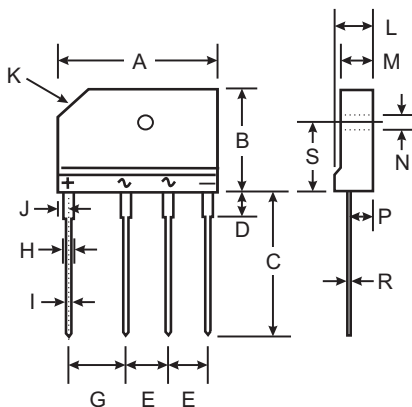


### Features

- Glass Passivated Die Construction
- High Case Dielectric Strength of 1500V<sub>RMS</sub>
- Low Reverse Leakage Current
- Surge Overload Rating to 170A Peak
- Ideal for Printed Circuit Board Applications
- UL Listed Under Recognized Component Index, File Number E94661
- **Lead Free Finish/RoHS Compliant (Note 4)**

### Mechanical Data

- Case: GBJ
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Plated Leads, Solderable per MIL-STD-202, Method 208 (e3)
- Lead Free Plating (Tin Finish).
- Polarity: Molded on Body
- Mounting: Through Hole for #6 Screw
- Mounting Torque: 5.0 in-lbs Maximum
- Marking: Type Number
- Weight: 6.6 grams (approximate)



| GBJ                  |           |       |
|----------------------|-----------|-------|
| Dim                  | Min       | Max   |
| A                    | 29.70     | 30.30 |
| B                    | 19.70     | 20.30 |
| C                    | 17.00     | 18.00 |
| D                    | 3.80      | 4.20  |
| E                    | 7.30      | 7.70  |
| G                    | 9.80      | 10.20 |
| H                    | 2.00      | 2.40  |
| I                    | 0.90      | 1.10  |
| J                    | 2.30      | 2.70  |
| K                    | 3.0 X 45° |       |
| L                    | 4.40      | 4.80  |
| M                    | 3.40      | 3.80  |
| N                    | 3.10      | 3.40  |
| P                    | 2.50      | 2.90  |
| R                    | 0.60      | 0.80  |
| S                    | 10.80     | 11.20 |
| All Dimensions in mm |           |       |

### Maximum Ratings and Electrical Characteristics @ T<sub>A</sub> = 25°C unless otherwise specified

Single phase, 60Hz, resistive or inductive load.

For capacitive load, derate current by 20%.

| Characteristic                                                                                        | Symbol                                                 | GBJ 8005    | GBJ 801 | GBJ 802 | GBJ 804 | GBJ 806 | GBJ 808 | GBJ 810 | Unit             |
|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------|-------------|---------|---------|---------|---------|---------|---------|------------------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage                | V <sub>RRM</sub><br>V <sub>RWM</sub><br>V <sub>R</sub> | 50          | 100     | 200     | 400     | 600     | 800     | 1000    | V                |
| RMS Reverse Voltage                                                                                   | V <sub>R(RMS)</sub>                                    | 35          | 70      | 140     | 280     | 420     | 560     | 700     | V                |
| Average Forward Rectified Output Current @ T <sub>C</sub> = 110°C                                     | I <sub>O</sub>                                         | 8.0         |         |         |         |         |         |         | A                |
| Non-Repetitive Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load     | I <sub>FSM</sub>                                       | 170         |         |         |         |         |         |         | A                |
| Forward Voltage per element @ I <sub>F</sub> = 4.0A                                                   | V <sub>FM</sub>                                        | 1.0         |         |         |         |         |         |         | V                |
| Peak Reverse Current @ T <sub>C</sub> = 25°C<br>at Rated DC Blocking Voltage @ T <sub>C</sub> = 125°C | I <sub>R</sub>                                         | 5.0<br>500  |         |         |         |         |         |         | μA               |
| I <sup>2</sup> t Rating for Fusing (t < 8.3ms) (Note 1)                                               | I <sup>2</sup> t                                       | 120         |         |         |         |         |         |         | A <sup>2</sup> s |
| Typical Total Capacitance per Element (Note 2)                                                        | C <sub>T</sub>                                         | 55          |         |         |         |         |         |         | pF               |
| Typical Thermal Resistance Junction to Case (Note 3)                                                  | R <sub>θJC</sub>                                       | 1.6         |         |         |         |         |         |         | °C/W             |
| Operating and Storage Temperature Range                                                               | T <sub>J</sub> , T <sub>STG</sub>                      | -65 to +150 |         |         |         |         |         |         | °C               |

