

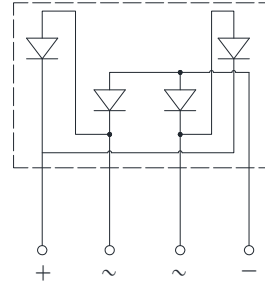
GBJ20005S thru GBJ2010S

Bridge Rectifiers

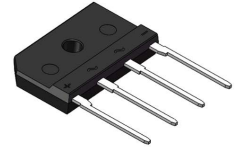
Voltage Range 50V to 1000V Forward Current 20A

Features

- Low forward voltage drop
- High current capability



Schematic Diagram



4GBJ

Absolute Maximum Ratings

($T_A=25^{\circ}\text{C}$ unless otherwise specified. Single phase, half wave, 60Hz, resistive or inductive load. For capacitive load, derate current by 20%.)

| Parameter | Symbol | GBJ20005S | GBJ2001S | GBJ2002S | GBJ2004S | GBJ2006S | GBJ2008S | GBJ2010S | 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 @ $T_C=100^{\circ}\text{C}$ | with Heatsink ² | 20.0 | | | | | | | A |
| | without Heatsink | 3.6 | | | | | | | |
| Peak Forward Surge Current 8.3ms Single Half Sine-Wave, Super Imposed on Rated Load (JEDEC Method) | I_{FSM} | 260 | | | | | | | A |
| Maximum Forward Voltage @ 10.0A DC | V_F | 1.1 | | | | | | | V |
| Maximum DC Reverse Current at Rated DC Blocking Voltage | $T_J=25^{\circ}\text{C}$ | 5 | | | | | | | μA |
| | $T_J=125^{\circ}\text{C}$ | 500 | | | | | | | |
| I^2t Rating for Fusing, $t < 8.3\text{ms}$ | I^2t | 280 | | | | | | | A^2S |
| Typical Junction Capacitance Per Element ¹ | C_J | 70 | | | | | | | pF |
| Typical Thermal Resistance ² | $R_{\theta JC}$ | 0.8 | | | | | | | $^{\circ}\text{C}/\text{W}$ |
| Junction Temperature Range | T_J | -55 to +150 | | | | | | | $^{\circ}\text{C}$ |
| Storage Temperature Range | T_{STG} | -55 to +150 | | | | | | | $^{\circ}\text{C}$ |

Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.
2. Device mounted on 300mm*300mm*1.6mm cu plate heatsink.

