

## 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: KBJ
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020D
- Terminals: Finish — Tin. Plated Leads, Solderable per MIL-STD-202, Method 208 
- Polarity: Molded on Body
- Mounting: Through Hole for #6 Screw
- Mounting Torque: 5.0 in-lbs Maximum
- Ordering Information: See Page 3
- Marking: Type Number
- Weight: 4.6 grams (approximate)

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

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitance load, derate current by 20%.

| Characteristic                                                                                     | Symbol              | KBJ<br>6005G | KBJ<br>601G | KBJ<br>602G | KBJ<br>604G | KBJ<br>606G | KBJ<br>608G | KBJ<br>610G | Unit |
|----------------------------------------------------------------------------------------------------|---------------------|--------------|-------------|-------------|-------------|-------------|-------------|-------------|------|
| Peak Repetitive Reverse Voltage                                                                    | V <sub>RRM</sub>    |              |             |             |             |             |             |             |      |
| Working Peak Reverse Voltage                                                                       | V <sub>RWM</sub>    | 50           | 100         | 200         | 400         | 600         | 800         | 1000        | V    |
| DC Blocking Voltage                                                                                | V <sub>R</sub>      |              |             |             |             |             |             |             |      |
| RMS Reverse Voltage                                                                                | V <sub>R(RMS)</sub> | 35           | 70          | 140         | 280         | 420         | 560         | 700         | V    |
| Average Rectified Output Current @ T <sub>C</sub> = 110°C                                          | I <sub>O</sub>      | 6.0          |             |             |             |             |             |             | A    |
| Non-Repetitive Peak Forward Surge Current, 8.3 ms Single Half Sine-Wave Superimposed on Rated Load | I <sub>FSM</sub>    | 170          |             |             |             |             |             |             | A    |

## Thermal Characteristics

| Characteristic                          | Symbol                            | Value       | Unit |
|-----------------------------------------|-----------------------------------|-------------|------|
| Typical Thermal Resistance (Note 2)     | R <sub>θJC</sub>                  | 1.5         | °C/W |
| Operating and Storage Temperature Range | T <sub>J</sub> , T <sub>STG</sub> | -65 to +150 | °C   |

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

| Characteristic                                          | Symbol           | Value | Unit             |
|---------------------------------------------------------|------------------|-------|------------------|
| Forward Voltage per element @ I <sub>F</sub> = 3.0A     | V <sub>FM</sub>  | 1.0   | V                |
| Peak Reverse Current @ T <sub>C</sub> = 25°C            | I <sub>RM</sub>  | 5.0   | μA               |
| at Rated DC Blocking Voltage @ T <sub>C</sub> = 125°C   |                  | 500   |                  |
| I <sup>2</sup> t Rating for Fusing (t < 8.3ms) (Note 3) | I <sup>2</sup> t | 120   | A <sup>2</sup> s |
| Typical Total Capacitance per Element (Note 1)          | C <sub>T</sub>   | 80    | pF               |

- Notes:
1. Measured at 1.0 MHz and applied reverse voltage of 4.0V DC.
  2. Thermal resistance from junction to case per element. Unit mounted on 75 x 75 x 1.6mm aluminum plate heat sink.
  3. Non-repetitive, for t > 1ms and < 8.3ms.
  4. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied. Please visit our website at [http://www.diodes.com/products/lead\\_free.html](http://www.diodes.com/products/lead_free.html).

