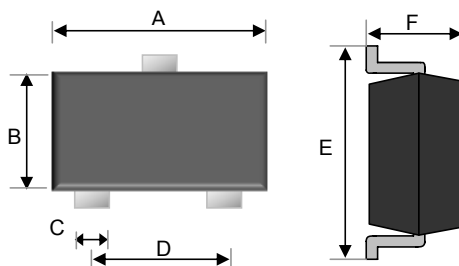


### Small Signal Diode



SOT-23



### Features

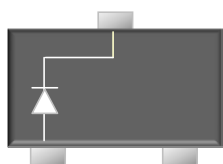
- ✧ Fast switching speed
- ✧ Surface device type mounting
- ✧ Moisture sensitivity level 1
- ✧ Matte Tin(Sn) lead finish with Nickel(Ni) underplate
- ✧ Pb free version and RoHS compliant
- ✧ Green compound (Halogen free) with suffix "G" on packing code and prefix "G" on date code

### Mechanical Data

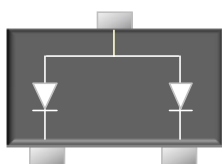
- ✧ Case :SOT-23 small outline plastic package
- ✧ Terminal: Matte tin plated, lead free., solderable per MIL-STD-202, Method 208 guaranteed
- ✧ High temperature soldering guaranteed: 260°C/10s
- ✧ Weight : 0.008gram (approximately)
- ✧ Marking Code: 5D.A7.A4.A1

| Dimensions | Unit (mm) |      | Unit (inch) |       |
|------------|-----------|------|-------------|-------|
|            | Min       | Max  | Min         | Max   |
| A          | 2.80      | 3.00 | 0.110       | 0.118 |
| B          | 1.20      | 1.40 | 0.047       | 0.055 |
| C          | 0.30      | 0.50 | 0.012       | 0.020 |
| D          | 1.80      | 2.00 | 0.071       | 0.079 |
| E          | 2.25      | 2.55 | 0.089       | 0.100 |
| F          | 0.90      | 1.20 | 0.035       | 0.047 |

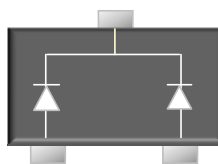
### Pin Configuration



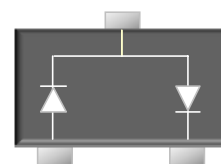
MMBD4148



MMBD4148CA



MMBD4148CC

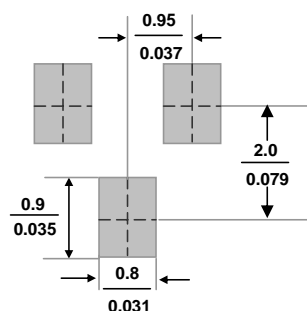


MMBD4148SE

### Ordering Information

| Part No.   | Package | Packing Code | Packing      | Marking |
|------------|---------|--------------|--------------|---------|
| MMBD4148   | SOT-23  | RF           | 3K / 7" Reel | 5D      |
| MMBD4148CC | SOT-23  | RF           | 3K / 7" Reel | A4      |
| MMBD4148CA | SOT-23  | RF           | 3K / 7" Reel | A1      |
| MMBD4148SE | SOT-23  | RF           | 3K / 7" Reel | A7      |
| MMBD4148   | SOT-23  | RFG          | 3K / 7" Reel | 5D      |
| MMBD4148CC | SOT-23  | RFG          | 3K / 7" Reel | A4      |
| MMBD4148CA | SOT-23  | RFG          | 3K / 7" Reel | A1      |
| MMBD4148SE | SOT-23  | RFG          | 3K / 7" Reel | A7      |

### Suggested PAD Layout



### Maximum Ratings and Electrical Characteristics

Rating at 25°C ambient temperature unless otherwise specified.

