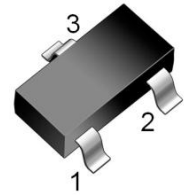
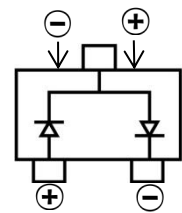


**SWITCHING DIODE**
**FEATURES**

- Fast Switching
- High Conductance
- Surface Mount device
- For General Purpose Switching Applications


**SOT-23**

**MMBD4148SE:D4**
**MECHANICAL DATA**

- Case: SOT-23
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Weight: 0.008 grams (approximate)

**MARKING: D4**
**MAXIMUM RATINGS (T<sub>A</sub> = 25°C unless otherwise noted)**

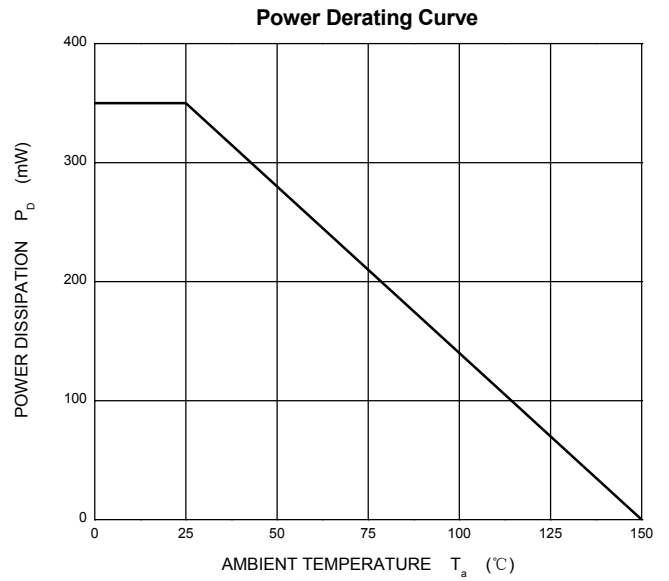
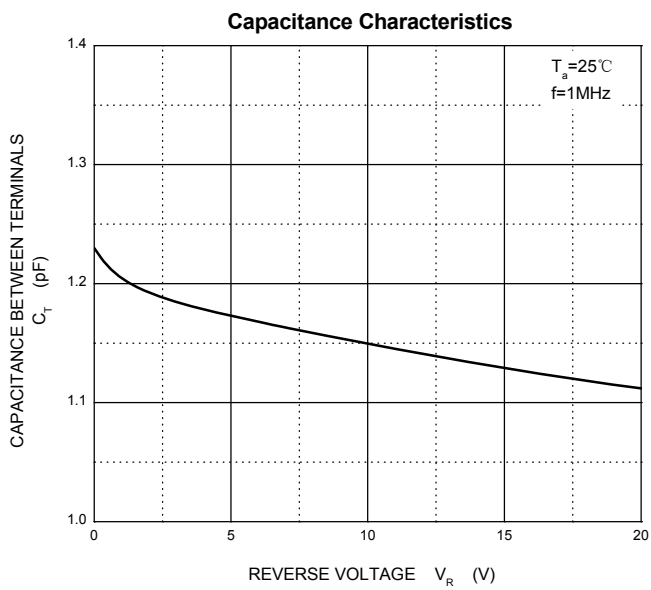
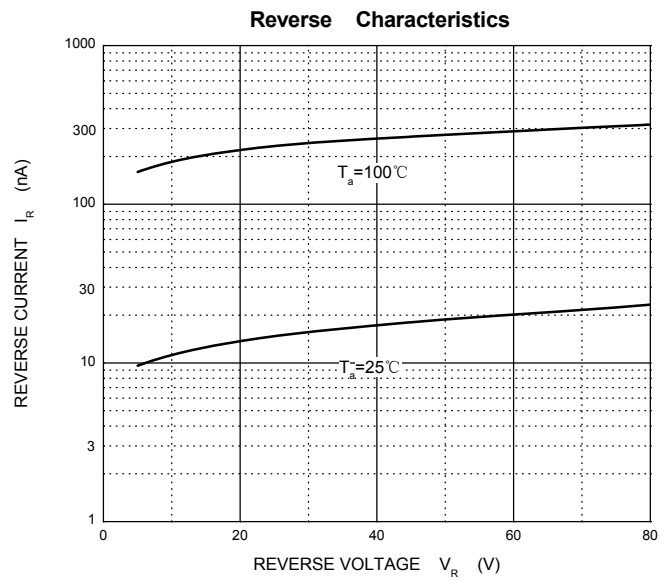
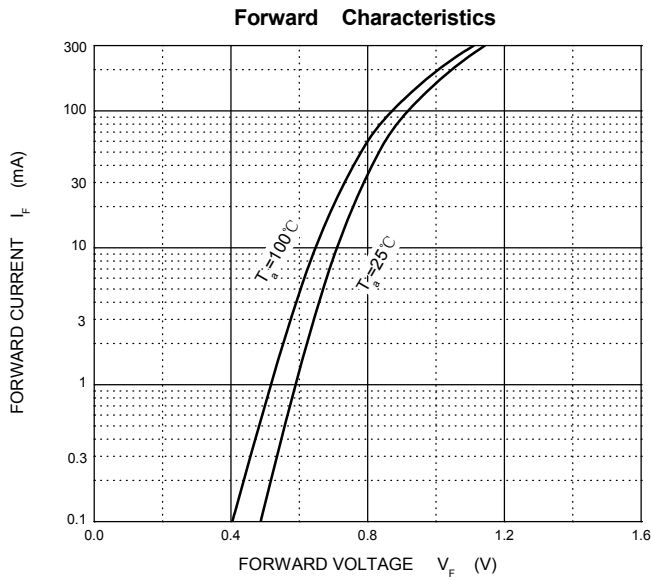
| Parameter   | Symbol              | Value     | Unit |
|---|---------------------|-----------|------|
| Non-Repetitive Peak Reverse Voltage                 | V <sub>RM</sub>     | 100       | V    |
| DC Blocking Reverse Voltage                         | V <sub>R</sub>      | 75        | V    |
| RMS Reverse Voltage                                 | V <sub>R(RMS)</sub> | 53        | V    |
| Forward Current                                     | I <sub>F</sub>      | 300       | mA   |
| Average Rectified Output Current                    | I <sub>O</sub>      | 200       | mA   |
| Non-Repetitive Peak Forward Surge Current @t@=8.3ms | I <sub>FSM</sub>    | 2.0       | A    |
| Power Dissipation                                   | P <sub>D</sub>      | 350       | mW   |
| Thermal Resistance From Junction To Ambient         | R <sub>θJA</sub>    | 357       | °C/W |
| Junction Temperature                                | T <sub>J</sub>      | 150       | °C   |
| Storage Temperature                                 | T <sub>STG</sub>    | -55 ~+150 | °C   |

**ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise specified)**

| Parameter                       | Symbol            | Min | Max | Unit | Conditions  |
|---------------------------------|-------------------|-----|-----|------|---|
| Reverse breakdown voltage       | V <sub>(BR)</sub> | 100 |     | V    | I <sub>R</sub> =100uA   |
| Reverse voltage leakage current | I <sub>R</sub>    |     | 5   | uA   | V <sub>R</sub> =75V   |
| Forward voltage                 | V <sub>F</sub>    |     | 1   | V    | I <sub>F</sub> =10mA  |
| Diode capacitance               | C <sub>D</sub>    |     | 4   | pF   | V <sub>R</sub> =0V, f=1MHz  |
| Reverse recovery time           | T <sub>rr</sub>   |     | 4   | nS   | I <sub>F</sub> =I <sub>R</sub> =10mA I <sub>rr</sub> =0.1×I <sub>R</sub> R <sub>L</sub> =100Ω |

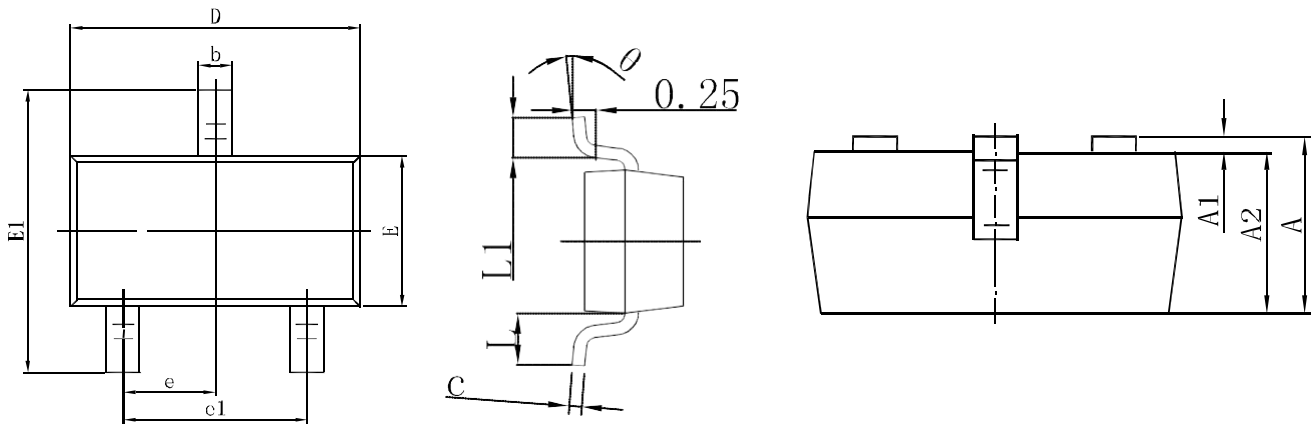
SWITCHING DIODE

Typical Characteristics



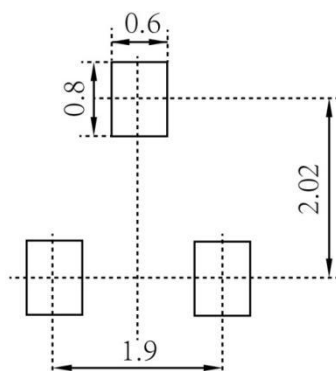
SWITCHING DIODE

**SOT-23 Package Outline Dimensions**



| Symbol | Dimensions In Millimeters |       | Dimensions In Inches |       |
|--------|---------------------------|-------|----------------------|-------|
|        | Min.                      | Max.  | Min.                 | Max.  |
| A      | 0.900                     | 1.150 | 0.035                | 0.045 |
| A1     | 0.000                     | 0.100 | 0.000                | 0.004 |
| A2     | 0.900                     | 1.050 | 0.035                | 0.041 |
| b      | 0.300                     | 0.500 | 0.012                | 0.020 |
| c      | 0.080                     | 0.150 | 0.003                | 0.006 |
| D      | 2.800                     | 3.000 | 0.110                | 0.118 |
| E      | 1.200                     | 1.400 | 0.047                | 0.055 |
| E1     | 2.250                     | 2.550 | 0.089                | 0.100 |
| e      | 0.950 TYP                 |       | 0.037 TYP            |       |
| e1     | 1.800                     | 2.000 | 0.071                | 0.079 |
| L      | 0.550 REF                 |       | 0.022 REF            |       |
| L1     | 0.300                     | 0.500 | 0.012                | 0.020 |
| θ      | 0°                        | 8°    | 0°                   | 8°    |

