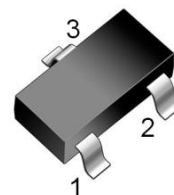
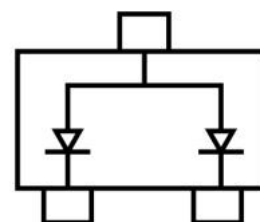


FEATURES

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


SOT-23


MMBD4148CA:D6

MECHANICAL DATA

- Case: SOT-23
- Case Material: Molded Plastic. UL flammability
- Classification Rating: 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Weight: 0.008 grams (approximate)
- Marking:D6

MAXIMUM RATINGS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

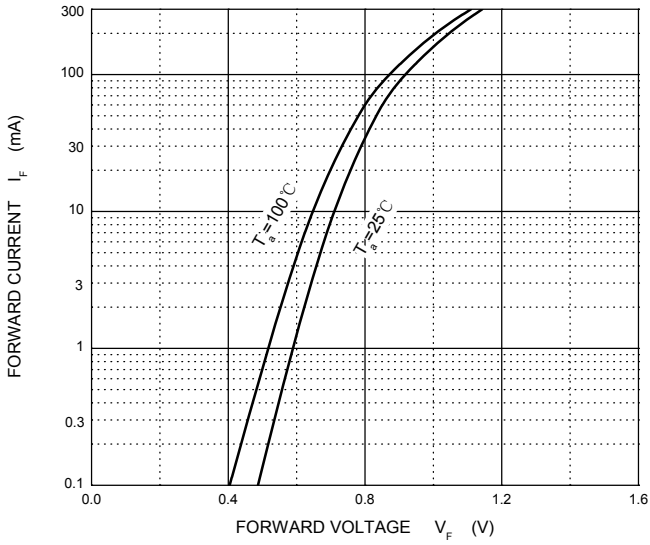
| Parameter | Symbol | Value | Unit |
|---------------------------------------------|-----------------|-----------|---------------------------|
| Reverse Voltage | V_R | 80 | V |
| Forward Current | I_F | 100 | mA |
| Power Dissipation | P_D | 150 | mW |
| Thermal Resistance From Junction To Ambient | $R_{\theta JA}$ | 357 | $^\circ\text{C}/\text{W}$ |
| Junction Temperature | T_J | 150 | $^\circ\text{C}$ |
| Storage Temperature | T_{STG} | -55 ~+150 | $^\circ\text{C}$ |

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

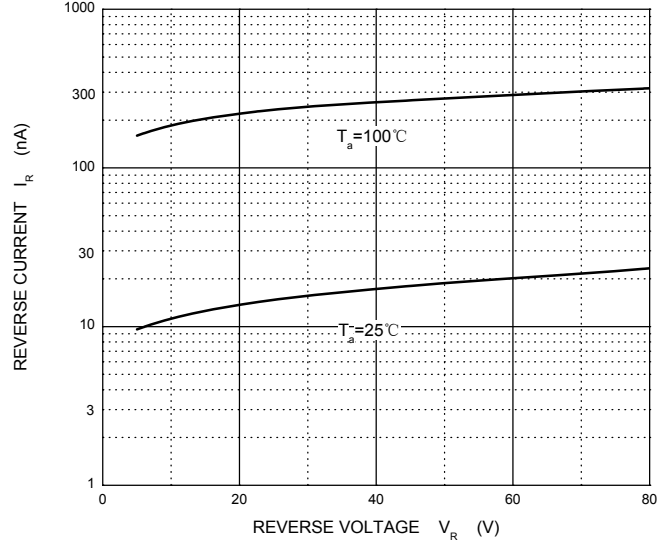
| Parameter | Symbol | Min | Max | Unit | Conditions |
|---------------------------------|------------|-----|------|---------------|-----------------------------------------------|
| Reverse breakdown voltage | $V_{(BR)}$ | 80 | | V | $I_R=100\mu\text{A}$ |
| Reverse voltage leakage current | I_{R1} | | 25 | nA | $V_R=20\text{V}$ |
| | I_{R2} | | 1 | μA | $V_R=80\text{V}$ |
| Forward voltage | V_{F1} | | 0.65 | V | $I_{F1}=1\text{ mA}$ |
| | V_{F2} | | 0.70 | V | $I_{F2}=5\text{ mA}$ |
| | V_{F3} | | 0.80 | V | $I_{F3}=10\text{mA}$ |
| | V_{F4} | | 0.90 | V | $I_{F4}=50\text{ mA}$ |
| | V_{F5} | | 1.00 | V | $I_{F5}=100\text{ mA}$ |
| | V_{F6} | | 1.20 | V | $I_{F6}=150\text{ mA}$ |
| Diode capacitance | C_D | | 3.0 | pF | $V_R=0\text{V}, f=1\text{MHz}$ |
| Reverse recovery time | T_{rr} | | 4 | nS | $I_F=I_R=10\text{mA}$ $I_{rr}=0.1 \times I_R$ |