Ratings and Characteristics Curves

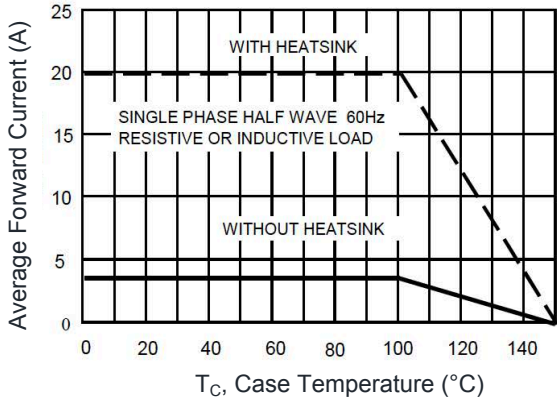


Figure 1. Forward Current Derating Curve

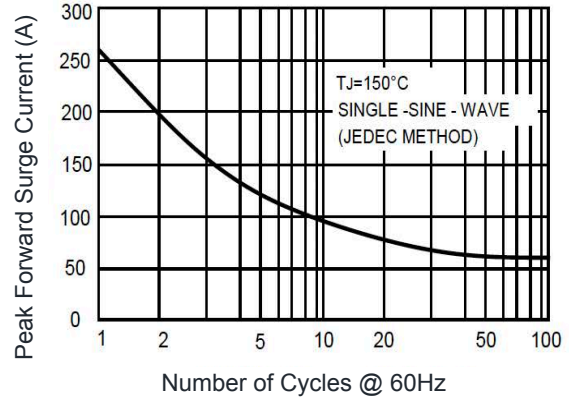


Figure 2. Surge Forward Current Capability

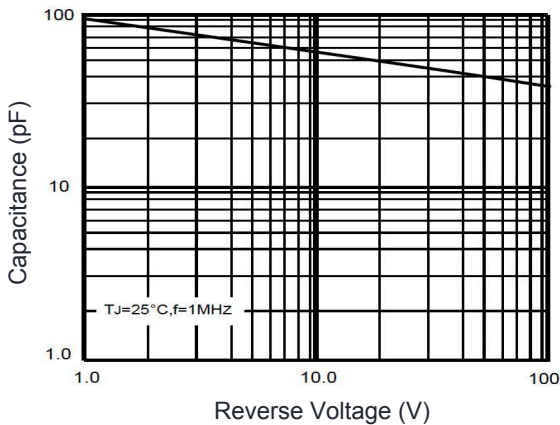


Figure 3. Typical Junction Capacitance

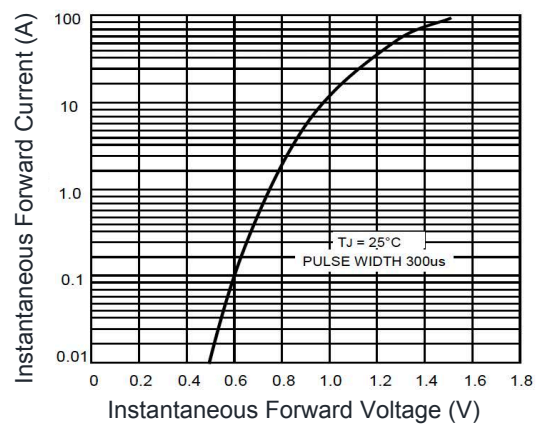


Figure 4. Typical Forward Voltage

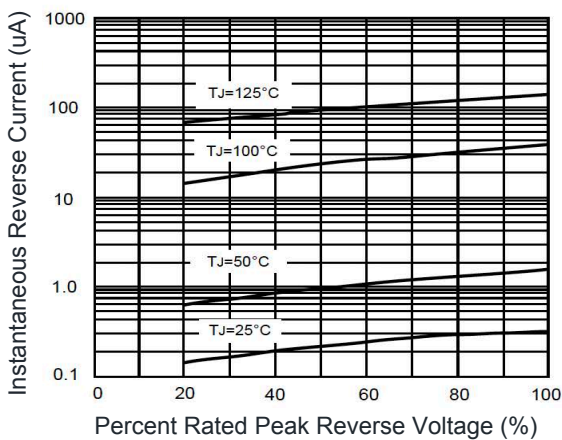
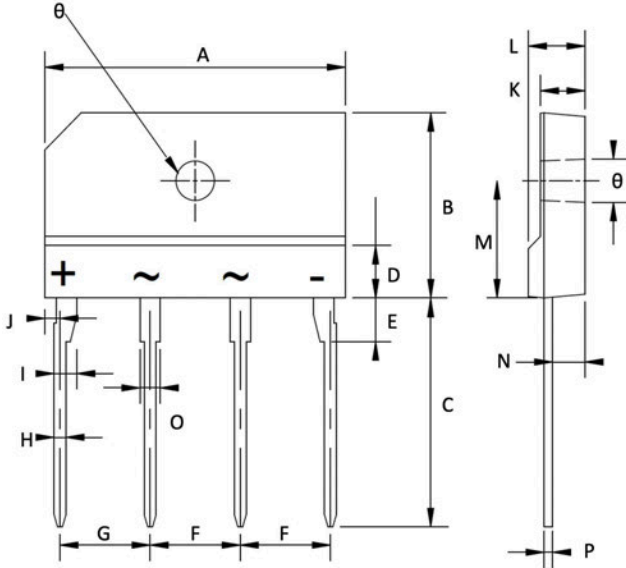


Figure 5. Typical Reverse Characteristics

Package Outline Dimensions (4GBJ)



| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|--------|---------------------------|--------|----------------------|-------|
| | Min | Max | Min | Max |
| A | 24.700 | 25.300 | 0.972 | 0.996 |
| B | 14.700 | 15.300 | 0.579 | 0.602 |
| C | 17.000 | 18.000 | 0.669 | 0.709 |
| D | 4.000 | | 0.157 | |
| E | 3.300 | 3.800 | 0.130 | 0.150 |
| F | 7.300 | 7.700 | 0.287 | 0.303 |
| G | 7.300 | 7.700 | 0.287 | 0.303 |
| H | 0.900 | 1.100 | 0.035 | 0.043 |
| I | 1.700 | 2.100 | 0.067 | 0.083 |
| J | 1.050 | 1.450 | 0.041 | 0.057 |
| K | 3.400 | 3.800 | 0.134 | 0.150 |
| L | 4.400 | 4.800 | 0.173 | 0.189 |
| M | 9.300 | 9.700 | 0.366 | 0.382 |
| N | 2.500 | 2.900 | 0.098 | 0.114 |
| O | 1.500 | 1.900 | 0.059 | 0.075 |
| P | 0.600 | 0.800 | 0.024 | 0.031 |
| θ | 3.100 | 3.400 | 0.122 | 0.134 |