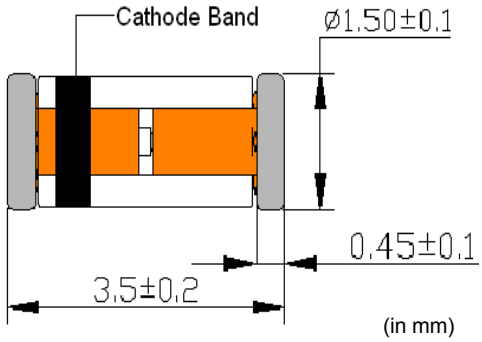
# LL4148
# Switching Diode

## Features

- Silicon epitaxial planar diode
- Fast switching
- Ideal for automatic insertion

## Mechanical Data

- Case:MiniMELF (SOD-80)
- Weight: approx.0.05g
- Plating thickness: 4um to 12um
- Plating material: Pure tin(99.99%)




Package: Mini-MELF (SOD-80)

## Absolute Maximum Ratings ($T_A$=25°C unless otherwise specified)

| Parameter | Symbol | Limit | Unit |
|---|---|---|---|
| Reverse voltage | $V_R$ | 75 | Volts |
| Peak reverse voltage | $V_{RM}$ | 100 | Volts |
| Forward DC current at $T_{amb}$=25°C (1) | $I_F$ | 200 | mA |
| Average rectified current half wave rectification with resistive load at $T_{amb}$=25°C f≥50 Hz (1) | $I_{F(AV)}$ | 150 | mA |
| Surge forward current at t<1s and $T_j$=25°C | $I_{FSM}$ | 500 | mA |
| Power dissipation at $T_{amb}$=25°C (1) | $P_{tot}$ | 500 | mW |
| Thermal resistance junction to ambient air (2) | $R_{\Theta JA}$ | 350 | °C/W |
| Thermal resistance junction to tie-point | $R_{\Theta Jtp}$ | 300 | °C/W |
| Operation Junction temperature | $T_{opr}$ | 175 | °C |
| Storage temperature range | $T_S$ | -65 to +175 | °C |

Note: 1.Valid provided that electrodes are kept at ambient temperature

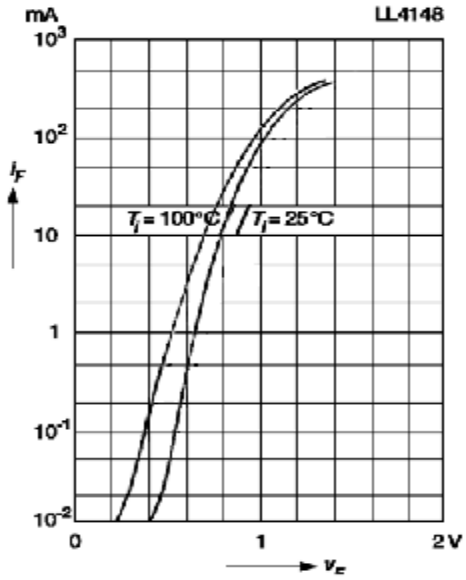
2.Device mounted on FR4 printed-circuit board

## Electrical Characteristics ($T_A$=25°C unless otherwise specified)

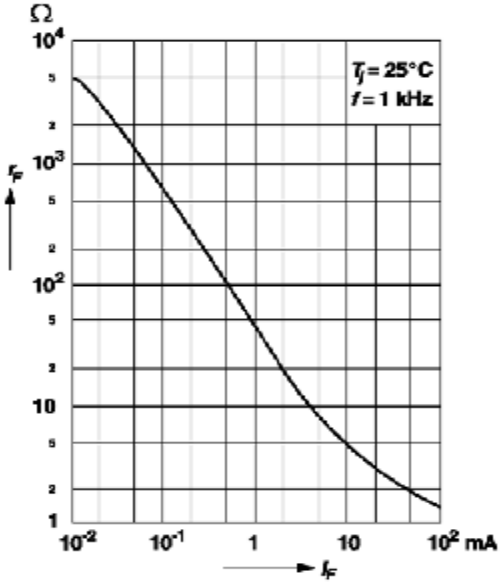
| Parameter | Symbol | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| Forward voltage | $V_F$ | $I_F$=10mA | - | - | 1.0 | Volt |
| Leakage current | $I_R$ | $V_R$=20V<br>$V_R$=75V<br>$V_R$=20V,$T_J$=150°C | -<br>-<br>- | -<br>-<br>- | 25<br>5.0<br>50 | nA<br>uA<br>uA |
| Capacitance | $C_{tot}$ | $V_F$=$V_R$=0V, f=1MHz | - | - | 4.0 | pF |
| Voltage rise when switching ON (tested with 50mA forward pulses) | $V_{fr}$ | tp=0.1us, Rise time<30ns fp=5 to 100kHz | - | - | 2.5 | Volts |
| Reverse recovery time | $t_{rr}$ | $I_F$=10mA, $I_R$=1mA $V_R$=6V, $R_L$=100Ω | - | - | 4.0 | ns |
| Rectification efficiency | ηV | f=100MHz, $V_{RF}$=2V | 0.45 | - | - | - |

