

# Switching Diode

**MMDL6050T1**


## MAXIMUM RATINGS

| Rating                     | Symbol          | Value | Unit |
|----------------------------|-----------------|-------|------|
| Reverse Voltage            | $V_R$           | 70    | Vdc  |
| Forward Current            | $I_F$           | 200   | mAdc |
| Peak Forward Surge Current | $I_{FM(surge)}$ | 500   | mAdc |

## THERMAL CHARACTERISTICS

| Characteristic  | Symbol          | Max  | Unit                 |
|---|-----------------|------|----------------------|
| Total Device Dissipation FR-5 Board,*<br>$T_A = 25^\circ\text{C}$ | $P_D$           | 200  | mW                   |
| Derate above $25^\circ\text{C}$                                   |                 | 1.57 | mW/ $^\circ\text{C}$ |
| Thermal Resistance Junction to Ambient                            | $R_{\theta JA}$ | 635  | $^\circ\text{C/W}$   |
| Junction and Storage Temperature                                  | $T_J, T_{stg}$  | 150  | $^\circ\text{C}$     |

\*\*FR-4 Minimum Pad

## DEVICE MARKING

MMDL6050T1 = 5A

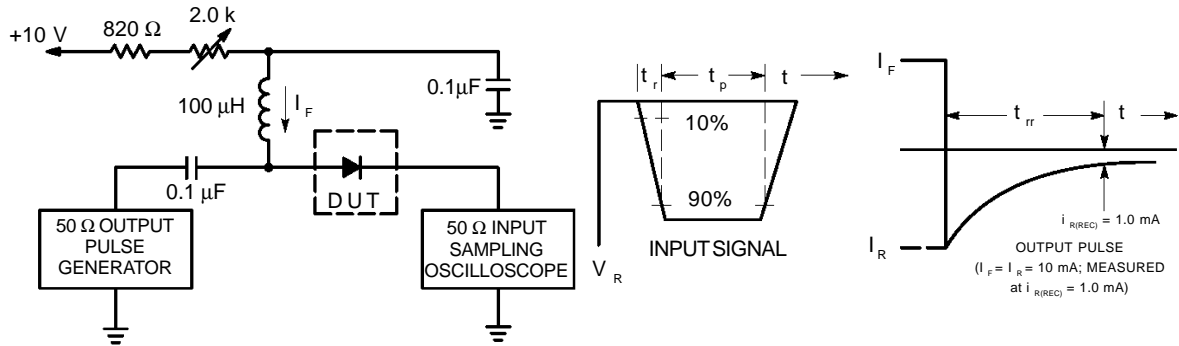
## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

| Characteristic | Symbol | Min | Max | Unit |
|----------------|--------|-----|-----|------|
|----------------|--------|-----|-----|------|

## OFF CHARACTERISTICS

|  |            |      |     |                 |
|--|------------|------|-----|-----------------|
| Reverse Breakdown Voltage ( $I_{(BR)} = 100 \mu\text{Adc}$ )   | $V_{(BR)}$ | 70   | —   | Vdc             |
| Reverse Voltage Leakage Current<br>( $V_R = 50 \text{ Vdc}$ )  | $I_R$      | —    | 0.1 | $\mu\text{Adc}$ |
| Forward Voltage<br>( $I_F = 1.0 \text{ mAdc}$ )  | $V_F$      | 0.55 | 0.7 | Vdc             |
| ( $I_F = 100 \text{ mAdc}$ )   |            | 0.85 | 1.1 |                 |
| Reverse Recovery Time<br>( $I_F = I_R = 10 \text{ mAdc}, I_{R(REC)} = 1.0 \text{ mAdc}$ ) (Figure 1) | $t_{rr}$   | —    | 4.0 | ns              |
| Capacitance ( $V_R = 0 \text{ V}$ )  | C          | —    | 2.5 | pF              |

### MMDL6050T1



- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.  
 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10mA.  
 3.  $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