Typical Characteristics

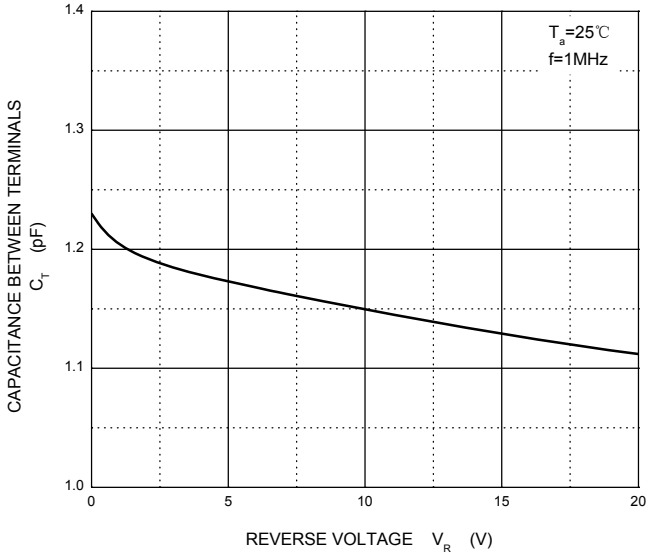
Forward Characteristics



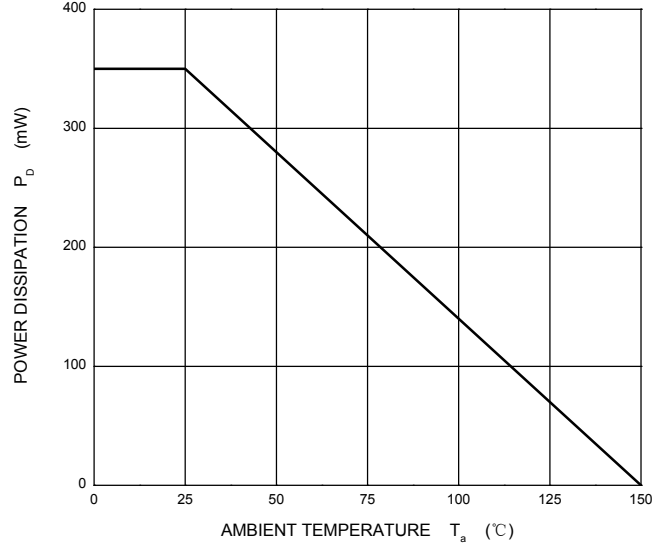
Reverse Characteristics

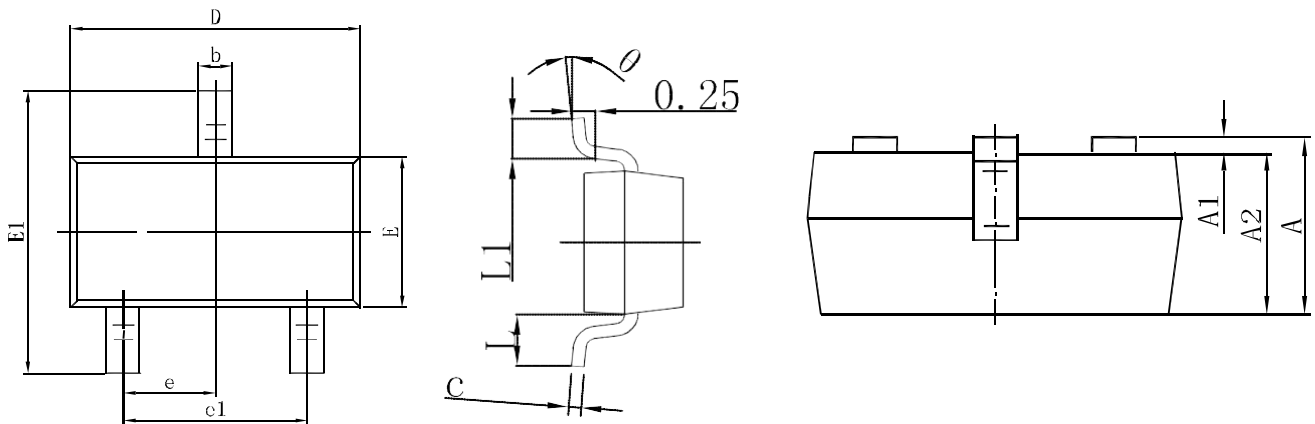


Capacitance Characteristics

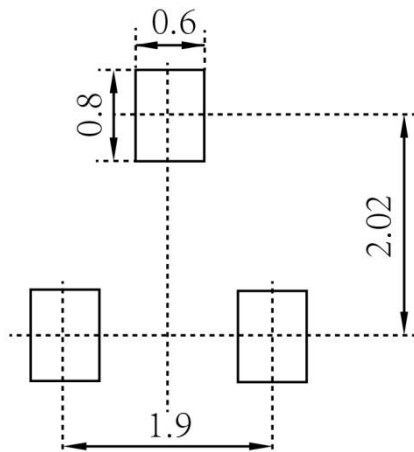


Power Derating Curve



SOT-23 Package Outline Dimensions


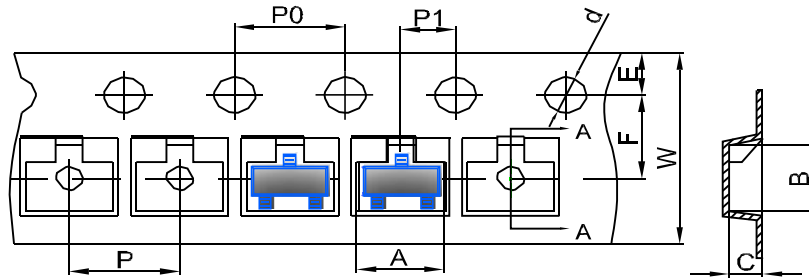
| Symbol | Dimensions In Millimeters | | Dimensions In Inches | |
|----------|---------------------------|-------|----------------------|-------|
| | Min. | Max. | Min. | Max. |
| A | 0.900 | 1.150 | 0.035 | 0.045 |
| A1 | 0.000 | 0.100 | 0.000 | 0.004 |