## Typical Characteristic Curves

**Forward characteristics**

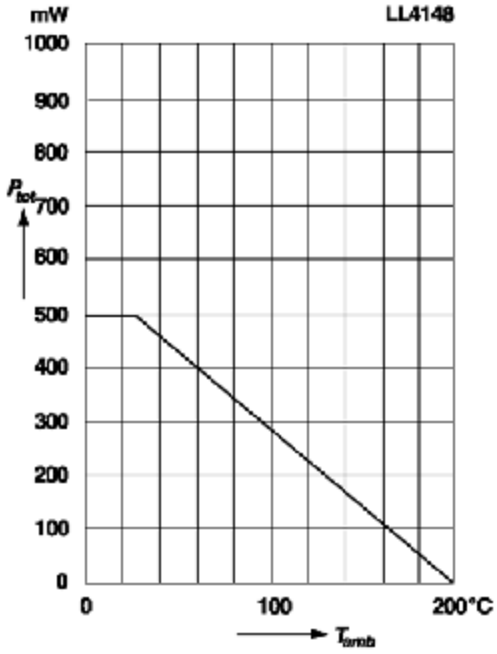



**Dynamic forward resistance versus forward current**

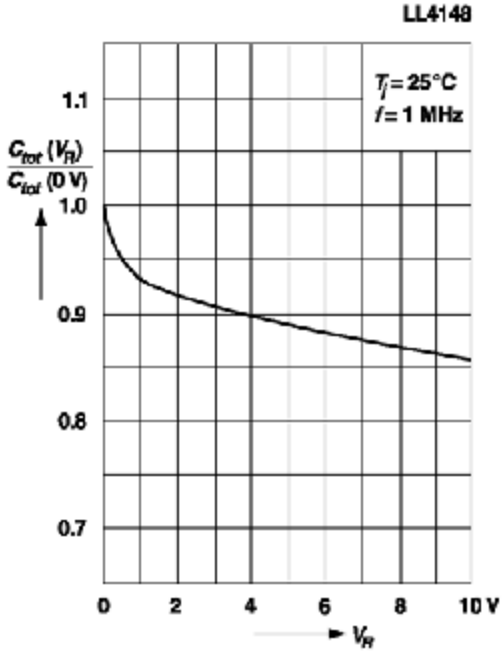



**Admissible power dissipation versus ambient temperature**

Valid provided that electrodes are kept at ambient temperature

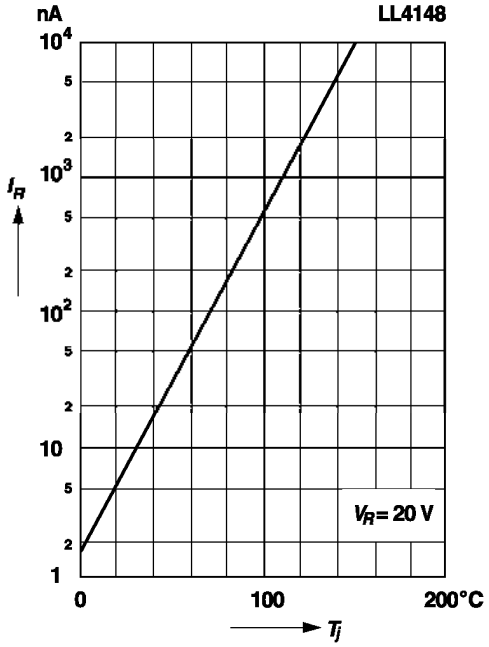



**Relative capacitance versus reverse voltage**

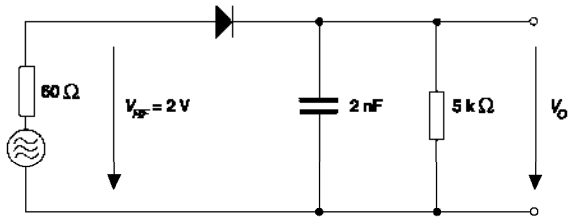


## Typical Characteristic Curves

**Leakage current versus junction temperature**




**Rectification Efficiency Measurement Circuit**




**Admissible repetitive peak forward current versus pulse duration**

Valid provided that electrodes are kept at ambient temperature