



# MMBD7000

## SURFACE MOUNT SWITCHING DIODE

**VOLTAGE** 100 Volt **POWER** 225 mWatt

**SOT-23** Unit : inch(mm)

### FEATURES

- Very fast reverse recovery ( $T_{rr} < 2$  ns typical)
- Isolated, series-connected diode pair
- Surface mount package ideally suited for automatic insertion
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

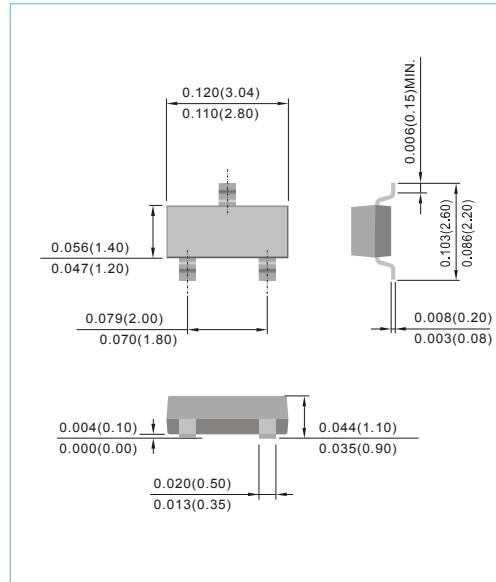
### MECHANICAL DATA

Case: SOT-23, Plastic

Terminals: Solderable per MIL-STD-750, Method 2026

Approx. Weight: 0.0003 ounces, 0.0084 grams

Marking: T3



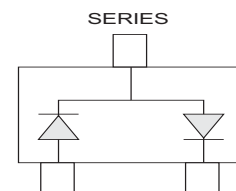
### ABSOLUTE RATINGS

| Parameter   | Symbol    | Value | Units |
|---|-----------|-------|-------|
| Maximum Reverse Voltage                                 | $V_R$     | 100   | V     |
| Peak Reverse Voltage                                    | $V_{RRM}$ | 100   | V     |
| Continuous Forward Current                              | $I_F$     | 0.2   | A     |
| Non-repetitive Peak Forward Surge Current at $t=1\mu s$ | $I_{FSM}$ | 4     | A     |

### THERMAL CHARACTERISTICS

| Parameter  | Symbol          | Value      | Units         |
|--|-----------------|------------|---------------|
| Power Dissipation (Note 1)                       | $P_{TOT}$       | 225        | mW            |
| Thermal Resistance, Junction to Ambient (Note 1) | $R_{\theta JA}$ | 556        | $^{\circ}C/W$ |
| Junction Temperature                             | $T_J$           | -55 to 150 | $^{\circ}C$   |
| Storage Temperature                              | $T_{STG}$       | -55 to 150 | $^{\circ}C$   |

Note 1. FR-4 Board = 70 x 60 x 1mm.

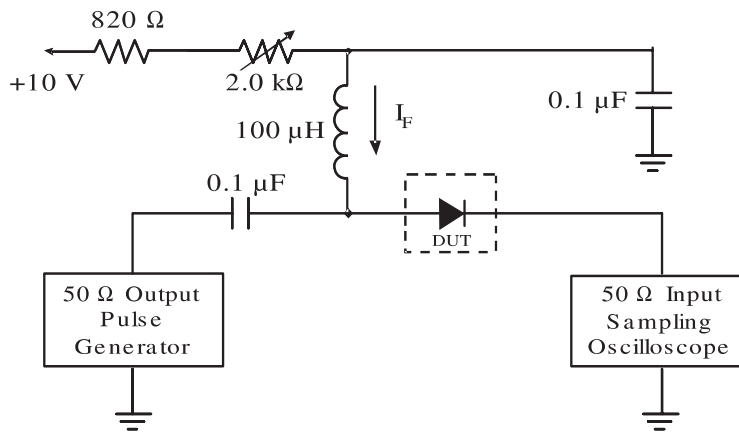




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## ELECTRICAL CHARACTERISTICS

