

## 1N4148 HIGH VOLTAGE SILICON RECTIFIER

VOLTAGE RANGE  
CURRENT

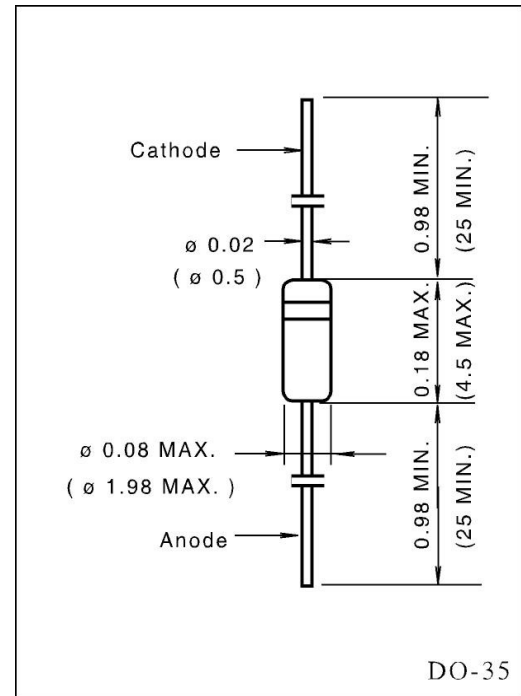
75 Volts  
1.5 A ere

### FEATURES

- Silicon Epitaxial Planar Diode
- Fast switching diode
- This diode is also available in other case styles including: the SOD-123 case with the type designation 1N4448W, the MiniMELF case with the type designation LL4448, and the SOT23 case with the type designation

### MECHANICAL DATA

- Case: DO-35
- Weight: approx: 0.13gram



### MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

- Ratings at 25°C ambient temperature unless otherwise specified

|   | 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 $T_{amb} = 25\text{ }^\circ\text{C}$ and $f \geq 50\text{ Hz}$ | $I_0$     | 150 <sup>1)</sup> | mA   |
| Surge Forward Current at $t < 1\text{ s}$ and $T_j = 25\text{ }^\circ\text{C}$  | $I_{FSM}$ | 500               | mA   |
| Power Dissipation at $T_{amb} = 25\text{ }^\circ\text{C}$   | $P_{tot}$ | 500 <sup>1)</sup> | mW   |
| Junction Temperature  | $T_j$     | 175               | °C   |
| Storage Temperature Range   | $T_S$     | -65 to +175       | °C   |

<sup>1)</sup> Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature (DO-35)

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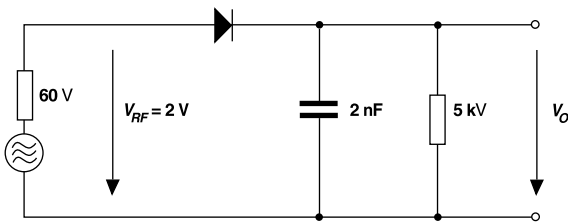
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Ratings at 25 °C ambient temperature unless otherwise specified

|   | 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>$\mu\text{A}$ |
| Capacitance<br>at $V_F = V_R = 0 \text{ V}$   | $C_{\text{tot}}$        | –           | –           | 4                 | pF                                   |
| Voltage Rise when Switching ON<br>tested with 50 mA Pulses<br>$t_p = 0.1 \text{ } \mu\text{s}$ , Rise Time < 30 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 $I_R = 1 \text{ mA}$ ,<br>$V_R = 6 \text{ V}, R_L = 100 \text{ } \Omega$                           | $t_{rr}$                | –           | –           | 4                 | ns                                   |
| Thermal Resistance Junction to Ambient Air  | $R_{\text{thJA}}$       | –           | –           | 350 <sup>1)</sup> | K/W                                  |
| Rectification Efficiency<br>at $f = 100 \text{ MHz}, V_{RF} = 2 \text{ V}$  | $\eta_v$                | 0.45        | –           | –                 | –                                    |

<sup>1)</sup> Valid provided that leads at a distance of 8 mm from case are kept at ambient temperature (DO-35)



