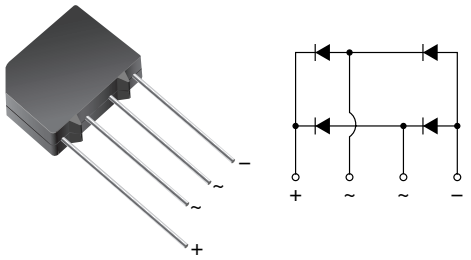
# Glass Passivated Single-Phase Bridge Rectifier




**Case Style KBPM**

## FEATURES

- UL recognition file number E54214
- Ideal for printed circuit board
- High surge current capability
- High case dielectric strength
- 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 switching power supply, home appliances, office equipment, and telecommunication applications.

| PRIMARY CHARACTERISTICS | |
|---|---|
| $I_{F(AV)}$ | 1.5 A |
| $V_{RRM}$ | 50 V to 1000 V |
| $I_{FSM}$ | 60 A |
| $I_R$ | 5 µA |
| $V_F$ | 1.0 V |
| $T_J$ max. | 150 °C |

## MECHANICAL DATA

**Case:** KBPM

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

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

| PARAMETER | SYMBOL | KBP 005M | KBP 01M | KBP 02M | KBP 04M | KBP 06M | KBP 08M | KBP 10M | UNIT |
|---|---|---|---|---|---|---|---|---|---|
| | | 3N246 | 3N247 | 3N248 | 3N249 | 3N250 | 3N251 | 3N252 | |
| Maximum repetitive peak reverse voltage (1) | $V_{RRM}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum RMS voltage (1) | $V_{RMS}$ | 35 | 70 | 140 | 280 | 420 | 560 | 700 | V |
| Maximum DC blocking voltage (1) | $V_{DC}$ | 50 | 100 | 200 | 400 | 600 | 800 | 1000 | V |
| Maximum average forward output rectified current at $T_A$ = 40 °C | $I_{F(AV)}$ | 1.5 | | | | | | | A |
| Peak forward surge current single half sine-wave (1) $T_A$ = 25 °C / $T_J$ = 150 °C | $I_{FSM}$ | 60<br>40 | | | | | | | A |
| Rating for fusing (t < 8.3 ms) | $I^2t$ | 10 | | | | | | | $A^2s$ |
| Operating junction and storage temperature range (1) | $T_J$, $T_{STG}$ | - 55 to + 150 | | | | | | | °C |

**Note:**

(1) JEDEC registered values

| **ELECTRICAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITIONS** | **SYMBOL** | **KBP 005M** | **KBP 01M** | **KBP 02M** | **KBP 04M** | **KBP 06M** | **KBP 08M** | **KBP 10M** | **UNIT** |
| | | | **3N246** | **3N247** | **3N248** | **3N249** | **3N250** | **3N251** | **3N252** | |
| Maximum instantaneous forward voltage drop per diode (1) | 1.0 A<br>1.57 A | $V_F$ | 1.0<br>1.3 | | | | | | | V |
| Maximum DC reverse current at rated DC blocking voltage per diode (1) | $T_A$ = 25 °C<br>$T_A$ = 125 °C | $I_R$ | 5.0<br>500 | | | | | | | µA |
| Typical junction capacitance per diode | 4.0 V, 1 MHz | $C_J$ | 15 | | | | | | | pF |

**Note:**
(1) JEDEC registered values

| **THERMAL CHARACTERISTICS** ($T_A$ = 25 °C unless otherwise noted) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| **PARAMETER** | **SYMBOL** | **KBP 005M** | **KBP 01M** | **KBP 02M** | **KBP 04M** | **KBP 06M** | **KBP 08M** | **KBP 10M** | **UNIT** |
| | | **3N246** | **3N247** | **3N248** | **3N249** | **3N250** | **3N251** | **3N252** | |
| Typical thermal resistance (1) | $R_{\theta JA}$<br>$R_{\theta JL}$ | 40<br>13 | | | | | | | °C/W |

**Note:**
(1) Thermal resistance from junction to ambient and from junction to lead mounted on P.C.B. with, 0.47 x 0.47" (12 x 12 mm) copper pads

| **ORDERING INFORMATION** (Example) | | | | |
|---|---|---|---|---|
| **PREFERRED P/N** | **UNIT WEIGHT (g)** | **PREFERRED PACKAGE CODE** | **BASE QUANTITY** | **DELIVERY MODE** |
| KBP06M-E4/45 | 1.895 | 45 | 30 | Tube |
| KBP06M-E4/51 | 1.895 | 51 | 600 | Anti-static PVC tray |
| 3N250-E4/45 | 1.895 | 45 | 30 | Tube |
| 3N250-E4/51 | 1.895 | 51 | 600 | Anti-static PVC tray |

## RATINGS AND CHARACTERISTICS CURVES

($T_A$ = 25 °C unless otherwise noted)

