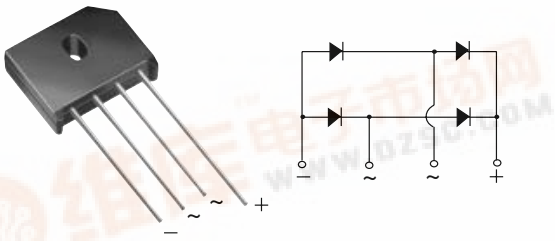
# Single-Phase Bridge Rectifier



Case Style KBU

## FEATURES

- UL recognition file number E54214
- Ideal for printed circuit boards
- High surge current capability
- High case dielectric strength of 1500 $V_{RMS}$
- 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.

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

## 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)

**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 (1)(2) / $T_A$ = 40 °C (3) | $I_{F(AV)}$ | 6.0 / 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

| **ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 °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 °C<br>$T_A$ = 125 °C | $I_R$ | 5.0<br>1.0 | | | | | | | µA<br>mA |

| **THERMAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **KBU6A** | **KBU6B** | **KBU6D** | **KBU6G** | **KBU6J** | **KBU6K** | **KBU6M** | **UNIT** |
| Typical thermal resistance (1) | $R_{\theta JA}$<br>$R_{\theta JC}$ | 8.6<br>3.1 | | | | | | | °C/W |

**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

| **ORDERING INFORMATION** (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 °C unless otherwise noted)

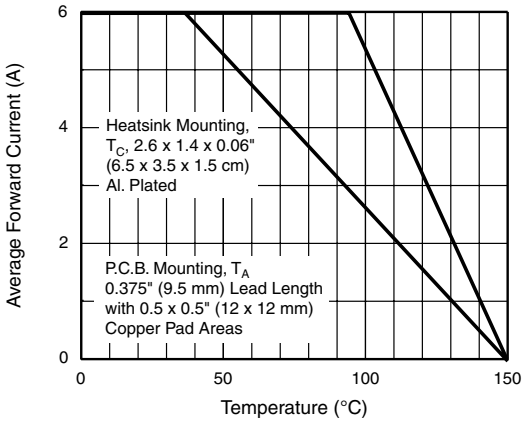



Figure 1. Derating Curve Output Rectified Current

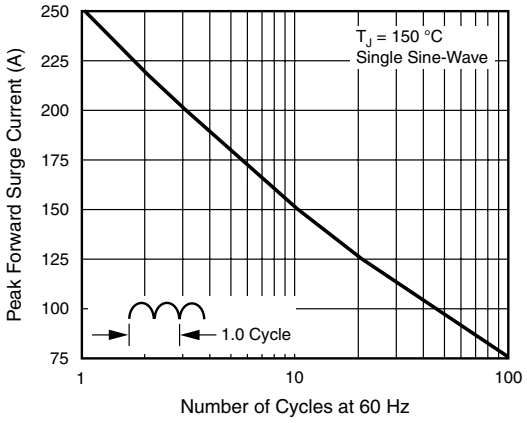



Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

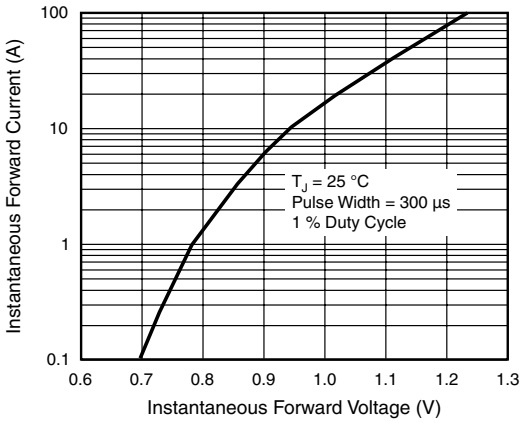



Figure 3. Typical Instantaneous Forward Characteristics Per Diode

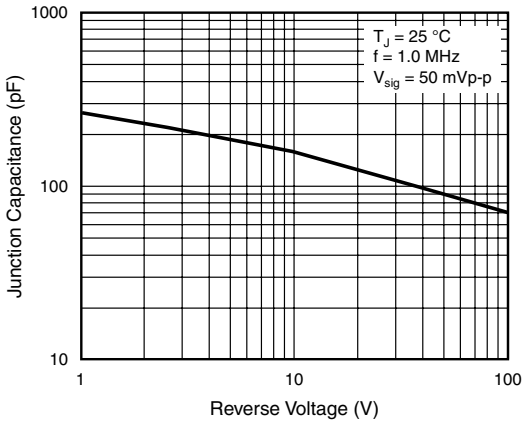



Figure 5. Typical Junction Capacitance Per Diode

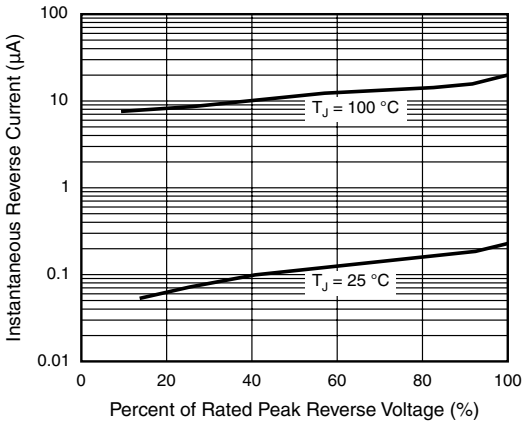
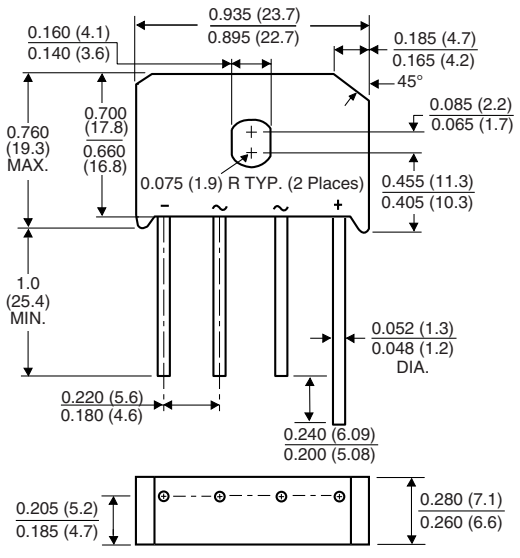



Figure 4. Typical Reverse Leakage Characteristics Per Diode

## **PACKAGE OUTLINE DIMENSIONS** in inches (millimeters)

**Case Style KBU**



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