# QUNHAN TECH

# MMBD4148

## Surface Mount Switching Diode

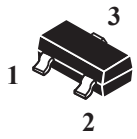
**SWITCHING DIODE**
**200mAMPERS**
**100VOLTS**

**Features:**

*High Speed ≤4ns

*Low Rever Leakage Current

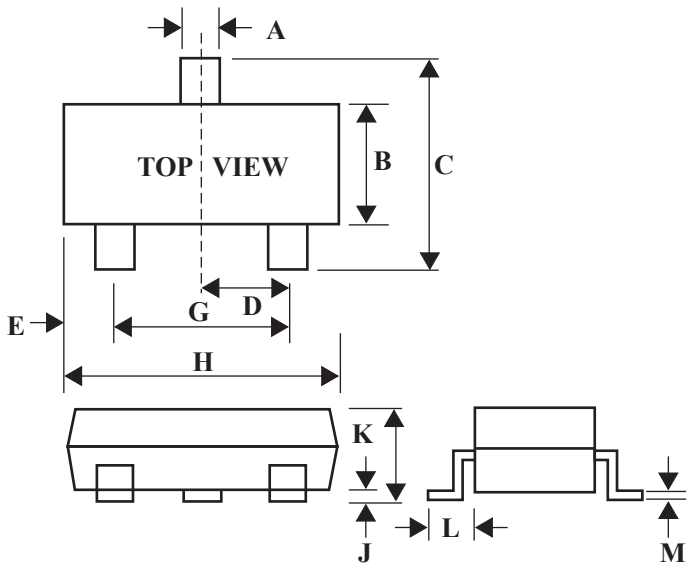
*Small Outline Surface Mount SOT-23 Package




**SOT-23**

## SOT-23 Outline Dimensions

Unit:mm




| Dim | Min | Max |
|---|---|---|
| A | 0.35 | 0.51 |
| B | 1.19 | 1.40 |
| C | 2.10 | 3.00 |
| D | 0.85 | 1.05 |
| E | 0.46 | 1.00 |
| G | 1.70 | 2.10 |
| H | 2.70 | 3.10 |
| J | 0.01 | 0.13 |
| K | 0.89 | 1.10 |
| L | 0.30 | 0.61 |
| M | 0.076 | 0.25 |

## Maximum Ratings

| Rating | Symbol | Value | Unit |
|---|---|---|---|
| Reverse Voltage | $V_R$ | 100 | Vdc |
| Forward Current | $I_F$ | 200 | mAdc |
| Peak Forward Surge Current | $I_{FM(Surge)}$ | 500 | mAdc |

## Thermal Characteristics

| Characterictics | Symbol | Max | Unit |
|---|---|---|---|
| Total Device Dissipation FR-5 Board $T_A$=25°C | $P_D$ | 500 | mW |
| Thermal Resistance, Junction to Ambient | $R_{\theta JA}$ | 556 | °C/W |
| Junction and Storage Temperature | TJ, Tstg | -55 to + 150 | °C |

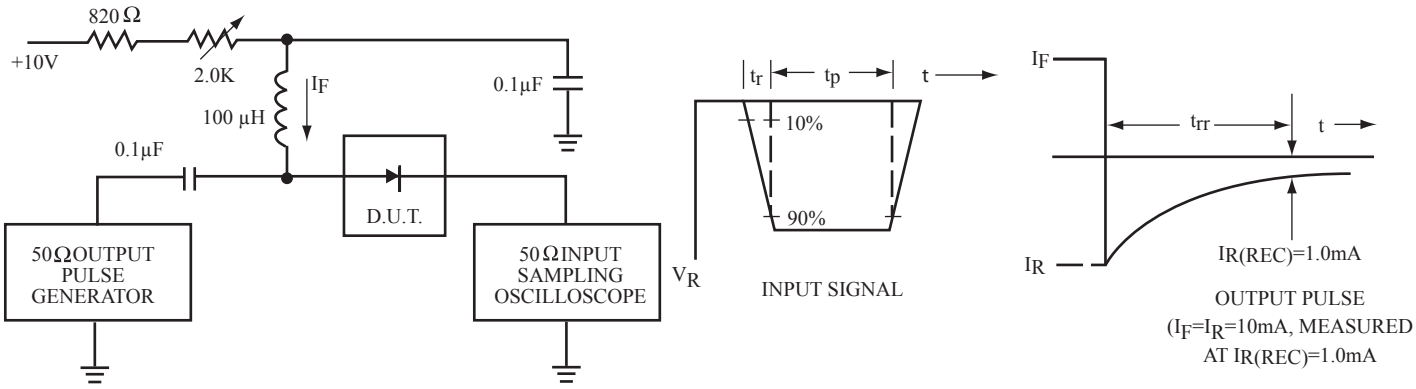
## Electrical Characteristics ($T_A$=25°C Unless Otherwise note)