| Parameter                               | Symbol   | Test Condition  | Min. | Typ. | Max.               | Units   |
|---|----------|---|------|------|--------------------|---------|
| Reverse Breakdown Voltage               | $V_{BR}$ | $I_R=100\mu A$  | 100  | --   | --                 | V       |
| Reverse Current                         | $I_R$    | $V_R=50V$<br>$V_R=100V$<br>$V_R=50V, T_J=125^\circ C$ | --   | --   | 1<br>3<br>100      | $\mu A$ |
| Forward Voltage                         | $V_F$    | $I_F=1mA$<br>$I_F=10mA$<br>$I_F=100mA$                | --   | --   | 0.7<br>0.82<br>1.1 | V       |
| Total Capacitance                       | $C_J$    | $V_R=0V, f=1MHz$                                      | --   | --   | 2                  | pF      |
| Reverse Recovery Time<br>(See Figure 1) | $T_{RR}$ | $I_F=10mA, I_R=10mA$<br>$R_L=100\Omega$               | --   | --   | 4                  | ns      |



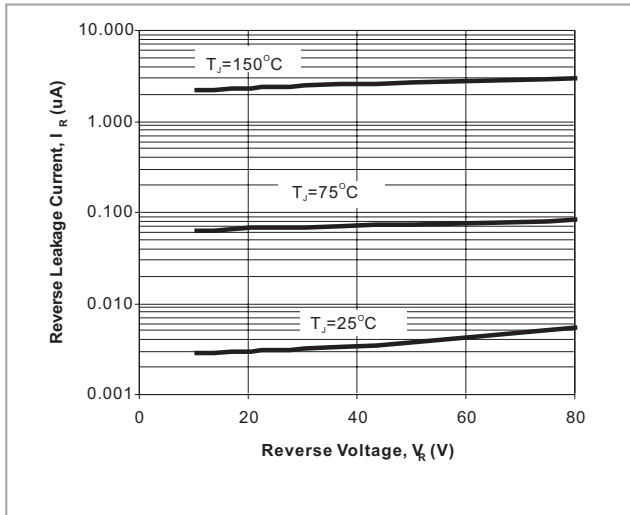
- Notes: 1. A 2.0k $\Omega$  variable resistor adjusted for a forward current ( $I_F$ ) to 10mA  
2. Input pulse is adjusted to  $I_{R(peak)}$  is equal to 10mA

Figure 1. REVERSE RECOVERY TIME EQUIVALENT TEST CIRCUIT

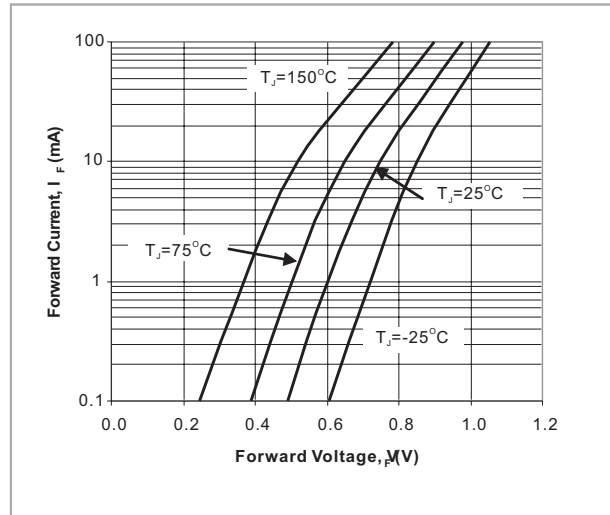


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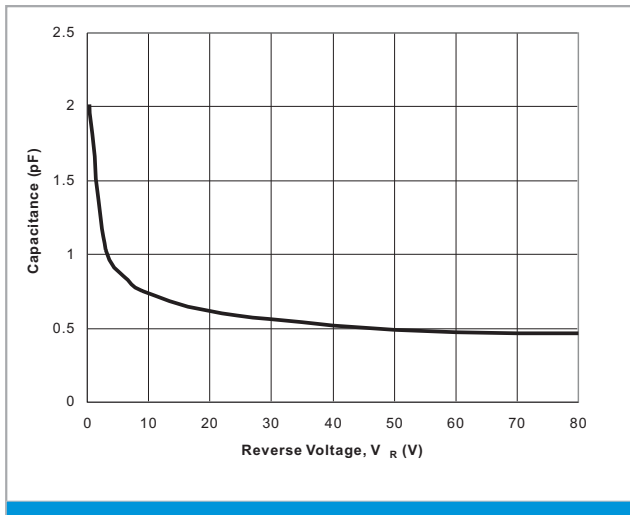
## ELECTRICAL CHARACTERISTICS CURVE



