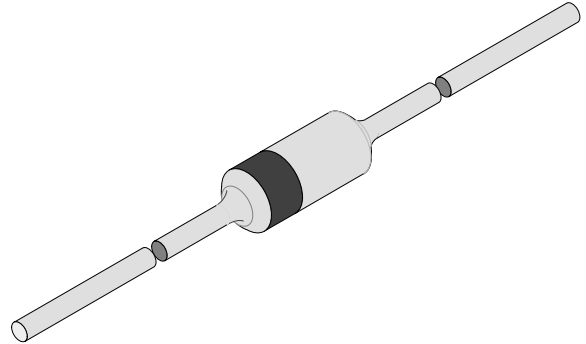


Fast Switching Diodes

Features

- Silicon Epitaxial Planar Diodes
- Electrically equivalent diodes:
1N4148 – 1N914
1N4448 – 1N914B



94 9367

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Applications

Extreme fast switches

Order Instruction

Type	Type Differentiation	Ordering Code	Remarks
1N4148	$V_{RRM} = 100 \text{ V}$, $V_F@I_F 10\text{mA} = 1 \text{ V}$	1N4148-TAP	Ammopack
		1N4148-TR	Tape and Reel
1N4448	$V_{RRM} = 100 \text{ V}$, $V_F@I_F 100\text{mA} = 1 \text{ V}$	1N4448-TAP	Ammopack
		1N4448-TR	Tape and Reel

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 current			I_{FRM}	500	mA
Forward current			I_F	300	mA
Average forward current	$V_R=0$		I_{FAV}	150	mA
Power dissipation	$l=4 \text{ mm}$, $T_L=45^\circ\text{C}$		P_V	440	mW
	$l=4 \text{ mm}$, $T_L \leq 25^\circ\text{C}$		P_V	500	mW
Junction temperature			T_j	200	$^\circ\text{C}$
Storage temperature range			T_{stg}	-65...+200	$^\circ\text{C}$

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			1	V
	$I_F=100\text{mA}$	1N4448	V_F			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	μA
	$V_R=75\text{ V}$		I_R			5	μA
Breakdown voltage	$I_R=100\mu\text{A}, t_p/T=0.01,$ $t_p=0.3\text{ms}$		$V_{(BR)}$	100			V
Diode capacitance	$V_R=0, f=1\text{MHz}, V_{HF}=50\text{mV}$		C_D			4	pF
Rectification efficiency	$V_{HF}=2\text{V}, f=100\text{MHz}$		η_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)

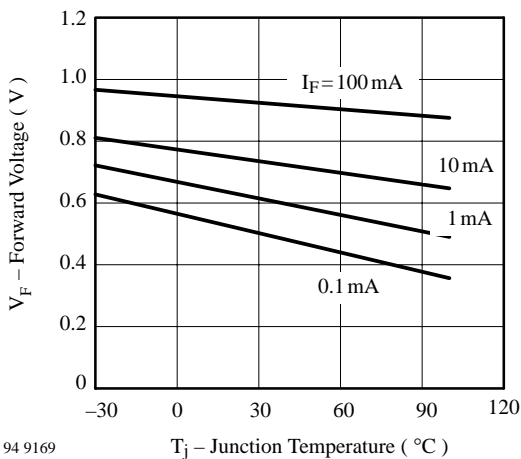


Figure 1. Forward Voltage vs. Junction Temperature

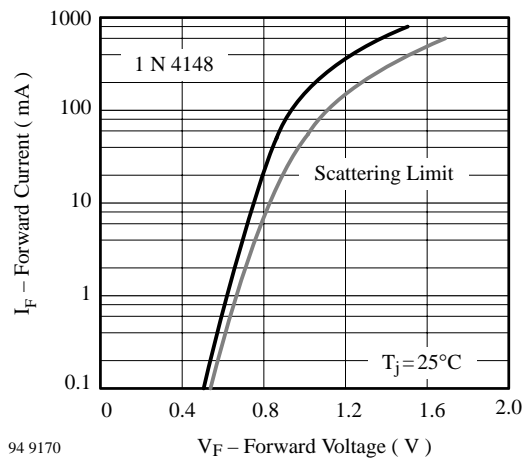


Figure 2. Forward Current vs. Forward Voltage

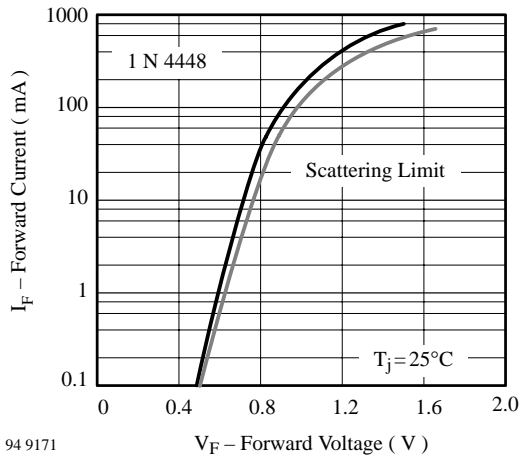


Figure 3. Forward Current vs. Forward Voltage

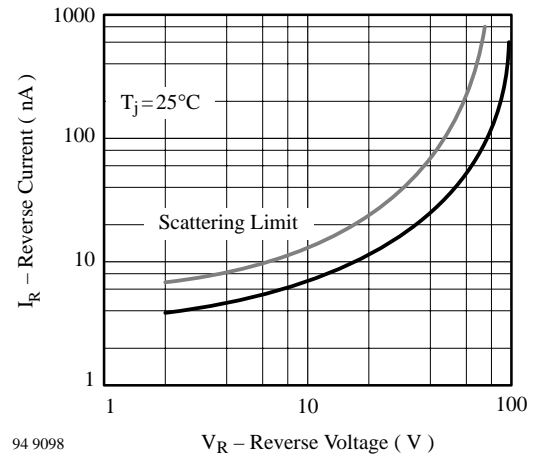


Figure 4. Reverse Current vs. Reverse Voltage

Dimensions in mm

technical drawings according to DIN specifications
94 9366

Standard Glass Case
54 A 2 DIN 41880
JEDEC DO 35
Weight max. 0.3g

