

1N4148

Silicon Epitaxial Planar Switching Diode

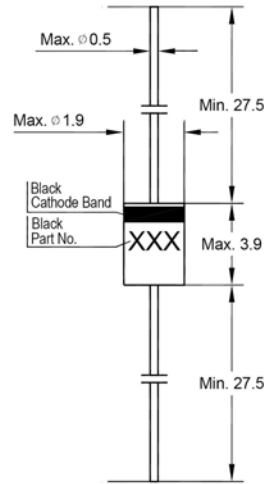
FEATURES

High-speed switching

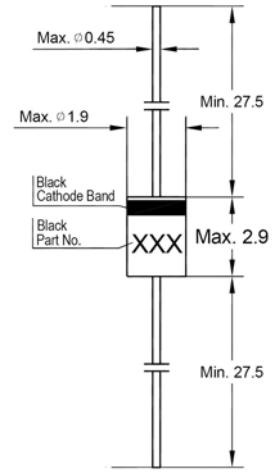
This diode is also available in MiniMELF case

With the type designation LL4148

1N4148



Glass Case DO-35
Dimensions in mm



Glass Case DO-34
Dimensions in mm

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings (Ta = 25°C)

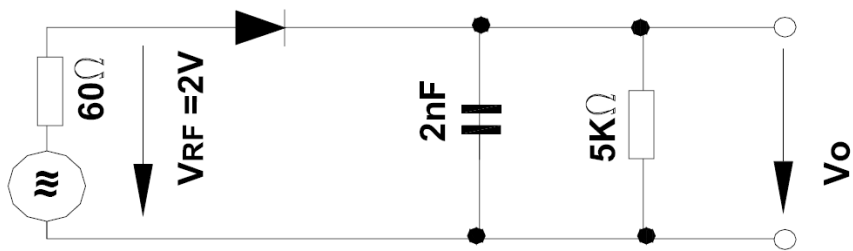
| PARAMETER | SYMBOL | VALUE | UNIT |
|---|------------------|-------------------|------|
| Peak Reverse Voltage | V_{RM} | 100 | V |
| Reverse Voltage | V_R | 75 | V |
| Average Rectified Forward Current | $I_{F(AV)}$ | 200 | mA |
| Non-repetitive Peak Forward Surge Current | at t = 1 s | 0.5 | A |
| | at t = 1 ms | 1 | |
| | at t = 1 μ s | 4 | |
| Power Dissipation | P_{tot} | 500 ¹⁾ | mW |
| Junction Temperature | T_j | 200 | °C |
| Storage Temperature Range | T_{stg} | - 65 to + 200 | °C |

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

Characteristics at Ta = 25°C

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

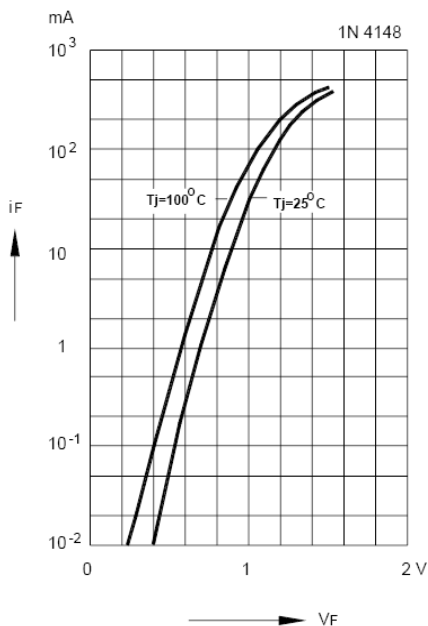
¹⁾ Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature.