| A2 | 0.900 | 1.050 | 0.035 | 0.041 |
| b | 0.300 | 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

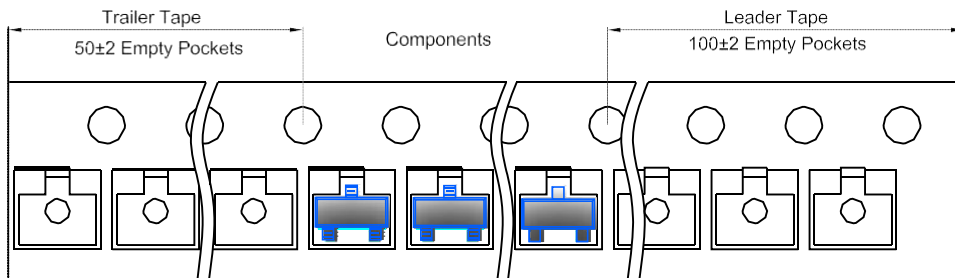
SOT-23 Tape and Reel

SOT-23 Embossed Carrier Tape

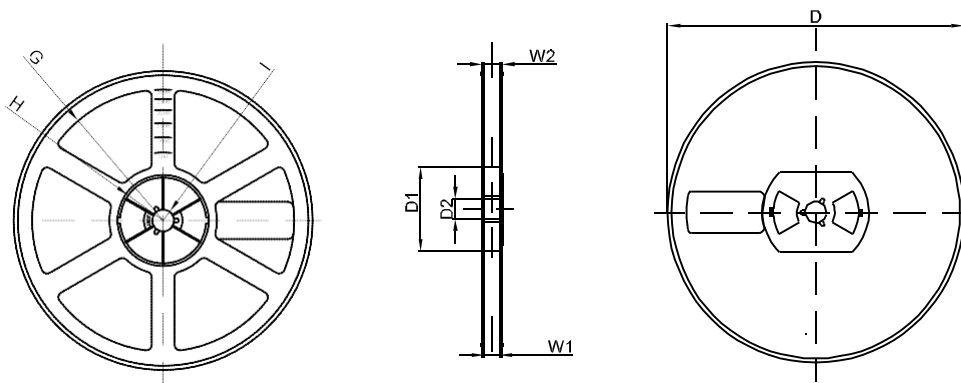


| DIMENSIONS ARE IN MILLIMETER | | | | | | | | | |
|------------------------------|------|------|------|-------|------|------|------|------|------|
| TYPE | A | B | C | d | E | F | P0 | P | P1 |
| SOT-23 | 3.15 | 2.77 | 1.22 | Ø1.50 | 1.75 | 3.50 | 4.00 | 4.00 | 2.00 |
| TOLERANCE | ±0.1 | ±0.1 | ±0.1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