

## Features

- Low Leakage
- 150°C Junction Temperature
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- Halogen Free Available Upon Request By Adding Suffix "-HF"
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Mechanical Data

- Weight: 0.008 Grams ( Approx.)

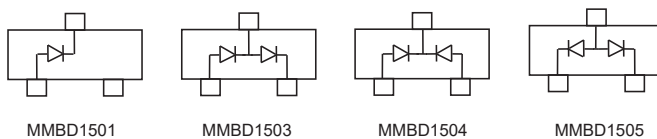
## Maximum Ratings

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance:357°C/W Junction to Ambient

| MCC Part Number | Device Marking | Working Inverse Voltage $V_{IV}$ |
|-----------------|----------------|----------------------------------|
| MMBD1501        | 11             | 180V                             |
| MMBD1503        | 13             | 180V                             |
| MMBD1504        | 14             | 180V                             |
| MMBD1505        | 15             | 180V                             |

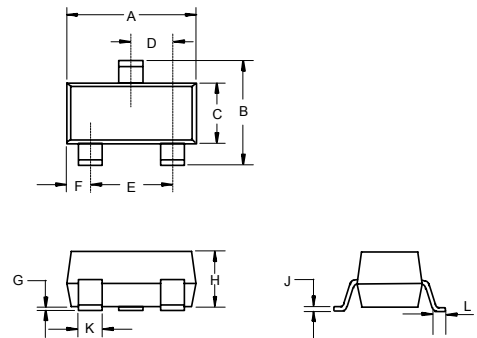
|                                  |           |              |                           |
|----------------------------------|-----------|--------------|---------------------------|
| Forward Continuous Current       | $I_F$     | 600mA        |                           |
| Average Rectified Output Current | $I_o$     | 200mA        |                           |
| Recurrent Peak Forward Current   | $i_f$     | 700mA        |                           |
| Peak Forward Surge Current       | $I_{FSM}$ | 1.0A<br>2.0A | @ t = 1.0s<br>@ t = 1.0ms |
| Power Dissipation                | $P_D$     | 350mW        |                           |

## Internal Structure



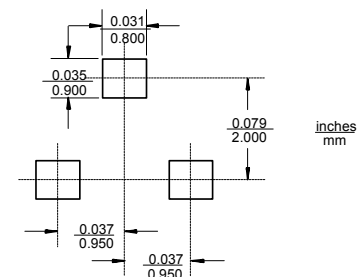
# 350mW Small Signal Diode

## SOT-23



| DIM | INCHES |       | MM   |      | NOTE |
|-----|--------|-------|------|------|------|
|     | MIN    | MAX   | MIN  | MAX  |      |
| A   | 0.110  | 0.120 | 2.80 | 3.04 |      |
| B   | 0.083  | 0.104 | 2.10 | 2.64 |      |
| C   | 0.047  | 0.055 | 1.20 | 1.40 |      |
| D   | 0.034  | 0.041 | 0.85 | 1.05 |      |
| E   | 0.067  | 0.083 | 1.70 | 2.10 |      |
| F   | 0.018  | 0.024 | 0.45 | 0.60 |      |
| G   | 0.0004 | 0.006 | 0.01 | 0.15 |      |
| H   | 0.035  | 0.043 | 0.90 | 1.10 |      |
| J   | 0.003  | 0.007 | 0.08 | 0.18 |      |
| K   | 0.014  | 0.020 | 0.35 | 0.51 |      |
| L   | 0.007  | 0.020 | 0.20 | 0.50 |      |

