

## Features

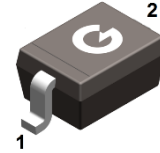
- Fast switching speed
- High conductance
- RoHS compliant with Halogen-free
- Qualified to AEC-Q101 Standards

HF

## Mechanical Data

- Case: SOD-323
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208

Cathode Anode  
1 2



SOD-323

## Ordering Information

| Part Number | Package | Shipping Quantity      | Marking Code |
|-------------|---------|------------------------|--------------|
| T1N4148WS   | SOD-323 | 3000 pcs / Tape & Reel | T4           |

## Maximum Ratings (@ T<sub>A</sub> = 25°C unless otherwise specified)

| Parameter                                             | Symbol              | Value | Unit |
|-------------------------------------------------------|---------------------|-------|------|
| Non-Repetitive Peak Reverse Voltage                   | V <sub>RM</sub>     | 100   | V    |
| Peak Repetitive Peak Reverse Voltage                  | V <sub>RRM</sub>    | 100   | V    |
| Working Peak Reverse Voltage                          | V <sub>RWM</sub>    | 100   | V    |
| DC Blocking Voltage                                   | V <sub>R</sub>      | 100   | V    |
| RMS Reverse Voltage                                   | V <sub>R(RMS)</sub> | 70    | V    |
| Average Rectified Output Current                      | I <sub>F</sub>      | 200   | mA   |
| Repetitive Peak Forward Current                       | I <sub>FRM</sub>    | 400   | mA   |
| Peak Forward Surge Current, 1μs Single Half-sine-wave | I <sub>FSM</sub>    | 2     | A    |
| Peak Forward Surge Current, 1s Single Half-sine-wave  | I <sub>FSM</sub>    | 1     | A    |

## Thermal Characteristics

| Parameter                              | Symbol           | Value      | Unit |
|----------------------------------------|------------------|------------|------|
| Power Dissipation                      | P <sub>D</sub>   | 200        | mW   |
| Thermal Resistance Junction-to-Air *1  | R <sub>θJA</sub> | 625        | °C/W |
| Thermal Resistance Junction-to-Case *1 | R <sub>θJC</sub> | 350        | °C/W |
| Thermal Resistance Junction-to-Air *2  | R <sub>θJA</sub> | 315        | °C/W |
| Thermal Resistance Junction-to-Case *2 | R <sub>θJC</sub> | 180        | °C/W |
| Thermal Resistance Junction-to-Lead *2 | R <sub>θJL</sub> | 250        | °C/W |
| Operating Junction Temperature Range   | T <sub>J</sub>   | -65 ~ +150 | °C   |
| Storage Temperature Range              | T <sub>STG</sub> | -65 ~ +150 | °C   |

### Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ unless otherwise specified)

| Parameter                    | Symbol      | Test Condition                                                          | Min. | Typ. | Max.  | Unit          |
|------------------------------|-------------|-------------------------------------------------------------------------|------|------|-------|---------------|
| Reverse Breakdown Voltage    | $V_{(BR)R}$ | $I_R = 10\mu\text{A}$                                                   | 100  | -    | -     | V             |
| Forward Voltage              | $V_F$       | $I_F = 1\text{mA}$                                                      | -    | -    | 0.715 | V             |
|                              |             | $I_F = 10\text{mA}$                                                     | -    | -    | 0.855 | V             |
|                              |             | $I_F = 50\text{mA}$                                                     | -    | -    | 1.000 | V             |
|                              |             | $I_F = 150\text{mA}$                                                    | -    | -    | 1.250 | V             |
| Maximum Peak Reverse Current | $I_R$       | $V_R = 20\text{V}$                                                      | -    | -    | 25    | nA            |
|                              |             | $V_R = 75\text{V}$                                                      | -    | -    | 1     | $\mu\text{A}$ |
| Total Capacitance            | $C_J$       | $V_R = 0\text{V}, f = 1.0\text{MHz}$                                    | -    | -    | 2     | pF            |
| Reverse Recovery Time        | $t_{rr}$    | $I_F = I_R = 10\text{mA}$<br>$I_{rr} = 0.1 \times I_R, R_L = 100\Omega$ | -    | -    | 4     | ns            |

Notes:

- The data tested by surface mounted on a minimum recommended FR-4 board
- The data tested by surface mounted on a 1 inch<sup>2</sup> FR-4 board with 2OZ copper

Ratings and Characteristics Curves (@  $T_A = 25^\circ\text{C}$  unless otherwise specified)

