

# High-speed switching diode

## Features

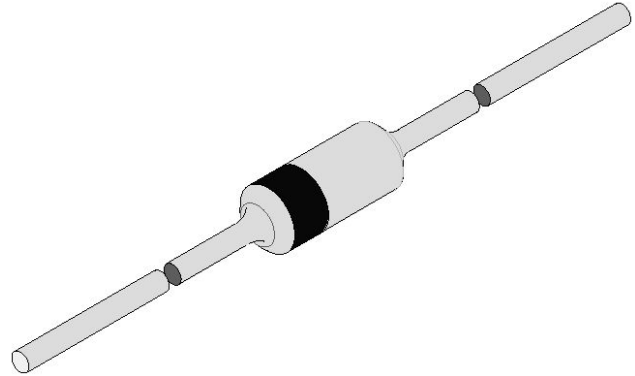
1. High reliability
2. High speed ( $t_{rr} \leq 4$  ns)

## Applications

Extreme fast switches

## Construction

Silicon epitaxial planar



## Absolute Maximum Ratings

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Type	Symbol	Value	Unit
Repetitive peak reverse voltage			$V_{RRM}$	100	V
Reverse voltage			$V_R$	75	V
Peak forward surge current	$t_p = 1 \mu\text{s}$		$I_{FSM}$	2	A
Repetitive peak forward voltage			$I_{FRM}$	500	mA
Forward current			$I_F$	300	mA
Average forward current	$V_R = 0$		$I_{FAV}$	150	mA
Power dissipation	$l = 4\text{mm } T_L \leq 25^\circ\text{C}$		$P_V$	500	mW
Junction temperature			$T_j$	175	$^\circ\text{C}$
Storage temperature range			$T_{stg}$	-65~+175	$^\circ\text{C}$

## Maximum Thermal Resistance

$T_j = 25^\circ\text{C}$

Parameter	Test Conditions	Symbol	Value	Unit
Junction ambient	$l = 4\text{mm } T_L = \text{constant}$	$R_{thJA}$	350	K/W

### Electrical Characteristics

$T_j=25^{\circ}\text{C}$

Parameter	Test Conditions	Type	Symbol	Min	Typ	Max	Unit
Forward voltage	$I_F=5\text{mA}$	1N4448	$V_F$	0.62		0.72	V
	$I_F=10\text{mA}$	1N4148	$V_F$		0.86	1	V
	$I_F=100\text{mA}$	1N4448	$V_F$		0.93	1	V
Reverse current	$V_R=20\text{V}$		$I_R$			25	nA
	$V_R=20\text{V}, T_j=150^{\circ}\text{C}$		$I_R$			50	$\mu\text{A}$
	$V_R=75\text{V}$		$I_R$			5	$\mu\text{A}$
Breakdown current	$I_R=100\ \mu\text{A}, t_p/T=0.01, t_p=0.3\text{ms}$		$V_{(BR)}$	100			V
Diode capacitance	$V_R=0, f=1\text{MHz}, V_{HF}=50\text{mV}$		$C_D$			4	pF
Rectification efficiency	$V_{HF}=2\text{V}, f=100\text{MHz}$		$\eta_R$	45			%
Reverse recovery time	$I_F=I_R=10\text{mA}, i_R=1\text{mA}$		$t_{rr}$			8	ns
	$I_F=10\text{mA}, V_R=6\text{V}, i_R=0.1 \times I_R, R_L=100\ \Omega$		$t_{rr}$			4	ns

