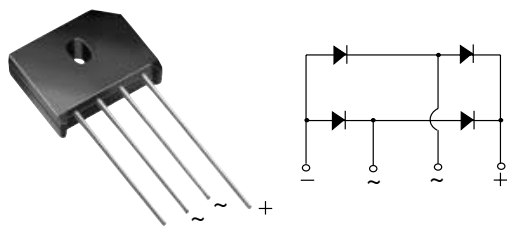


## Single-Phase Bridge Rectifier



Case Style KBU

### FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- High surge current capability
- High case dielectric strength of 1500 V<sub>RMS</sub>
- Solder dip 260 °C, 40 s
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC


**RoHS**  
COMPLIANT

### TYPICAL APPLICATIONS

General purpose use in ac-to-dc bridge full wave rectification for monitor, TV, printer, SMPS, adapter, audio equipment, and home appliances applications.

### MECHANICAL DATA

**Case:** KBU

Epoxy meets UL 94V-0 flammability rating

**Terminals:** Silver plated leads, solderable per J-STD-002 and JESD22-B102

E4 suffix for consumer grade

**Polarity:** As marked on body

**Mounting Torque:** 10 cm-kg (8.8 inches-lbs) max.

**Recommended Torque:** 5.7 cm-kg (5 inches-lbs)

### PRIMARY CHARACTERISTICS

|             |                |
|-------------|----------------|
| $I_{F(AV)}$ | 6 A            |
| $V_{RRM}$   | 50 V to 1000 V |
| $I_{FSM}$   | 200 A          |
| $I_R$       | 5 $\mu$ A      |
| $V_F$       | 1.0 V          |
| $T_J$ max.  | 150 °C         |

### MAXIMUM RATINGS ( $T_A = 25$ °C unless otherwise noted)

| PARAMETER                                                                                                            | SYMBOL         | KBU6A         | KBU6B | KBU6D | KBU6G | KBU6J | KBU6K | KBU6M | 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 output current at $T_C = 100$ °C <sup>(1)(2)</sup><br>$T_A = 40$ °C <sup>(3)</sup> | $I_{F(AV)}$    | 6.0<br>6.0    |       |       |       |       |       |       | A    |
| Peak forward surge current single sine-wave superimposed on rated load                                               | $I_{FSM}$      | 250           |       |       |       |       |       |       | A    |
| Operating junction and storage temperature range                                                                     | $T_J, T_{STG}$ | - 50 to + 150 |       |       |       |       |       |       | °C   |

#### Notes:

- (1) Recommended mounted position is to bolt down on heatsink with silicone thermal compound for maximum heat transfer with #6 screw
- (2) Thermal resistance from junction to ambient with units in free air, P.C.B. mounted on 0.5 x 0.5" (12 x 12 mm) copper pads, 0.375" (9.5 mm) lead length
- (3) Thermal resistance from junction to case with units mounted on a 2.6 x 1.4 x 0.06" thick (6.5 x 3.5 x 0.15 cm) aluminum plate

| <b>ELECTRICAL CHARACTERISTICS</b> ( $T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted) |                                     |        |       |       |       |       |       |       |       |               |
|------------------------------------------------------------------------------------------------|-------------------------------------|--------|-------|-------|-------|-------|-------|-------|-------|---------------|
| PARAMETER                                                                                      | TEST CONDITIONS                     | SYMBOL | KBU6A | KBU6B | KBU6D | KBU6G | KBU6J | KBU6K | KBU6M | UNIT          |
| Maximum instantaneous forward drop per diode                                                   | 6.0 A                               | $V_F$  | 1.0   |       |       |       |       |       |       | V             |
| Maximum DC reverse current at rated DC blocking voltage per diode                              | $T_A = 25\text{ }^{\circ}\text{C}$  | $I_R$  | 5.0   |       |       |       |       |       |       | $\mu\text{A}$ |
|                                                                                                | $T_A = 125\text{ }^{\circ}\text{C}$ |        | 1.0   |       |       |       |       |       |       | mA            |

| THERMAL CHARACTERISTICS (T <sub>A</sub> = 25 °C unless otherwise noted) |                  |       |       |       |       |       |       |       |      |
|-------------------------------------------------------------------------|------------------|-------|-------|-------|-------|-------|-------|-------|------|
| PARAMETER                                                               | SYMBOL           | KBU6A | KBU6B | KBU6D | KBU6G | KBU6J | KBU6K | KBU6M | UNIT |
| Typical thermal resistance <sup>(1)</sup>                               | R <sub>θJA</sub> | 8.6   |       |       |       |       |       |       | °C/W |
|                                                                         | R <sub>θJC</sub> | 3.1   |       |       |       |       |       |       |      |

**Note:**

- (1) Thermal resistance from junction to ambient with units in free air, P.C.B. mounted on 0.5 x 0.5" (12 x 12 mm) copper pads, 0.375" (9.5 mm) lead length

| <b>ORDERING INFORMATION</b> (Example) |                 |                        |               |                      |
|---------------------------------------|-----------------|------------------------|---------------|----------------------|
| PREFERRED P/N                         | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE        |
| KBU6J-E4/51                           | 8.0             | 51                     | 250           | Anti-static PVC tray |