## Suggested Solder Pad Layout



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

|                                   |          |  |  |
|-----------------------------------|----------|--|--|
| Minimum Reverse Breakdown Voltage | $V_{BR}$ | 200V   | $I_R=5.0\mu A$   |
| Forward Voltage Drop              | $V_F$    | 0.62V(Min.)<br>0.72V(Min.)<br>0.80V(Min.)<br>0.83V(Min.)<br>0.87V(Min.)<br>0.90V(Min.) | $I_F=1.0mA$<br>$I_F=10.0mA$<br>$I_F=50.0mA$<br>$I_F=100.0mA$<br>$I_F=200mA$<br>$I_F=300mA$ |
|                                   |          | 0.75V(Max.)<br>0.85V(Max.)<br>0.95V(Max.)<br>1.10V(Max.)<br>1.30V(Max.)<br>1.50V(Max.) | $I_F=1.0mA$<br>$I_F=10.0mA$<br>$I_F=50.0mA$<br>$I_F=100.0mA$<br>$I_F=200mA$<br>$I_F=300mA$ |
| Maximum Reverse Current           | $I_R$    | 10nA<br>5.0 $\mu A$  | $V_R=180V$<br>$V_R=180V, T_A=150^\circ C$  |
| Maximum Junction Capacitance      | $C_J$    | 4.0pF  | $V_R=0.0V, f=1.0MHz$   |

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

## Curve Characteristics

Fig. 1 - Typical Instantaneous Forward Characteristics

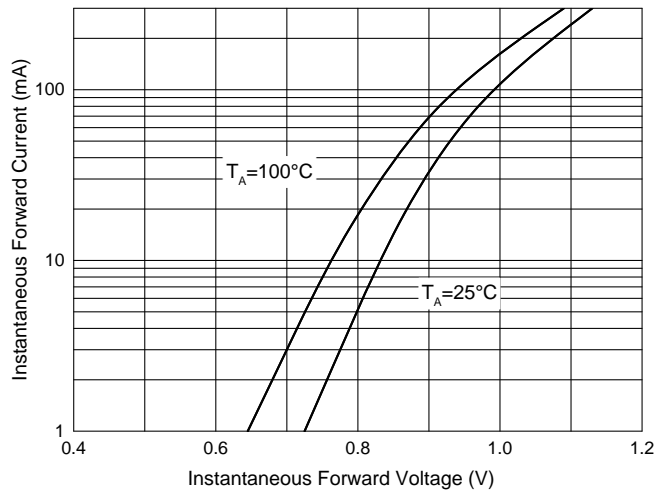


Fig. 2 - Typical Reverse Leakage Characteristics

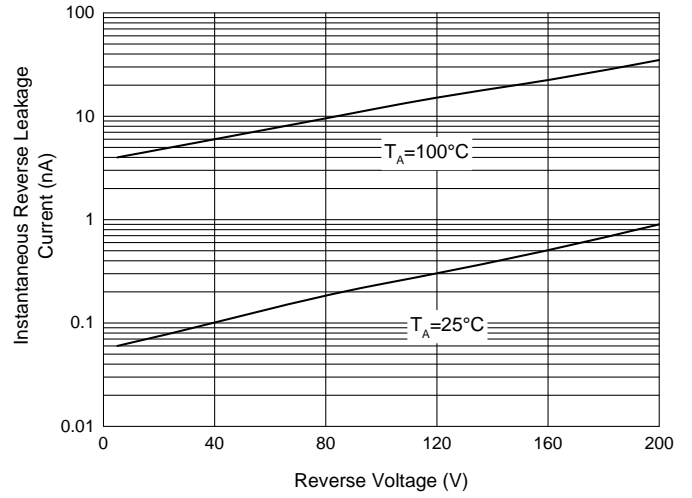
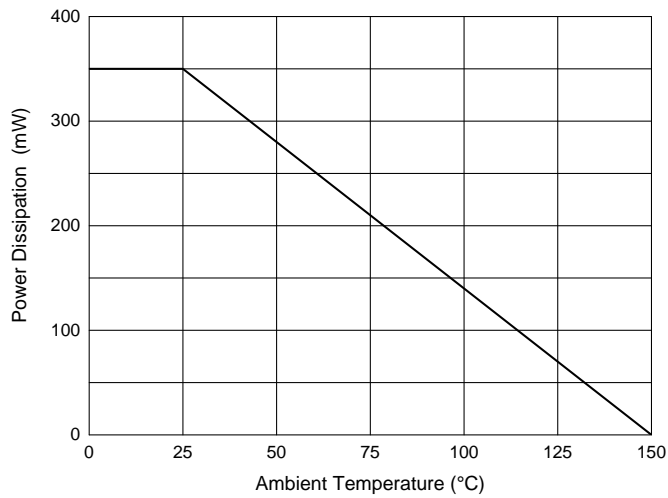


Fig. 3 - Power Derating Curve



## 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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