plated leads, solderable per JESD22-B102  
 Meet JESD 201 class 1A whisker test

**Polarity:** Polarity as marked on the body

**Mounting torque:** 20 in-lbs maximum

**Weight:** 17.3 g (approximately)

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

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |  |  |                                                          |              |     |     |     |     |     |      |      |
|------------------------------------------------------------------------------------------------|--|--|----------------------------------------------------------|--------------|-----|-----|-----|-----|-----|------|------|
| PARAMETER                                                                                      |  |  | SYMBOL                                                   | 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    |
| Maximum average forward rectified current<br>GBPC40<br>GBPC50                                  |  |  | I <sub>F(AV)</sub>                                       | 40<br>50     |     |     |     |     |     |      | A    |
| Peak forward surge current,8.3 ms<br>single half sine-wave superimposed<br>on rated load       |  |  | GBPC40<br>GBPC50<br>I <sub>FSM</sub>                     | 400          |     |     |     |     |     |      | A    |
| Maximum instantaneous<br>forward voltage drop per<br>element at specified current              |  |  | GBPC40 20 A<br>GBPC50 25 A<br>(Note 1)<br>V <sub>F</sub> | 1.1          |     |     |     |     |     |      | V    |
| Maximum reverse current @ Rated VR @ T <sub>J</sub> =25°C                                      |  |  | I <sub>R</sub>                                           | 10           |     |     |     |     |     |      | µA   |
| Typical thermal resistance                                                                     |  |  | R <sub>θJC</sub>                                         | 1.5          |     |     |     |     |     |      | °C/W |
| Operating junction temperature range                                                           |  |  | T <sub>J</sub>                                           | - 55 to +150 |     |     |     |     |     |      | °C   |
| Storage temperature range                                                                      |  |  | T <sub>STG</sub>                                         | - 55 to +150 |     |     |     |     |     |      | °C   |

Note 1: Pulse test with  $PW=300\mu\text{s}$ , 1% duty cycle

Note 2: Suffix "M" - Terminal Location Face to Face

| ORDERING INFORMATION |              |         |         |
|----------------------|--------------|---------|---------|
| PART NO.             | PACKING CODE | PACKAGE | PACKING |
| GBPC**xx<br>(Note 1) | T0           | GBPC    | Tray    |

Note 1: "\*" defines current from 40A (GBPC40xx) to 50A (GBPC50xx),  
"xx" defines voltage from 50V (GBPC\*\*005) to 1000V (GBPC\*\*10)

| EXAMPLE       |          |              |             |
|---------------|----------|--------------|-------------|
| PREFERRED P/N | PART NO. | PACKING CODE | DESCRIPTION |
| GBPC4010 T0   | GBPC4010 | T0           |             |