- Notes:
1. Non-repetitive, for t > 1.0ms and < 8.3ms.
  2. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  3. Thermal resistance from junction to case per element. Unit mounted on 100 x 100 x 1.6mm aluminum plate heat sink.
  4. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see EU Directive Annex Notes 5 and 7.

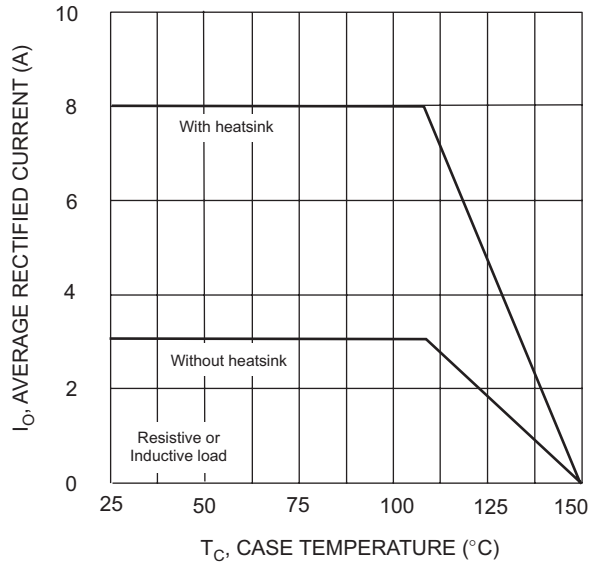


Fig. 1 Forward Current Derating Curve

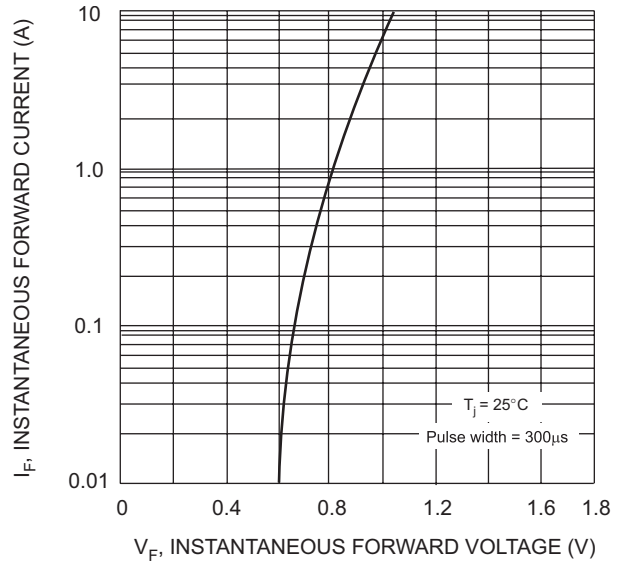


Fig. 2 Typical Forward Characteristics (per element)

