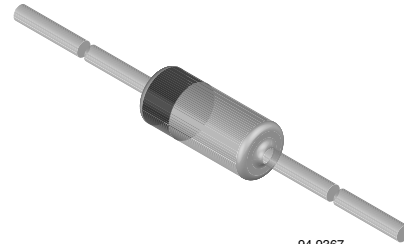


### Small Signal Fast Switching Diodes

#### Features

- Silicon epitaxial planar diodes
- Electrically equivalent diodes: 1N4148 - 1N914
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



94 9367

#### Applications

- Extreme fast switches

#### Mechanical Data

**Case:** DO35 glass case

**Weight:** approx. 105 mg

**Cathode Band Color:** black

**Packaging Codes/Options:**

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

TAP/10 k per Ammopack (52 mm tape), 50 k/box

#### Parts Table

Part	Ordering code	Type Marking	Remarks
1N4148	1N4148-TAP or 1N4148-TR	V4148	Ammopack/tape and reel

#### 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	$V_R = 0$	$I_{FAV}$	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	$^{\circ}\text{C}$

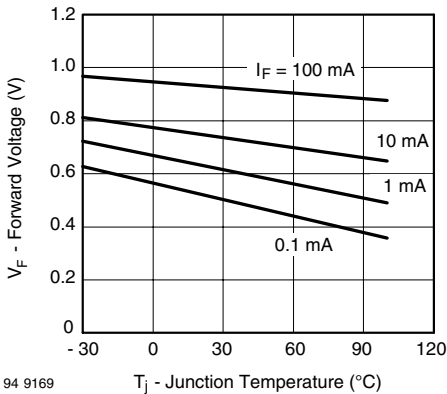
### Electrical Characteristics

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

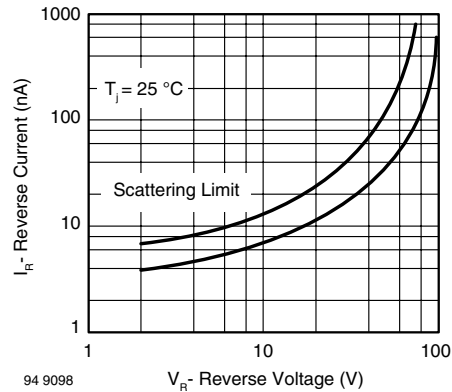
Parameter	Test condition	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F = 10\text{ mA}$	$V_F$			1000	mV
Reverse current	$V_R = 20\text{ V}$	$I_R$			25	nA
	$V_R = 20\text{ V}, T_j = 150\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
	$V_R = 75\text{ V}$	$I_R$			5	$\mu\text{A}$
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}, t_p/T = 0.01,$ $t_p = 0.3\text{ ms}$	$V_{(BR)}$	100			V
Diode capacitance	$V_R = 0, f = 1\text{ MHz}, V_{HF} = 50\text{ mV}$	$C_D$			4	pF
Rectification efficiency	$V_{HF} = 2\text{ V}, f = 100\text{ MHz}$	$\eta_r$	45			%
Reverse recovery time	$I_F = I_R = 10\text{ mA}, i_R = 1\text{ mA}$	$t_{rr}$			8	ns
	$I_F = 10\text{ mA}, V_R = 6\text{ V},$ $i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$	$t_{rr}$			4	ns

### Typical Characteristics

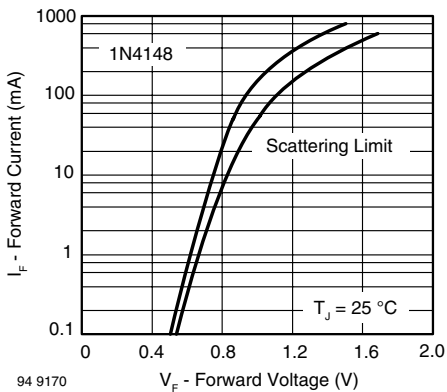
$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified



94 9169  $T_j$  - Junction Temperature ( $^{\circ}\text{C}$ )  
Figure 1. Forward Voltage vs. Junction Temperature

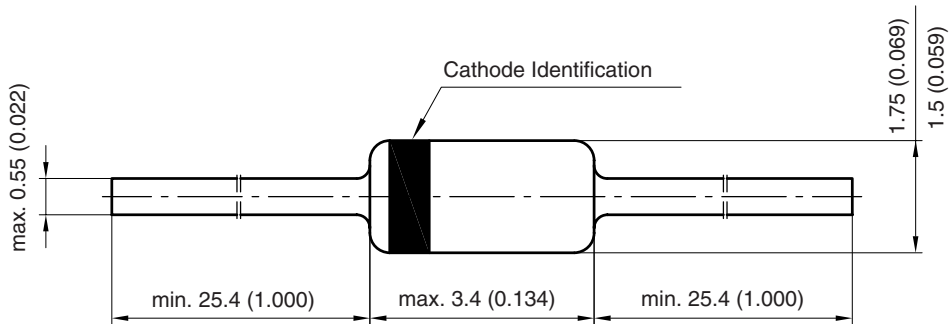


94 9098  $V_R$  - Reverse Voltage (V)  
Figure 3. Reverse Current vs. Reverse Voltage



94 9170  $V_F$  - Forward Voltage (V)  
Figure 2. Forward Current vs. Forward Voltage

**Package Dimensions** in millimeters (inches): **DO35\_02**



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### Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively.
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA.
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design  
and may do so without further notice.

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Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany



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