

## Product Summary

| $V_{RRM}$ (V)  | $I_F$ (A) | $V_F$ Max (V)<br>@ $I_F = 3A$ | $I_R$ Max ( $\mu A$ ) |
|----------------|-----------|-------------------------------|-----------------------|
| 600, 800, 1000 | 6         | 1.0                           | 10                    |

## Mechanical Data

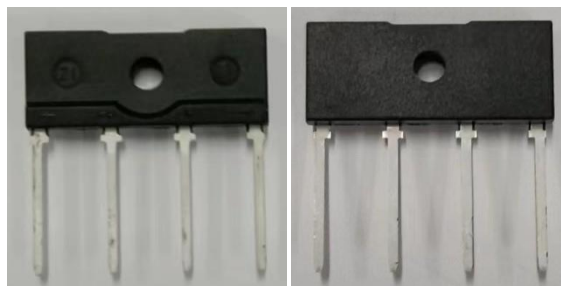
- Package: KBJL
- Package Material: Molded Plastic, "Green" Molding Compound.  
UL Flammability Classification Rating 94V-0
- Terminals: Finish – Matte Tin Plated Leads, Solderable per  
MIL-STD-202, Method 208 
- Weight: 2.4 grams (Approximate)

## Features

- Glass Passivation Die Construction
- Ideal for Printed Circuit Board
- High Surge Current Capability
- UL Listed Under Recognized Component Index, File Number E95060
- Lead-Free Finish; RoHS Compliant (Notes 1 & 2)
- Halogen and Antimony Free. "Green" Device (Note 3)
- For automotive applications requiring specific change control (i.e. parts qualified to AEC-Q100/101/104/200, PPAP capable, and manufactured in IATF 16949 certified facilities), please [contact us](https://www.diodes.com/quality/product-definitions/) or your local Diodes representative.

## Applications

- TV power
- Game power
- PC power

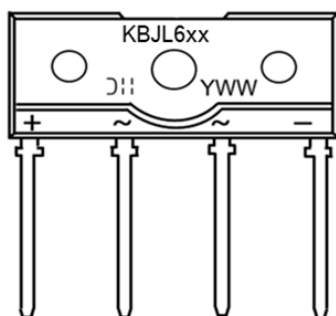


## Ordering Information (Note 4)

| Orderable Part Number | Package | Packing |         |
|-----------------------|---------|---------|---------|
|                       |         | Qty.    | Carrier |
| KBJL606-TU            | KBJL    | 20pcs   | Tube    |
| KBJL608-TU            | KBJL    | 20pcs   | Tube    |
| KBJL610-TU            | KBJL    | 20pcs   | Tube    |

- Notes:
- EU Directive 2002/95/EC (RoHS), 2011/65/EU (RoHS 2) & 2015/863/EU (RoHS 3) compliant. All applicable RoHS exemptions applied.
  - See <https://www.diodes.com/quality/lead-free/> for more information about Diodes Incorporated's definitions of Halogen- and Antimony-free, "Green" and Lead-free.
  - Halogen- and Antimony-free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
  - For packaging details, go to our website at <https://www.diodes.com/design/support/packaging/diodes-packaging/>.

## Marking Information



KBJL6xx = Product Type Marking Code  
 311 = Manufacturer's Code Marking  
 YWW = Date Code Marking  
 Y = Last Digit of Year (ex: 5 = 2025)  
 WW = Week Code (01 to 53)

