

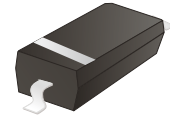
## 1N4148W-HF

**Reverse Voltage: 100 V**

**Forward Current: 150mA**

**RoHS Device**

**Halogen Free**

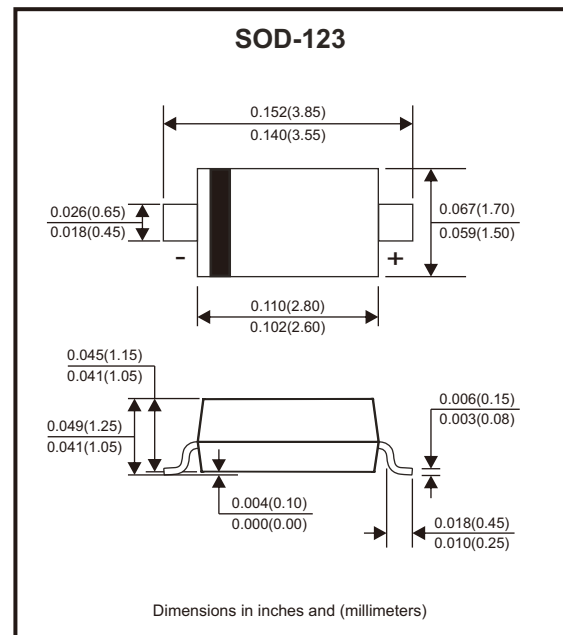


### Features

- Fast switching device ( $T_{rr} < 4.0\text{nS}$ ).
- Power dissipation of 500mW.
- High stability and high reliability.
- Low reverse leakage.

### Mechanical data

- Case: SOD-123, molded plastic.
- Polarity: Color band denotes cathode end.
- Epoxy UL: 94V-0.
- Mounting position: Any.



### Circuit Diagram



### Maximum Rating (at $T_a=25^\circ\text{C}$ unless otherwise noted)

| Parameter                                                                | Symbol          | Value       | Unit               |
|--------------------------------------------------------------------------|-----------------|-------------|--------------------|
| Peak repetitive reverse voltage                                          | $V_{RRM}$       | 100         | V                  |
| Peak reverse voltage                                                     | $V_{RM}$        | 100         | V                  |
| Power dissipation                                                        | $P_D$           | 500         | mW                 |
| Average rectified current                                                | $I_o$           | 150         | mA                 |
| Non-repetitive peak forward current                                      | $I_{FM}$        | 300         | mA                 |
| Peak forward surge current @ $t_p=1\mu\text{s}$ , $T_A=25^\circ\text{C}$ | $I_{FSM}$       | 2           | A                  |
| Thermal resistance from junction to ambient                              | $R_{\theta JA}$ | 250         | $^\circ\text{C/W}$ |
| Operating junction temperature range                                     | $T_j$           | -55 to +150 | $^\circ\text{C}$   |
| Storage temperature range                                                | $T_{STG}$       | -65 to +150 | $^\circ\text{C}$   |

Note: Valid provided that electrodes are kept at ambient temperature.

## Electrical Characteristics (at Ta=25°C unless otherwise noted)

| Parameter               | Conditions                                                   | Symbol   | Min | Typ | Max   | Unit |
|-------------------------|--------------------------------------------------------------|----------|-----|-----|-------|------|
| Breakdown voltage       | $I_R = 100\mu A$                                             | $V_{BR}$ | 100 |     |       | V    |
|                         | $I_R = 5\mu A$                                               |          | 75  |     |       |      |
| Reverse leakage current | $V_R = 20V$                                                  | $I_R$    |     |     | 25    | nA   |
|                         | $V_R = 75V$                                                  |          |     |     | 1     |      |
| Forward voltage         | $I_F = 1mA$                                                  | $V_F$    |     |     | 0.715 | V    |
|                         | $I_F = 10mA$                                                 |          |     |     | 0.855 |      |
|                         | $I_F = 50mA$                                                 |          |     |     | 1.00  |      |
|                         | $I_F = 150mA$                                                |          |     |     | 1.25  |      |
| Reverse recovery time   | $I_F = I_R = 10mA, R_L = 100\Omega, I_{RR} = 0.1 \times I_R$ | $T_{RR}$ |     |     | 4     | nS   |
| Capacitance             | $V_R = 0V, f = 1MHz$                                         | $C_J$    |     |     | 2     | pF   |

