

DATA SHEET

SWITCHING DIODE
GENERAL PURPOSE

1N4148W

RoHS compliant & Halogen free

Product specification— December 03, 2023 V.1



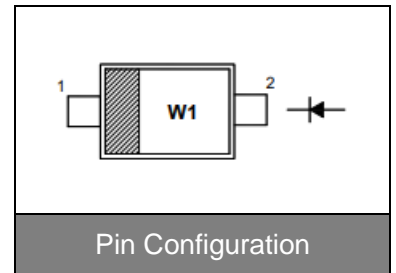
Switching Diode

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Switching Diode

Features

- SOD-123 package
- Fast switching
- Halogen and Antimony Free(HAF), RoHS compliant
- Marking code:W1



Absolute Maximum Ratings (Ta = 25°C)

| Parameter | Symbol | Value | Unit |
|---|-----------------|---------------|------|
| Peak Reverse Voltage | V_{RM} | 100 | V |
| Reverse Voltage | V_R | 75 | V |
| Average Rectified Forward Current | $I_{F(AV)}$ | 150 | mA |
| Peak Forward Current | I_{FM} | 300 | mA |
| Non-repetitive Peak Forward Surge Current | I_{FSM} | at t = 1s | 0.5 |
| | | at t = 1ms | 1 |
| | | at t = 1us | 4 |
| Power Dissipation | P_{tot} | 400 | mW |
| Thermal Resistance from Junction to Ambient Air | $R_{\theta JA}$ | 312 | °C/W |
| Junction Temperature | T_j | 150 | °C |
| Storage Temperature Range | T_{stg} | - 65 to + 150 | °C |

Characteristics at Ta = 25°C

| Parameter | Symbol | Min. | Max. | Unit |
|--|-------------|------------------|-----------------------------|-------------------------------------|
| Reverse Breakdown Voltage at $I_R = 1 \mu A$ | $V_{(BR)R}$ | 75 | - | V |
| Forward Voltage at $I_F = 1 \text{ mA}$ at $I_F = 10 \text{ mA}$ at $I_F = 50 \text{ mA}$ at $I_F = 150 \text{ mA}$ | V_F | - - - - | 0.715 0.855 1 1.25 | V |
| Peak Reverse Current at $V_R = 75 \text{ V}$ at $V_R = 20 \text{ V}$ at $V_R = 75 \text{ V}, T_J = 150^\circ \text{C}$ at $V_R = 25 \text{ V}, T_J = 150^\circ \text{C}$ | I_R | - - - - | 1 25 50 30 | μA nA μA μA |
| Total Capacitance at $V_R = 0 \text{ V}, f = 1 \text{ MHz}$ | C_T | - | 2 | pF |
| Reverse Recovery Time at $I_F = 10 \text{ mA}, I_{rr} = 0.1 * I_R, V_R = 6 \text{ V}, R_L = 100 \Omega$ | t_{rr} | - | 4 | ns |