**Maximum Ratings** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                                         |                                           | Symbol             | KBJL606     | KBJL608 | KBJL610 | Unit             |
|--------------------------------------------------------|-------------------------------------------|--------------------|-------------|---------|---------|------------------|
| Maximum Repetitive Peak Reverse Voltage                |                                           | V <sub>RRM</sub>   | 600         | 800     | 1000    | V                |
| Maximum DC Blocking Voltage                            |                                           | V <sub>DC</sub>    | 600         | 800     | 1000    | V                |
| Average Rectified Output Current                       | With Heatsink @T <sub>C</sub> = +130°C    | I <sub>F(AV)</sub> | 6           |         |         | A                |
|                                                        | Without Heatsink @T <sub>C</sub> = +125°C |                    | 2.5         |         |         |                  |
| Peak Forward Surge Current 8.3ms Single Half Sine Wave | T <sub>J</sub> =+25°C                     | I <sub>FSM</sub>   | 135         |         |         | A                |
|                                                        | T <sub>J</sub> =+125°C (Note 5)           |                    | 108         |         |         |                  |
| Peak Forward Surge Current 1.0ms Single Half Sine Wave | T <sub>J</sub> =+25°C                     | I <sub>FSM</sub>   | 270         |         |         | A                |
|                                                        | T <sub>J</sub> =+125°C (Note 5)           |                    | 216         |         |         |                  |
| I <sup>2</sup> t Rating for Fusing (t = 8.3ms)         |                                           | I <sup>2</sup> t   | 75.6        |         |         | A <sup>2</sup> s |
| Operating Temperature Range                            |                                           | T <sub>J</sub>     | -55 to +150 |         |         | °C               |
| Storage Temperature Range                              |                                           | T <sub>STG</sub>   | -55 to +150 |         |         | °C               |

**Electrical Characteristics** (@T<sub>A</sub> = +25°C, unless otherwise specified.)

| Characteristic                        | Test Condition          |                         | Symbol         | Value | Unit |
|---------------------------------------|-------------------------|-------------------------|----------------|-------|------|
| Maximum Forward Voltage               | I <sub>F</sub> = 3A     | T <sub>J</sub> = +25°C  | V <sub>F</sub> | 1.0   | V    |
| Maximum Leakage Current               | V <sub>R</sub> at Rated | T <sub>J</sub> = +25°C  | I <sub>R</sub> | 10    | μA   |
|                                       |                         | T <sub>J</sub> = +125°C |                | 500   |      |
| Typical Junction Capacitance (Note 6) |                         |                         | C <sub>T</sub> | 52    | pF   |

**Thermal Characteristics**

| Characteristic                                | Symbol           | Value | Unit |
|-----------------------------------------------|------------------|-------|------|
| Typical Thermal Resistance (Without Heatsink) | R <sub>θJC</sub> | 7     | °C/W |
|                                               | R <sub>θJL</sub> | 12    |      |
|                                               | R <sub>θJA</sub> | 28    |      |
| Typical Thermal Resistance (Note 7)           | R <sub>θJC</sub> | 2     | °C/W |
|                                               | R <sub>θJL</sub> | 5     |      |
|                                               | R <sub>θJA</sub> | 7     |      |

- Notes: 5. Perform static test after the temperature of oven is steady 20 minutes.  
6. Measured at 1.0MHz and applied reverse voltage of 4.0V DC.  
7. Thermal resistance junction to case, lead and ambient in accordance with JESD-51. Unit mounted on 35mm \* 35mm \*1.7mm Cu heatsink.

