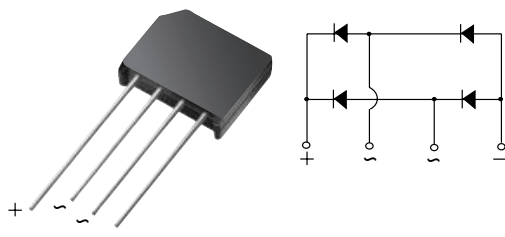


## Single-Phase Bridge Rectifier



Case Style KBL

### 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:** KBL

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

|             |                |
|-------------|----------------|
| $I_{F(AV)}$ | 4 A            |
| $V_{RRM}$   | 50 V to 1000 V |
| $I_{FSM}$   | 200 A          |
| $I_R$       | 5 $\mu$ A      |
| $V_F$       | 1.1 V          |
| $T_J$ max.  | 150 °C         |

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

| PARAMETER                                                              | SYMBOL         | KBL005        | KBL01 | KBL02 | KBL04 | KBL06 | KBL08 | KBL10 | 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 current at $T_A = 50$ °C                       | $I_{F(AV)}$    | 4.0           |       |       |       |       |       |       | A    |
| Peak forward surge current single sine-wave superimposed on rated load | $I_{FSM}$      | 200           |       |       |       |       |       |       | A    |
| Operating junction and storage temperature range                       | $T_J, T_{STG}$ | - 50 to + 150 |       |       |       |       |       |       | °C   |

### ELECTRICAL CHARACTERISTICS ( $T_A = 25$ °C unless otherwise noted)

| PARAMETER                                                         | TEST CONDITIONS                 | SYMBOL | KBL005     | KBL01 | KBL02 | KBL04 | KBL06 | KBL08 | KBL10 | UNIT          |
|-------------------------------------------------------------------|---------------------------------|--------|------------|-------|-------|-------|-------|-------|-------|---------------|
| Maximum instantaneous forward drop per diode                      | 4.0 A                           | $V_F$  | 1.1        |       |       |       |       |       |       | 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 |       |       |       |       |       |       | $\mu$ A<br>mA |

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

| PARAMETER                  | SYMBOL          | KBL005 | KBL01 | KBL02 | KBL04              | KBL06 | KBL08 | KBL10 | UNIT                 |
|----------------------------|-----------------|--------|-------|-------|--------------------|-------|-------|-------|----------------------|
| Typical thermal resistance | $R_{\theta JA}$ |        |       |       | 19 <sup>(1)</sup>  |       |       |       | $^{\circ}\text{C/W}$ |
|                            | $R_{\theta JL}$ |        |       |       | 2.4 <sup>(2)</sup> |       |       |       |                      |

**Notes:**

(1) Thermal resistance from junction to ambient with units mounted on 3.0 x 3.0 x 0.11" thick (7.5 x 7.5 x 0.3 cm) aluminum plate

(2) Thermal resistance from junction to lead with units mounted on P.C.B. at 0.375" (9.5 mm) lead length and 0.5 x 0.5" (12 x 12 mm) copper pads

**ORDERING INFORMATION** (Example)

| PREFERRED P/N | UNIT WEIGHT (g) | PREFERRED PACKAGE CODE | BASE QUANTITY | DELIVERY MODE        |
|---------------|-----------------|------------------------|---------------|----------------------|
| KBL06-E4/51   | 6.0             | 51                     | 300           | Anti-static PVC tray |

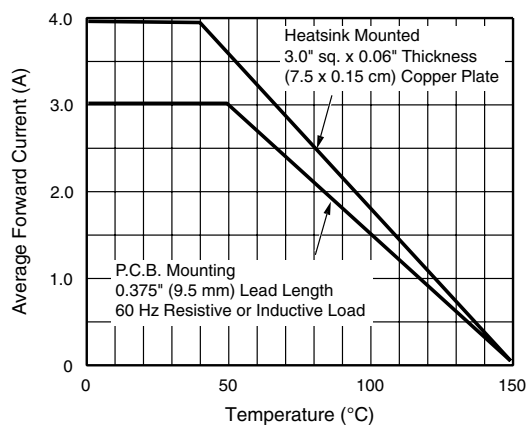
**RATINGS AND CHARACTERISTICS CURVES**( $T_A = 25\text{ }^{\circ}\text{C}$  unless otherwise noted)

