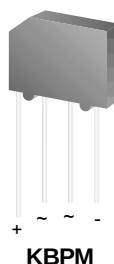




# KBP005M/3N246 - KBP10M/3N252

## Features

- Surge overload rating: 50 amperes peak.
- Reliable low cost construction utilizing molded plastic technique.
- UL certified, UL #E111753.



## Bridge Rectifiers

### Absolute Maximum Ratings\*

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

| Symbol      | Parameter                                                        | Value       |     |     |     |     |     |      | Units            |
|-------------|------------------------------------------------------------------|-------------|-----|-----|-----|-----|-----|------|------------------|
|             |                                                                  | 005M        | 01M | 02M | 04M | 06M | 08M | 10M  |                  |
|             |                                                                  | 246         | 247 | 248 | 249 | 250 | 251 | 252  |                  |
| $V_{RRM}$   | Maximum Repetitive Reverse Voltage                               | 50          | 100 | 200 | 400 | 600 | 800 | 1000 | V                |
| $V_{RMS}$   | Maximum RMS Bridge Input Voltage                                 | 35          | 70  | 140 | 280 | 420 | 560 | 700  | V                |
| $V_R$       | DC Reverse Voltage (Rated $V_R$ )                                | 50          | 100 | 200 | 400 | 600 | 800 | 1000 | V                |
| $I_{F(AV)}$ | Average Rectified Forward Current,<br>@ $T_A = 50^\circ\text{C}$ | 1.5         |     |     |     |     |     |      | A                |
| $I_{FSM}$   | Non-repetitive Peak Forward Surge Current                        | 50          |     |     |     |     |     |      | A                |
| $T_{stg}$   | Storage Temperature Range                                        | -55 to +165 |     |     |     |     |     |      | $^\circ\text{C}$ |
| $T_J$       | Operating Junction Temperature                                   | -55 to +165 |     |     |     |     |     |      | $^\circ\text{C}$ |

\*These ratings are limiting values above which the serviceability of any semiconductor device may be impaired.

## Thermal Characteristics

| Symbol          | Parameter                                         | Value | Units                     |
|-----------------|---------------------------------------------------|-------|---------------------------|
| $P_D$           | Power Dissipation                                 | 3.5   | W                         |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient,* per leg | 40    | $^\circ\text{C}/\text{W}$ |

\*Device mounted on PCB with 0.47 x 0.47" (12 x 12 mm).

## Electrical Characteristics

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

| Symbol | Parameter                                                  | Device | Units                |
|--------|------------------------------------------------------------|--------|----------------------|
| $V_F$  | Forward Voltage, per bridge @ 1.0 A                        | 1.0    | V                    |
|        | @ 3.14 A                                                   | 1.3    | V                    |
| $I_R$  | Reverse Current, total bridge @ rated $V_R$                |        |                      |
|        | $T_A = 25^\circ\text{C}$                                   | 5.0    | $\mu\text{A}$        |
|        | $T_A = 100^\circ\text{C}$                                  | 500    | $\mu\text{A}$        |
|        | $I^2t$ rating for fusing $t < 8.35$ ms                     | 10     | $\text{A}^2\text{s}$ |
| $C_T$  | Total Capacitance, per leg<br>$V_R = 4.0$ V, $f = 1.0$ MHz | 15     | pF                   |

Typical Characteristics

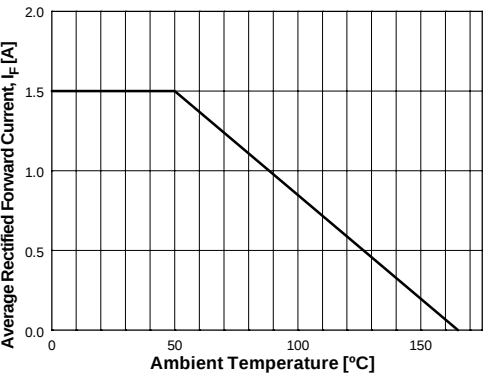


Figure 1. Forward Current Derating Curve

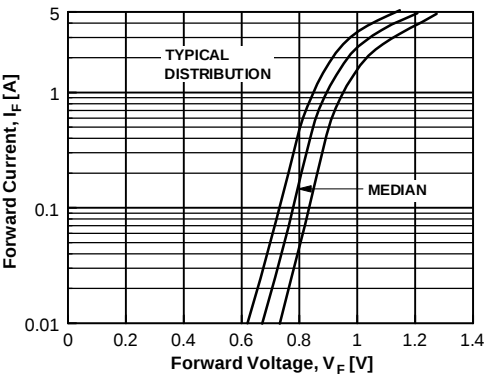


Figure 2. Forward Voltage Characteristics

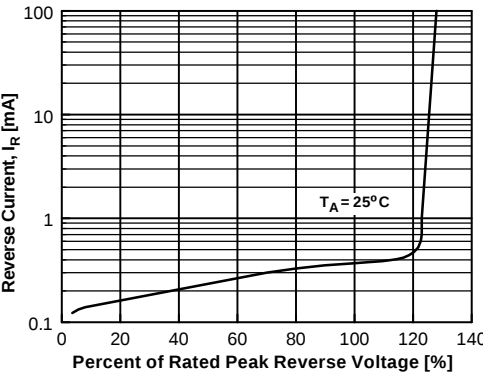


Figure 3. Reverse Current vs Reverse Voltage

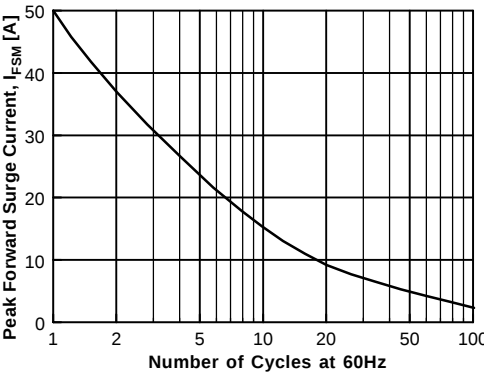


Figure 4. Non-Repetitive Surge Current

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| DenseTrench™         | GTO™                | Power247™                    | SuperSOT™-6           |      |
| DOME™                | HiSeC™              | PowerTrench <sup>®</sup>     | SuperSOT™-8           |      |
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