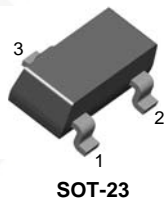


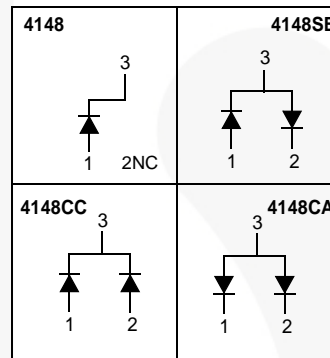


November 2014

MMBD4148 / MMBD4148SE / MMBD4148CC / MMBD4148CA Small Signal Diode



Connection Diagram



Ordering Information

| Part Number | Top Mark | Package | Packing Method |
|---------------|----------|-----------|----------------|
| MMBD4148 | 5H | SOT-23 3L | Tape and Reel |
| MMBD4148_D87Z | 5H | SOT-23 3L | Tape and Reel |
| MMBD4148SE | D4 | SOT-23 3L | Tape and Reel |
| MMBD4148CC | D5 | SOT-23 3L | Tape and Reel |
| MMBD4148CA | D6 | SOT-23 3L | Tape and Reel |

Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | | Value | Unit |
|-------------|---|-------------------------------|-------------|------------------|
| V_{RRM} | Maximum Repetitive Reverse Voltage | | 100 | V |
| $I_{F(AV)}$ | Average Rectified Forward Current | | 200 | mA |
| I_{FSM} | Non-Repetitive Peak Forward Surge Current | Pulse Width = 1.0 second | 1.0 | A |
| | | Pulse Width = 1.0 microsecond | 2.0 | |
| T_{STG} | Storage Temperature Range | | -55 to +150 | $^\circ\text{C}$ |
| T_J | Operating Junction Temperature | | 150 | $^\circ\text{C}$ |

MMBD4148 / MMBD4148SE / MMBD4148CC / MMBD4148CA — Small Signal Diode

Thermal Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Value | Unit |
|-----------------|---|-------|---------------------------|
| P_D | Power Dissipation | 350 | mW |
| $R_{\theta JA}$ | Thermal Resistance, Junction-to-Ambient | 357 | $^\circ\text{C}/\text{W}$ |

Electrical Characteristics

Values are at $T_A = 25^\circ\text{C}$ unless otherwise noted.

| Symbol | Parameter | Conditions | Min. | Max. | Unit |
|----------|-------------------------|---|------|------|---------------|
| V_R | Breakdown Voltage | $I_R = 5.0 \mu\text{A}$ | 75 | | V |
| | | $I_R = 100 \mu\text{A}$ | 100 | | |
| V_F | Forward Voltage | $I_F = 10 \text{ mA}$ | | 1.0 | V |
| I_R | Reverse Leakage Current | $V_R = 20 \text{ V}$ | | 25 | nA |
| | | $V_R = 20 \text{ V}, T_A = 150^\circ\text{C}$ | | 50 | μA |
| | | $V_R = 75 \text{ V}$ | | 5.0 | μA |
| C_T | Total Capacitance | $V_R = 0 \text{ V}, f = 1.0 \text{ MHz}$ | | 4.0 | pF |
| t_{rr} | Reverse Recovery Time | $I_F = 10 \text{ mA}, V_R = 6.0 \text{ V}, I_{RR} = 1.0 \text{ mA}, R_L = 100 \Omega$ | | 4.0 | ns |