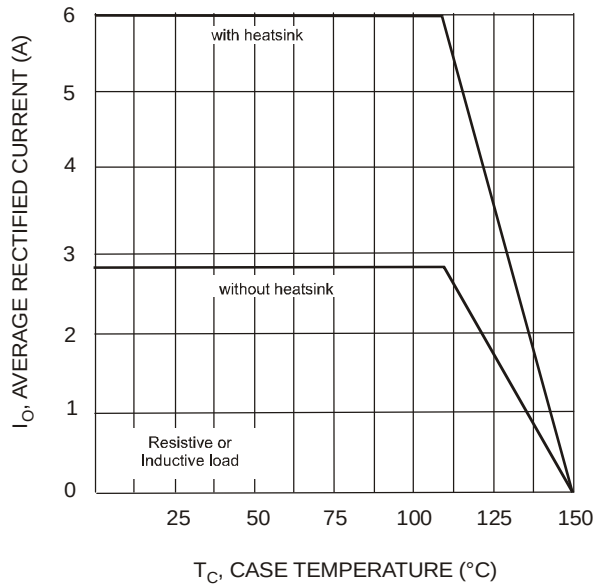


Fig. 1 Forward Current Derating Curve

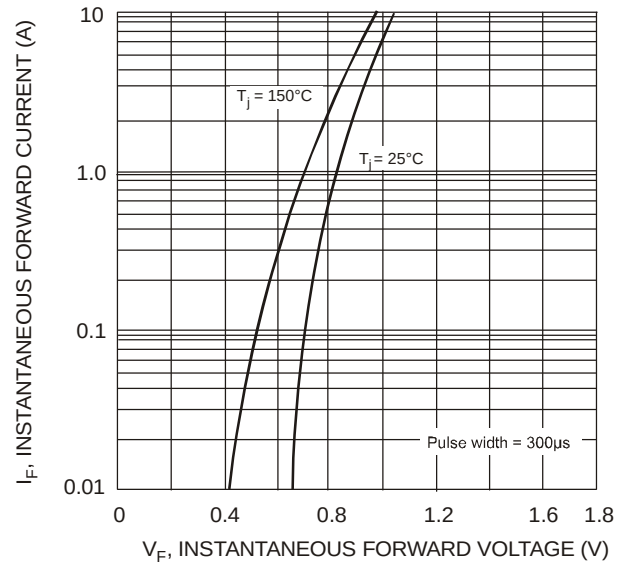


Fig. 2 Typical Forward Characteristics

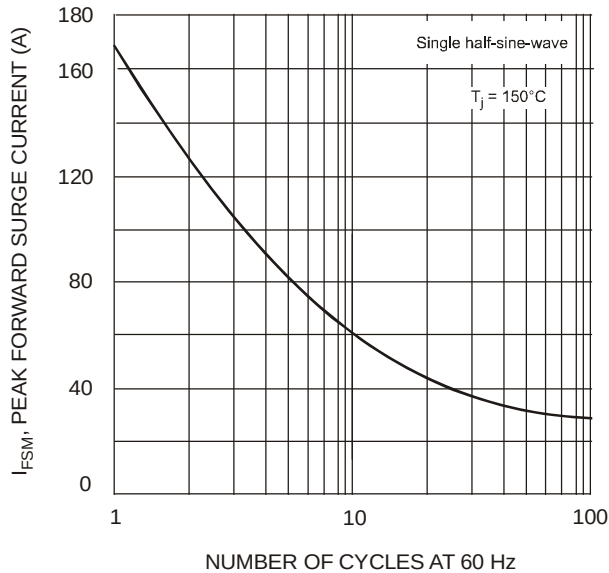


Fig. 3 Max Non-Repetitive Surge Current

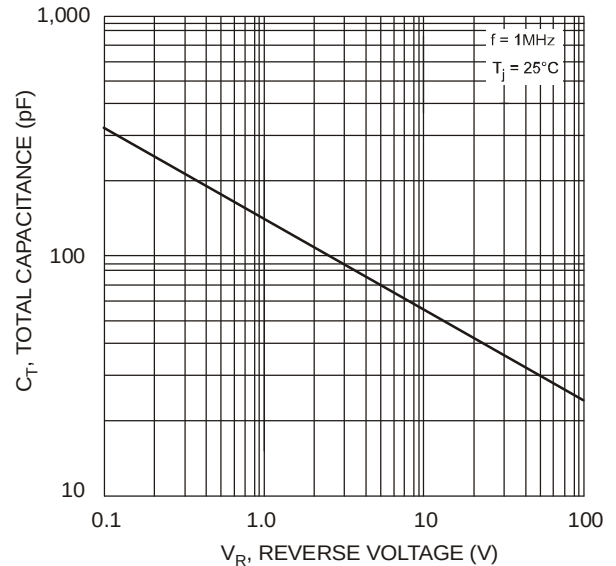


Fig. 4 Typical Total Capacitance, Per Element

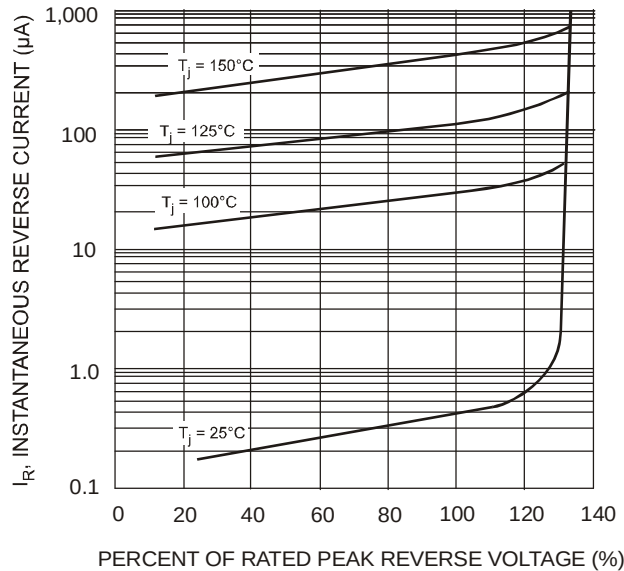
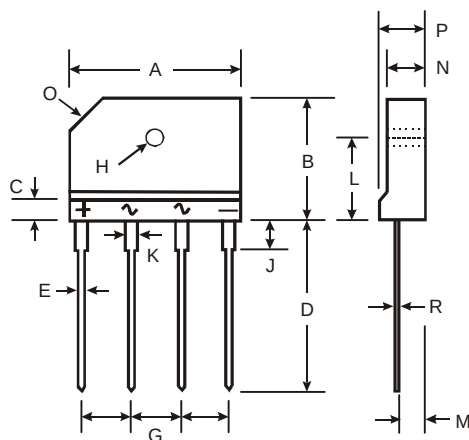


Fig. 5 Typical Reverse Characteristics

**Ordering Information** (Note 5)

| Part Number | Case | Packaging |
|-------------|------|-----------|
| KBJ6005G    | KBJ  | 20/Tube   |
| KBJ601G     | KBJ  | 20/Tube   |
| KBJ602G     | KBJ  | 20/Tube   |
| KBJ604G     | KBJ  | 20/Tube   |
| KBJ606G     | KBJ  | 20/Tube   |
| KBJ608G     | KBJ  | 20/Tube   |
| KBJ610G     | KBJ  | 20/Tube   |

Notes: 5. For packaging details, go to our website at <http://www.diodes.com/datasheets/ap02007.pdf>.

**Package Outline Dimensions**


| KBJ                  |           |       |
|----------------------|-----------|-------|
| Dim                  | Min       | Max   |
| A                    | 24.80     | 25.20 |
| B                    | 14.70     | 15.30 |
| C                    | 3.90      | 4.10  |
| D                    | 17.20     | 17.80 |
| E                    | 0.90      | 1.10  |
| G                    | 7.30      | 7.70  |
| H                    | 3.10Ø     | 3.40Ø |
| J                    | 3.30      | 3.70  |
| K                    | 1.50      | 1.90  |
| L                    | 9.30      | 9.70  |
| M                    | 2.50      | 2.90  |
| N                    | 3.40      | 3.80  |
| O                    | 3.0 x 45° |       |
| P                    | 4.40      | 4.80  |
| R                    | 0.60      | 0.80  |
| All Dimensions in mm |           |       |

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