



# MMBD3004BRM

## SURFACE MOUNT HIGH VOLTAGE SWITCHING DIODE ARRAY

This device features two series-connected diode pairs which can be connected to form a full-wave bridge. It is housed in a very small SOT23-6L surface mount package.

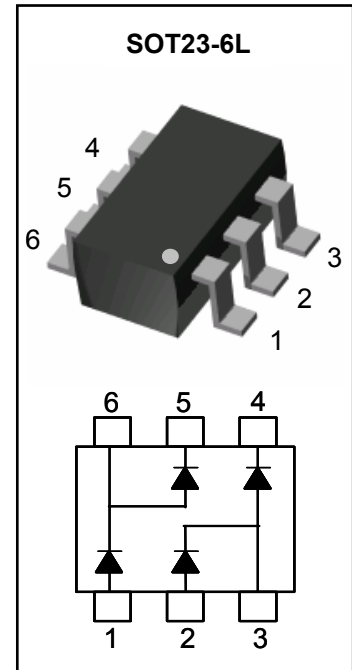
### FEATURES

- High Reverse Voltage Rating
- Fast Switching Speed
- Low Capacitance
- 100% Matte Tin Finish (LEAD-FREE PRODUCT)

### APPLICATIONS

- Power Supplies
- High Speed Rectification

Marking Code: 304



### MAXIMUM RATINGS (Per Diode) $T_J = 25^{\circ}\text{C}$ Unless otherwise noted

| Rating   | Symbol    | Value       | Units              |
|--|-----------|-------------|--------------------|
| Repetitive Peak Reverse Voltage                                      | $V_{RRM}$ | 350         | V                  |
| Continuous Reverse Voltage   | $V_R$     | 300         | V                  |
| RMS Reverse Voltage  | $V_{RMS}$ | 212         | V                  |
| Continuous Forward Current (Note 1)                                  | $I_F$     | 225         | mA                 |
| Peak Repetitive Forward Current (Note 1)                             | $I_{FRM}$ | 625         | mA                 |
| Non-repetitive Peak Forward Current, $t = 1\text{sec}$ , Square Wave | $I_{FSM}$ | 1.0         | A                  |
| Total Power Dissipation (Note 1)                                     | $P_{tot}$ | 350         | mW                 |
| Operating Junction Temperature Range                                 | $T_J$     | -55 to +150 | $^{\circ}\text{C}$ |
| Storage Temperature Range  | $T_{stg}$ | -55 to +150 | $^{\circ}\text{C}$ |

### THERMAL CHARACTERISTICS

| Characteristic                                   | Symbol     | Value | Units                       |
|--|------------|-------|-----------------------------|
| Thermal Resistance, Junction to Ambient (Note 1) | $R_{thja}$ | 357   | $^{\circ}\text{C}/\text{W}$ |

Note 1. FR-5 Board 1.0 x 0.75 x 0.062 in.



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## ELECTRICAL CHARACTERISTICS (Per Diode) $T_J = 25^\circ\text{C}$ Unless otherwise noted

| Parameter                        | Symbol   | Conditions  | Min | Typ  | Max  | Units         |
|----------------------------------|----------|---|-----|------|------|---------------|
| Breakdown Voltage (Note 1)       | $V_{BR}$ | $I_{BR} = 150\mu\text{A}$   | 350 | -    | -    | V             |
| Forward Voltage (Note 1)         | $V_F$    | $I_F = 20\text{mA}$   | -   | 0.82 | 0.87 | V             |
|                                  |          | $I_F = 100\text{mA}$  | -   | 0.95 | 1.0  |               |
|                                  |          | $I_F = 200\text{mA}$  | -   | 1.0  | 1.25 |               |
| Reverse Leakage Current (Note 1) | $I_R$    | $V_R = 240\text{V}$   | -   | 0.02 | 0.1  | $\mu\text{A}$ |
|                                  |          | $V_R = 240\text{V}$ $T_J = 150^\circ\text{C}$                                 | -   | 0.5  | 100  |               |
| Total Capacitance                | $C_T$    | 0Vdc Bias, $f = 1\text{MHz}$  | -   | 1.7  | 5.0  | pF            |
| Reverse Recovery Time            | $t_{rr}$ | $I_F = I_R = 30\text{mA}$ , $I_{RR} = 3\text{mA}$ ,<br>$R_L = 100\text{ohms}$ | -   | -    | 50   | ns            |