## RATINGS AND CHARACTERISTICS CURVES

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

FIG.1- MAXIMUM FORWARD CURRENT DERATING CURVE

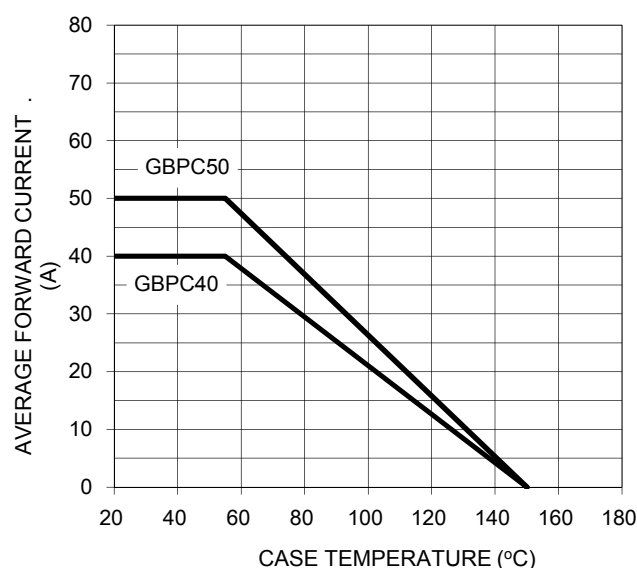


FIG. 2- TYPICAL REVERSE CHARACTERISTICS

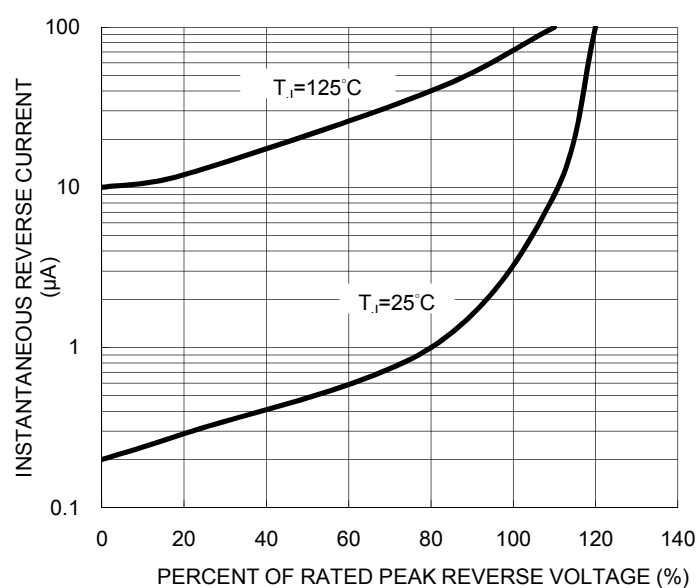


FIG. 3- MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

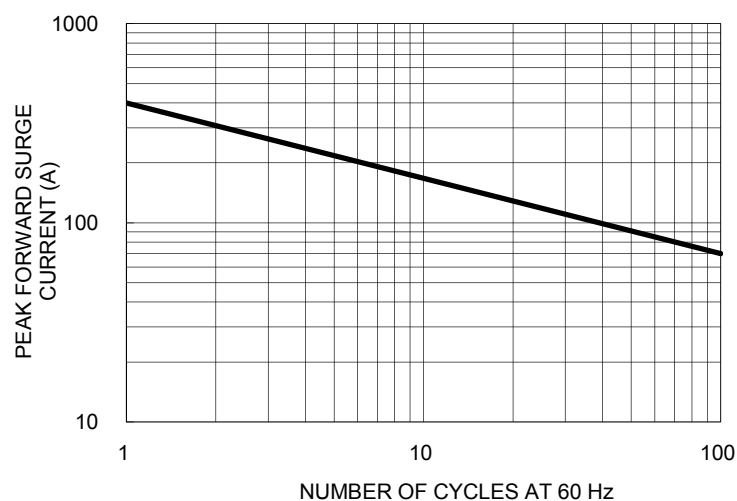


FIG. 4- TYPICAL FORWARD CHARACTERISTICS

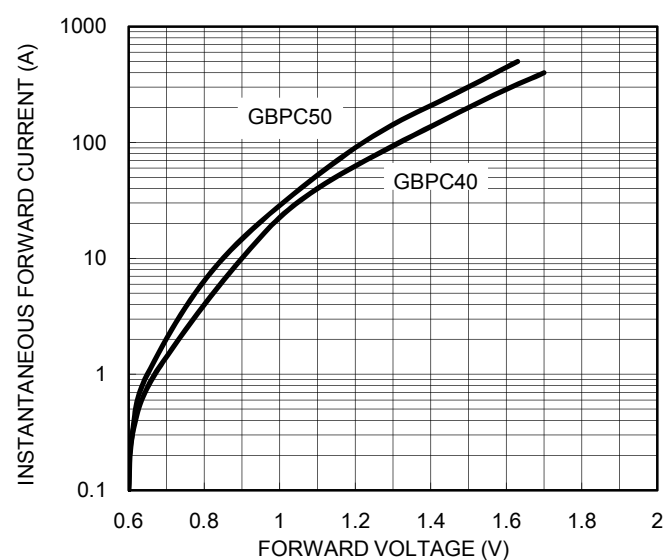
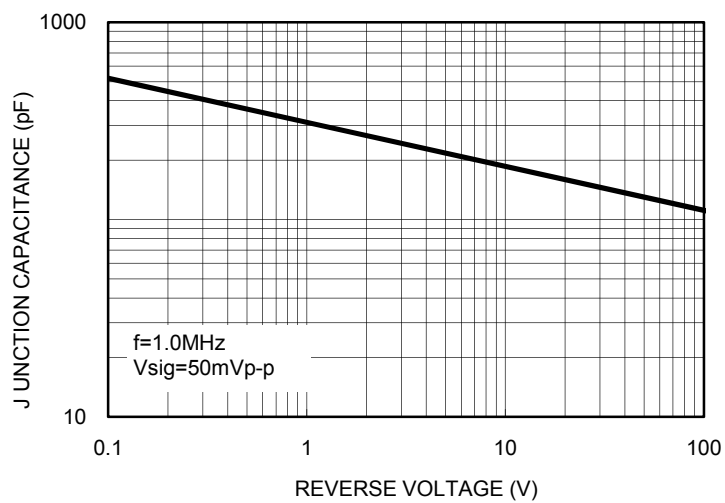
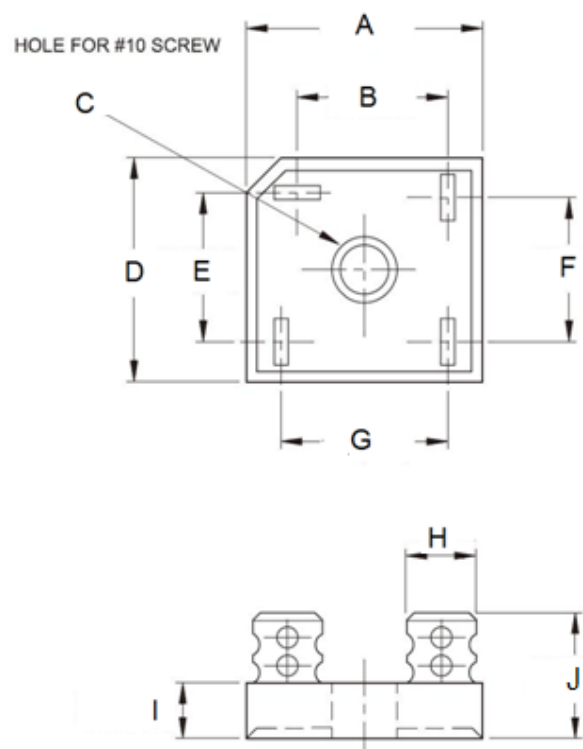


