

Small Signal Fast Switching Diodes



FEATURES

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

APPLICATIONS

- Extreme fast switches



RoHS
COMPLIANT
HALOGEN
FREE

ADDITIONAL RESOURCES



MECHANICAL DATA

Case: DO-35 (DO-204AH)

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	CIRCUIT CONFIGURATION	REMARKS
1N4448	1N4448TAP or 1N4448TR	V4448	Single	Tape and reel / ammpack

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	I = 4 mm, T _L = 45 °C	P _{tot}	440	mW
	I = 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	I = 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	$I_F = 5\text{ mA}$	V_F	0.620		0.720	V
	$I_F = 100\text{ mA}$	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
	$V_R = 75\text{ V}$	I_R			5	μA
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}, t_p/T = 0.01, t_p = 0.3\text{ ms}$	$V_{(BR)}$	100			V
Diode capacitance	$V_R = 0, f = 1\text{ MHz}, V_{HF} = 50\text{ mV}$	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

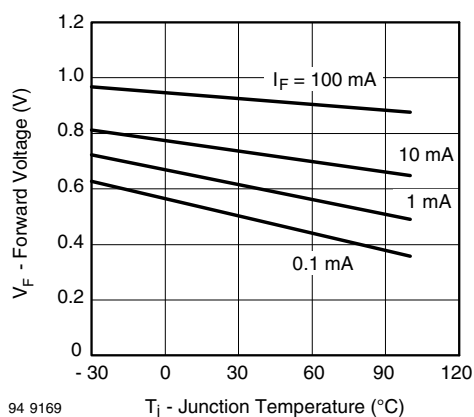
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Forward Voltage vs. Junction Temperature

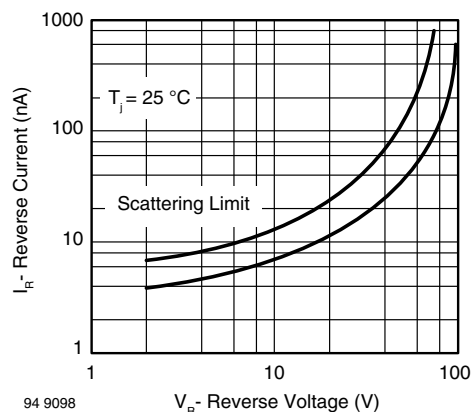


Fig. 3 - Reverse Current vs. Reverse Voltage

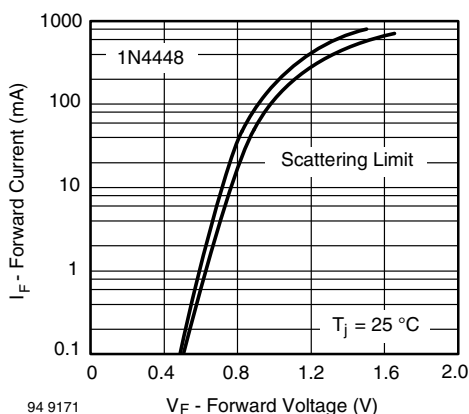
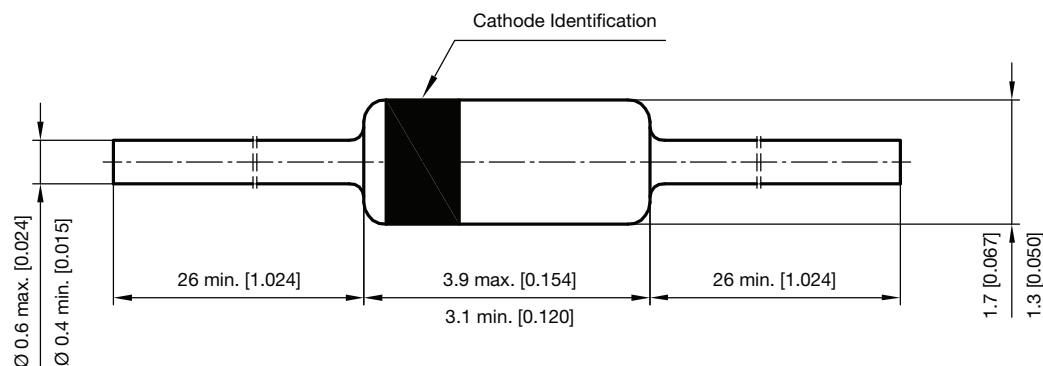


Fig. 2 - Forward Current vs. Forward Voltage

PACKAGE DIMENSIONS in millimeters (inches): **DO-35 (DO-204AH)**


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