## Features

- Glass Passivated Die Construction
- High Case Dielectric Strength of $1500 \mathrm{~V}_{\mathrm{RMS}}$
- 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)


## Maximum Ratings and Electrical Characteristics ${ }^{@} \mathrm{~T}_{\mathrm{A}}=25^{\circ} \mathrm{C}$ unless otherwise specified

Single phase, 60 Hz , resistive or inductive load.
For capacitive load, derate current by $20 \%$.

| Characteristic | Symbol | $\begin{aligned} & \text { GBJ } \\ & 8005 \end{aligned}$ | $\begin{aligned} & \text { GBJ } \\ & 801 \end{aligned}$ | $\begin{aligned} & \text { GBJ } \\ & 802 \end{aligned}$ | $\begin{aligned} & \text { GBJ } \\ & 804 \end{aligned}$ | $\begin{gathered} \text { GBJ } \\ 806 \end{gathered}$ | $\begin{aligned} & \text { GBJ } \\ & 808 \end{aligned}$ | $\begin{aligned} & \text { GBJ } \\ & 810 \end{aligned}$ | Unit |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage | $V_{\text {RRM }}$ <br> $V_{\text {RWM }}$ $V_{R}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| RMS Reverse Voltage | $\mathrm{V}_{\mathrm{R} \text { (RMS) }}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Average Forward Rectified Output Current @ $\mathrm{T}_{\mathrm{C}}=110^{\circ} \mathrm{C}$ | lo | 8.0 |  |  |  |  |  |  | A |
| Non-Repetitive Peak Forward Surge Current, 8.3ms single half-sine-wave superimposed on rated load | $I_{\text {FSM }}$ | 170 |  |  |  |  |  |  | A |
| Forward Voltage per element $\mathrm{Cl}^{\text {I }}$ = 4.0A | $\mathrm{V}_{\mathrm{FM}}$ | 1.0 |  |  |  |  |  |  | V |
| Peak Reverse Current <br> @ $\mathrm{T}_{\mathrm{C}}=25^{\circ} \mathrm{C}$ <br> at Rated DC Blocking Voltage <br> @ $\mathrm{T}_{\mathrm{C}}=125^{\circ} \mathrm{C}$ | $I_{R}$ | $\begin{aligned} & 5.0 \\ & 500 \end{aligned}$ |  |  |  |  |  |  | $\mu \mathrm{A}$ |
| $\mathrm{I}^{2} \mathrm{t}$ Rating for Fusing ( $\mathrm{t}<8.3 \mathrm{~ms}$ ) (Note 1) | $\mathrm{I}^{2} \mathrm{t}$ | 120 |  |  |  |  |  |  | $\mathrm{A}^{2} \mathrm{~S}$ |
| Typical Total Capacitance per Element (Note 2) | $\mathrm{C}_{\text {T }}$ | 55 |  |  |  |  |  |  | pF |
| Typical Thermal Resistance Junction to Case (Note 3) | $\mathrm{R}_{\theta \text { JC }}$ | 1.6 |  |  |  |  |  |  | ${ }^{\circ} \mathrm{C} / \mathrm{W}$ |
| Operating and Storage Temperature Range | $\mathrm{T}_{\mathrm{j}, \mathrm{T}}$ TStG | -65 to +150 |  |  |  |  |  |  | ${ }^{\circ} \mathrm{C}$ |

Notes: 1. Non-repetitive, for $t>1.0 \mathrm{~ms}$ and $<8.3 \mathrm{~ms}$.
2. Measured at 1.0 MHz and applied reverse voltage of 4.0 V DC.
3. Thermal resistance from junction to case per element. Unit mounted on $100 \times 100 \times 1.6 \mathrm{~mm}$ 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


NUMBER OF CYCLES AT 60 Hz
Fig. 3 Maximum Non-Repetitive Surge Current


Fig. 2 Typical Forward Characteristics (per element)


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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