Figure 1. Derating Curve Output Rectified Current

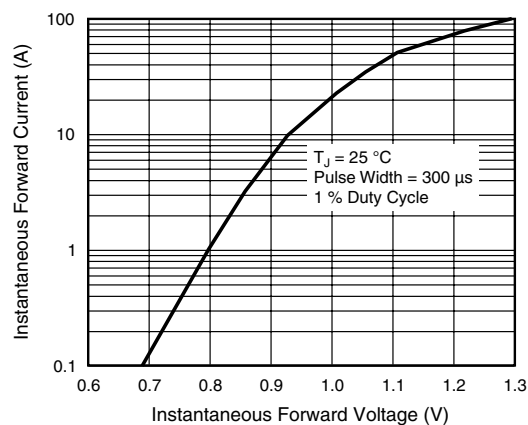


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

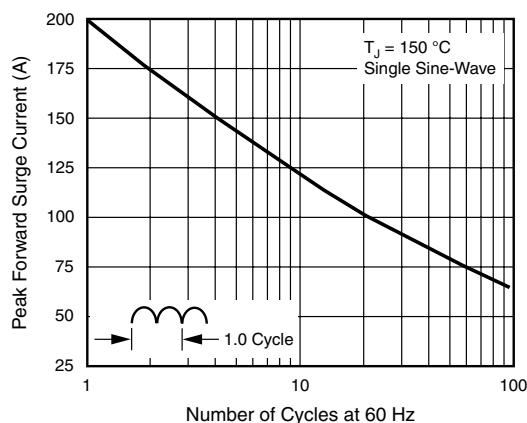


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

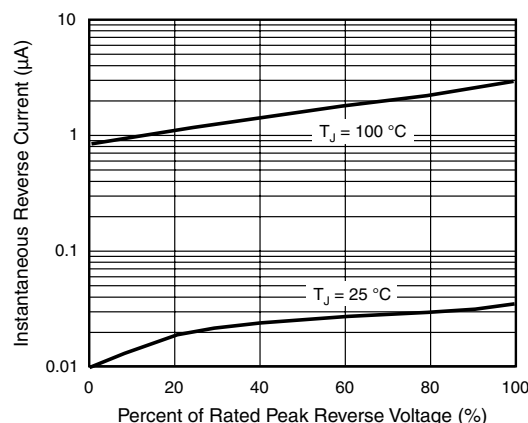


Figure 4. Typical Reverse Leakage Characteristics Per Diode

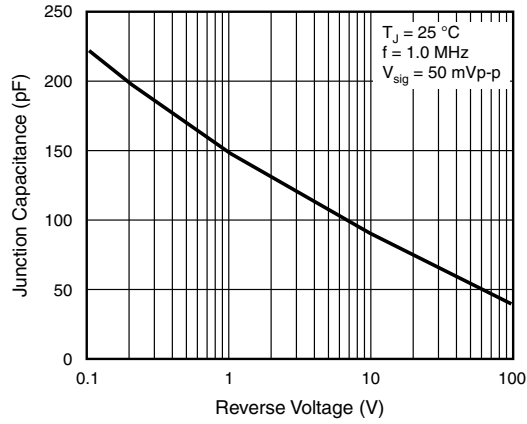
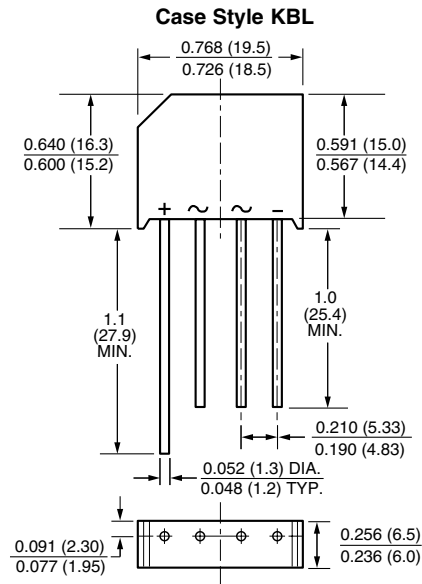


Figure 5. Typical Junction Capacitance Per Diode

### PACKAGE OUTLINE DIMENSIONS in inches (millimeters)





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