

Small Signal Fast Switching Diodes



FEATURES

- Silicon epitaxial planar diodes
- AEC-Q101 qualified
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

- Extreme fast switches

MECHANICAL DATA

Case: DO-35

Weight: approx. 125 mg

Cathode band color: black

Packaging codes/options:

TR/10K per 13" reel (52 mm tape), 50K/box

TAP/10K per ammpack (52 mm tape), 50K/box

PARTS TABLE

PART	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
1N4448	1N4448TAP or 1N4448TR	V4448	Single diode	Tape and reel/ammpack

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		V_{RRM}	100	V
Reverse voltage		V_R	75	V
Peak forward surge current	$t_p = 1\text{ }\mu\text{s}$	I_{FSM}	2	A
Repetitive peak forward current		I_{FRM}	500	mA
Forward continuous current		I_F	300	mA
Average forward current	$V_R = 0$	$I_{F(AV)}$	150	mA
Power dissipation	$l = 4\text{ mm}, T_L = 45\text{ }^{\circ}\text{C}$	P_{tot}	440	mW
	$l = 4\text{ mm}, T_L \leq 25\text{ }^{\circ}\text{C}$	P_{tot}	500	mW

THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	$l = 4\text{ mm}, T_L = \text{constant}$	R_{thJA}	350	K/W
Junction temperature		T_j	175	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 65 to + 150	$^{\circ}\text{C}$



ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 5 mA	V _F	0.620		0.720	V
	I _F = 100 mA	V _F			1	V
Reverse current	V _R = 20 V	I _R			25	nA
	V _R = 20 V, T _j = 150 °C	I _R			50	μA
	V _R = 75 V	I _R			5	μA
Breakdown voltage	I _R = 100 μA, t _p /T = 0.01, t _p = 0.3 ms	V _(BR)	100			V
Diode capacitance	V _R = 0, f = 1 MHz, V _{HF} = 50 mV	C _D			4	pF
Rectification efficiency	V _{HF} = 2 V, f = 100 MHz	η _r	45			%
Reverse recovery time	I _F = I _R = 10 mA, i _R = 1 mA	t _{rr}			8	ns
	I _F = 10 mA, V _R = 6 V, i _R = 0.1 x I _R , R _L = 100 Ω	t _{rr}			4	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

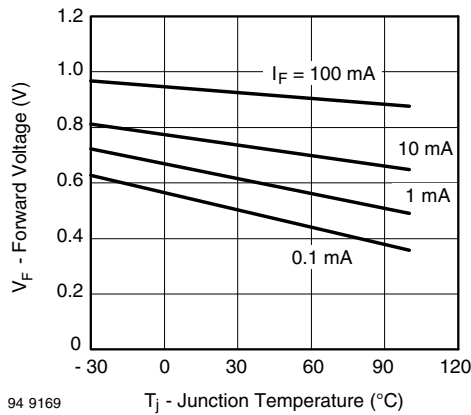


Fig. 1 - Forward Voltage vs. Junction Temperature

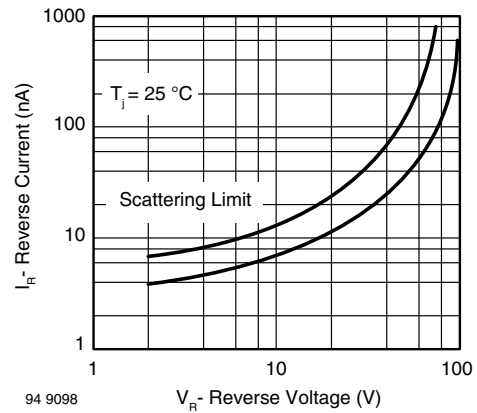


Fig. 3 - Reverse Current vs. Reverse Voltage

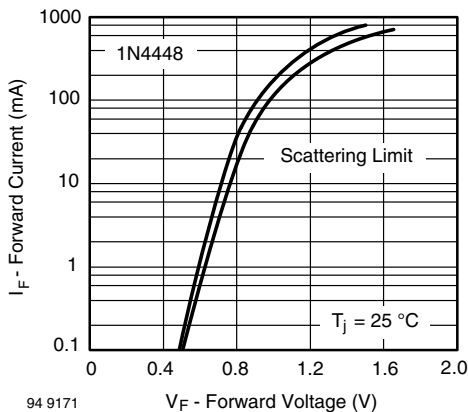
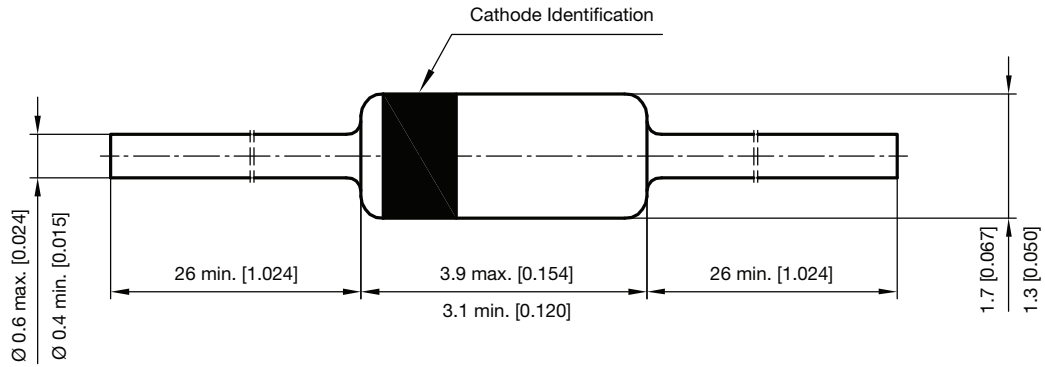


Fig. 2 - Forward Current vs. Forward Voltage



PACKAGE DIMENSIONS in millimeters (inches): **DO-35**



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