## Typical Rating and Characteristic Curves (1N4148W-HF)

Fig.1 - Forward Characteristics

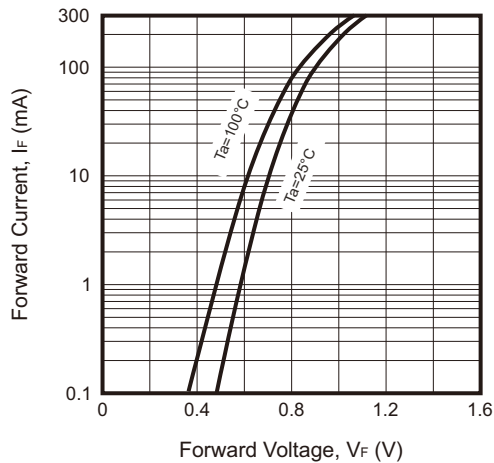


Fig.2 - Reverse Characteristics

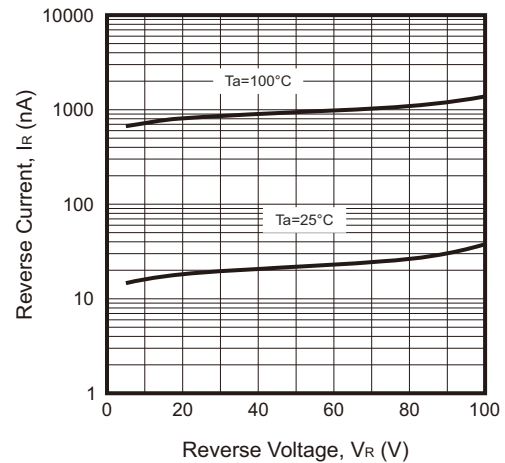


Fig.3 - Capacitance Characteristics

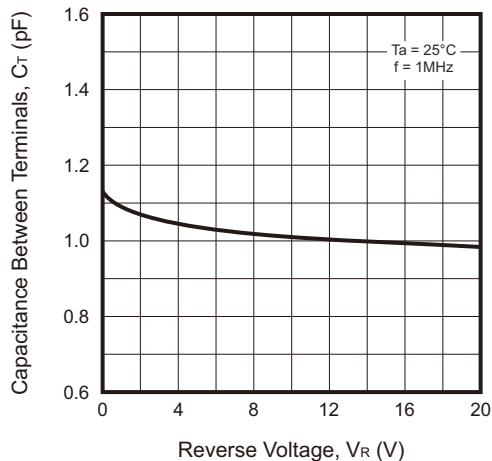
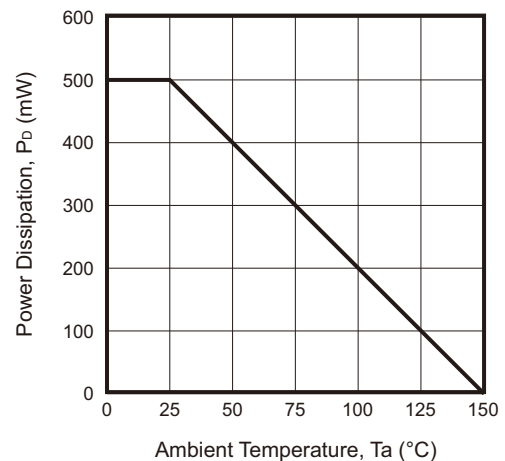
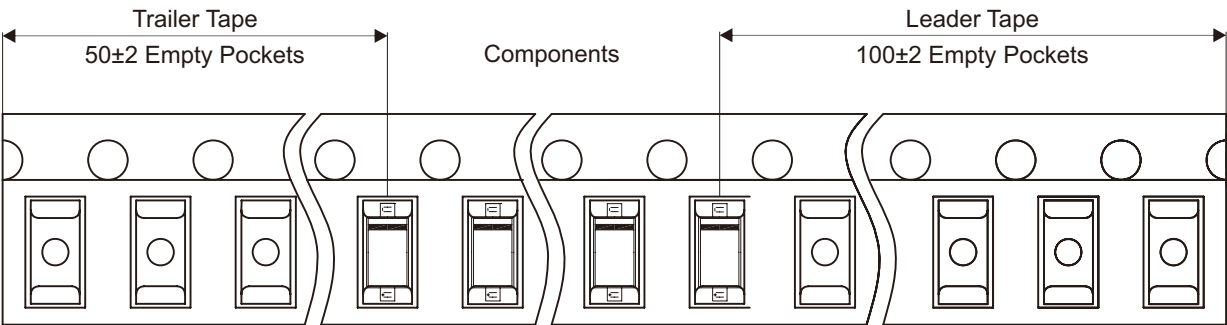
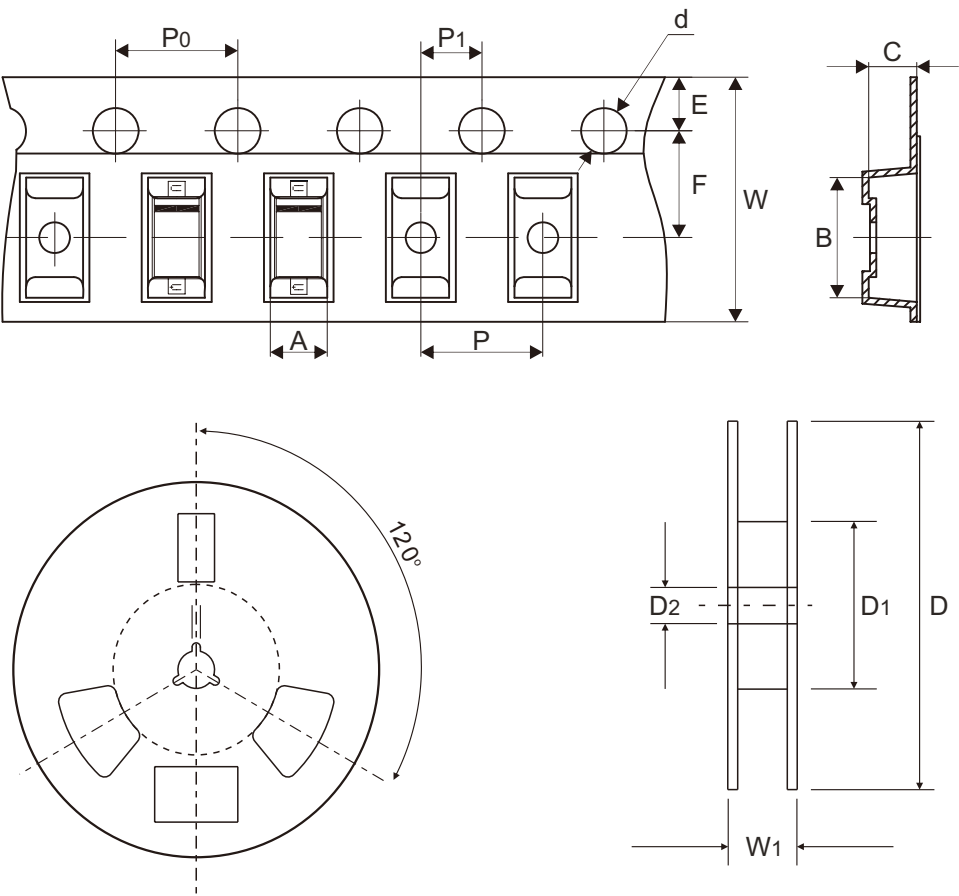