Typical Performance Characteristics

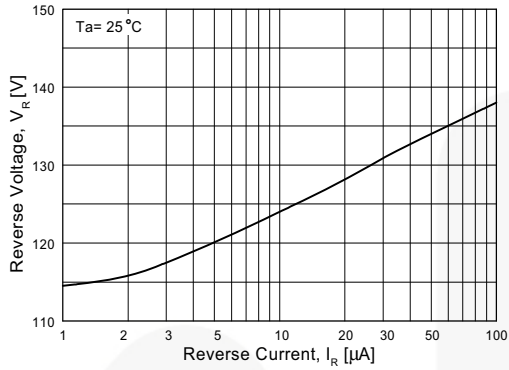


Figure 1. Reverse Voltage vs. Reverse Current
BV - 1.0 to 100 μ A

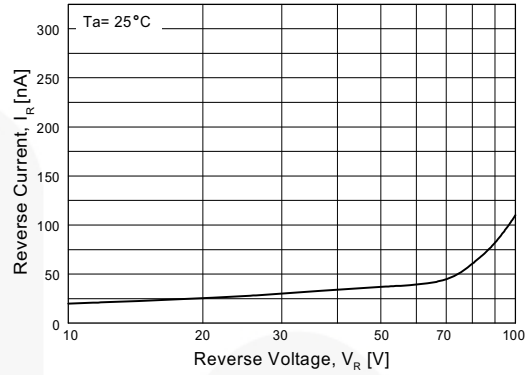


Figure 2. Reverse Current vs. Reverse Voltage
IR - 10 to 100 V

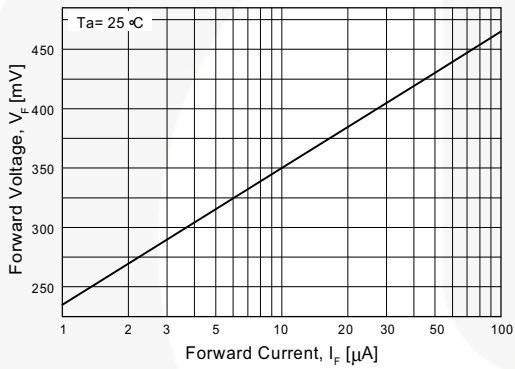


Figure 3. Forward Voltage vs. Forward Current
VF - 1.0 to 100 μ A

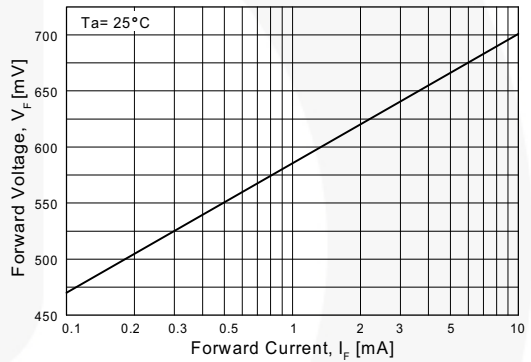


Figure 4. Forward Voltage vs. Forward Current
VF - 0.1 to 10 mA

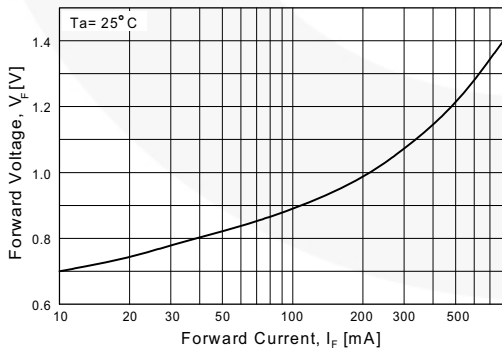


Figure 5. Forward Voltage vs. Forward Current
VF - 10 to 800 mA

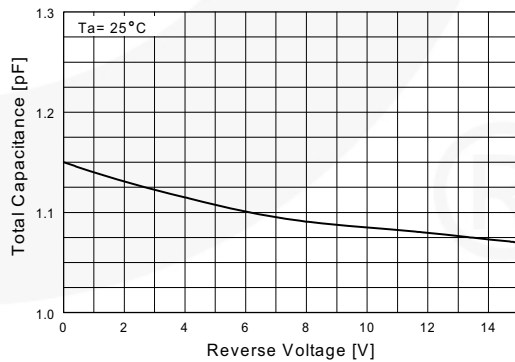


Figure 6. Total Capacitance vs. Reverse Voltage

Typical Performance Characteristics (Continued)

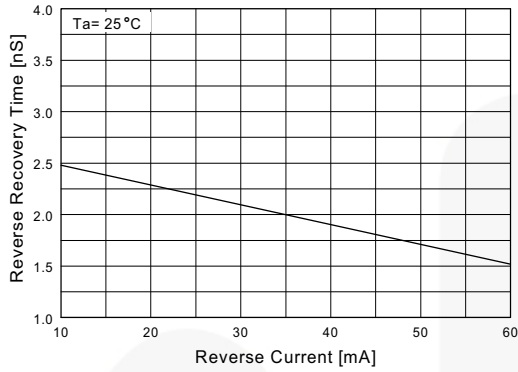


Figure 7. Reverse Recovery Time vs. Reverse Current
TRR - IR 10 mA to 60 mA

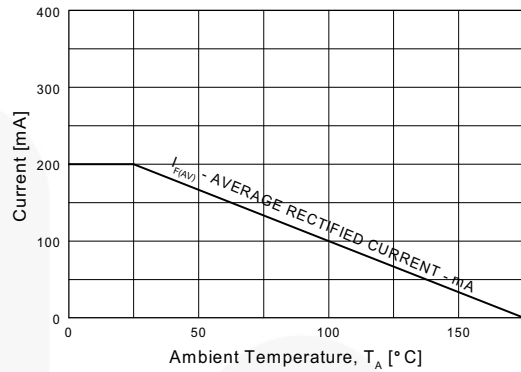


Figure 8. Average Rectified Current ($I_{F(AV)}$)
vs. Ambient Temperature (T_A)