#### Maximum Ratings

| Type Number                               | Symbol         | Value       | Units |
|---|----------------|-------------|-------|
| Power Dissipation                         | $P_D$          | 350         | mW    |
| Repetitive Peak Reverse Voltage           | $V_{RRM}$      | 100         | V     |
| Reverse Voltage                           | $V_R$          | 75          | V     |
| Average Rectified Forward Current         | $I_{F(AV)}$    | 200         | mA    |
| Repetitive Peak Forward Current           | $I_{FRM}$      | 700         | mA    |
| Non-Repetitive Peak Forward Surge Current | $I_{FSM}$      | 2           | A     |
|   |                | 1           |       |
| Thermal Resistance (Junction to Ambient)  | $R\theta_{JA}$ | 357         | °C/W  |
| Junction and Storage Temperature Range    | $T_J, T_{STG}$ | -55 to +150 | °C    |

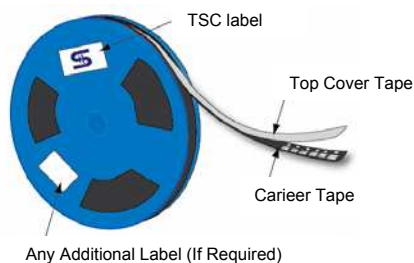
Note1. The suggested land pattern dimensions have been provided for reference only, as actual pad layouts may vary depending on application.

**Small Signal Diode**

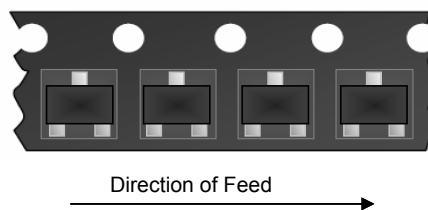
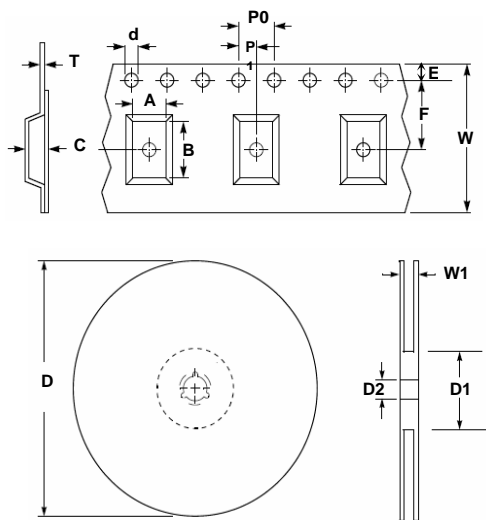
**Electrical Characteristics**

| Type Number               |   | Symbol     | Min | Max  | Units   |
|---------------------------|---|------------|-----|------|---------|
| Reverse Breakdown Voltage | $I_R = 100\mu A$                                      | $V_{(BR)}$ | 100 | -    | V       |
|                           | $I_R = 5\mu A$  |            | 75  | -    |         |
| Forward Voltage           | $I_F = 10mA$  | $V_F$      | -   | 1.0  | V       |
|                           | $V_R = 20V$   |            | -   | 25.0 |         |
| Reverse Leakage Current   | $V_R = 75V$   | $I_R$      | -   | 5.0  | $\mu A$ |
|                           | $V_R = 20V, I_a = 10\mu A$                            |            | -   | 50.0 | $\mu A$ |
|                           |   |            |     |      |         |
| Junction Capacitance      | $V_R = 0V, f = 1 MHz$                                 | $C_J$      | -   | 4.0  | pF      |
| Reverse Recovery Time     | $I_F = 10mA, V_R = 6V, I_{RR} = 1mA, R_L = 100\Omega$ | $T_{rr}$   | -   | 4.0  | ns      |

**Tape & Reel specification**



| Item                   | Symbol | Dimension(mm) |
|------------------------|--------|---------------|
| Carrier width          | A      | 3.15 ±0.10    |
| Carrier length         | B      | 2.77 ±0.10    |
| Carrier depth          | C      | 1.22 ±0.10    |
| Sprocket hole          | d      | 1.50 ± 0.10   |
| Reel outside diameter  | D      | 178 ± 1       |
| Reel inner diameter    | D1     | 55 Min        |
| Feed hole width        | D2     | 13.0 ± 0.20   |
| Sprocket hole position | E      | 1.75 ±0.10    |
| Punch hole position    | F      | 3.50 ±0.05    |
| Sprocket hole pitch    | P0     | 4.00 ±0.10    |
| Embossment center      | P1     | 2.00 ±0.05    |
| Overall tape thickness | T      | 0.229 ±0.013  |
| Tape width             | W      | 8.10 ±0.20    |
| Reel width             | W1     | 12.30 ±0.20   |



