



# Small Signal Fast Switching Diodes



### FEATURES

- Silicon epitaxial planar diode
- AEC-Q101 qualified
- Material categorization:  
For definitions of compliance please see [www.vishay.com/doc?99912](http://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
1N4151	1N4151-TR or 1N4151-TAP	1N4151	Single diode	Tape and reel/ammpack

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		V <sub>RRM</sub>	75	V
Reverse voltage		V <sub>R</sub>	50	V
Peak forward surge current	t <sub>p</sub> = 1 μs	I <sub>FSM</sub>	2	A
Repetitive peak forward current		I <sub>FRM</sub>	500	mA
Forward continuous current		I <sub>F</sub>	300	mA
Average forward current	V <sub>R</sub> = 0	I <sub>F(AV)</sub>	150	mA
Power dissipation	I = 4 mm, T <sub>L</sub> = 45 °C	P <sub>tot</sub>	440	mW
	I = 4 mm, T <sub>L</sub> ≤ 25 °C	P <sub>tot</sub>	500	mW

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	I = 4 mm, T <sub>L</sub> = constant	R <sub>thJA</sub>	350	K/W
Junction temperature		T <sub>j</sub>	175	°C
Storage temperature range		T <sub>stg</sub>	- 65 to + 175	°C

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 50\text{ mA}$	$V_F$		880	1000	mV
Reverse current	$V_R = 50\text{ V}$	$I_R$		14	50	nA
	$V_R = 50\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
Breakdown voltage	$I_R = 5\text{ }\mu\text{A}$	$V_{(BR)}$	75			V
Diode capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}, V_{HF} = 50\text{ mV}$	$C_D$			2	pF
Reverse recovery time	$I_F = I_R = 10\text{ mA}, i_R = 1\text{ mA}$	$t_{rr}$			4	ns
	$I_F = 10\text{ mA}, V_R = 6\text{ V}, i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$	$t_{rr}$			2	ns

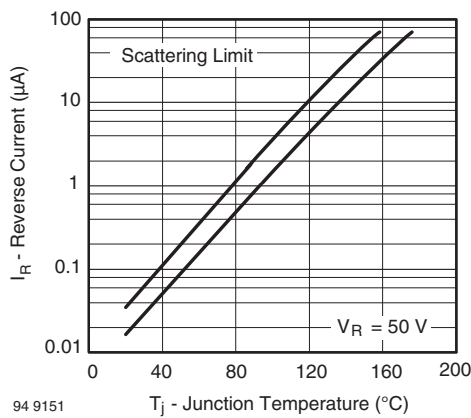
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

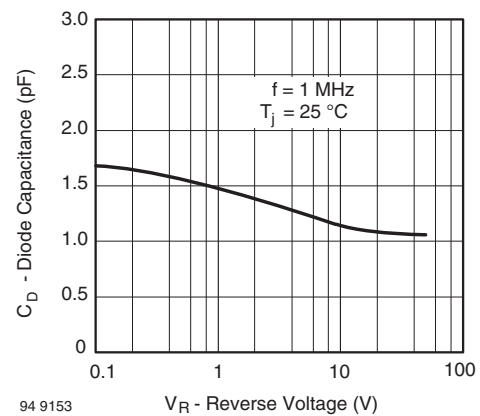


Fig. 3 - Diode Capacitance vs. Reverse Voltage

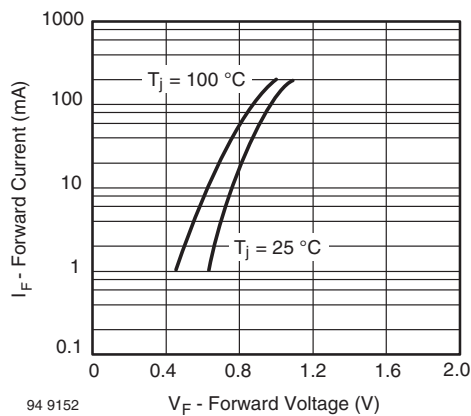
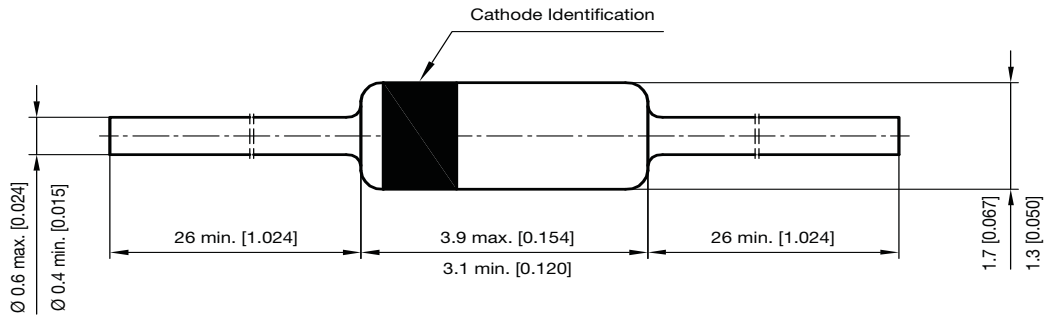


Fig. 2 - Forward Current vs. Forward Voltage



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



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