



# MMBD1501 THRU MMBD1505

## High Conductance Low Leakage Diode 350mW

### Features

- Low Leakage
- Surface Mount Package Ideally Suited for Automatic Insertion
- 150C Junction Temperature
- Lead Free Finish/Rohs Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Halogen free available upon request by adding suffix "-HF"

### Mechanical Data

- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Polarity: See Diagram
- Weight: 0.008 grams ( approx.)

### Maximum Ratings @ 25°C Unless Otherwise Specified

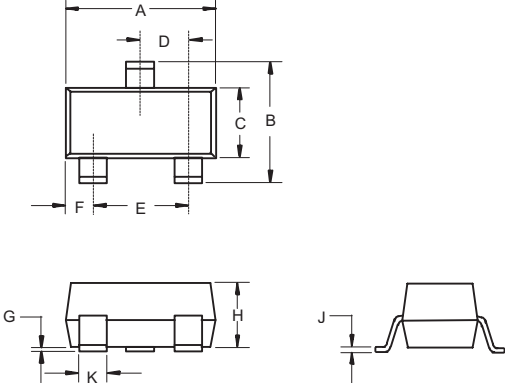
| Characteristic                                       | Symbol          | Value       | Unit |
|--|-----------------|-------------|------|
| Working Inverse Voltage                              | $V_{IV}$        | 180         | V    |
| DC Forward Current                                   | $I_F$           | 600         | mA   |
| Average Rectified Current                            | $I_o$           | 200         | mA   |
| Recurrent Peak Forward Current                       | $i_f$           | 700         | mA   |
| Peak Forward Surge Current @ $t=1.0s$<br>@ $t=1.0ms$ | $i_{f(surge)}$  | 1.0<br>2.0  | A    |
| Power Dissipation                                    | $P_d$           | 350         | mW   |
| Thermal Resistance, Junction to Ambient              | $R_{\theta JA}$ | 357         | °C/W |
| Operation & Storage Temp. Range                      | $T_J, T_{STG}$  | -55 to +150 | °C   |

**Note:** 1) These ratings are based on a max. junction temperature of 150 degrees C  
2) These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operation

### Electrical Characteristics @ 25°C Unless Otherwise Specified

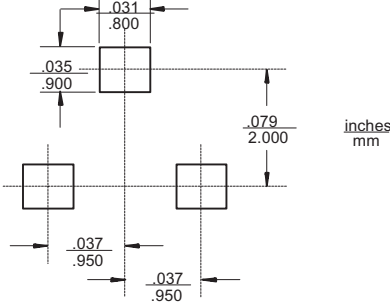
| Characteristic       | Symbol | Min   | Max       | Unit     | Test Cond.                               |
|----------------------|--------|-------|-----------|----------|--|
| Breakdown Voltage    | $B_V$  | 200   |           | V        | $I_R=5.0\mu A$                           |
| Forward Voltage Drop | $V_F$  | 620   | 750       | mV       | $I_F=1.0mA$                              |
|                      |        | 720   | 850       | mV       | $I_F=10mA$                               |
|                      |        | 800   | 950       | mV       | $I_F=50mA$                               |
|                      |        | 0.83  | 1.1       | V        | $I_F=100mA$                              |
|                      |        | 0.87  | 1.3       | V        | $I_F=200mA$                              |
|                      |        | 0.9   | 1.5       | V        | $I_F=300mA$                              |
| Reverse Current      | $I_R$  | ----- | 10<br>5.0 | nA<br>uA | $V_R=180V$<br>$V_R=180V T_A=150^\circ C$ |
| Junction Capacitance | $C_j$  | ----- | 4         | pF       | $V_R=0V, f=1.0MHz$                       |

### SOT-23



| DIMENSIONS |        |       |      |      |      |
|------------|--------|-------|------|------|------|
| DIM        | INCHES |       | MM   |      | NOTE |
|            | MIN    | MAX   | MIN  | MAX  |      |
| A          | .110   | .120  | 2.80 | 3.04 |      |
| B          | .083   | .104  | 2.10 | 2.64 |      |
| C          | .047   | .055  | 1.20 | 1.40 |      |
| D          | .035   | .041  | .89  | 1.03 |      |
| E          | .070   | .081  | 1.78 | 2.05 |      |
| F          | .018   | .024  | .45  | .60  |      |
| G          | .0005  | .0039 | .013 | .100 |      |
| H          | .035   | .044  | .89  | 1.12 |      |
| J          | .003   | .007  | .085 | .180 |      |
| K          | .015   | .020  | .37  | .51  |      |