**Small Signal Diode**

**Rating and Sharacteristic Curves**

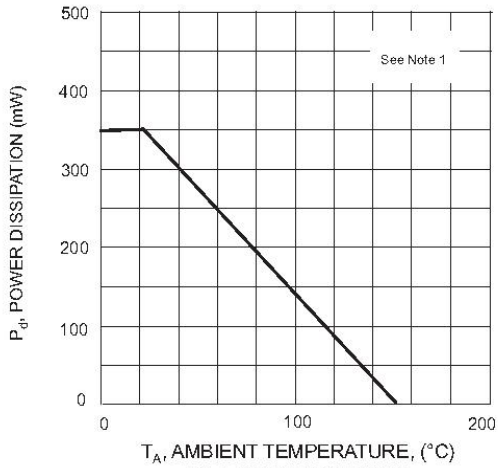


Fig. 1 Power Derating Curve

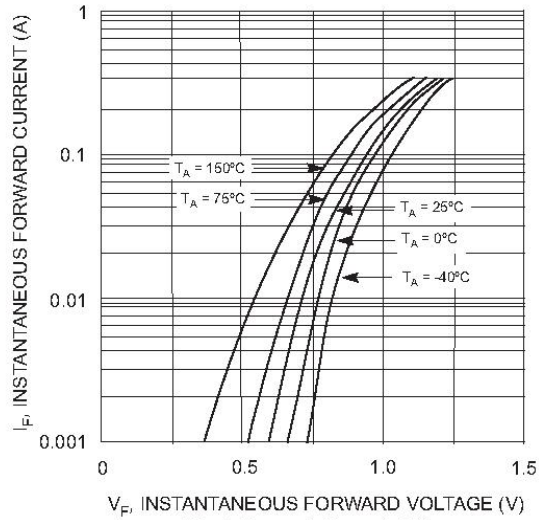


Fig. 2 Forward Characteristics

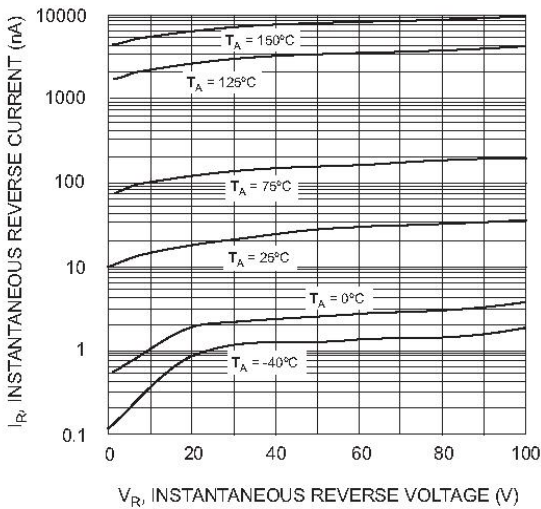


Fig. 3 Typical Reverse Characteristics

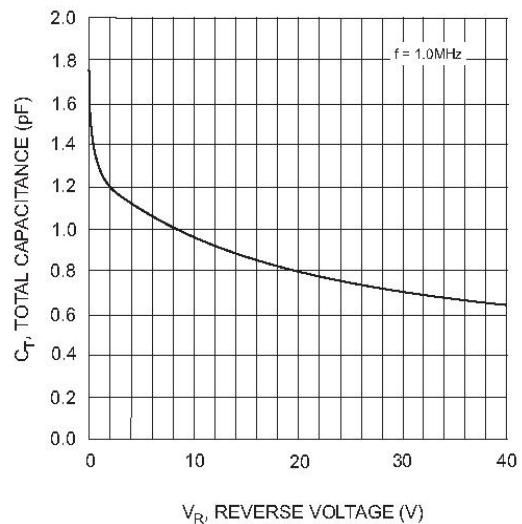


Fig. 4 Typical Capacitance vs. Reverse Voltage