High-speed switching diode

Features

1. High reliability
2. High speed (t_{rr}≤4 ns)

Applications

Extreme fast switches

Construction

Silicon epitaxial planar

Absolute Maximum Ratings

T_j=25℃

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=1μs		I_{FSM}	2	A
Repetitive peak forward current			I_{FRM}	500	mA
Forward current			I_F	300	mA
Average forward current	V_R=0		I_{FAV}	150	mA
Power dissipation	I=4mm T_L≤25℃		P_V	500	mW
Junction temperature			T_j	175	℃
Storage temperature range			T_{stg}	-65~+175	℃

Maximum Thermal Resistance

T_j=25℃

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

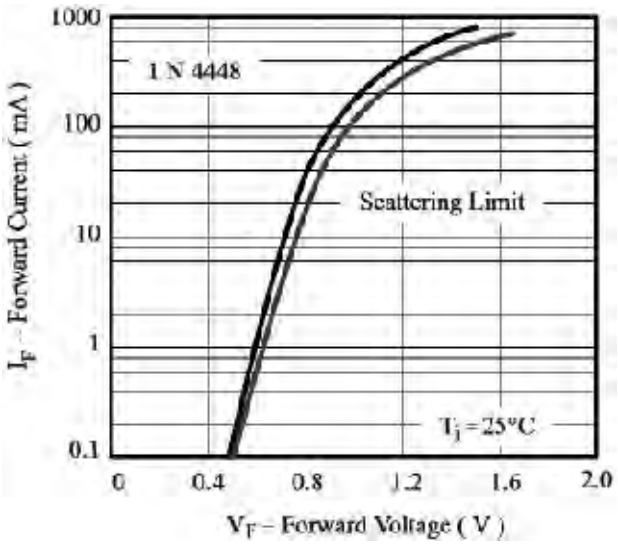


Figure 3. Forward current vs. forward voltage

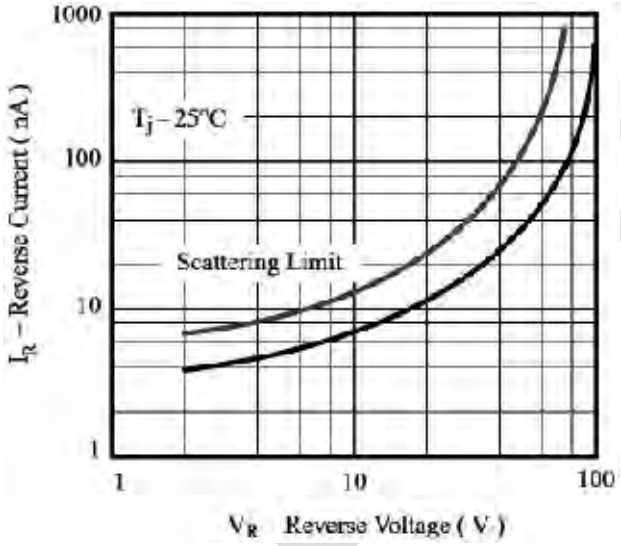
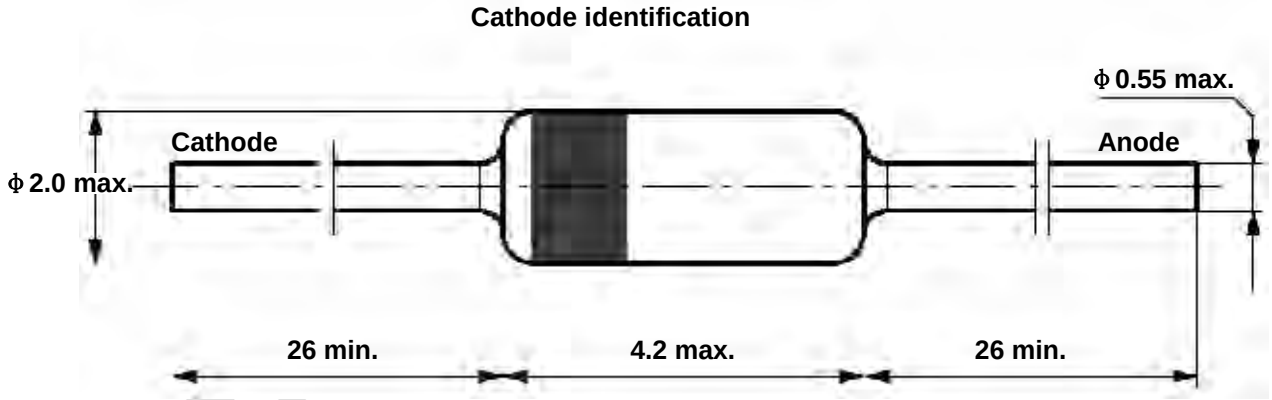


Figure 4. Reverse current vs. reverse voltage

Dimensions in mm



Standard Glass Case
JEDEC DO 35

Electrical Characteristics

T_j=25℃

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

Characteristics (T_j=25℃ unless otherwise specified)

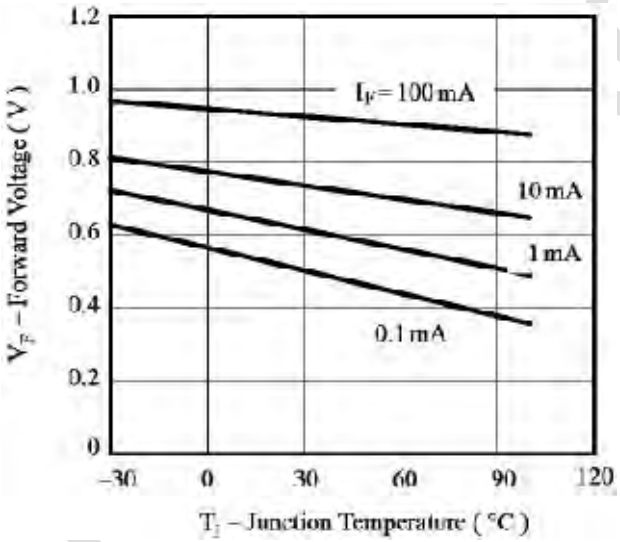


Figure 1. Forward voltage vs. junction temperature

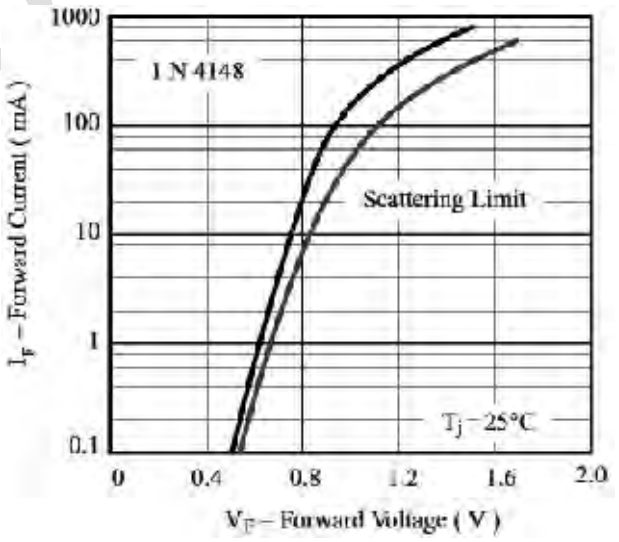


Figure 2. Forward current vs. forward voltage