Electrical Characteristic Curves

Figure 1. Power Dissipation vs. Ambient Temperature

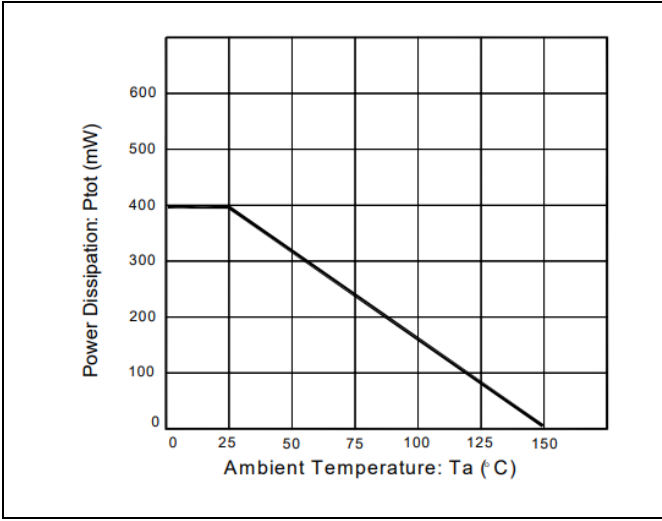


Figure 2. Total Capacitance vs. Reverse Voltage

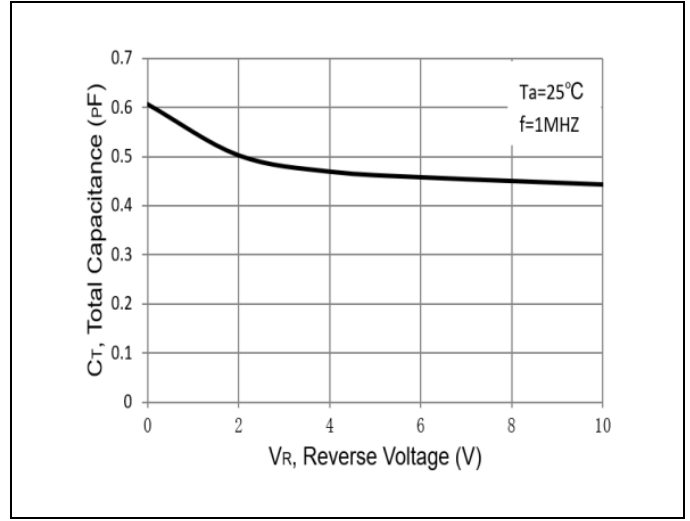


Figure 3. Reverse Current vs. Reverse Voltage

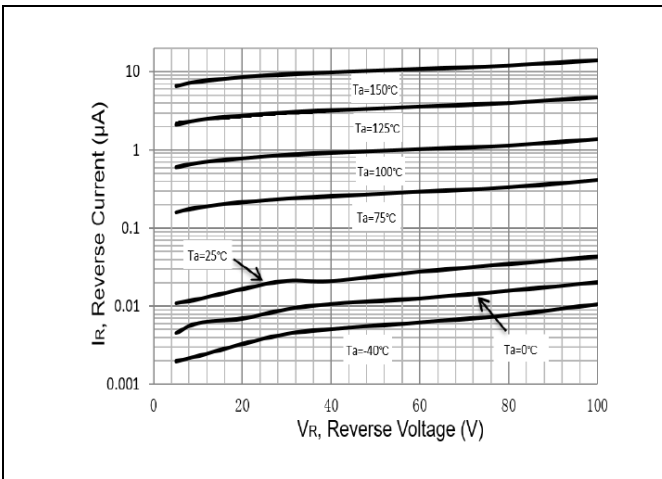
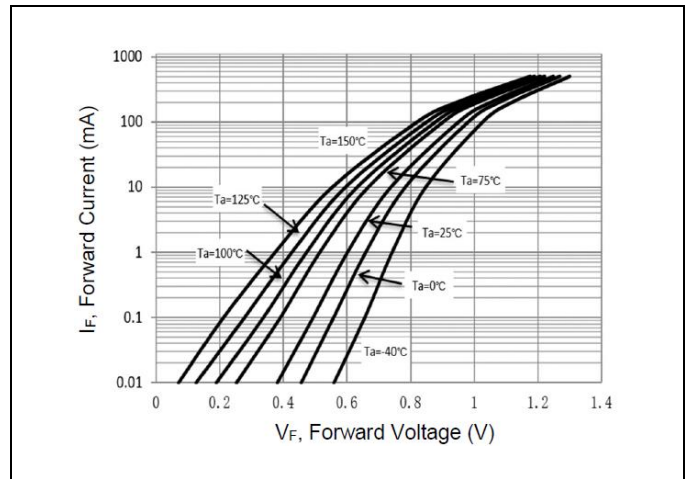
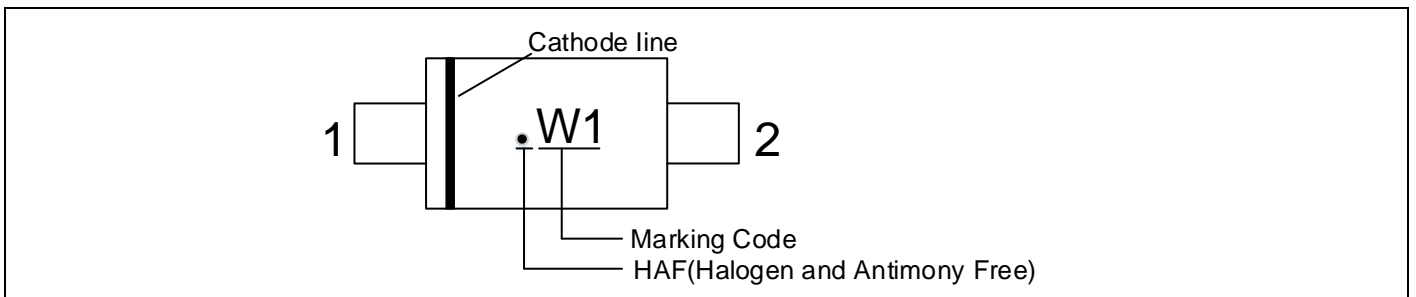