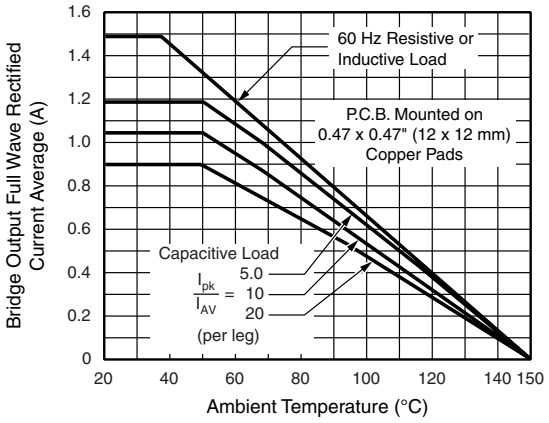



Figure 1. Derating Curve Output Rectified Current

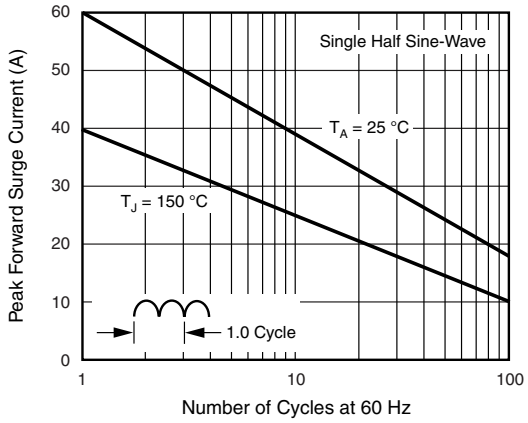



Figure 2. Maximum Non-Repetitive Peak Forward Surge Current Per Diode

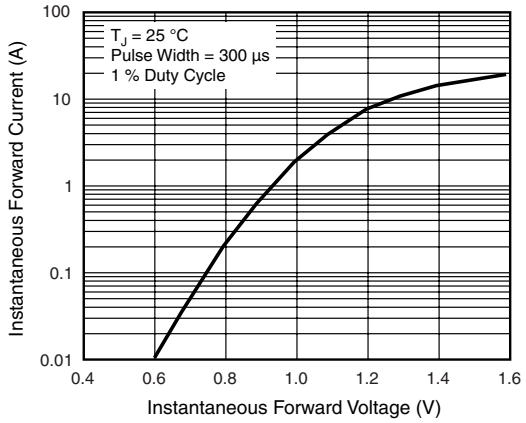



Figure 3. Typical Forward Characteristics Per Diode

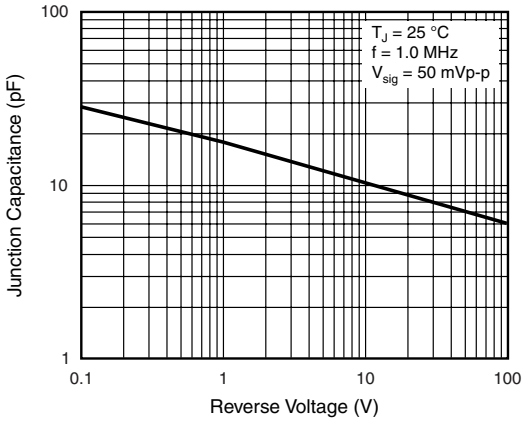



Figure 5. Typical Junction Capacitance Per Diode

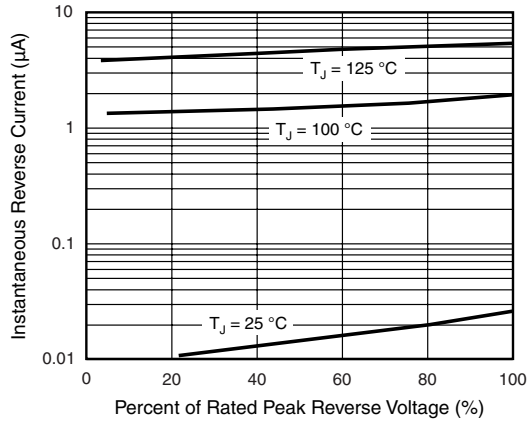
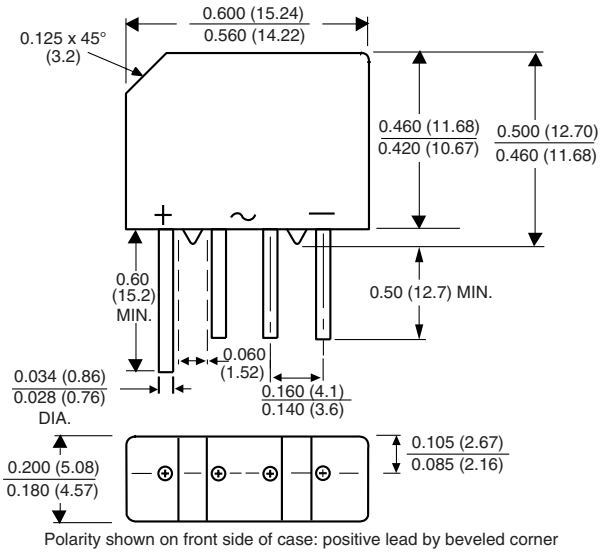



Figure 4. Typical Reverse Leakage Characteristics Per Diode

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

**Case Style KBPM**




Polarity shown on front side of case: positive lead by beveled corner

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