

July 2010

GBPC 12, 15, 25, 35 SERIES Bridge Rectifiers (Glass Passivated)

Features

- Integrally molded heatsink provided very low thermal resistance for maximum heat dissipation.
- Surge Overload Ratings from 300 amperes to 400 amperes.
- Isolated voltage from case to lead over 2500 volts.
- UL certified, UL #E326243
- Terminals Finish Material Silver (solderable per MIL-STD-202, Method 208 for the wire type GBPC-W package)
 Nickel for GBPC package.

Suffix "W"

Wire Lead Structure

Suffix "M"

Terminal Location Face to Face



Absolute Maximum Ratings * T_A = 25°C unless otherwise noted

| Symbol | Parameter | | Value | | | | | | Units |
|--------------------|--|--|----------------------|-----|-----|-----|-----|-------------|-------|
| | | | 01 | 02 | 04 | 06 | 08 | 10 | Units |
| V_{RRM} | Maximum Repetitive Reverse Voltage | | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| V _{RMS} | Maximum RMS Bridge Input Voltage | | 70 | 140 | 280 | 420 | 560 | 700 | V |
| V _R | DC Reverse Voltage (Rated V _R) | | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| I _{F(AV)} | Average Rectified Forward Current @ T _C = 55°C GBPC12 GBPC15 GBPC25 GBPC35 | | 12 15 25 35 | | | | | A A A | |
| I _{FSM} | Non-Repetitive Peak Forward Surge Current GBPC12, 25, 25 8.3ms Single Half-Sine-Wave GBPC35 | | | | | | | A A | |
| T _{STG} | Storage Temperature Range | | -55 to +150 | | | | °C | | |
| T _J | Operating Junction Temperature | | -55 to +150 | | | | | °C | |

^{*} These ratings are limiting values above which the serviceability of any semiconductor device may by impaired.

Thermal Characteristics

| Symbol | Parameter | Value | Units | |
|----------------|--|-------|-------|--|
| P _D | Power Dissipation | 83.3 | W | |
| $R_{	heta JC}$ | Thermal Resistance, Junction to Case * | 1.5 | °C/W | |

^{*} With Heatsink

Electrical Characteristics $T_A = 25^{\circ}C$ unless otherwise noted

| Symbol | Parameter | | Value | Units | | |
|------------------|--|---|--------------------------|--|--|--|
| V _F | Forward Voltage Drop, per brid @6.0A @7.5A @12.5A @17.5A | GBPC12 GBPC15 GBPC25 GBPC35 | 1.1 (Max.) | V | | |
| I _R | Reverse Current, per element @ Rated V _R | T _A = 25°C T _A = 125°C | 5.0 (Max.) 500 (Max.) | μ Α μ Α | | |
| I ² t | Rating for Fusing t < 8.35ms | GBPC12, 15, 25 GBPC35 | 375 660 | A ² Sec A ² Sec | | |
| C _T | Total Capacitance, per leg V _R = 4.0V f = 1.0MHz | GBPC12, 15, 25 GBPC35 | 180 200 | pF pF | | |

Typical Performance Characteristics

Figure 1. Forward Current Derating Curve

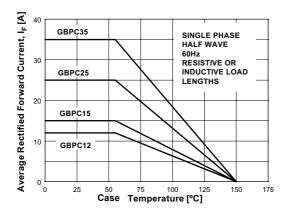


Figure 2. Non-Repetitive Surge Current

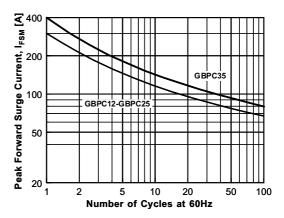


Figure 3. Forward Voltage Characteristics

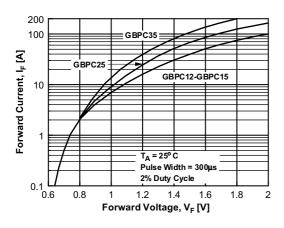
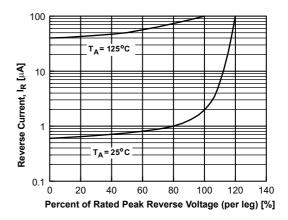


Figure 4. Reverse Current vs Reverse Voltage







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