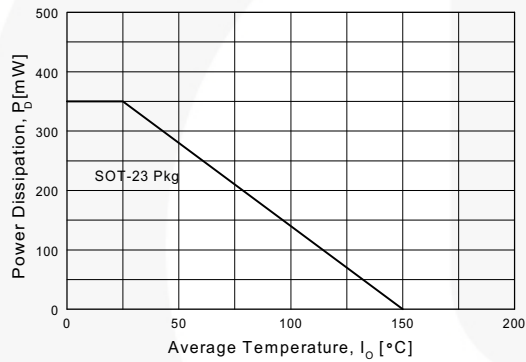
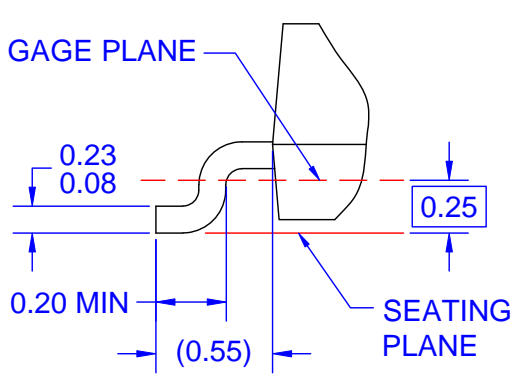
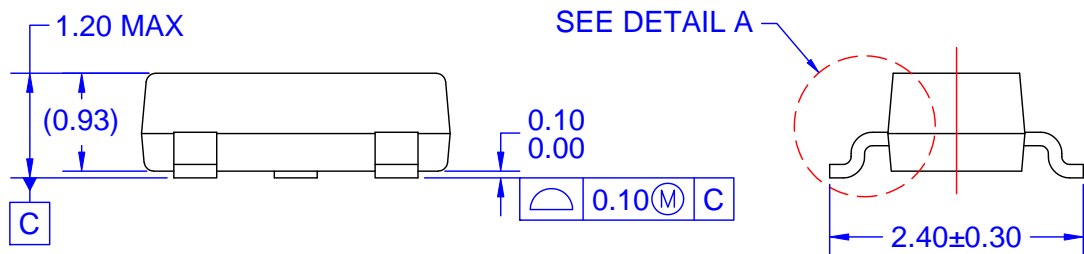
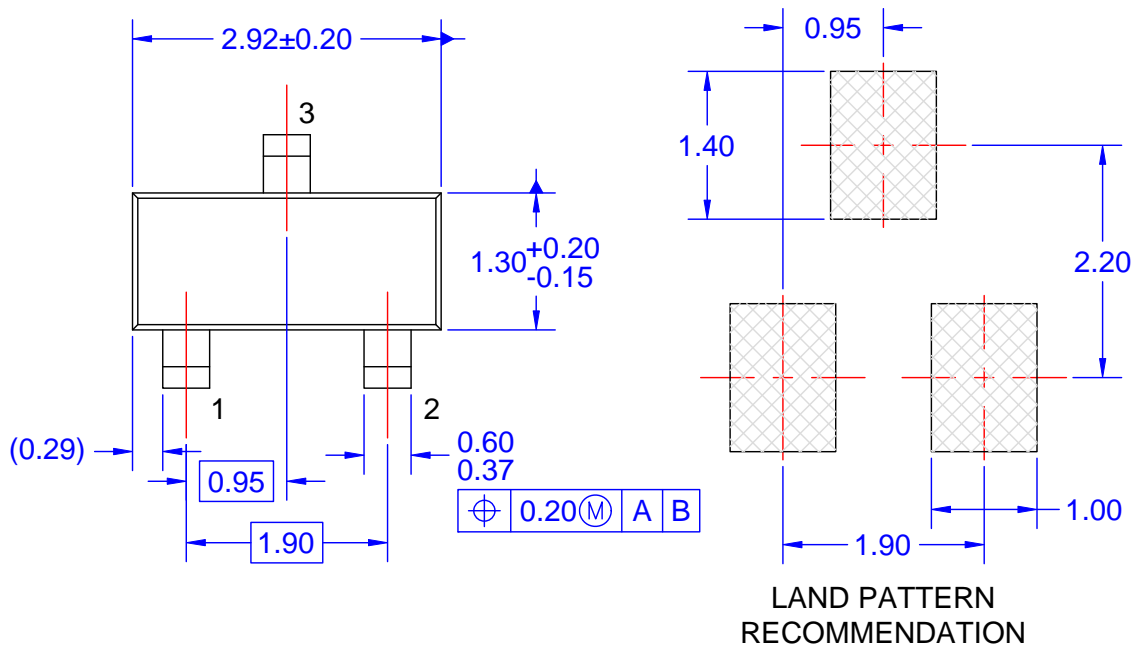


Figure 9. Power Derating Curve



DETAIL A
SCALE: 2X






NOTES: UNLESS OTHERWISE SPECIFIED

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- B) ALL DIMENSIONS ARE IN MILLIMETERS.
- C) DIMENSIONS ARE INCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR EXTRUSIONS.
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- E) DRAWING FILE NAME: MA03DREV10



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