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

Pb e2 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 ammopack (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/ammopack

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °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 µs	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 mm, T_L = 45 °C	P_{tot}	440	mW
	l = 4 mm, $T_L \leq$ 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 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Forward voltage	I_F = 1 mA	V_F	0.540		0.620	V
	I_F = 10 mA	V_F	0.660		0.740	V
	I_F = 50 mA	V_F	0.760		0.860	V
	I_F = 100 mA	V_F	0.820		0.920	V
	I_F = 200 mA	V_F	0.870		1	V
Reverse current	V_R = 50 V	I_R			100	nA
	V_R = 50 V, T_j = 150 °C	I_R			100	µA
Diode capacitance	V_R = 0 V, f = 1 MHz, V_{HF} = 50 mV	C_D			2.5	pF
Reverse recovery time	I_F = I_R = (10 to 100) mA, i_R = 0.1 x I_R, R_L = 100 Ω	t_{rr}			4	ns

TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

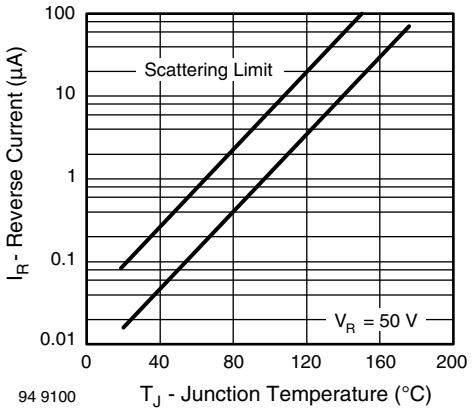


Fig. 1 - Reverse Current vs. Junction Temperature

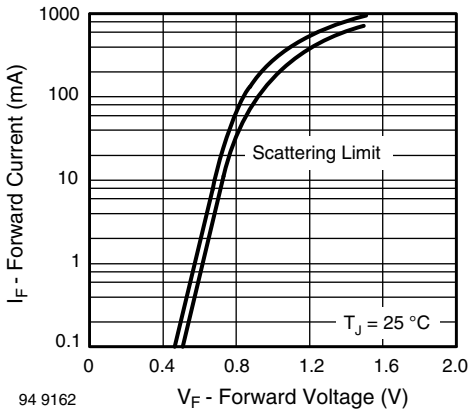
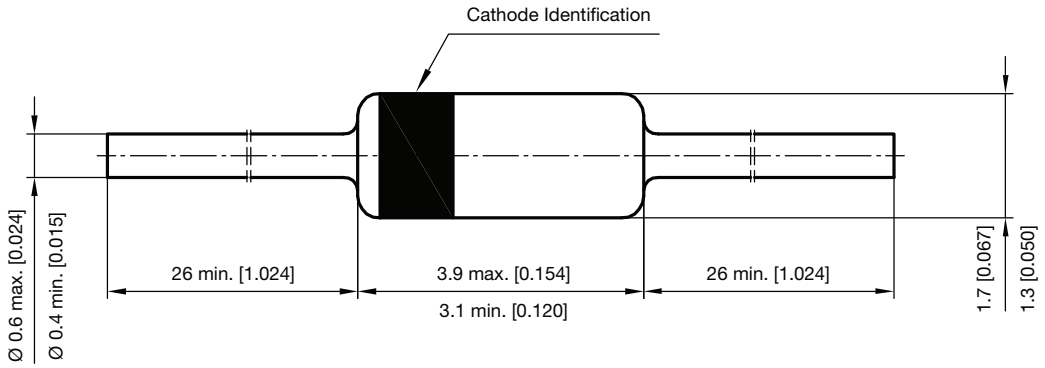


Fig. 2 - Forward Current vs. Forward Voltage

PACKAGE DIMENSIONS in millimeters (inches): DO-35



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