



# MMBD7000W

## SURFACE MOUNT SWITCHING DIODE

SOT-323

Unit: inch (mm)

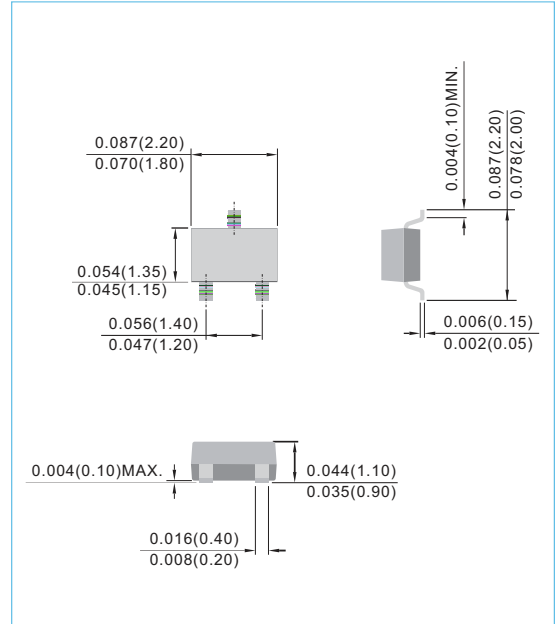
**VOLTAGE** 100 Volts **POWER** 200 mWatts

### FEATURES

- Very fast reverse recovery ( $t_{rr} < 2.0$  ns typical)
- Isolated, series-connected diode pair
- Surface mount package ideally suited for automatic insertion
- Lead free in comply with EU RoHS 2011/65/EU directives.
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

- Case: SOT-323, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0048 gram
- 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 $t=1.0 \infty$ s | $I_{FSM}$ | 4.0   | A     |

### THERMAL CHARACTERISTICS

| PARAMETER  | Symbol          | Value      | Units                       |
|--|-----------------|------------|-----------------------------|
| Power Dissipation (Note 1)                       | $P_{TOT}$       | 200        | mW                          |
| Thermal Resistance, Junction to Ambient (Note 1) | $R_{\theta JA}$ | 556        | $^{\circ}\text{C}/\text{W}$ |
| Junction Temperature                             | $T_J$           | -55 to 150 | $^{\circ}\text{C}$          |
| Storage Temperature                              | $T_{STG}$       | -55 to 150 | $^{\circ}\text{C}$          |

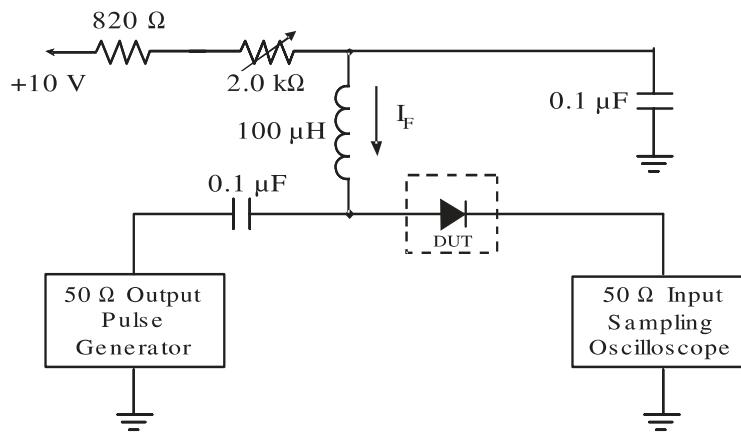
Note 1. FR-4 Board = 70 x 60 x 1mm.



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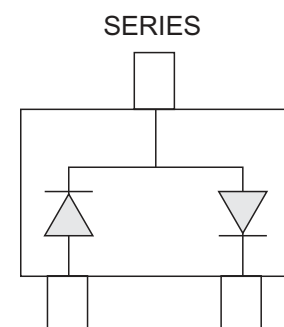
## ELECTRICAL CHARACTERISTICS

| PARAMETER                        | Symbol     | Test Condition   | MIN. | TYP. | MAX.                 | Units   |
|----------------------------------|------------|--|------|------|----------------------|---------|
| Reverse Breakdown Voltage        | $V_{(BR)}$ | $I_R=100 \mu A$  | 100  | --   | --                   | V       |
| Reverse Current                  | $I_r$      | $V_R=50 V$<br>$V_R=100 V$<br>$V_R=50 V, T_J=125^\circ C$ | --   | --   | 1.0<br>3.0<br>100    | $\mu A$ |
| Forward Voltage                  | $V_F$      | $I_F=1.0mA$<br>$I_F=10mA$<br>$I_F=100mA$                 | --   | --   | 0.70<br>0.82<br>1.10 | V       |
| Total Capacitance                | $C_J$      | $V_R=0V, f=1.0MHz$                                       | --   | --   | 2.0                  | pF      |
| Reverse Recovery Time (Figure 1) | $t_{rr}$   | $I_F=I_R=10mA, R_L=100\Omega$                            | --   | --   | 4.0                  | ns      |