| Characterictics | | Symbol | Min | Max | Unit |
|---|---|---|---|---|---|
| **Off Characteristics** | | | | | |
| Reverse Breakdown Votalge (IR=100μAdc) | | V(BR) | 100 | – | Vcc |
| Forward Voltage(IF=10mAdc) | | $V_F$ | – | 1000 | mVdc |
| Reverse Voltage Leakage Current | ($V_R$=20Vdc)<br>($V_R$=75Vdc) | $I_R$ | –<br>– | 0.025<br>5.0 | μAdc |
| Diode Capacitance ($V_R$=0, f=1.0MHz) | | $C_T$ | – | 4.0 | $P_F$ |
| Revarse Recover Time ($I_F$=$I_R$=10mAdc) | | trr | – | 4.0 | ns |

1. FR-5=1.0x0.75x0.062 in 2.Alumina=0.4x0.3x0.024 in. 99.5% alumina.

## Device Marking

| Item | Marking | Eqivalent Circuitdiagram |
|---|---|---|
| MMBD4148 | 5D |  |




Notes: 1. A 2.0 kΩ variable resistor for a Forward Current ($I_F$) 0f 10 mA

2. Input pules is adjusted so $I_R$(peak) is equal to 10 mA

3. $t_p \gg t_{rr}$

**Figure 1. Recovery Time Equivalent Test Circuit**

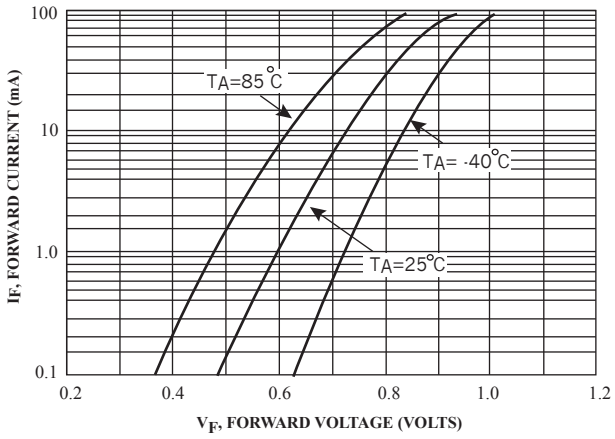



**Figure 2. Forward Voltage**

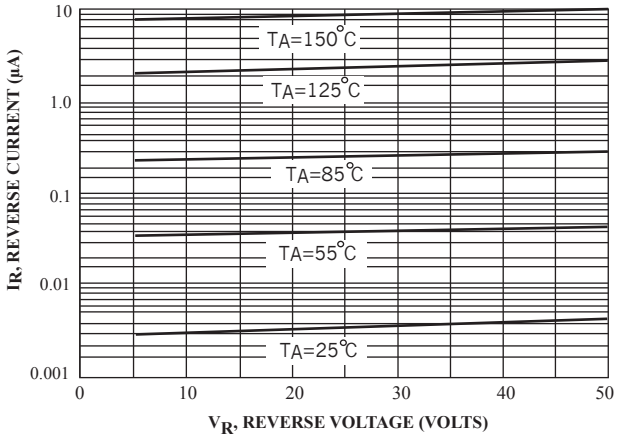



**Figure 3. Leakage Current**

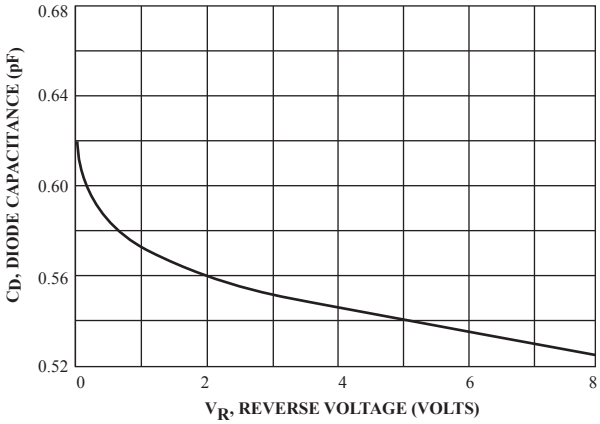



**Figure 4. Capacitance**