

# Vishay Semiconductors

# **Small Signal Fast Switching Diodes**



#### **FEATURES**

- Silicon epitaxial planar diode
- Low forward voltage drop
- High forward current capability
- Material categorization: for definitions of compliance please see www.vishav.com/doc?99912









#### **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

**LINKS TO ADDITIONAL RESOURCES** 

#### **APPLICATIONS**

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

PARTS TABLE					
PART	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS	
1N4150	1N4150TR or 1N4150TAP	1N4150	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		$V_{RRM}$	50	V	
Reverse voltage		V <sub>R</sub>	50	V	
Peak forward surge current	t <sub>p</sub> = 1 μs	I <sub>FSM</sub>	4	А	
Average peak forward current		I <sub>FRM</sub>	600	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	
Dever dissination	I = 4 mm, T <sub>L</sub> = 45 °C	P <sub>tot</sub>	440	mW	
Power dissipation	I = 4 mm, T <sub>L</sub> ≤ 25 °C	P <sub>tot</sub>	500	mW	

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



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
	I <sub>F</sub> = 1 mA	$V_{F}$	0.540		0.620	V
	I <sub>F</sub> = 10 mA	V <sub>F</sub>	0.660		0.740	٧
Forward voltage	I <sub>F</sub> = 50 mA	$V_{F}$	0.760		0.860	V
	I <sub>F</sub> = 100 mA	V <sub>F</sub>	0.820		0.920	V
	I <sub>F</sub> = 200 mA	$V_{F}$	0.870		1	V
Reverse current	V <sub>R</sub> = 50 V	I <sub>R</sub>			100	nA
heverse current	$V_R = 50 \text{ V}, T_j = 150 ^{\circ}\text{C}$	I <sub>R</sub>			100	μΑ
Diode capacitance	$V_R = 0 \text{ V, f} = 1 \text{ MHz,}$ $V_{HF} = 50 \text{ mV}$	C <sub>D</sub>			2.5	pF
Reverse recovery time	$I_F = I_R = (10 \text{ to } 100) \text{ mA},$ $I_R = 0.1 \text{ x } I_R, R_L = 100 \Omega$	t <sub>rr</sub>			4	ns

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

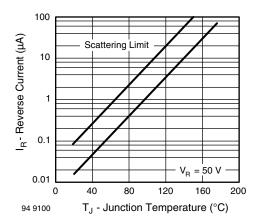


Fig. 1 - Reverse Current vs. Junction Temperature

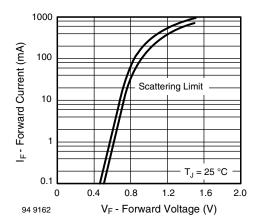
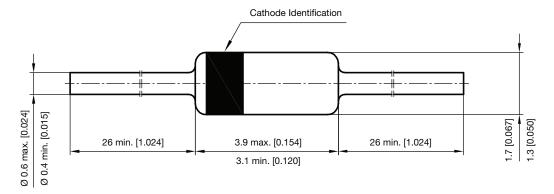


Fig. 2 - Forward Current vs. Forward Voltage

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



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