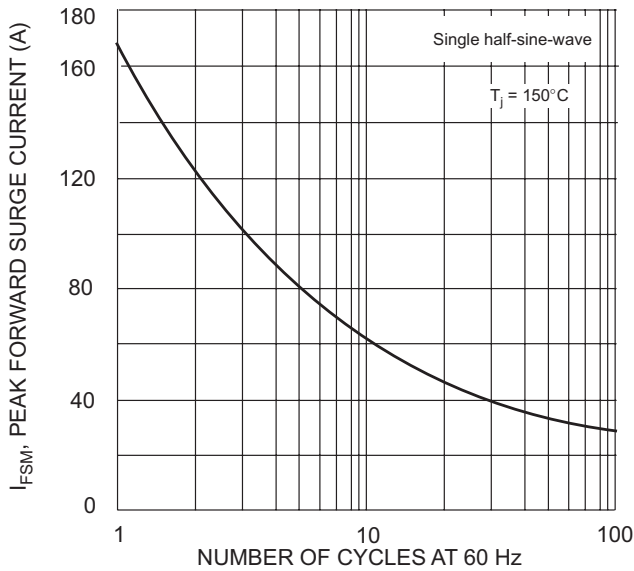


Fig. 3 Maximum Non-Repetitive Surge Current

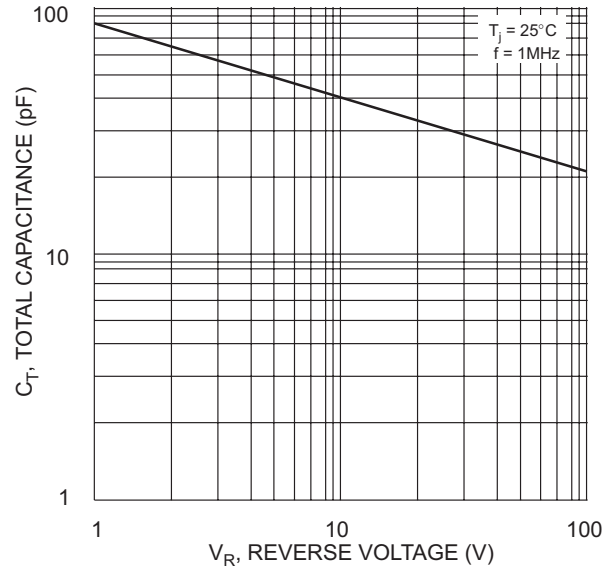


Fig. 4 Typical Total Capacitance (per element)

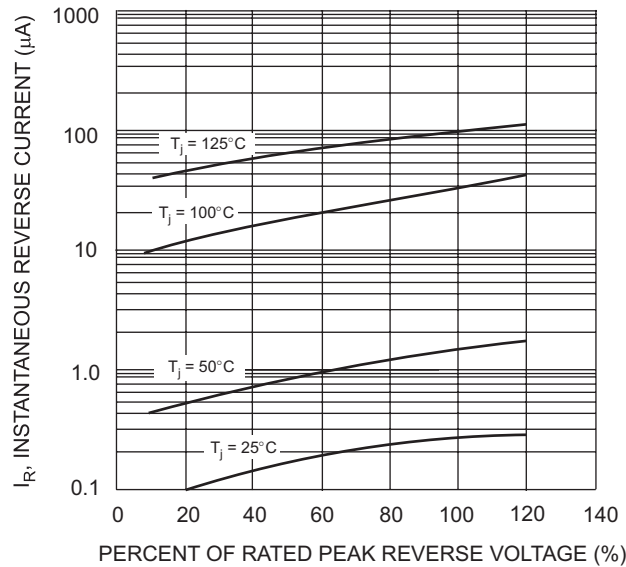


Fig. 5 Typical Reverse Characteristics

**Ordering Information** (Note 5)

| Device    | Packaging | Shipping |
|-----------|-----------|----------|
| GBJ8005-F | GBJ       | 15/Tube  |
| GBJ801-F  | GBJ       | 15/Tube  |
| GBJ802-F  | GBJ       | 15/Tube  |
| GBJ804-F  | GBJ       | 15/Tube  |
| GBJ806-F  | GBJ       | 15/Tube  |
| GBJ808-F  | GBJ       | 15/Tube  |
| GBJ810-F  | GBJ       | 15/Tube  |

Notes: 5. For packaging details, visit our website at <http://www.diodes.com/datasheets/ap2008.pdf>.

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