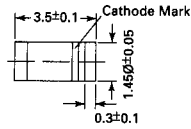


# LL4148

## Silicon Epitaxial Planar Diode

fast switching diode in MiniMELF case especially suited for automatic surface mounting.

Identical electrically to standard JEDEC 1N4148



Glass case MiniMELF

Weight approx. 0.05g

Dimensions in mm

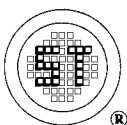
These diodes are delivered taped.

Details see "Taping".

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

|  | Symbol    | Value             | Unit             |
|--|-----------|-------------------|------------------|
| Reverse Voltage  | $V_R$     | 75                | V                |
| Peak Reverse Voltage   | $V_{RM}$  | 100               | V                |
| Rectified Current (Average)<br>Half Wave Rectification with Resist. Load<br>at $T_{amb} = 25^\circ\text{C}$ and $f \geq 50$ Hz | $I_o$     | 150 <sup>1)</sup> | mA               |
| Surge Forward Current at $t < 1$ s and $T_j = 25^\circ\text{C}$  | $I_{FSM}$ | 500               | mA               |
| Power Dissipation at $T_{amb} = 25^\circ\text{C}$  | $P_{tot}$ | 500 <sup>1)</sup> | mW               |
| Junction Temperature   | $T_j$     | 175               | $^\circ\text{C}$ |
| Storage Temperature Range  | $T_s$     | -65 to + 175      | $^\circ\text{C}$ |

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature



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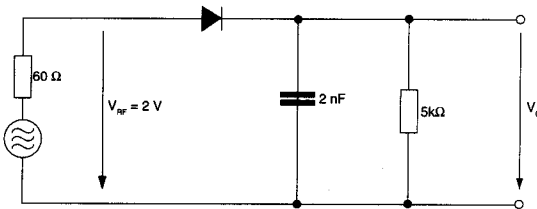
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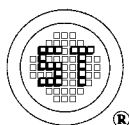
## Characteristics at $T_j = 25\text{ }^\circ\text{C}$

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

<sup>1)</sup> Valid provided that electrodes are kept at ambient temperature



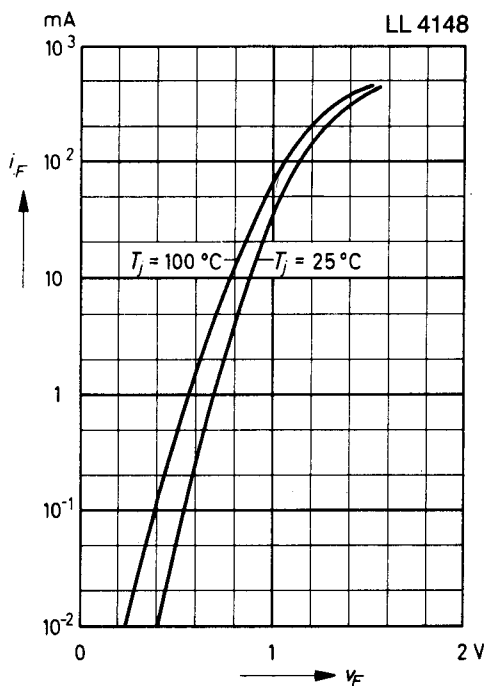
**Rectification Efficiency Measurement Circuit**



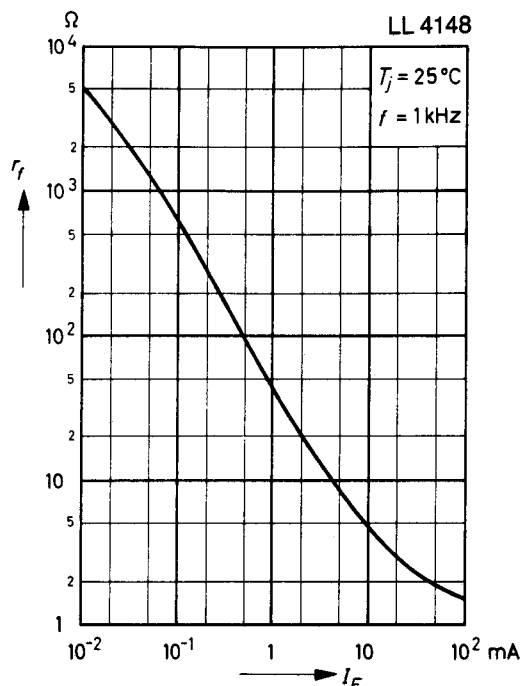
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**Forward characteristics**