Fig.4 - Power Derating Curve



Reel Taping Specification

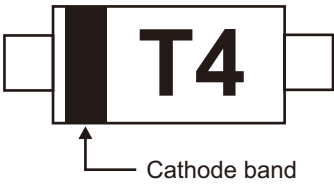


| SOD-123 | SYMBOL | A             | B             | C             | d             | D             | D1            | D2            |
|---------|--------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
|         | (mm)   | 1.85 ± 0.05   | 3.94 ± 0.05   | 1.57 ± 0.05   | 1.55 ± 0.10   | 178.00 ± 2.00 | 54.40 ± 1.00  | 13.00 ± 1.00  |
|         | (inch) | 0.073 ± 0.002 | 0.155 ± 0.002 | 0.062 ± 0.002 | 0.061 ± 0.004 | 7.008 ± 0.079 | 2.142 ± 0.039 | 0.512 ± 0.039 |

| SOD-123 | SYMBOL | E             | F             | P             | P1            | P0            | W                        | W1            |
|---------|--------|---------------|---------------|---------------|---------------|---------------|--------------------------|---------------|
|         | (mm)   | 1.75 ± 0.10   | 3.50 ± 0.10   | 4.00 ± 0.10   | 2.00 ± 0.10   | 4.00 ± 0.10   | 8.00 + 0.06<br>- 0.10    | 12.30 ± 1.00  |
|         | (inch) | 0.069 ± 0.004 | 0.138 ± 0.004 | 0.157 ± 0.004 | 0.079 ± 0.004 | 0.157 ± 0.004 | 0.315 + 0.002<br>- 0.004 | 0.484 ± 0.039 |

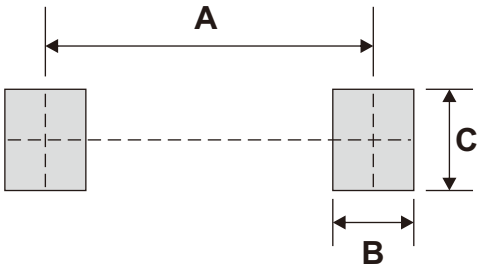
Marking Code

| Part Number | Marking Code |
|-------------|--------------|
| 1N4148W-HF  | T4           |



Suggested P.C.B. PAD Layout

| SIZE | SOD-123 |        |
|------|---------|--------|
|      | (mm)    | (inch) |
| A    | 3.24    | 0.128  |
| B    | 0.80    | 0.031  |
| C    | 1.00    | 0.039  |



Standard Packaging

| Case Type | REEL PACK       |                     |
|-----------|-----------------|---------------------|
|           | REEL<br>( pcs ) | Reel Size<br>(inch) |
| SOD-123   | 3,000           | 7                   |