

# 1N4148W-BL

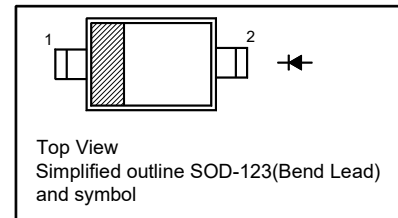
## Silicon Epitaxial Planar Switching Diode

### Features

- Fast switching
- These diodes are also available in other case style including the DO-35 case with the type designation 1N4148, the MiniMELF case with the type designation LL4148 and the MicroMELF case with the type designation MCL4148.

### PINNING

| PIN | DESCRIPTION |
|-----|-------------|
| 1   | Cathode     |
| 2   | Anode       |



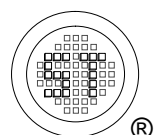
### Absolute Maximum Ratings ( $T_a = 25^\circ\text{C}$ )

| 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               |
| Non-repetitive Peak Forward Surge Current | $I_{FSM}$   | 0.5<br>1<br>4                                       | A                |
|   |             | at $t = 1$ s<br>at $t = 1$ ms<br>at $t = 1$ $\mu$ s |                  |
| Power Dissipation                         | $P_{tot}$   | 400   | mW               |
| Operating Junction Temperature Range      | $T_j$       | - 65 to + 150                                       | $^\circ\text{C}$ |
| Storage Temperature Range                 | $T_{stg}$   | - 65 to + 150                                       | $^\circ\text{C}$ |

### Thermal Characteristics

| Parameter   | Symbol          | Max. | Unit               |
|---|-----------------|------|--------------------|
| Thermal Resistance from Junction to Ambient <sup>1)</sup> | $R_{\theta JA}$ | 312  | $^\circ\text{C/W}$ |

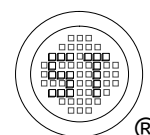
<sup>1)</sup> Device mounted on FR-4 substrate PC board, 2oz copper, with minimum recommended pad layout.



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## Characteristics at $T_a = 25^\circ\text{C}$

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



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## Electrical Characteristics Curves