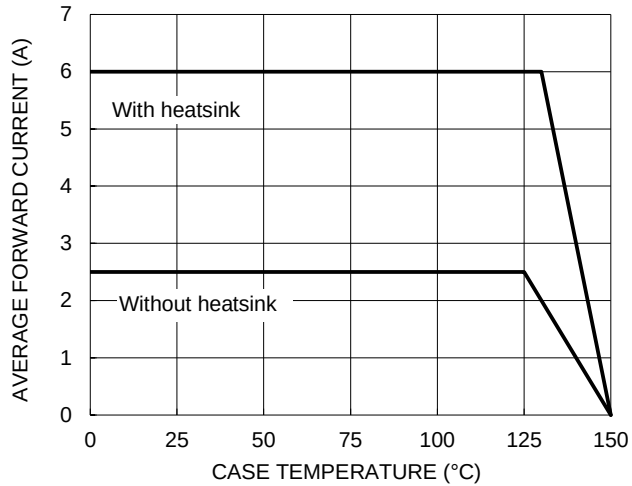


Figure 1. Forward Current Derating Curve

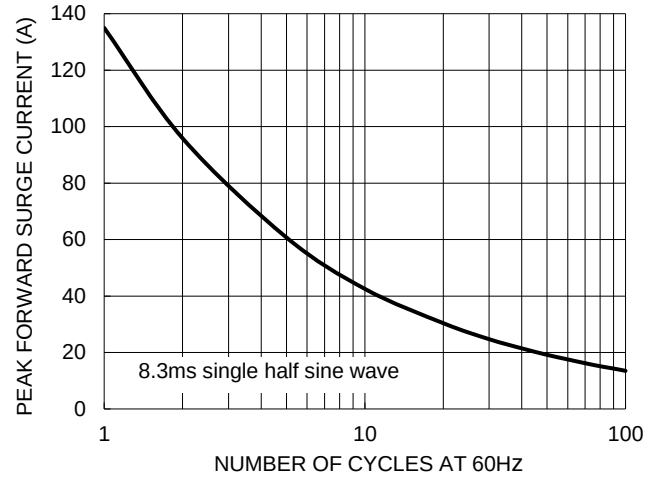


Figure 2. Maximum Non-Repetitive Surge Current

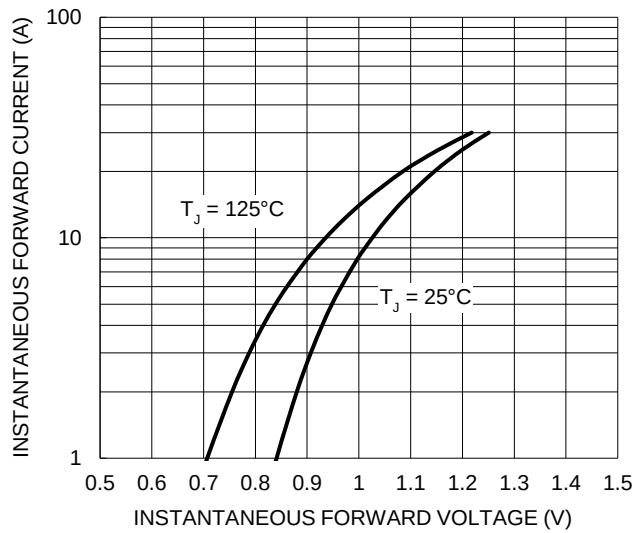


Figure 3. Typical Forward Characteristics

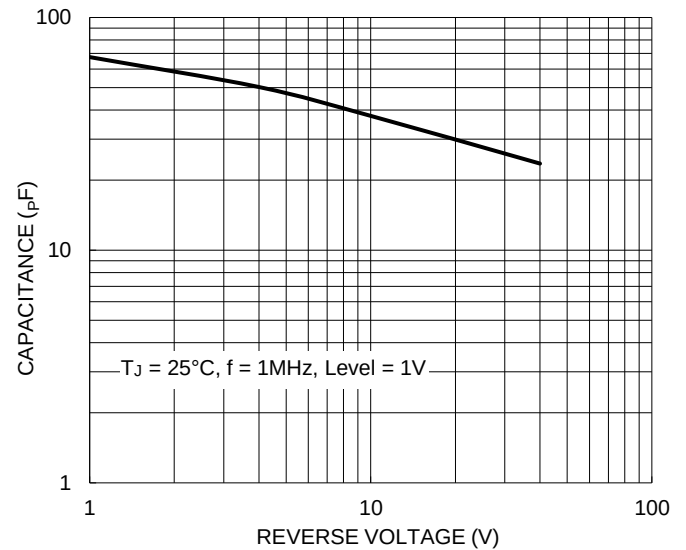


Figure 4. Typical Junction Capacitance

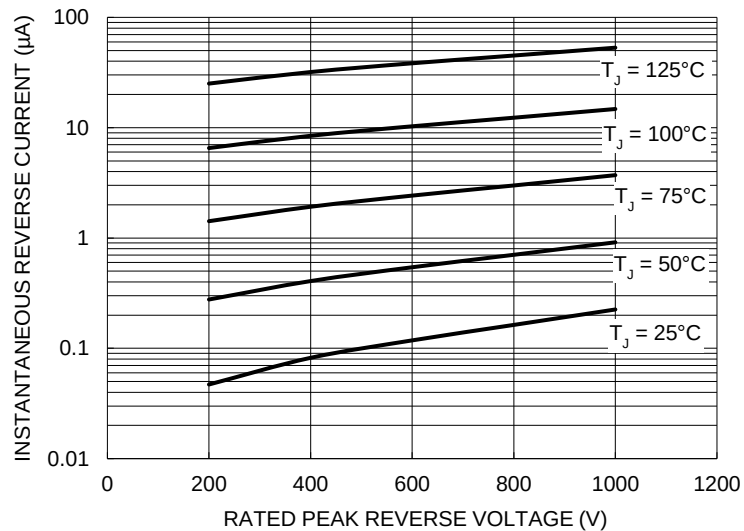
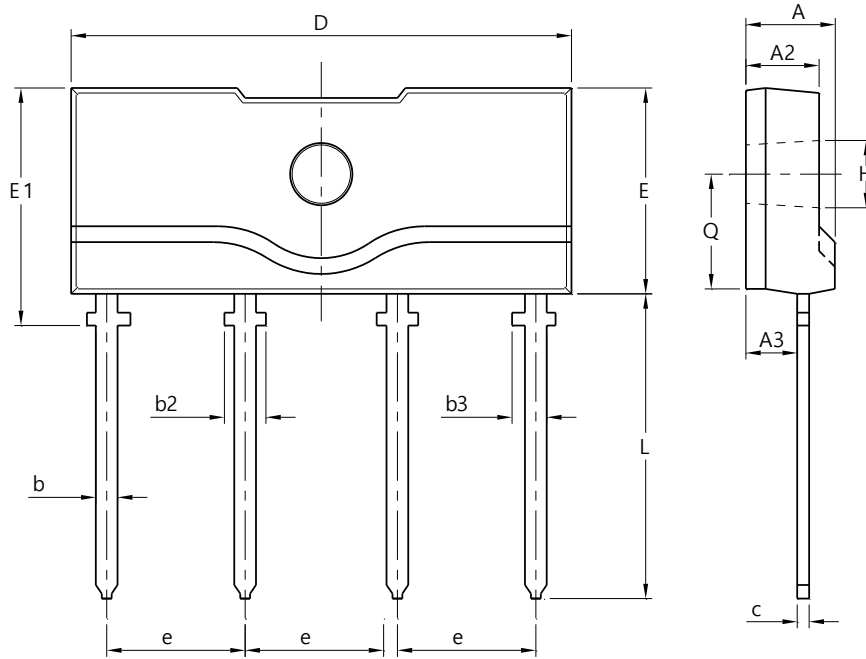


Figure 5. Typical Reverse Characteristics

## Package Outline Dimensions

Please see <http://www.diodes.com/package-outlines.html> for the latest version.

**KBJL**



| KBJL                 |       |       |
|----------------------|-------|-------|
| Dim                  | Min   | Max   |
| A                    | 3.90  | 4.50  |
| A2                   | 2.90  | 3.90  |
| A3                   | 2.0   | 2.60  |
| b                    | 0.90  | 1.10  |
| b2                   | 2.10  | 2.30  |
| b3                   | --    | 1.75  |
| c                    | 0.40  | 0.60  |
| D                    | 24.70 | 25.30 |
| E                    | 10.0  | 10.60 |
| E1                   | 11.40 | 12.00 |
| e                    | 7.30  | 7.70  |
| H                    | 3.10  | 3.40  |
| L                    | 14.60 | 15.20 |
| Q                    | 5.40  | 6.00  |
| All Dimensions in mm |       |       |

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