Figure 4. Forward Characteristics



Marking Code



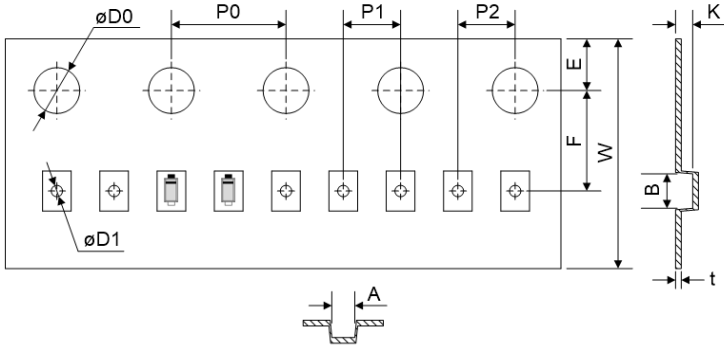
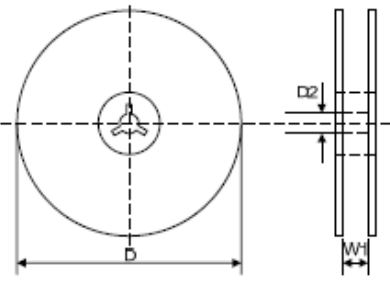
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Dimensions (SOD-123)

| Symbol | Dimension (mm) | | | |
|----------------|----------------|-------|--------|-------|
| | Millimeters | | Inches | |
| | Min. | Max. | Min. | Max. |
| A | 1.05 | 1.15 | 0.041 | 0.045 |
| bp | 0.50 | 0.60 | 0.020 | 0.024 |
| c | 0.100 | 0.135 | 0.004 | 0.005 |
| D | 2.60 | 2.70 | 0.102 | 0.106 |
| E | 1.55 | 1.65 | 0.061 | 0.065 |
| H _E | 3.55 | 3.85 | 0.140 | 0.152 |

Packaging

| | Symbol | Dimension(mm) | |
|---|--|---------------|------------|
| <p>Tape</p>  | W | 8.3max. | |
| | P0 | 4.00±0.10 | |
| | P1 | 4.00±0.10 | |
| | P2 | 2.00±0.10 | |
| | D0 | Φ1.5±0.1 | |
| | D1 | Φ1.3max. | |
| | E | 1.75±0.10 | |
| | F | 3.50±0.05 | |
| | A | 1.80±0.10 | |
| | B | 4.00±0.10 | |
| | K | 1.30±0.10 | |
| | t | 0.25max. | |
| | <p>Reel</p>  | D | Φ178max. |
| | | D2 | Φ13.0±0.50 |
| | | W1 | 8.4+1.5 |
| Quantity: 3000PCS | | | |

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