Rectification Efficiency Measurement Circuit

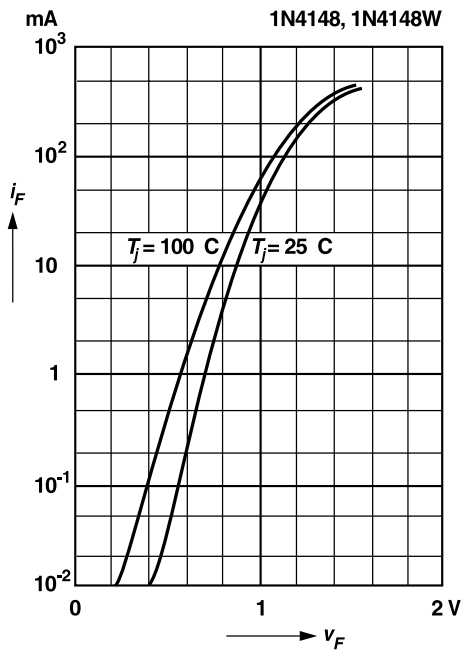
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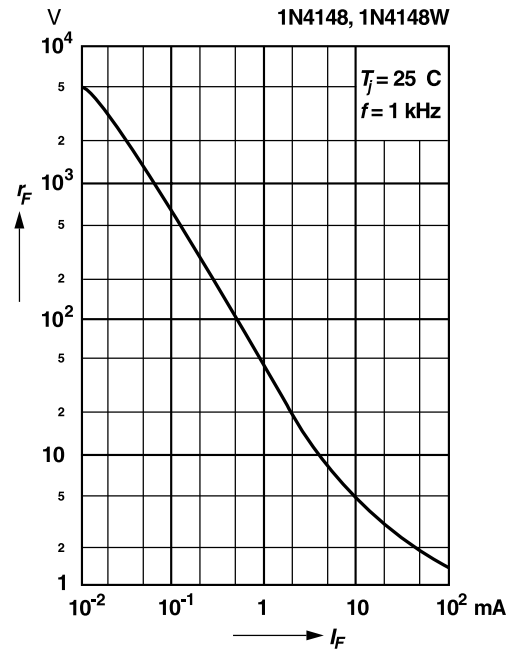
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Forward characteristics

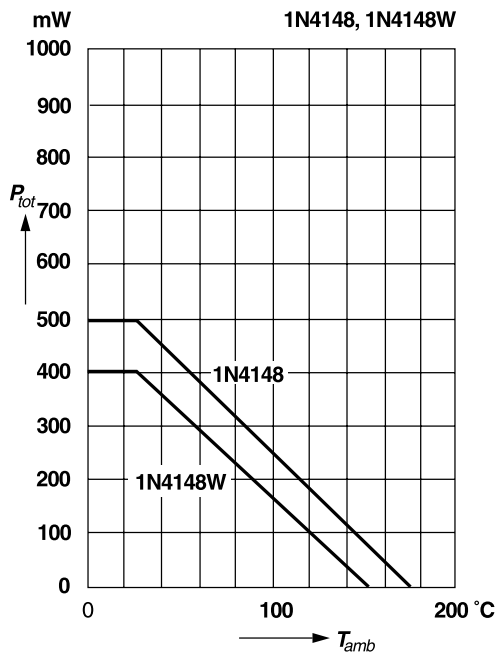


Dynamic forward resistance versus forward current

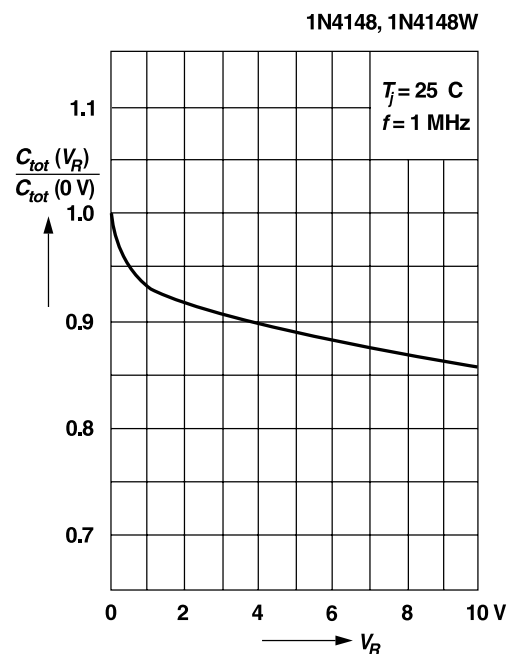


Admissible power dissipation versus ambient temperature

For conditions, see footnote in table  
"Absolute Maximum Ratings"



Relative capacitance versus reverse voltage



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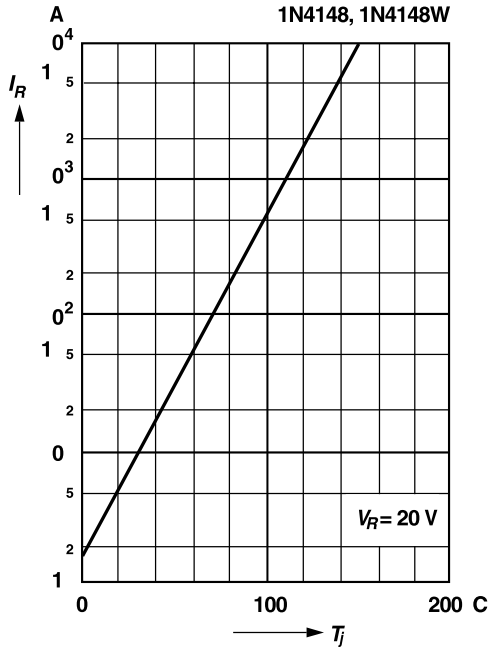
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n  
1 Leakage current  
versus junction temperature



### Admissible repetitive peak forward current versus pulse duration

For conditions, see footnote in table "Absolute Maximum Ratings"

