

Vishay Semiconductors

94 9367



Small Signal Fast Switching Diodes

Features

- Silicon Epitaxial Planar Diode
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC **BoHS**
- Halogen-free according to IEC 61249-2-21
 definition
 COMPLIANT
 HALOGEN
 FREE

Applications

• Extreme fast switches

Mechanical Data

Case: DO-35 Weight: approx. 125 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
1N4151	1N4151-TR or 1N4151-TAP	1N4151	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}	75	V
Reverse voltage		V _R	50	V
Peak forward surge current	t _p = 1 μs	I _{FSM}	2	А
Repetitive peak forward current		I _{FRM}	500	mA
Forward continuous current		١ _F	300	mA
Average forward current	V _R = 0	I _{FAV}	150	mA
Power dissipation	l = 4 mm, T _L = 45 °C	P _{tot}	440	mW
	$I = 4 \text{ mm}, \text{ T}_{L} \leq 25 \text{ °C}$	P _{tot}	500	mW

Thermal Characteristics

 $T_{amb} = 25 \ ^{\circ}C$, 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		Tj	175	°C
Storage temperature range		T _{stg}	- 65 to + 175	°C

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Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Тур.	Max.	Unit
Forward voltage	I _F = 50 mA	V _F		880	1000	mV
Reverse current	V _R = 50 V	I _R		14	50	nA
	V _R = 50 V, T _j = 150 °C	I _R			50	μA
Breakdown voltage	I _R = 5 μΑ	V _(BR)	75			V
Diode capacitance	V _R = 0, f = 1 MHz, V _{HF} = 50 mV	CD			2	pF
Reverse recovery time	I _F = I _R = 10 mA, i _R = 1 mA	t _{rr}			4	ns
	$I_F = 10 \text{ mA}, V_R = 6 \text{ V},$ $i_R = 0.1 \text{ x } I_R, R_L = 100 \Omega$	t _{rr}			2	ns

Typical Characteristics

 $T_{amb} = 25$ °C, unless otherwise specified

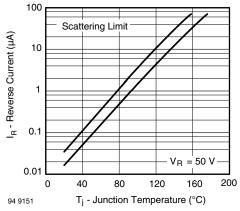


Figure 1. Reverse Current vs. Junction Temperature

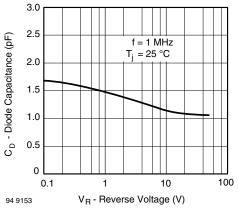


Figure 3. Diode Capacitance vs. Reverse Voltage

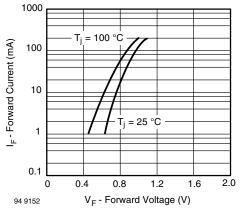
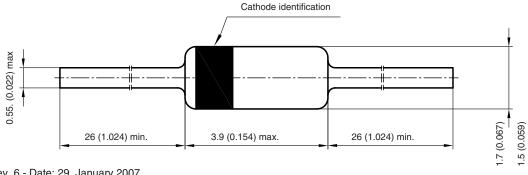


Figure 2. Forward Current vs. Forward Voltage



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Package Dimensions in millimeters (inches): DO-35



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