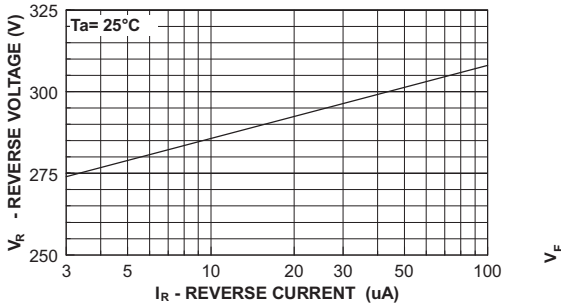
### Suggested Solder Pad Layout



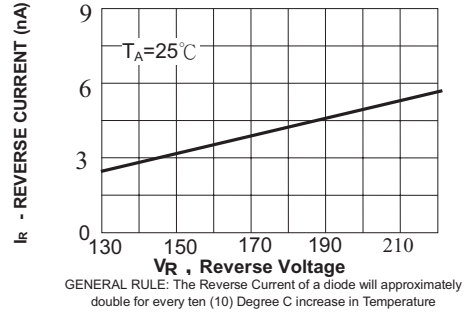
inches  
mm

# MMBD1501thru MMBD1505

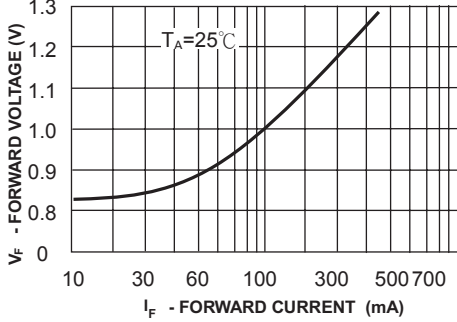
**REVERSE VOLTAGE vs REVERSE CURRENT**  
BV - 3.0 to 100  $\mu$ A



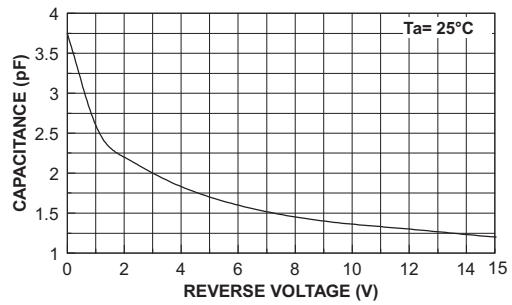
**Reverse Current Vs Reverse Voltage**  
 $I_R$  - 130 - 205 volts



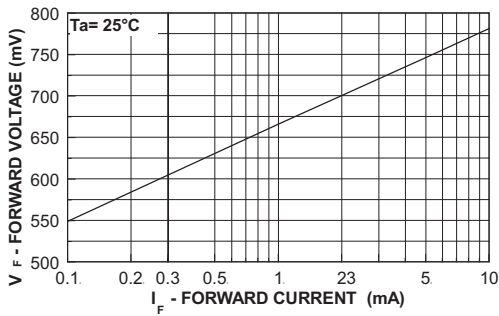
**FORWARD VOLTAGE vs FORWARD CURRENT**  
VF - 10 to 800 mA



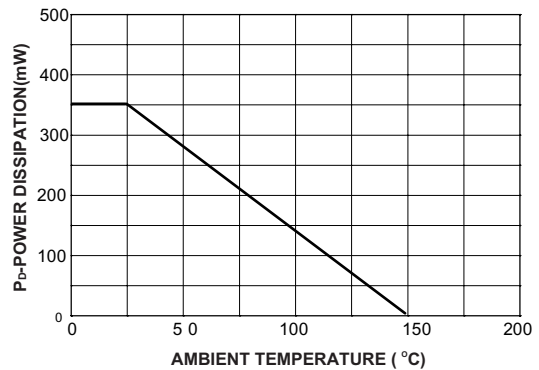
**CAPACITANCE vs REVERSE VOLTAGE**  
VR - 0 to 15 V



**FORWARD VOLTAGE vs FORWARD CURRENT**  
VF - 0.1 to 10 mA



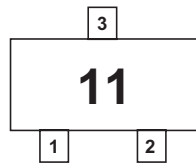
**POWER DERATING CURVE**



# MMBD1501 thru MMBD1505

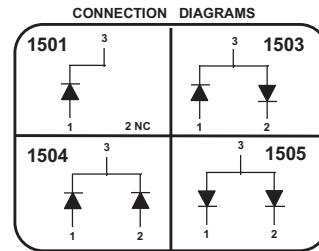
**M·C·C**

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### MARKING

|          |    |
|----------|----|
| MMBD1501 | 11 |
| MMBD1503 | 13 |
| MMBD1504 | 14 |
| MMBD1505 | 15 |





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### Ordering Information :

| Device         | Packing               |
|----------------|-----------------------|
| Part Number-TP | Tape&Reel: 3Kpcs/Reel |

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

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