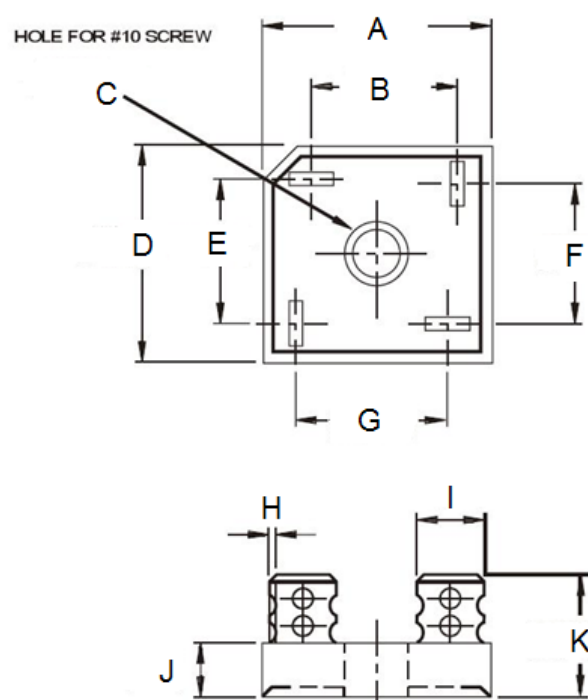
FIG. 5 TYPICAL JUNCTION CAPACITANCE



### PACKAGE OUTLINE DIMENSIONS



| GBPC40 |            |       |             |       |
|--------|------------|-------|-------------|-------|
| DIM.   | Unit (mm)  |       | Unit (inch) |       |
|        | Min        | Max   | Min         | Max   |
| A      | 28.50      | 29.00 | 1.122       | 1.142 |
| B      | 15.50      | 17.60 | 0.610       | 0.693 |
| C      | 5.08       | 5.59  | 0.200       | 0.220 |
| D      | 28.50      | 29.00 | 1.122       | 1.142 |
| E      | 15.50      | 17.60 | 0.610       | 0.693 |
| F      | 13.30      | 15.30 | 0.524       | 0.602 |
| G      | 17.10      | 19.10 | 0.673       | 0.752 |
| H      | 6.60 (TYP) |       | 0.26 (TYP)  |       |
| I      | 7.36       | 7.87  | 0.290       | 0.310 |
| J      | 21.26      | 24.57 | 0.837       | 0.967 |



| GBPC40-M |            |       |             |       |
|----------|------------|-------|-------------|-------|
| DIM.     | Unit (mm)  |       | Unit (inch) |       |
|          | Min        | Max   | Min         | Max   |
| A        | 28.50      | 29.00 | 1.122       | 1.142 |
| B        | 15.50      | 17.60 | 0.610       | 0.693 |
| C        | 5.08       | 5.59  | 0.200       | 0.220 |
| D        | 28.50      | 29.00 | 1.122       | 1.142 |
| E        | 15.50      | 17.60 | 0.610       | 0.693 |
| F        | 15.50      | 17.60 | 0.610       | 0.693 |
| G        | 15.50      | 17.60 | 0.610       | 0.693 |
| H        | 0.76       | 0.86  | 0.030       | 0.034 |
| I        | 6.60 (TYP) |       | 0.26 (TYP)  |       |
| J        | 7.36       | 7.87  | 0.290       | 0.310 |
| K        | 21.26      | 24.57 | 0.837       | 0.967 |

**MARKING DIAGRAM**



P/N = Specific Device Code  
YWW = Date Code  
F = Factory Code

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