

## HIGH SPEED SWITCHING DIODES

### 1N4148

#### FEATURES

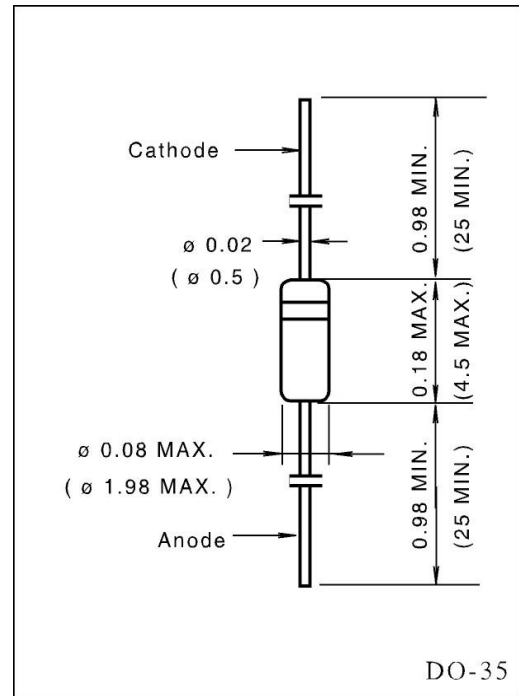
- Silicon Epitaxial Planar Diode
- Fast switching diode
- This diode is also available in other case styles including: the SOD-123 case with the type designation 1N4448W, the MiniMELF case with the type designation LL4448, and the SOT23 case with the type designation

#### 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) Half Wave Rectification with Resist. Load 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)

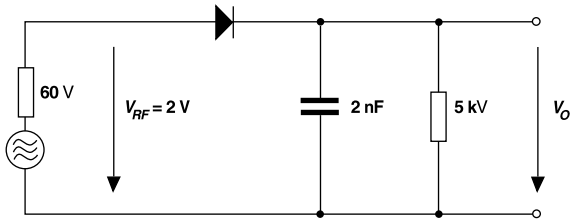


## HIGH SPEED SWITCHING DIODES

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Min.	Typ.	Max.	Unit
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 $V_R = 20 \text{ V}, T_j = 150 \text{ °C}$	$I_R$ $I_R$ $I_R$	– – –	– – –	25 5 50	nA $\mu\text{A}$ $\mu\text{A}$
Capacitance at $V_F = V_R = 0 \text{ V}$	$C_{\text{tot}}$	–	–	4	pF
Voltage Rise when Switching ON tested with 50 mA Pulses $t_p = 0.1 \mu\text{s}$ , Rise Time < 30 ns, $f_p = 5$ to 100 kHz	$V_{\text{fr}}$	–	–	2.5	V
Reverse Recovery Time from $I_F = 10 \text{ mA}$ to $I_R = 1 \text{ mA}$ , $V_R = 6 \text{ V}, R_L = 100 \Omega$	$t_{\text{rr}}$	–	–	4	ns
Thermal Resistance Junction to Ambient Air	$R_{\text{thJA}}$	–	–	350 <sup>1)</sup>	K/W
Rectification Efficiency at $f = 100 \text{ MHz}, V_{\text{RF}} = 2 \text{ V}$	$\eta_v$	0.45	–	–	–

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



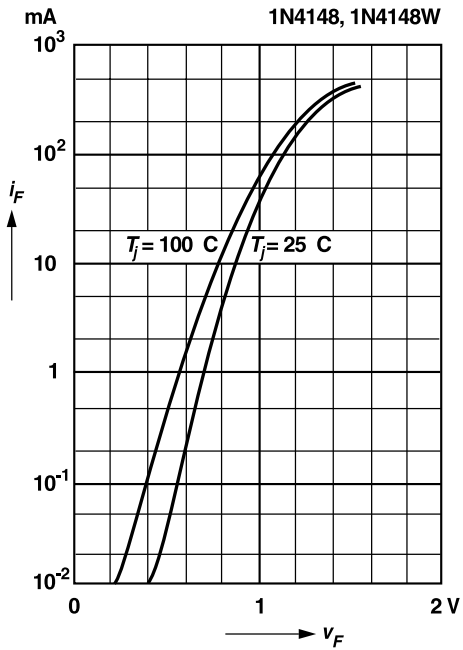
**Rectification Efficiency Measurement Circuit**