Fig 1. Power Dissipation vs Ambient Temperature

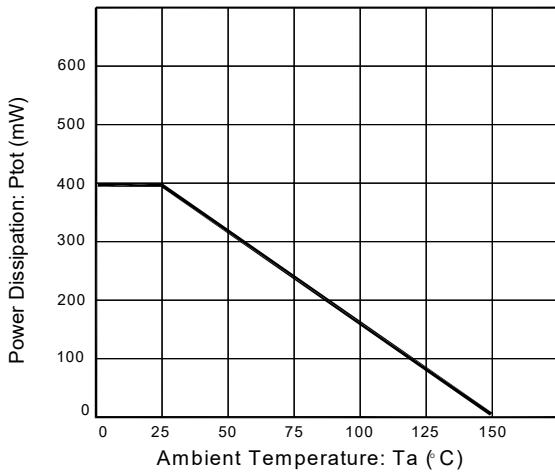


Fig 2. Total Capacitance vs. Reverse Voltage

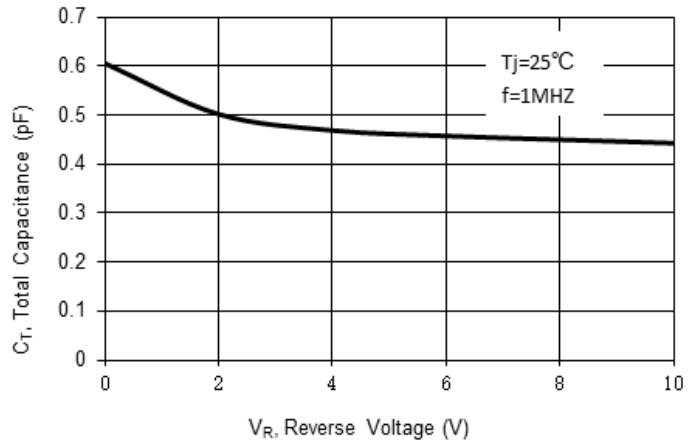


Fig 3. Reverse Current vs. Reverse Voltage

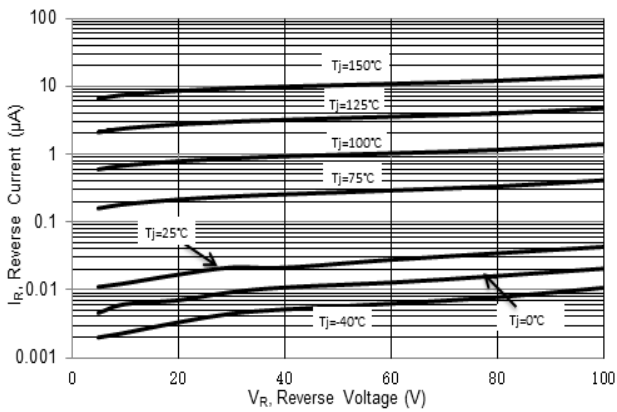
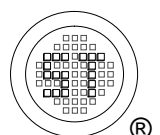
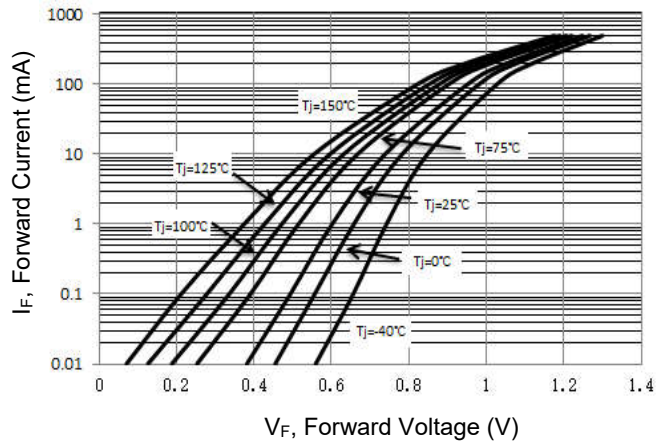


Fig 4. Forward Characteristics

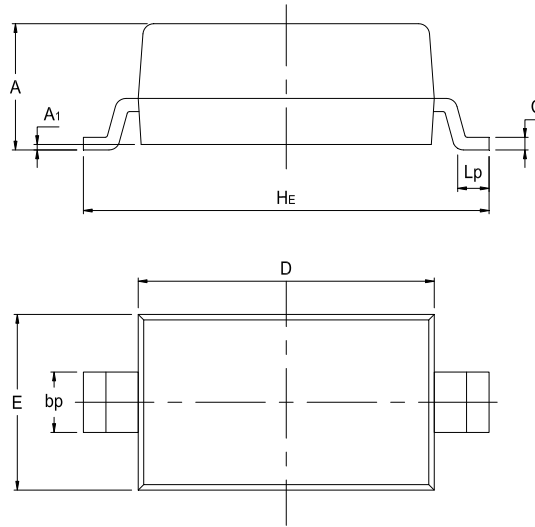


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## PACKAGE OUTLINE

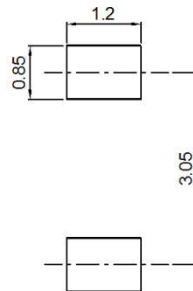
Plastic surface mounted package; 2 leads

SOD-123(Bend Lead)



| UNIT | A    | A <sub>1</sub> | bp  | C    | D    | E   | H <sub>E</sub> | L <sub>p</sub> | Q    |
|------|------|----------------|-----|------|------|-----|----------------|----------------|------|
| mm   | 1.21 | 0.1            | 0.7 | 0.14 | 2.7  | 1.7 | 3.8            | 0.4            | 0.65 |
|      | 0.91 | 0              | 0.5 | 0.08 | 2.54 | 1.5 | 3.5            | 0.2            | 0.55 |

### Recommended Soldering Footprint



### Packing information

| Package   | Tape Width (mm) | Pitch   |               | Reel Size |        | Per Reel Packing Quantity |
|-----------|-----------------|---------|---------------|-----------|--------|---------------------------|
|           |                 | mm      | (inch)        | mm        | (inch) |                           |
| SOD-123BL | 8               | 4 ± 0.1 | 0.157 ± 0.004 | 178       | 7      | 3,000                     |

### Marking information

" W1 " = Part No.

" III " = Cathode line

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