### Characteristics ( $T_j=25^{\circ}\text{C}$ unless otherwise specified)

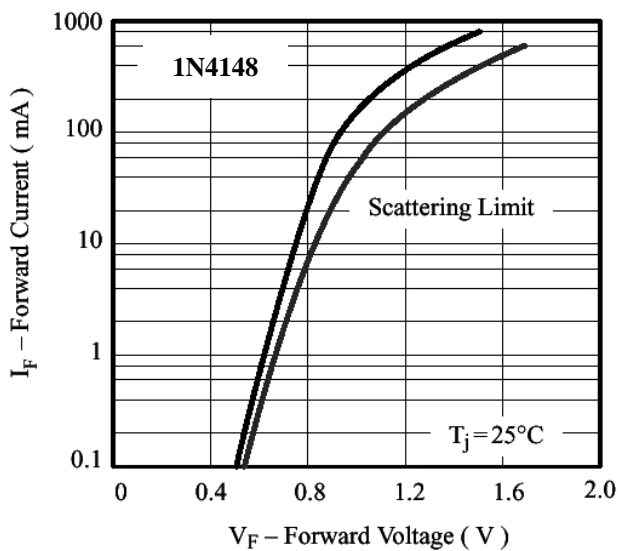


Figure 1. Forward Current vs. Forward Voltage

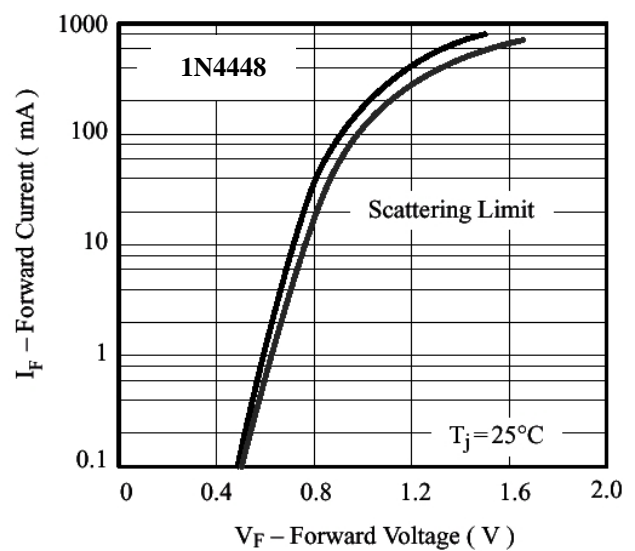


Figure 2. Forward Current vs. Forward Voltage

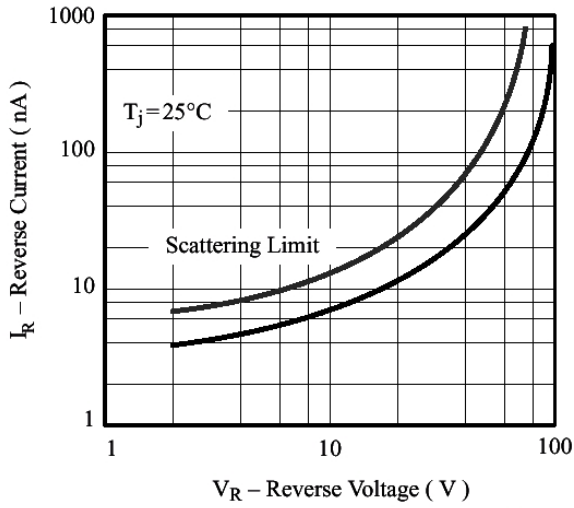


Figure 3. Reverse Current vs. Reverse Voltage

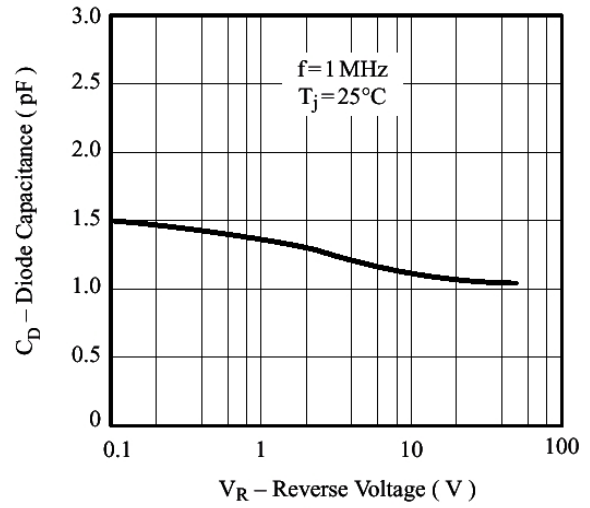
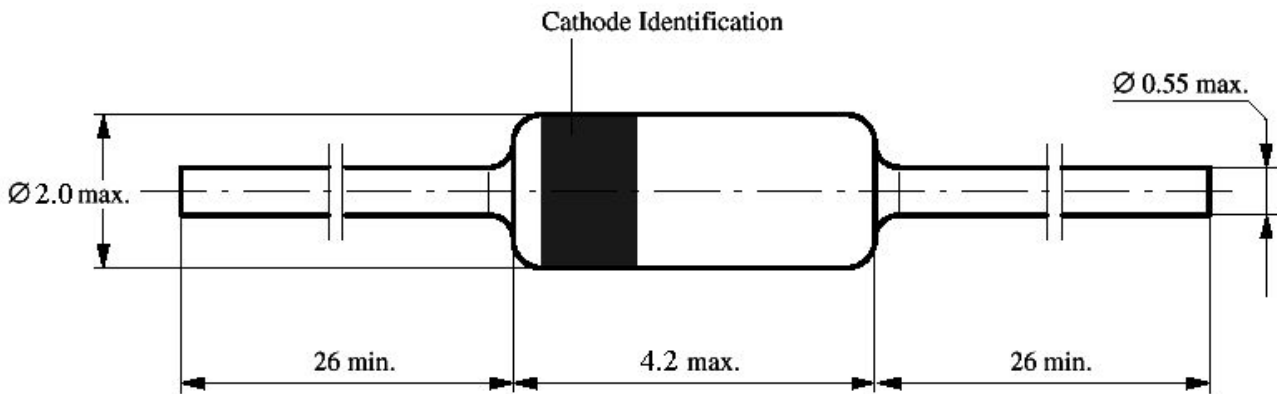


Figure 4. Diode Capacitance vs. Reverse Voltage

Dimensions in mm



Standard Glass Case  
JEDEC DO 35