**SOT-23 Suggested Pad Layout**



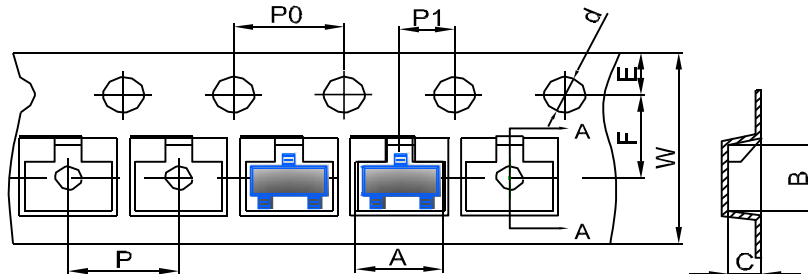
**Note:**

1. Controlling dimension: in millimeters
2. General tolerance:  $\pm 0.05\text{mm}$
3. The pad layout is for reference purposes only

SWITCHING DIODE

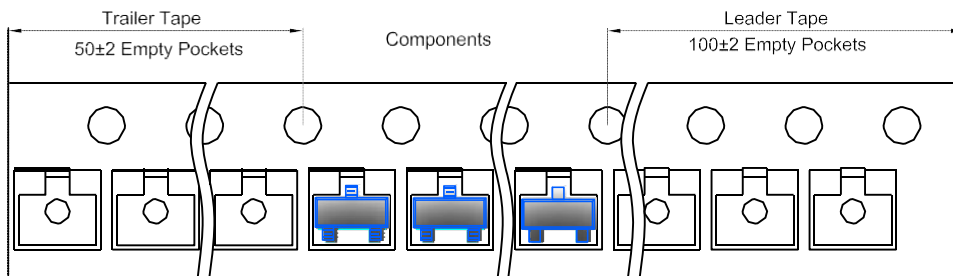
**SOT-23 Tape and Reel**

**SOT-23 Embossed Carrier Tape**

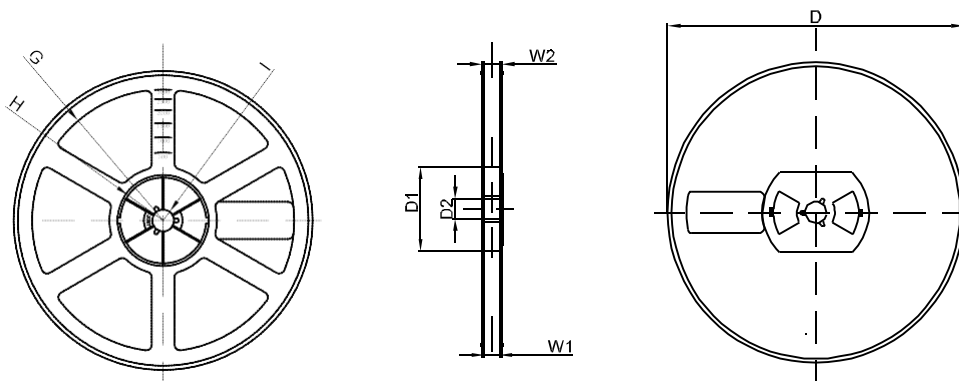


| DIMENSIONS ARE IN MILLIMETER |      |      |      |       |      |      |      |      |      |      |
|------------------------------|------|------|------|-------|------|------|------|------|------|------|
| TYPE                         | A    | B    | C    | d     | E    | F    | P0   | P    | P1   | W    |
| SOT-23                       | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 | 8.00 |
| TOLERANCE                    | ±0.1 | ±0.1 | ±0.1 | ±0.1  | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 | ±0.1 |

**SOT-23 Tape Leader and Trailer**



**SOT-23 Reel**



| DIMENSIONS ARE IN MILLIMETER |      |       |       |     |        |       |      |       |
|------------------------------|------|-------|-------|-----|--------|-------|------|-------|
| REEL OPTION                  | D    | D1    | D2    | G   | H      | I     | W1   | W2    |
| 7" DIA                       | Ø178 | 54.40 | 13.00 | R78 | R25.60 | R6.50 | 9.50 | 12.30 |
| TOLERANCE                    | ±2   | ±1    | ±1    | ±1  | ±1     | ±1    | ±1   | ±1    |