### TYPICAL CHARACTERISTICS

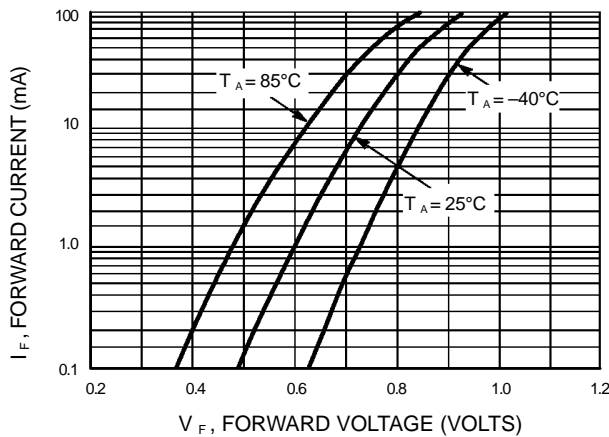


Figure 2. Forward Voltage

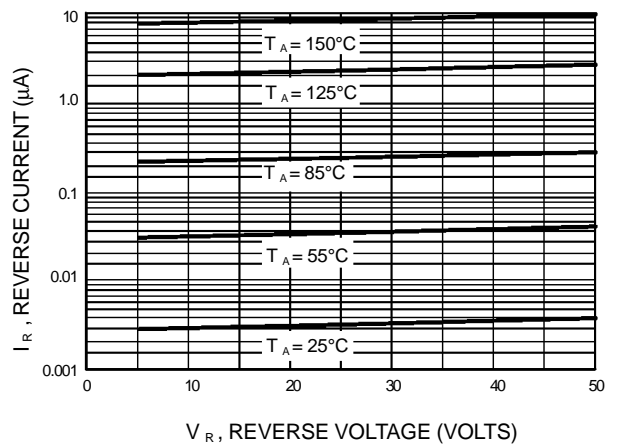


Figure 3. Leakage Current

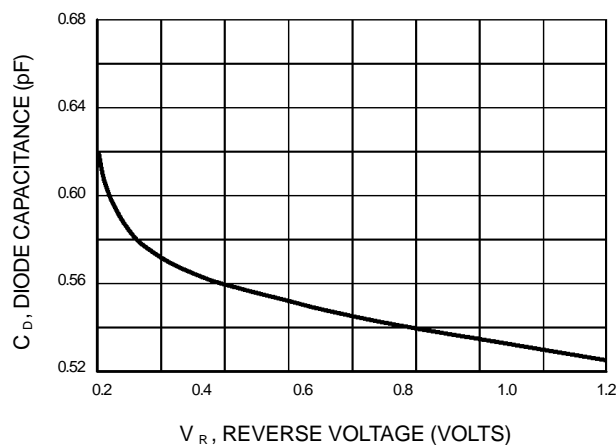
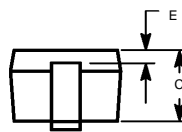
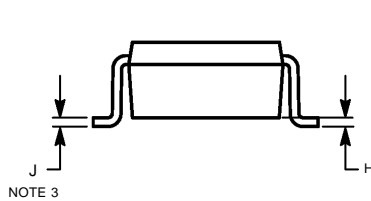
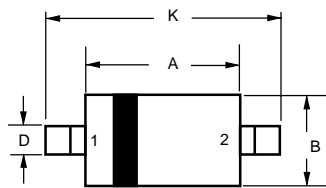


Figure 4. Capacitance

**MMDL6050T1**

**PACKAGE DIMENSIONS**

**SOD-323**  
 PLASTIC PACKAGE  
 CASE 477-02  
 ISSUE A



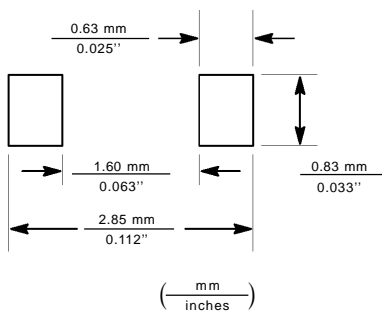
NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.

| DIM | MILLIMETERS |       | INCHES    |        |
|-----|-------------|-------|-----------|--------|
|     | MIN         | MAX   | MIN       | MAX    |
| A   | 1.60        | 1.80  | 0.063     | 0.071  |
| B   | 1.15        | 1.35  | 0.045     | 0.053  |
| C   | 0.80        | 1.00  | 0.031     | 0.039  |
| D   | 0.25        | 0.40  | 0.010     | 0.016  |
| E   | 0.15 REF    |       | 0.006 REF |        |
| H   | 0.00        | 0.10  | 0.000     | 0.004  |
| J   | 0.089       | 0.177 | 0.0035    | 0.0070 |
| K   | 2.30        | 2.70  | 0.091     | 0.106  |

STYLE 1:

- PIN 1. CATHODE  
 2. ANODE



**SOD-323**  
 Soldering Footprint