



Small Signal Fast Switching Diodes



FEATURES

- Silicon epitaxial planar diode
- Automotive graded device
- 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
1N4148-P	1N4148-P-TAP or 1N4148-P-TR	V4148	Single diode	Tape and reel/ammopack

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °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 μs	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 mm, T _L = 45 °C	P _{tot}	440	mW
	l = 4 mm, T _L ≤ 25 °C	P _{tot}	500	mW

THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	l = 4 mm, T _L = constant	R _{thJA}	350	K/W
Junction temperature		T _j	175	°C
Storage temperature range		T _{stg}	- 65 to + 150	°C

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 10\text{ mA}$	V_F			1	V
Reverse current	$V_R = 20\text{ V}$	I_R			25	nA
	$V_R = 20\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$	I_R			50	μA
Reverse current	$V_R = 75\text{ V}$	I_R			5	μA
	$I_R = 100\text{ }\mu\text{A}, t_p/T = 0.01,$ $t_p = 0.3\text{ ms}$	$V_{(BR)}$	100			V
Diode capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}, V_{HF} = 50\text{ mV}$	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
	$I_F = 10\text{ mA}, V_R = 6\text{ V},$ $i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$	t_{rr}			4	ns

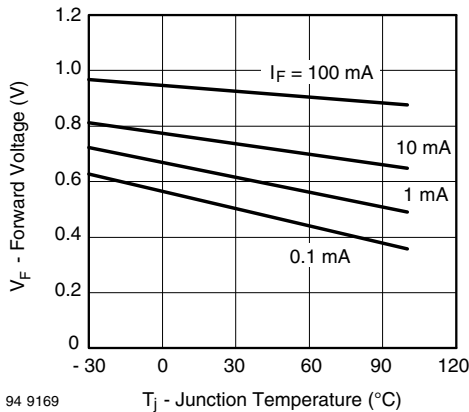
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Voltage vs. Junction Temperature

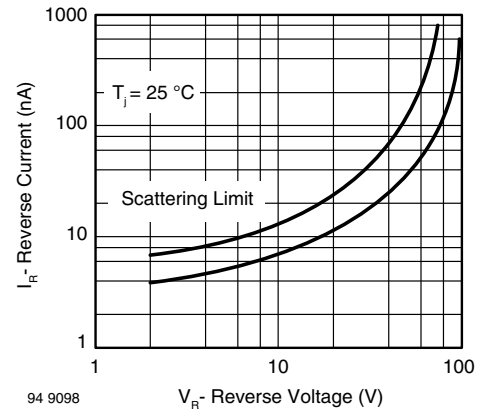


Fig. 3 - Reverse Current vs. Reverse Voltage

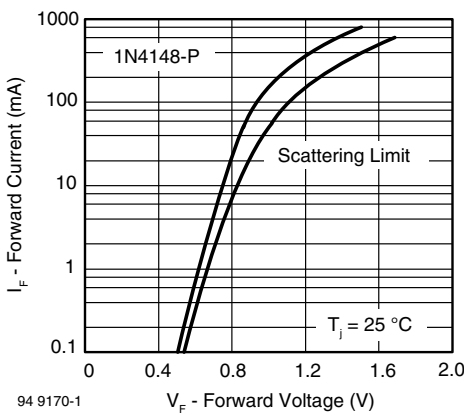
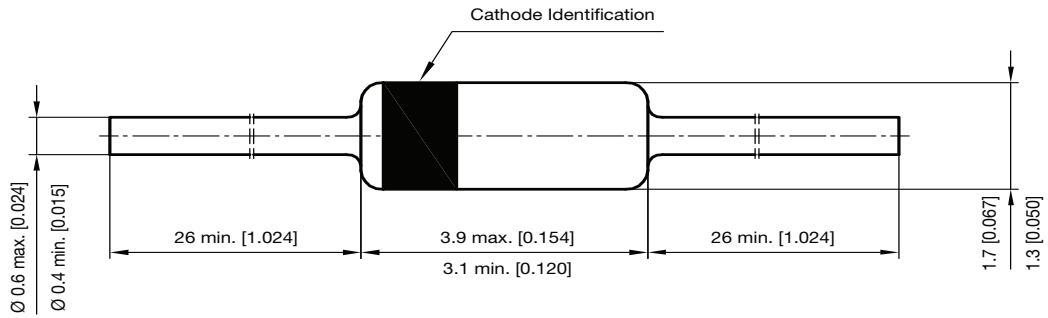


Fig. 2 - Forward Current vs. Forward Voltage



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



Rev. 6 - Date: 19. December 2011
Document no.: SB-V-3906.04-031(4)
94 9366



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Тел: +7 (812) 336 43 04 (многоканальный)
Email: org@lifeelectronics.ru