**Fig. 2. Reverse Current vs. Reverse Voltage**



**Fig. 3. Forward Current vs. Forward**



**Fig. 4. Capacitance vs. Reverse Voltage**

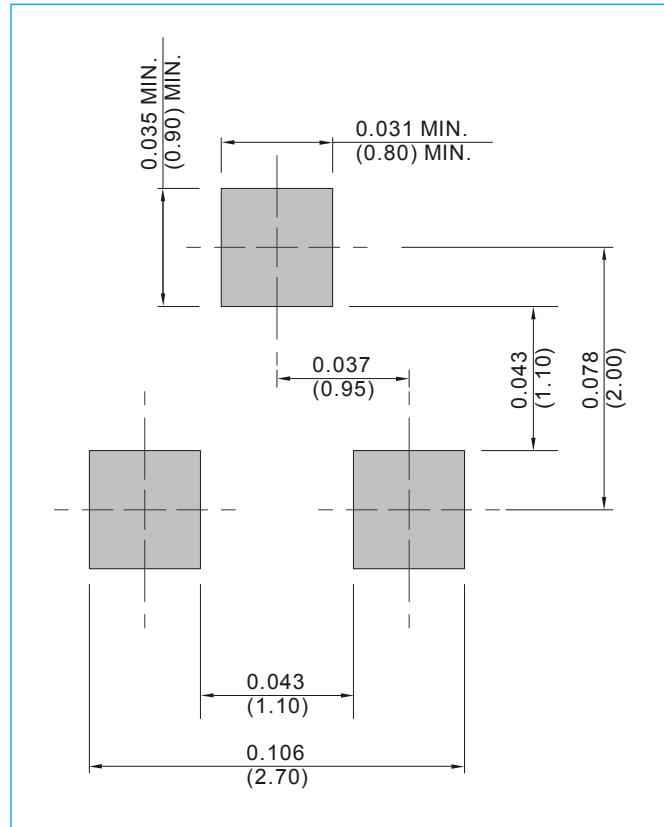


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## MOUNTING PAD LAYOUT

**SOT-23**

Unit : inch(mm)



## ORDER INFORMATION

- Packing information
  - T/R - 12K per 13" plastic Reel
  - T/R - 3K per 7" plastic Reel



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## Part No\_packing code\_Version

MMBD7000\_R1\_00001

MMBD7000\_R2\_00001

For example :

**RB500V-40\_R2\_00001**



| Packing Code <b>XX</b>               |                      |                                  |                      | Version Code <b>XXXXX</b> |                      |                                       |
|--------------------------------------|----------------------|----------------------------------|----------------------|---------------------------|----------------------|---------------------------------------|
| Packing type                         | 1 <sup>st</sup> Code | Packing size code                | 2 <sup>nd</sup> Code | HF or RoHS                | 1 <sup>st</sup> Code | 2 <sup>nd</sup> ~5 <sup>th</sup> Code |
| Tape and Ammunition Box (T/B)        | <b>A</b>             | N/A                              | <b>0</b>             | <b>HF</b>                 | <b>0</b>             | serial number                         |
| Tape and Reel (T/R)                  | <b>R</b>             | 7"                               | <b>1</b>             | <b>RoHS</b>               | <b>1</b>             | serial number                         |
| Bulk Packing (B/P)                   | <b>B</b>             | 13"                              | <b>2</b>             |                           |                      |                                       |
| Tube Packing (T/P)                   | <b>T</b>             | 26mm                             | <b>X</b>             |                           |                      |                                       |
| Tape and Reel (Right Oriented) (TRR) | <b>S</b>             | 52mm                             | <b>Y</b>             |                           |                      |                                       |
| Tape and Reel (Left Oriented) (TRL)  | <b>L</b>             | PANASERT T/B CATHODE UP (PBCU)   | <b>U</b>             |                           |                      |                                       |
| FORMING                              | <b>F</b>             | PANASERT T/B CATHODE DOWN (PBCD) | <b>D</b>             |                           |                      |                                       |



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