

## Glass Passivated Bridge Rectifiers

### FEATURES

- Glass passivated junction
- Integrally molded heatsink provide very low thermal resistance for maximum heat dissipation
- Typical  $I_R$  less than 0.2 $\mu$ A
- High surge current capability
- UL Recognized File # E-326243
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC



**GBPC**



**GBPC-W**



**GBPC-M**



### MECHANICAL DATA

**Case:** GBPC

GBPC-W: Wire structure

GBPC-M: Terminal cathode parallel to anode

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:** 16.95 g (approximately)

| MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise noted)    |                 |   |     |     |                   |     |     |      |                    |
|--|-----------------|---|-----|-----|-------------------|-----|-----|------|--------------------|
| PARAMETER  | SYMBOL          | 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                  |
| Maximum average forward rectified current<br>GBPC15<br>GBPC25<br>GBPC35                            | $I_{F(AV)}$     |   |     |     | 15<br>25<br>35    |     |     |      | A                  |
| Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$       |   |     |     | 300<br>300<br>400 |     |     |      | A                  |
| Maximum instantaneous forward voltage drop per element at specified current (Note 1)               | $V_F$           | GBPC15 7.5A<br>GBPC25 12.5A<br>GBPC35 17.5A |     |     | 1.1               |     |     |      | V                  |
| Maximum reverse current @ Rated VR @ $T_J=25^\circ\text{C}$  | $I_R$           |   |     |     | 5                 |     |     |      | $\mu\text{A}$      |
| Typical thermal resistance   | $R_{\theta JC}$ |   |     |     | 1.5               |     |     |      | $^\circ\text{C/W}$ |
| Operating junction temperature range   | $T_J$           |   |     |     | - 55 to +150      |     |     |      | $^\circ\text{C}$   |
| Storage temperature range  | $T_{STG}$       |   |     |     | - 55 to +150      |     |     |      | $^\circ\text{C}$   |

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

**ORDERING INFORMATION**

| PART NO.             | PACKING CODE | PACKAGE | PACKING |
|----------------------|--------------|---------|---------|
| GBPC*5xx<br>(Note 1) | T0           | GBPC    | Tray    |

Note 1: "\*" defines current from 15A (GBPC15xx) to 35A (GBPC35xx),  
"xx" defines voltage from 50V (GBPC\*5005) to 1000V (GBPC\*510)

**EXAMPLE**

| PREFERRED P/N | PART NO. | PACKING CODE | DESCRIPTION |
|---------------|----------|--------------|-------------|
| GBPC1510 T0   | GBPC1510 | T0           |             |

**RATINGS AND CHARACTERISTICS CURVES**

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

FIG. 1 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



| GBPC |            |       |             |       |
|------|------------|-------|-------------|-------|
| 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    | 6.35 (TYP) |       | 0.25 (TYP)  |       |
| I    | 10.97      | 11.23 | 0.432       | 0.442 |
| J    | 21.50      | 24.50 | 0.846       | 0.965 |



| GBPC-W |           |       |             |       |
|--------|-----------|-------|-------------|-------|
| DIM.   | Unit (mm) |       | Unit (inch) |       |
|        | Min       | Max   | Min         | Max   |
| A      | 28.50     | 29.00 | 1.122       | 1.142 |
| B      | 17.10     | 19.10 | 0.673       | 0.752 |
| C      | 5.08      | 5.59  | 0.200       | 0.220 |
| D      | 28.50     | 29.00 | 1.122       | 1.142 |
| E      | 17.10     | 19.10 | 0.673       | 0.752 |
| F      | 4.40      | 6.20  | 0.173       | 0.244 |
| G      | 10.40     | 12.40 | 0.409       | 0.488 |
| H      | 0.97      | 1.07  | 0.038       | 0.042 |
| I      | 10.97     | 11.23 | 0.432       | 0.442 |
| J      | 30.50     | -     | 1.201       | -     |
| K      | 4.40      | 6.20  | 0.173       | 0.244 |

PACKAGE OUTLINE DIMENSIONS



| GBPC-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      | 6.6 (TYP) |       | 0.26 (TYP)  |       |
| J      | 10.97     | 11.23 | 0.432       | 0.442 |
| 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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