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**Vishay Semiconductors** 

## **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

### **APPLICATIONS**

· Extreme fast switches



## DESIGN SUPPORT TOOLS click logo to get started



### **MECHANICAL DATA**

Case: DO-35 (DO-204AH)

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	CIRCUIT CONFIGURATION	REMARKS		
1N4154	1N4154TR or 1N4154TAP	1N4154	Single	Tape and reel / ammopack		

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Repetitive peak reverse voltage		V <sub>RRM</sub>	35	V		
Reverse voltage		V <sub>R</sub>	25	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	l = 4 mm, T <sub>L</sub> = 45 °C	P <sub>tot</sub>	440	mW		
rower ussipation	$I = 4 \text{ mm}, \text{ T}_{L} \le 25 \text{ °C}$	Ptot	500	mW		

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

Rev. 2.0, 07-Jul-17 Document Number: 85524 For technical questions within your region: DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com THIS DOCUMENT IS SUBJECT TO CHANGE WITHOUT NOTICE. THE PRODUCTS DESCRIBED HEREIN AND THIS DOCUMENT ARE SUBJECT TO SPECIFIC DISCLAIMERS, SET FORTH AT www.vishav.com/doc?91000

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1N4154

ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 30 mA	V <sub>F</sub>		0.88	1	V
Reverse current	V <sub>R</sub> = 25 V	I <sub>R</sub>		9	100	nA
neverse current	V <sub>R</sub> = 25 V, T <sub>j</sub> = 150 °C	I <sub>R</sub>			100	μA
Breakdown voltage	$I_{\rm R} = 5 \ \mu {\rm A}, \ t_{\rm p} / {\rm T} = 0.01, \ t_{\rm p} = 0.3 \ {\rm ms}$	V <sub>(BR)</sub>	35			V
Diode capacitance	$\label{eq:VR} \begin{array}{l} V_{\text{R}} = 0 \text{ V}, \text{ f} = 1 \text{ MHz}, \\ V_{\text{HF}} = 50 \text{ mV} \end{array}$	CD			4	pF
Reverse recovery time	I <sub>F</sub> = I <sub>R</sub> = 10 mA, i <sub>R</sub> = 1 mA	t <sub>rr</sub>			4	ns
neverse recovery lime	$I_F$ = 10 mA, $V_R$ = 6 V, $i_R$ = 0.1 x $I_R$ , $R_L$ = 100 Ω				2	115

## TYPICAL CHARACTERISTICS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

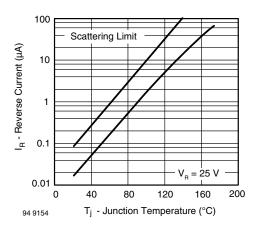


Fig. 1 - Reverse Current vs. Junction Temperature

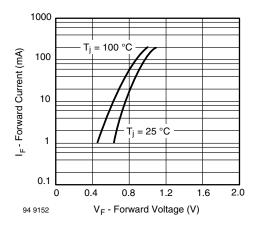


Fig. 2 - Forward Current vs. Forward Voltage

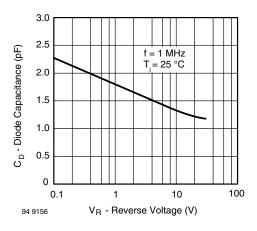


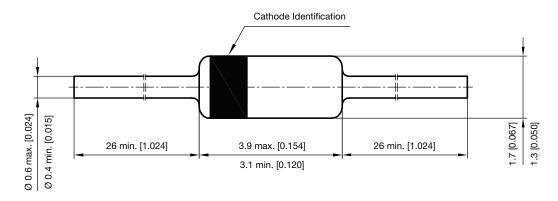
Fig. 3 - Diode Capacitance vs. Reverse Voltage

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## PACKAGE DIMENSIONS in millimeters (inches): DO-35 (DO-204AH)



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