

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



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_{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	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	l = 4 mm, T _L = 45 °C	P _{tot}	440	mW
	l = 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	l = 4 mm, T _L = constant	R _{thJA}	350	K/W
Junction temperature		T _j	175	°C
Storage temperature range		T _{stg}	- 65 to + 175	°C

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 50\text{ mA}$	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	μA
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

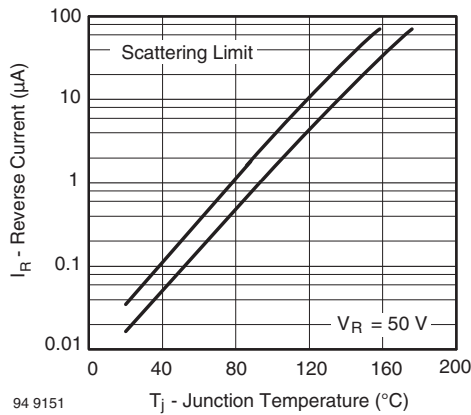
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

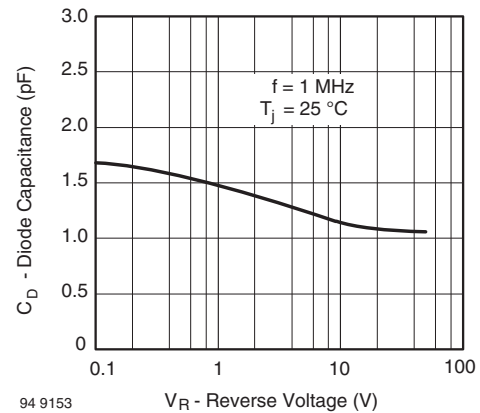


Fig. 3 - Diode Capacitance vs. Reverse Voltage

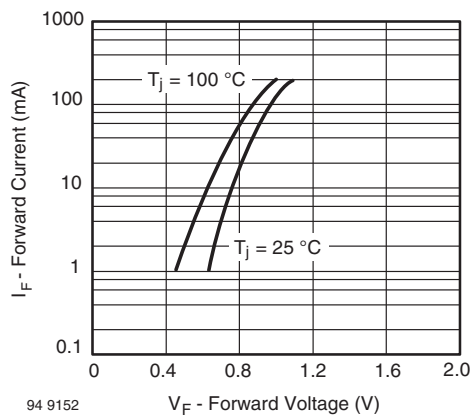
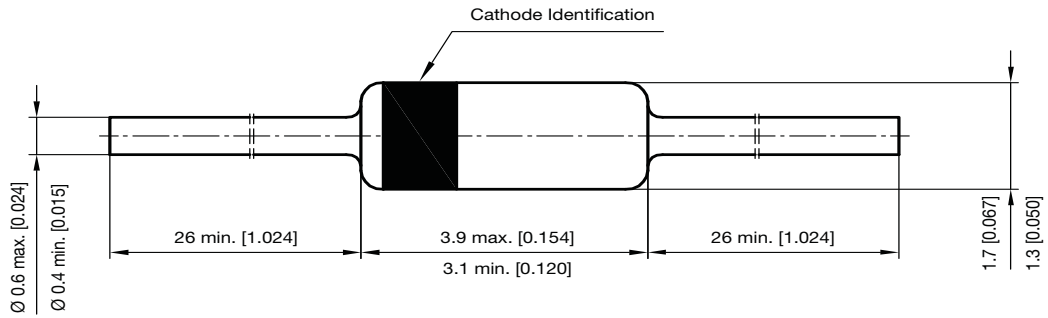


Fig. 2 - Forward Current vs. Forward Voltage



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



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