**RATINGS AND CHARACTERISTICS CURVES**

( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

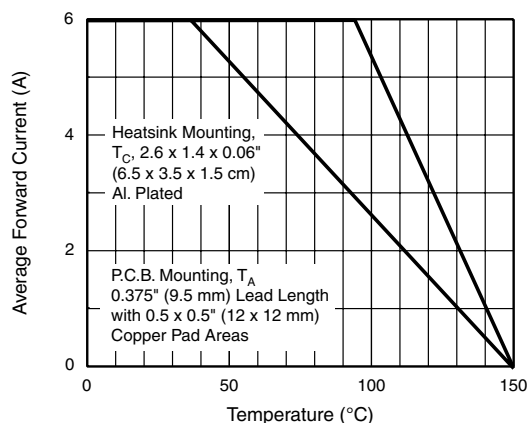


Figure 1. Derating Curve Output Rectified Current

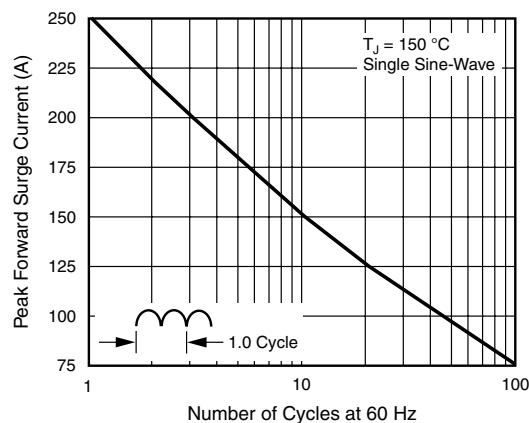


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

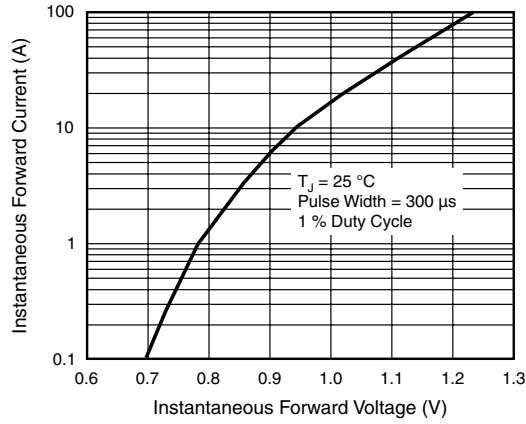


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

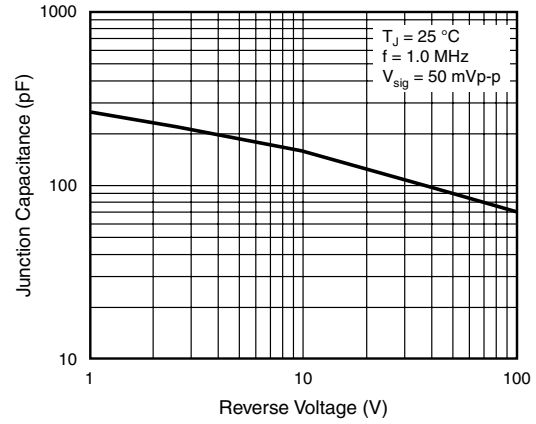


Figure 5. Typical Junction Capacitance Per Diode

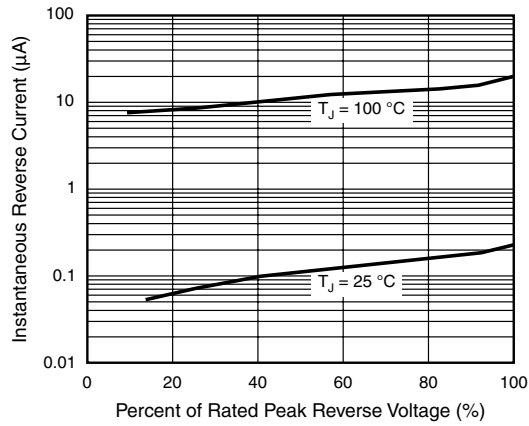
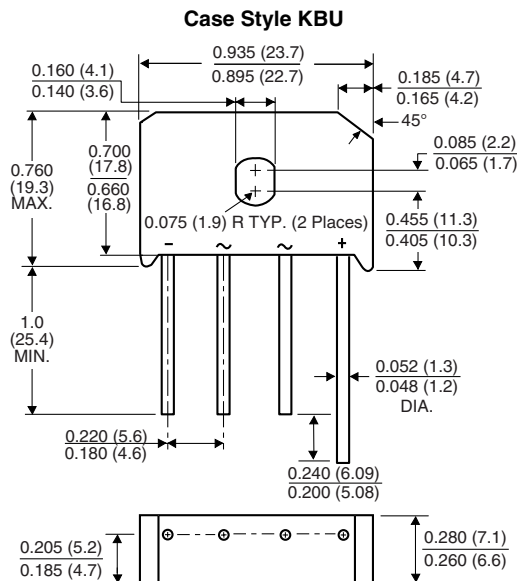


Figure 4. Typical Reverse Leakage Characteristics Per Diode

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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