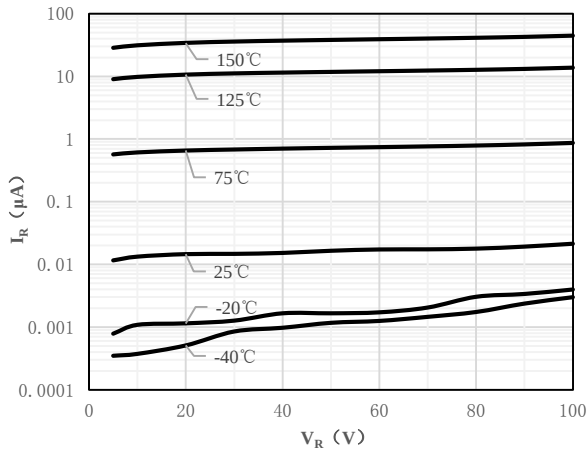


Fig 1 Typical Reverse Characteristic

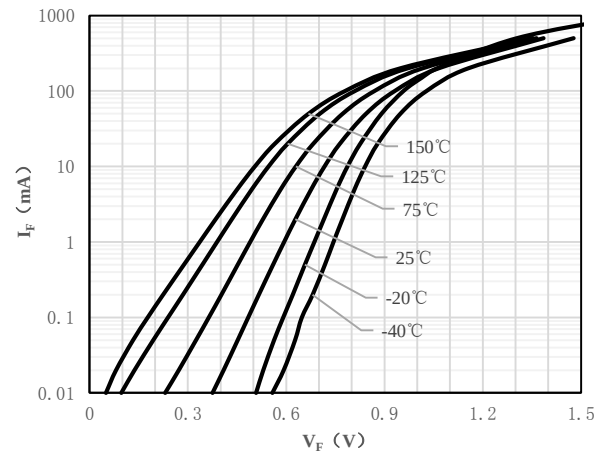


Fig 2 Typical Forward Characteristics

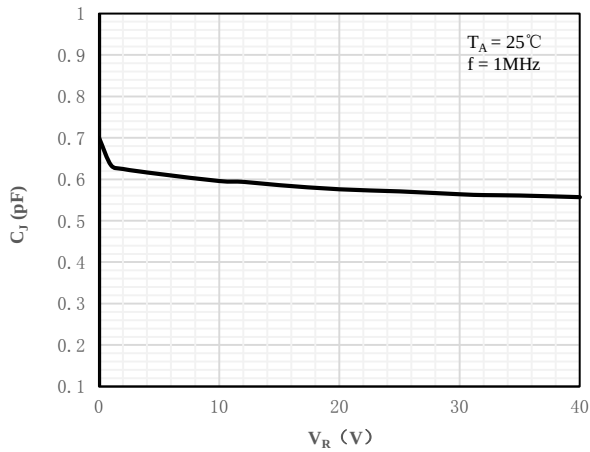


Fig 3 Capacitance vs. Reverse Voltage

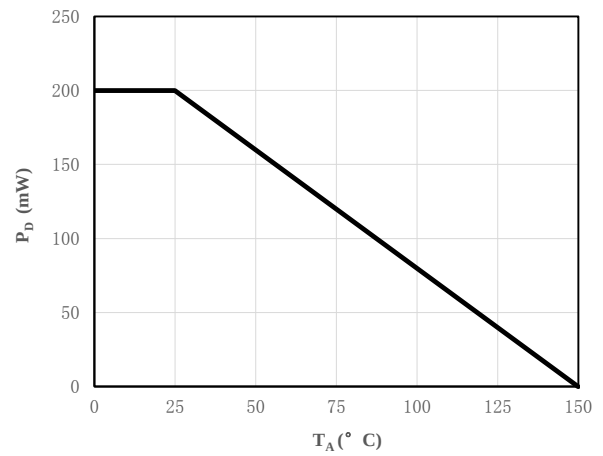


Fig 4 Power Derating Curve

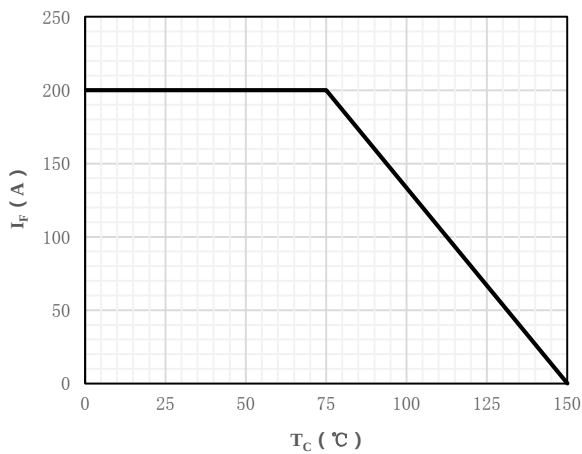
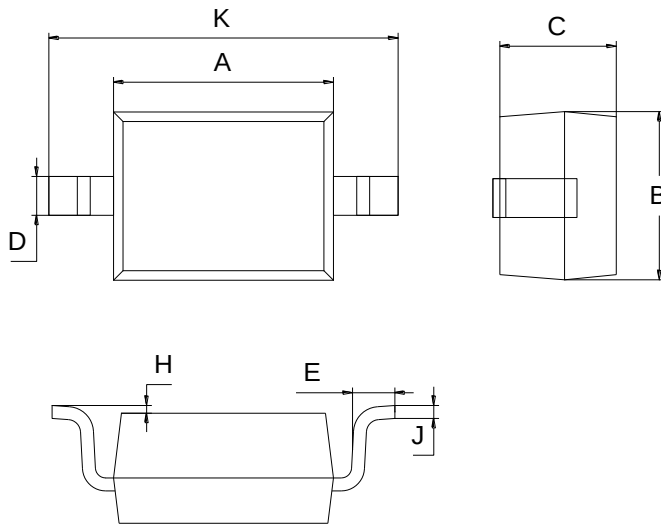


Fig 5 Forward Current Derating Curve

## Package Outline Dimensions (Unit: mm)



| SOD-323   |      |      |
|-----------|------|------|
| Dimension | Min. | Max. |
| A         | 1.60 | 1.80 |
| B         | 1.20 | 1.40 |
| C         | 0.80 | 0.90 |
| D         | 0.25 | 0.35 |
| E         | 0.22 | 0.42 |
| H         | 0.02 | 0.10 |
| J         | 0.05 | 0.15 |
| K         | 2.55 | 2.75 |

## Mounting Pad Layout (Unit: mm)

### SOD-323

