

## Small Signal Fast Switching Diodes



### FEATURES

- Silicon epitaxial planar diode
- Electrically equivalent diodes: 1N4148 - 1N914
- Material categorization:  
for definitions of compliance please see  
[www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



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### APPLICATIONS

- Extreme fast switches

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### MECHANICAL DATA

**Case:** DO-35 (DO-204AH)

**Weight:** approx. 105 mg

**Cathode band color:** black

**Packaging codes / options:**

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

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

### PARTS TABLE

PART	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS
1N4148	1N4148-TAP or 1N4148TR	V4148	Single	Tape and reel / ammopack

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25^{\circ}\text{C}$ , 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	$t_p = 1 \mu\text{s}$	$I_{FSM}$	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	$I = 4 \text{ mm}, T_L = 45^{\circ}\text{C}$	$P_{tot}$	440	mW
	$I = 4 \text{ mm}, T_L \leq 25^{\circ}\text{C}$	$P_{tot}$	500	mW

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

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

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25^\circ C$ , 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
	$V_R = 20 \text{ V}, T_j = 150^\circ C$	$I_R$			50	$\mu\text{A}$
	$V_R = 75 \text{ V}$	$I_R$			5	$\mu\text{A}$
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	$V_R = 0 \text{ V}, f = 1 \text{ MHz}, V_{HF} = 50 \text{ mV}$	$C_D$			4	pF
Rectification efficiency	$V_{HF} = 2 \text{ V}, f = 100 \text{ MHz}$	$\eta_r$	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

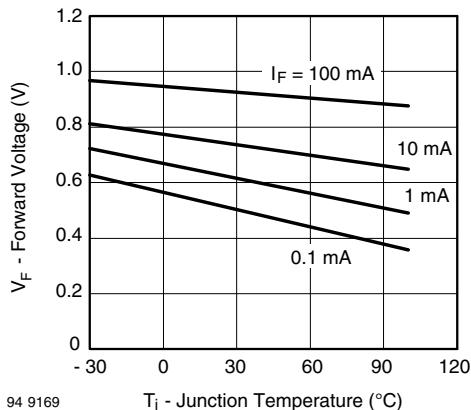
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25^\circ C$ , unless otherwise specified)


Fig. 1 - Forward Voltage vs. Junction Temperature

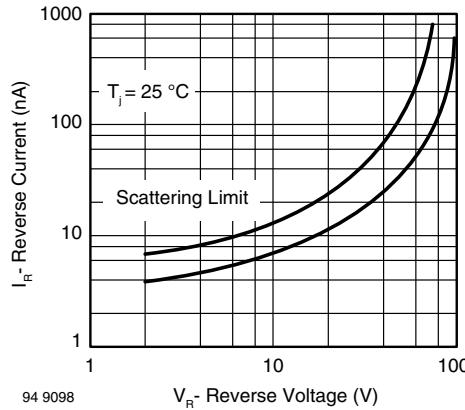


Fig. 3 - Reverse Current vs. Reverse Voltage

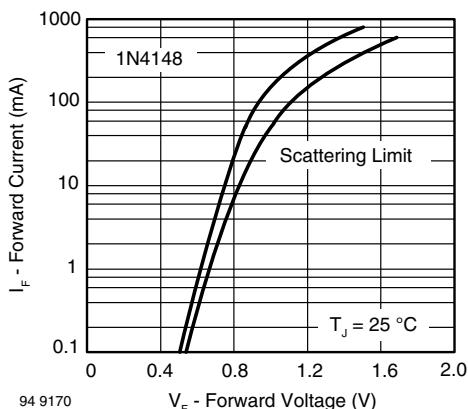
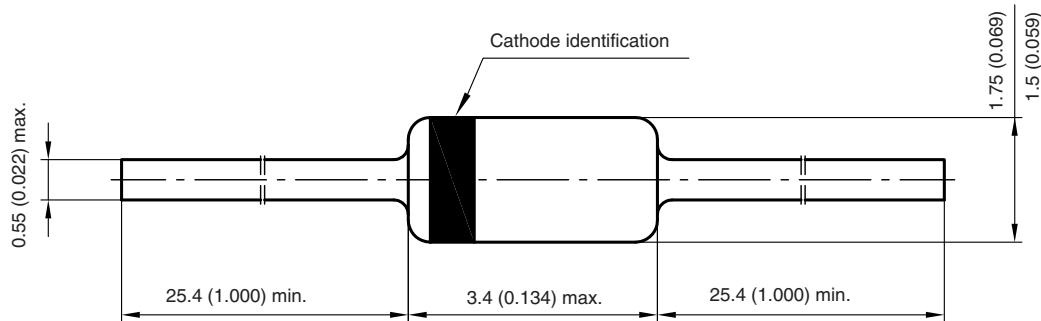


Fig. 2 - Forward Current vs. Forward Voltage

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

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