

Small Signal Fast Switching Diodes



FEATURES

- Silicon epitaxial planar diode
- Low forward voltage drop
- AEC-Q101 qualified
- High forward current capability
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

- High speed switch and general purpose use in computer and industrial applications

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
1N4150	1N4150TR or 1N4150TAP	1N4150	Single diode	Tape and reel/ammpack

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		V_{RRM}	50	V
Reverse voltage		V_R	50	V
Peak forward surge current	$t_p = 1 \mu\text{s}$	I_{FSM}	4	A
Average peak forward current		I_{FRM}	600	mA
Forward continuous current		I_F	300	mA
Average forward current	$V_R = 0$	$I_{F(AV)}$	150	mA
Power dissipation	$l = 4 \text{ mm}, T_L = 45^{\circ}\text{C}$	P_{tot}	440	mW
	$l = 4 \text{ mm}, T_L \leq 25^{\circ}\text{C}$	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	$l = 4 \text{ mm}, T_L = \text{constant}$	R_{thJA}	350	K/W
Junction temperature		T_j	175	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 65 to + 175	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 1\text{ mA}$	V_F	0.540		0.620	V
	$I_F = 10\text{ mA}$	V_F	0.660		0.740	V
	$I_F = 50\text{ mA}$	V_F	0.760		0.860	V
	$I_F = 100\text{ mA}$	V_F	0.820		0.920	V
	$I_F = 200\text{ mA}$	V_F	0.870		1	V
Reverse current	$V_R = 50\text{ V}$	I_R			100	nA
	$V_R = 50\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	I_R			100	μA
Diode capacitance	$V_R = 0\text{ V}, f = 1\text{ MHz}, V_{HF} = 50\text{ mV}$	C_D			2.5	pF
Reverse recovery time	$I_F = I_R = (10\text{ to }100)\text{ mA}, i_R = 0.1 \times I_R, R_L = 100\text{ }\Omega$	t_{rr}			4	ns

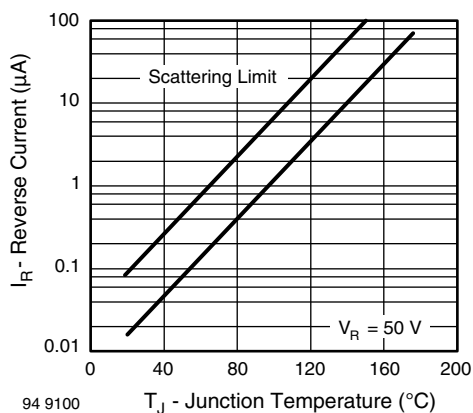
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)


Fig. 1 - Reverse Current vs. Junction Temperature

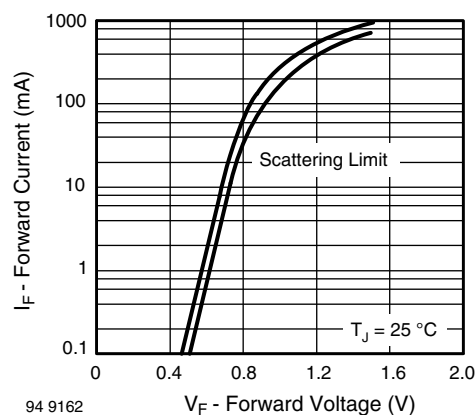
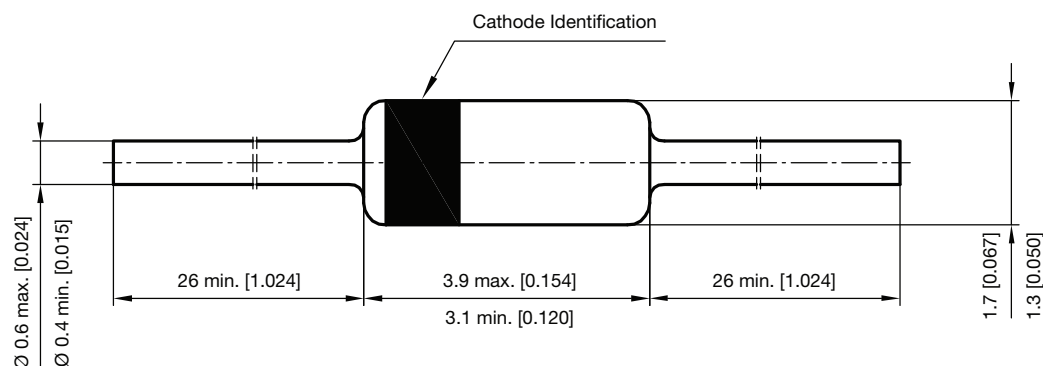


Fig. 2 - Forward Current vs. Forward Voltage

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


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