

# 2KBP005M/3N253 - 2KBP10M/3N259

## Bridge Rectifiers

### Features

- Surge overload rating: 60 amperes peak.
- Reliable low cost construction utilizing molded plastic technique.
- UL certified, UL #E111753.



KBPM

\* The nodules on the package may not be present on the actual parts.

### Absolute Maximum Ratings \* $T_a = 25^\circ\text{C}$ unless otherwise noted

| Symbol      | Parameter                                                                | Value       |     |     |     |     |     |      | Units            |
|-------------|--------------------------------------------------------------------------|-------------|-----|-----|-----|-----|-----|------|------------------|
|             |                                                                          | 005M        | 01M | 02M | 04M | 06M | 08M | 10M  |                  |
|             |                                                                          | 253         | 254 | 255 | 256 | 257 | 258 | 259  |                  |
| $V_{RRM}$   | 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>@ $T_A = 50^\circ\text{C}$         | 2.0         |     |     |     |     |     |      | A                |
| $I_{FSM}$   | Non-Repetitive Peak Forward Surge Current<br>8.3ms Single Half-Sine-Wave | 60          |     |     |     |     |     |      | A                |
| $T_{STG}$   | Storage Temperature Range                                                | -55 to +150 |     |     |     |     |     |      | $^\circ\text{C}$ |
| $T_J$       | Junction Temperature                                                     | -55 to +150 |     |     |     |     |     |      | $^\circ\text{C}$ |

\* 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                                  | 4.7   | W                  |
| $R_{\theta JA}$ | Thermal Resistance, Junction to Ambient, * per leg | 18    | $^\circ\text{C/W}$ |

\* Device mounted on PCB with  $0.47 \times 0.47''$  ( $12 \times 12\text{mm}$ ).

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

| Symbol | Parameter                                                                                        | Value      | Units                          |
|--------|--------------------------------------------------------------------------------------------------|------------|--------------------------------|
| $V_F$  | Forward Voltage, per element @ 3.14A                                                             | 1.1        | V                              |
| $I_R$  | Reverse Current, per element @ Rated $V_R$ $T_A = 25^\circ\text{C}$<br>$T_A = 125^\circ\text{C}$ | 5.0<br>500 | $\mu\text{A}$<br>$\mu\text{A}$ |
|        | $I^2t$ Rating for Fusing $t < 8.35\text{ms}$                                                     | 15         | $\text{A}^2\text{s}$           |
| $C_T$  | Total Capacitance, per leg<br>$V_R = 4.0\text{ V}$ , $f = 1.0\text{ MHz}$                        | 25         | pF                             |

## Typical Performance Characteristics

Figure 1. Forward Curve Derating Curve

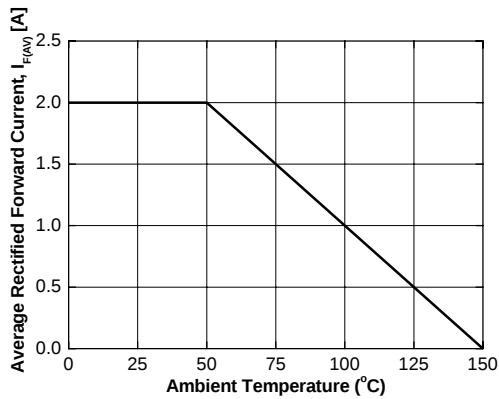


Figure 2. Forward Voltage Characteristics

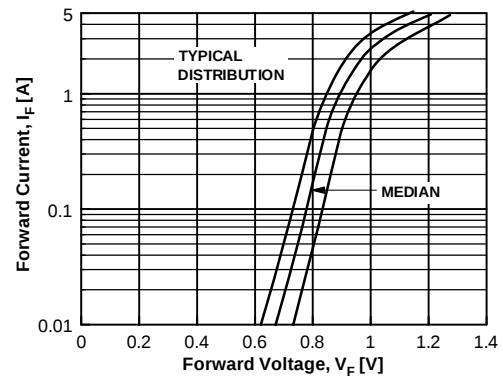


Figure 3. Reverse Current vs Reverse Voltage

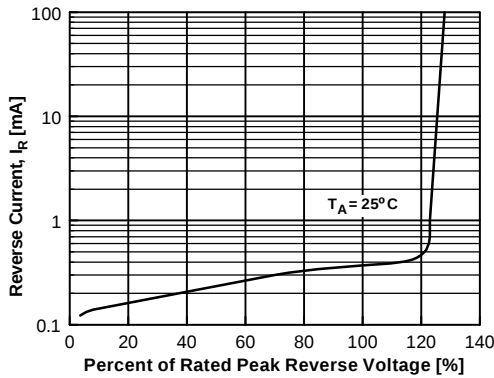
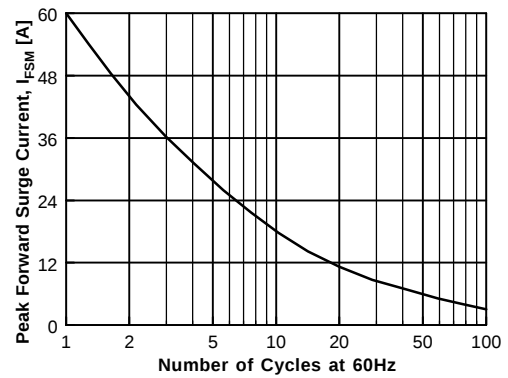


Figure 4. Non-Repetitive Surge Current





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