

Small Signal Fast Switching Diodes



FEATURES

- Silicon epitaxial planar diode
- Material categorization:
for definitions of compliance please see
www.vishay.com/doc?99912



RoHS
COMPLIANT
HALOGEN
FREE

APPLICATIONS

- Fast switches

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MECHANICAL DATA

Case: DO-35

Weight: approx. 125 mg

Cathode band color: black

Packaging codes/options:

TR/10K per 14" reel (52 mm tape), 50K/box

TAP/10K per ammpack (52 mm tape), 50K/box

PARTS TABLE

PART	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS
1N4454	1N4454-TR or 1N4454-TAP	1N4454	Single	Tape and reel / ammpack

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		V_{RRM}	100	V
Reverse voltage		V_R	75	V
Peak forward surge current	$t_p < 1\text{ s}$	I_{FSM}	500	mA
Forward continuous current		I_F	300	mA
Average forward current	$V_R = 0$	I_{FAV}	150	mA
Power dissipation	$l = 4\text{ mm}, T_L \leq 25\text{ }^{\circ}\text{C}$	P_{tot}	500	mW

THERMAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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	$I_F = 10\text{ mA}$	V_F			1000	mV
Reverse current	$V_R = 50\text{ V}$	I_R			100	nA
	$V_R = 75\text{ V}$	I_R			5	μA
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}$ (pulses)	$V_{(BR)}$	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	$I_F = 10\text{ mA}$, $V_R = 6\text{ V}$, $i_R = 0.1 \times I_R$, $R_L = 100\text{ }\Omega$	t_{rr}			4	ns

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

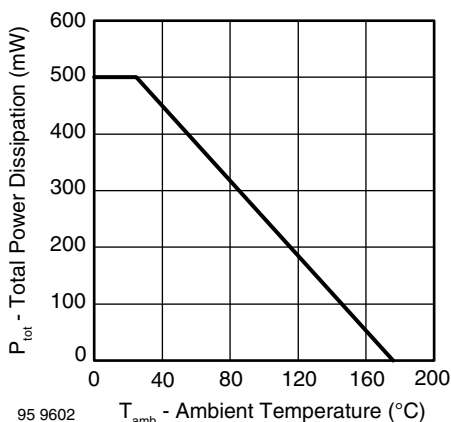


Fig. 1 - Total Power Dissipation vs. Ambient Temperature

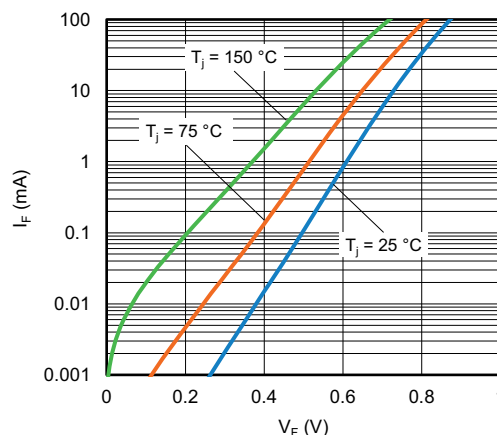
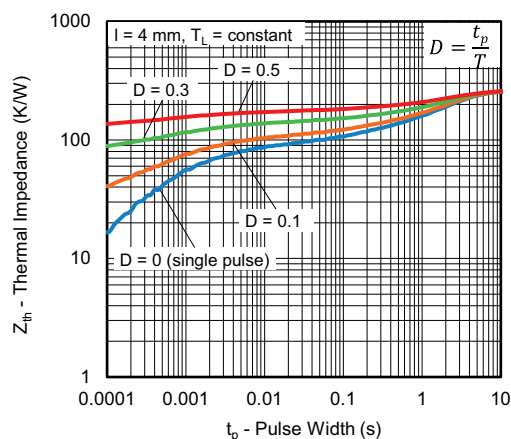
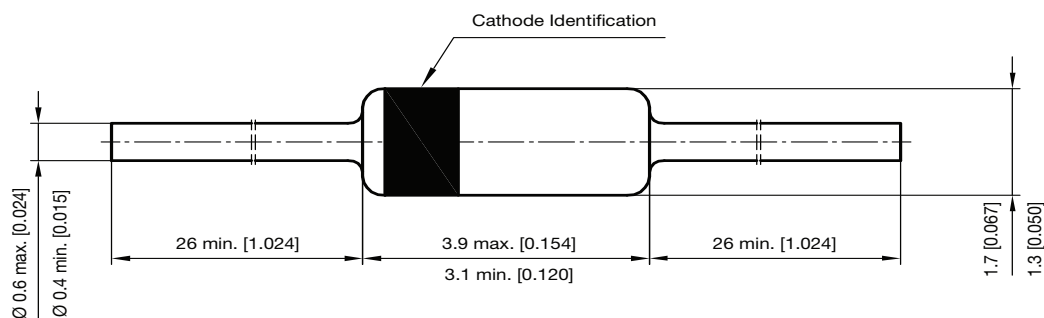
Fig. 3 - Forward Current I_F vs. Forward Voltage V_F 

Fig. 2 - Typical Thermal Response



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



Rev. 6 - Date: 19. December 2011
Document no.: SB-V-3906.04-031(4)
94 9366



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