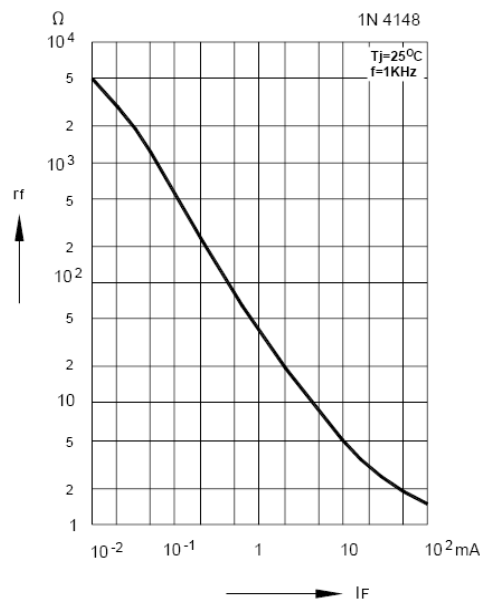
Rectification Efficiency Measurement Circuit

RATINGS AND CHARACTERISTIC CURVES 1N4148

Forward characteristics

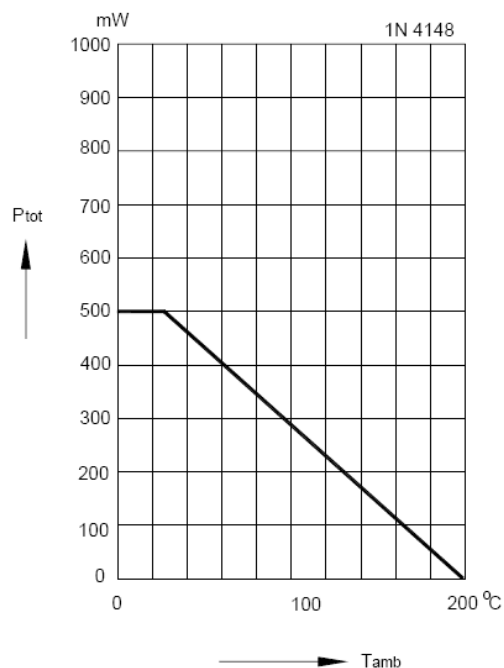


Dynamic forward resistance versus forward current

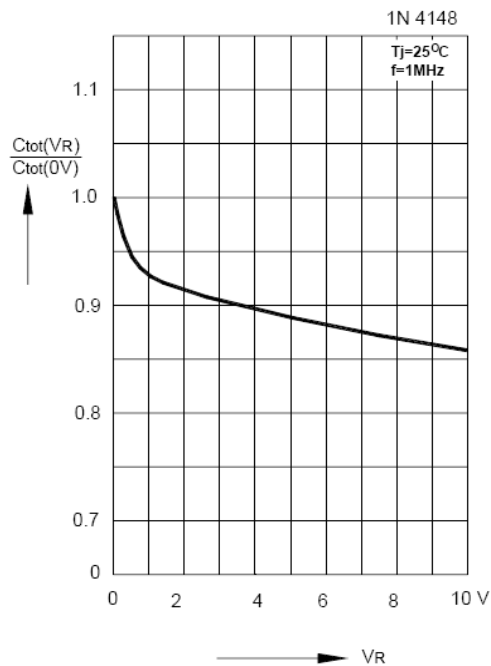


Admissible power dissipation versus ambient temperature

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

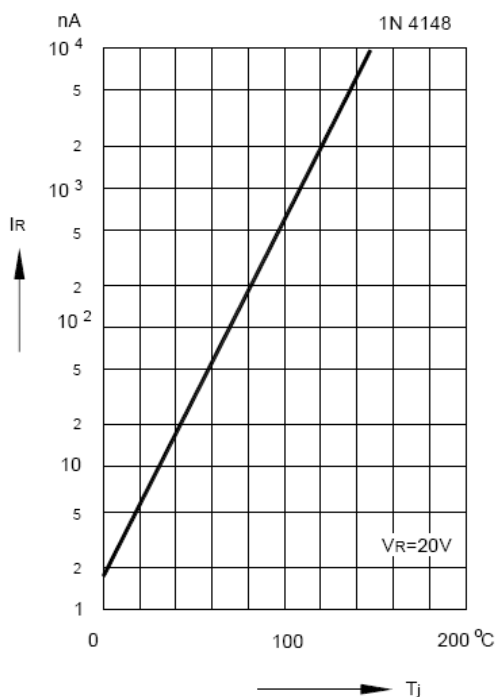


Relative capacitance versus reverse voltage



RATINGS AND CHARACTERISTIC CURVES 1N4148

Leakage current
versus junction temperature



Admissible repetitive peak forward current versus pulse duration

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