Note 1. Short duration pulse test to avoid self-heating effect

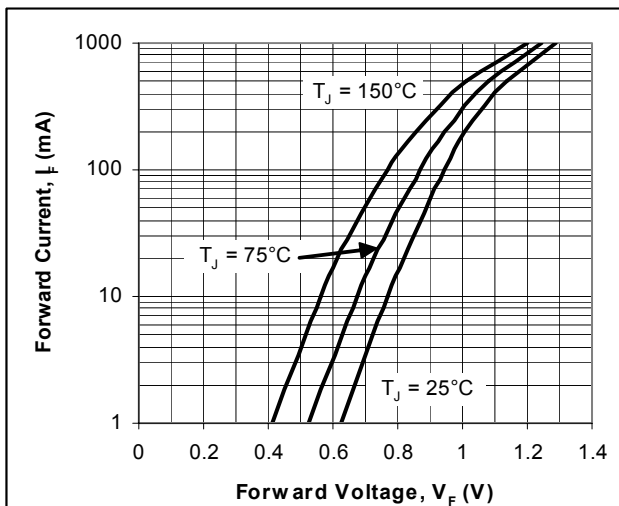


Fig. 1. Typical Forward Characteristics

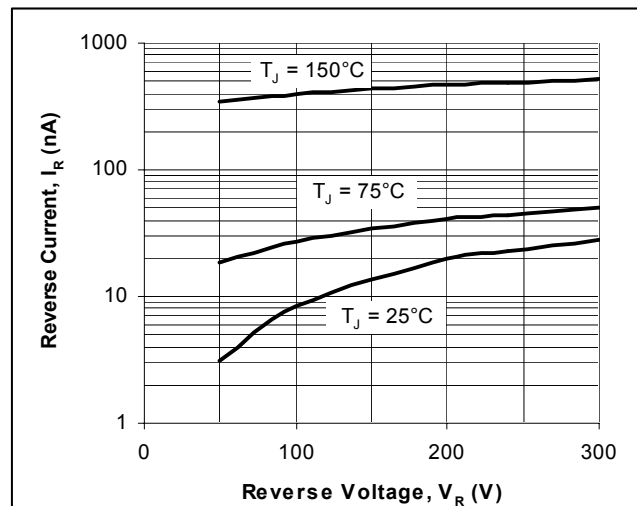


Fig. 2. Typical Reverse Characteristics

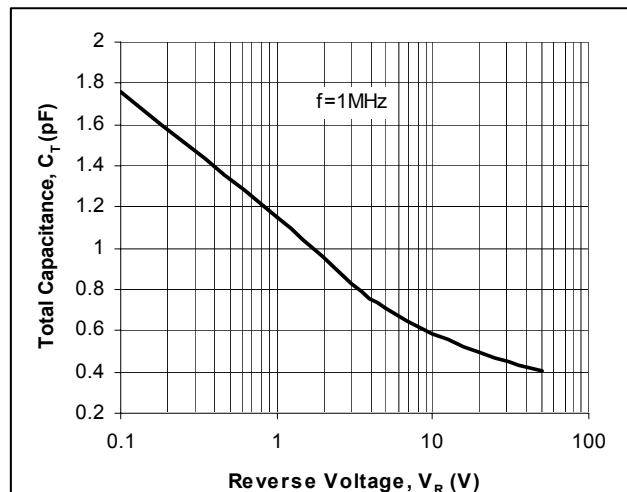
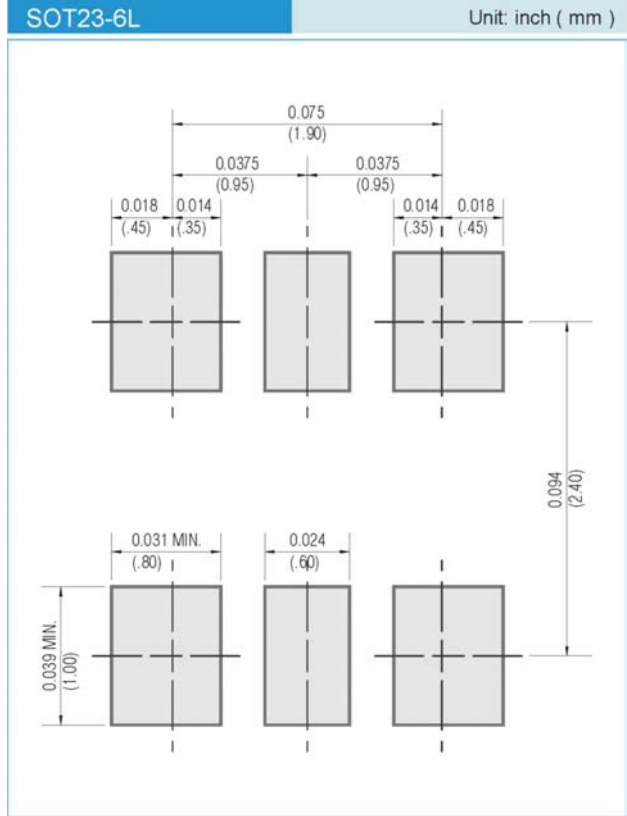
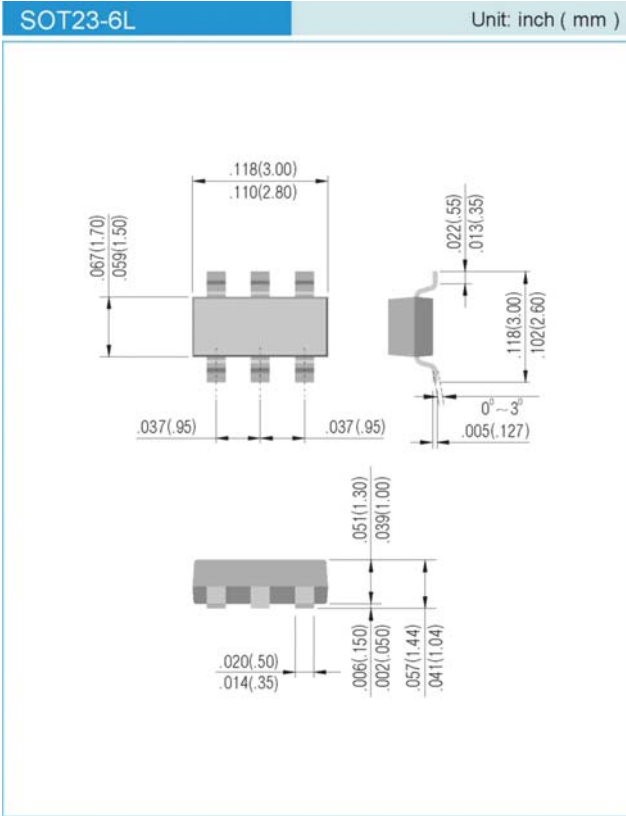


Fig. 3. Typical Capacitance



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## PACKAGE LAYOUT AND SUGGESTED PAD DIMENSIONS



## ORDERING INFORMATION

MMBD3004BRM T/R7 - 7" reel, 3K units per reel. Pin 1 towards tape sprocket holes

MMBD3004BRM T/R7R - 7" reel, 3K units per reel. Pin 1 away from tape sprocket holes

MMBD3004BRM T/R13 - 13" reel, 10K units per reel. Pin 1 towards tape sprocket holes

MMBD3004BRM T/R13R - 13" reel, 10K units per reel. Pin 1 away from tape sprocket holes

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