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

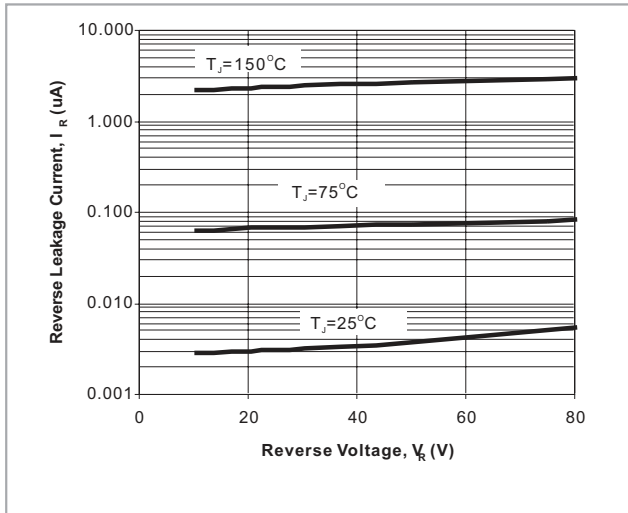
Figure 1. REVERSE RECOVERY TIME EQUIVALENT TEST CIRCUIT



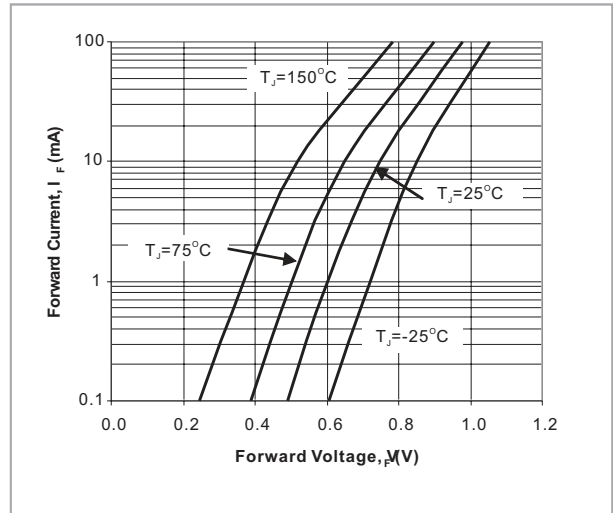


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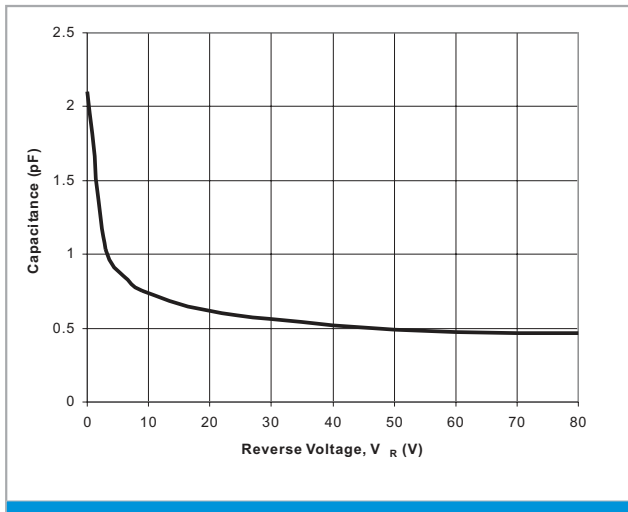
## ELECTRICAL CHARACTERISTICS CURVE



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



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

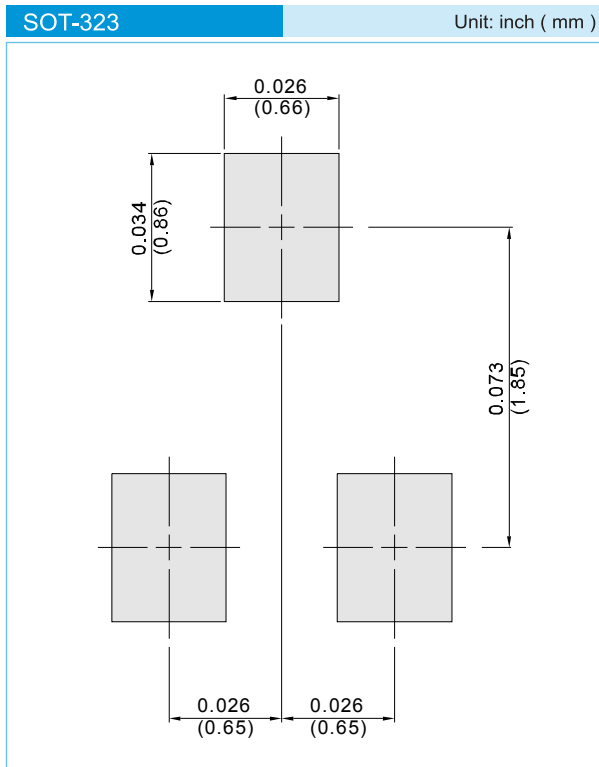


**Fig. 4. Capacitance vs. Reverse Voltage**



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## MOUNTING PAD LAYOUT



## ORDER INFORMATION

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



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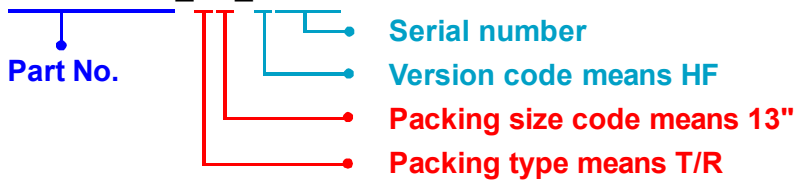
## Part No\_packing code\_Version

MMBD7000W\_R1\_00001

MMBD7000W\_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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