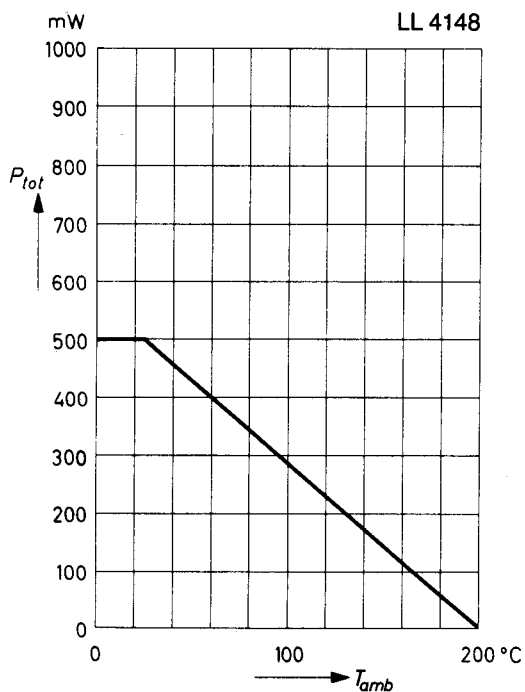


**Dynamic forward resistance versus forward current**

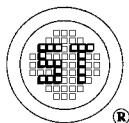
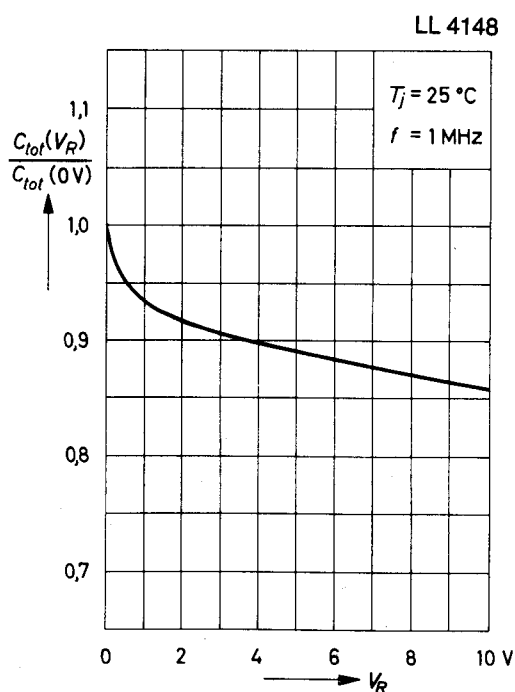


**Admissible power dissipation versus ambient temperature**

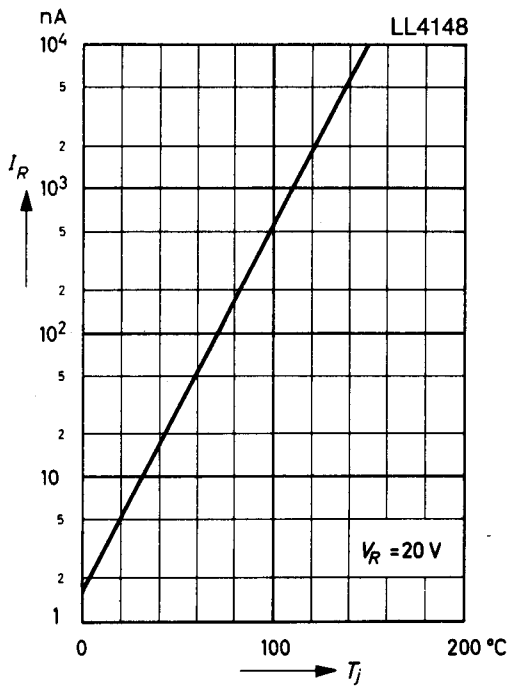
Valid provided that electrodes are kept at ambient temperature



**Relative capacitance versus reverse voltage**

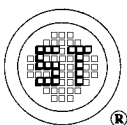
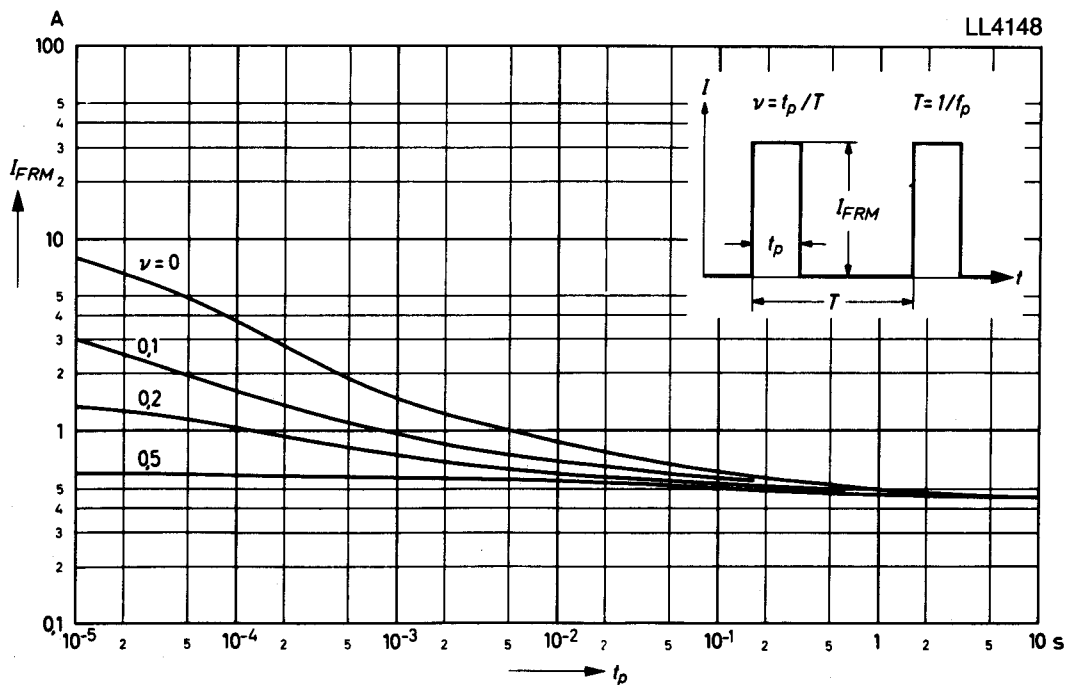


**Leakage current versus junction temperature**



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

Valid provided that electrodes are kept at ambient temperature



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