

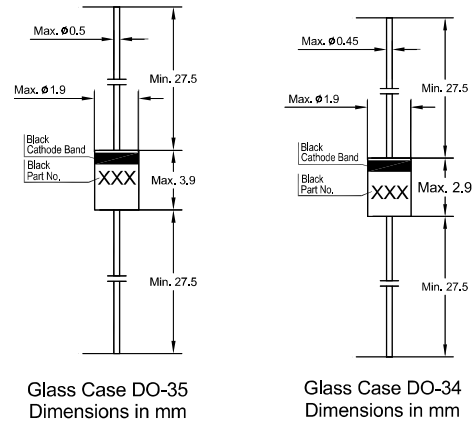
1N4148

Silicon Epitaxial Planar Switching Diode

Applications

- High-speed switching

This diode is also available in MiniMELF case with the type designation LL4148



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

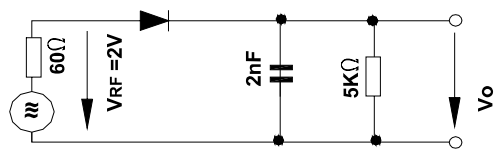
| Parameter | Symbol | Value | Unit |
|---|-------------|-------------------------------|------------------|
| Peak Reverse Voltage | V_{RM} | 100 | V |
| Reverse Voltage | V_R | 75 | V |
| Average Rectified Forward Current | $I_{F(AV)}$ | 200 | mA |
| Non-repetitive Peak Forward Surge Current | I_{FSM} | at $t = 1\text{ s}$ | 0.5 |
| | | at $t = 1\text{ ms}$ | 1 |
| | | at $t = 1\text{ }\mu\text{s}$ | 4 |
| Power Dissipation | P_{tot} | 500 ¹⁾ | mW |
| Junction Temperature | T_j | 200 | $^\circ\text{C}$ |
| Storage Temperature Range | T_{stg} | - 65 to + 200 | $^\circ\text{C}$ |

1) Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.

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| Characteristics at $T_a = 25^\circ\text{C}$ | | | | |
|--|----------------------------|-------------|--------------------|--------------------------------------|
| Parameter | Symbol | Min. | Max. | Unit |
| Reverse Breakdown Voltage at $I_R = 100 \mu\text{A}$ at $I_R = 5 \mu\text{A}$ | $V_{(BR)R}$ $V_{(BR)R}$ | 100 75 | - - | V V |
| Forward Voltage at $I_F = 10 \text{ mA}$ | V_F | - | 1 | V |
| Leakage Current at $V_R = 20 \text{ V}$ at $V_R = 75 \text{ V}$ at $V_R = 20 \text{ V}, T_j = 150^\circ\text{C}$ | I_R I_R I_R | - - - | 25 5 50 | nA μA μA |
| Capacitance at $V_R = 0, f = 1 \text{ MHz}$ | C_{tot} | - | 4 | pF |
| Voltage Rise when Switching ON tested with 50 mA Forward Pulses $t_p = 0.1 \text{ s}$, Rise Time < 30 ns, $f_p = 5 \text{ to } 100 \text{ KHz}$ | V_{fr} | - | 2.5 | V |
| Reverse Recovery Time at $I_F = 10 \text{ mA}$ to $I_R = 1 \text{ mA}$, $I_{\text{rr}} = 0.1 \times I_R$, $V_R = 6 \text{ V}$, $R_L = 100 \Omega$ | t_{rr} | - | 4 | ns |
| Thermal Resistance Junction to Ambient Air | R_{thA} | - | 0.35 ¹⁾ | K/mW |
| Rectification Efficiency at $f = 100 \text{ MHz}$, $V_{\text{RF}} = 2 \text{ V}$ | η_V | 0.45 | - | - |

1) Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.



Rectification Efficiency Measurement Circuit

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