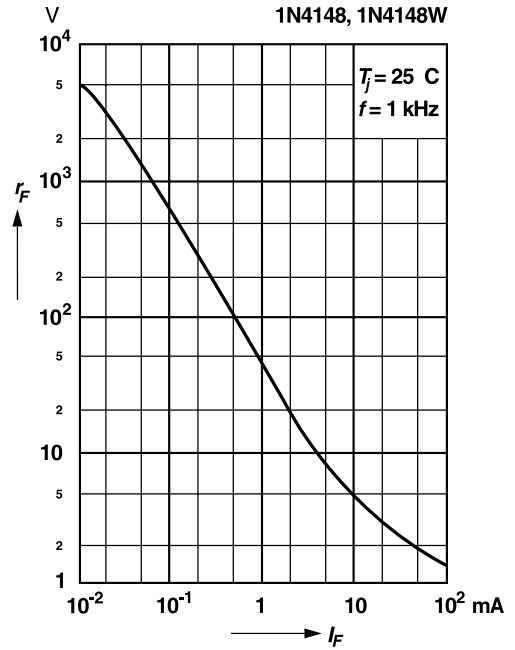
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## RATINGS AND CHARACTERISTIC CURVES 1N4148

Forward characteristics

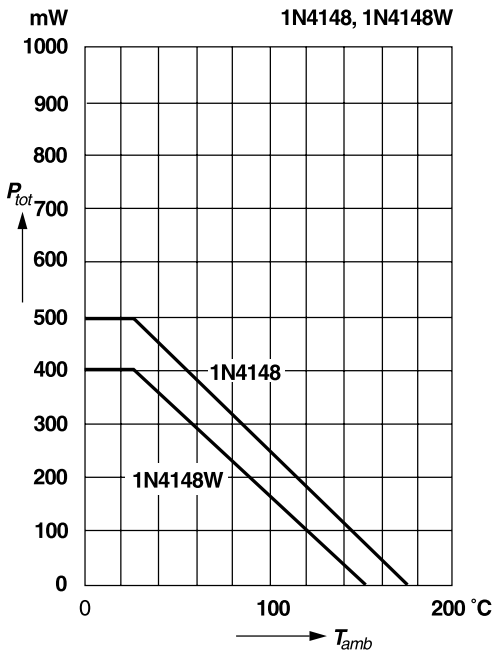


Dynamic forward resistance versus forward current

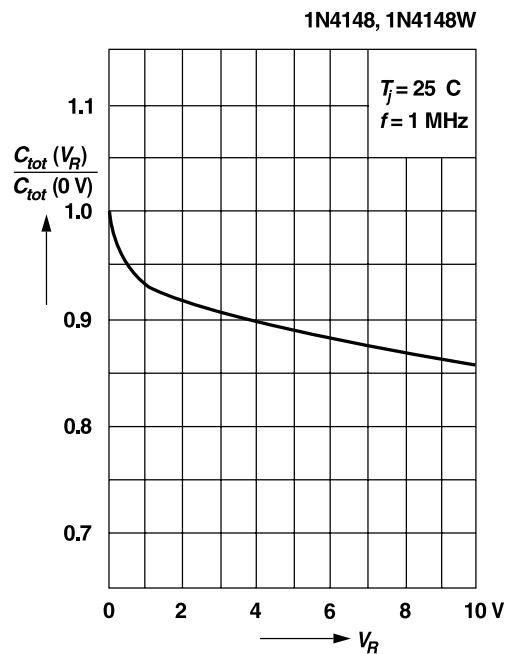


Admissible power dissipation versus ambient temperature

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



Relative capacitance versus reverse voltage

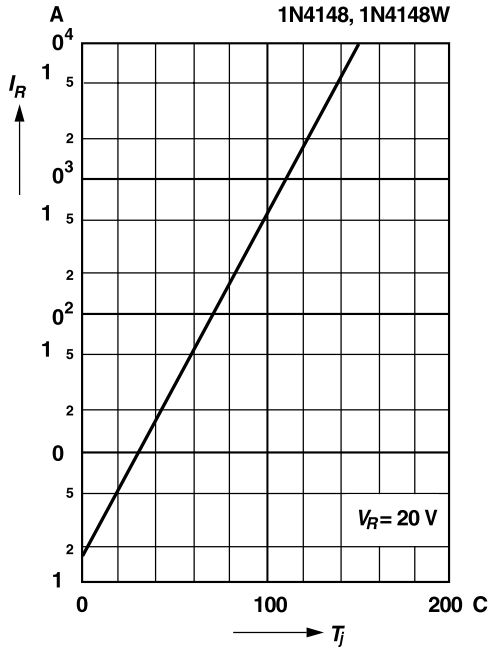




# HIGH SPEED SWITCHING DIODES

## RATINGS AND CHARACTERISTIC CURVES 1N4148

n  
1 Leakage current  
versus junction temperature



### Admissible repetitive peak forward current versus pulse duration

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

