

Vishay Semiconductors

Small Signal Fast Switching Diodes



FEATURES

- · Silicon epitaxial planar diode
- Electrically equivalent diodes: 1N4148 - 1N914
- Material categorization: for definitions of compliance please see www.vishav.com/doc?99912



ROHS COMPLIANT HALOGEN

FREE

APPLICATIONS

• Extreme fast switches

DESIGN SUPPORT TOOLS click logo to get started



MECHANICAL DATA

Case: DO-35 (DO-204AH)
Weight: approx. 105 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	
1N4148	1N4148-TAP or 1N4148TR	V4148	Single	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}	100	V	
Reverse voltage		V _R	75	V	
Peak forward surge current	t _p = 1 μs	I _{FSM}	2	А	
Repetitive peak forward current		I _{FRM}	500	mA	
Forward continuous current		I _F	300	mA	
Average forward current	$V_R = 0$	I _{F(AV)}	150	mA	
Dower discination	I = 4 mm, T _L = 45 °C	P _{tot}	440	mW	
Power dissipation	I = 4 mm, T _L ≤ 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	I = 4 mm, T _L = constant	R _{thJA}	350	K/W	
Junction temperature		Tj	175	°C	
Storage temperature range		T _{stg}	-65 to +150	°C	



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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 10 mA	V _F			1	V
	V _R = 20 V	I _R			25	nA
Reverse current	$V_R = 20 \text{ V}, T_j = 150 ^{\circ}\text{C}$	I _R			50	μA
	V _R = 75 V	I _R			5	μA
Breakdown voltage	$I_R = 100 \mu A, t_p/T = 0.01,$ $t_p = 0.3 \text{ ms}$	V _(BR)	100			V
Diode capacitance	$V_R = 0 \text{ V, f} = 1 \text{ MHz,}$ $V_{HF} = 50 \text{ mV}$	C _D			4	pF
Rectification efficiency	V _{HF} = 2 V, f = 100 MHz	η _r	45			%
Payaraa raaayan, tima	$I_F = I_R = 10 \text{ mA},$ $I_R = 1 \text{ mA}$	t _{rr}			8	ns
Reverse recovery time	$I_F = 10 \text{ mA}, V_R = 6 \text{ V},$ $I_R = 0.1 \text{ x } I_R, R_L = 100 \Omega$	t _{rr}			4	ns

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

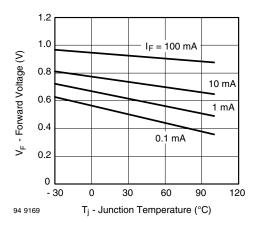


Fig. 1 - Forward Voltage vs. Junction Temperature

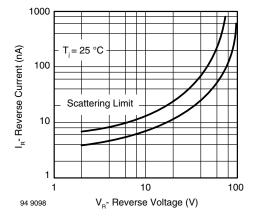


Fig. 3 - Reverse Current vs. Reverse Voltage

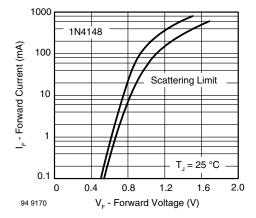
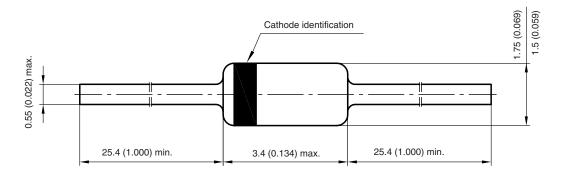


Fig. 2 - Forward Current vs. Forward Voltage

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



Document no.: 6.560-5004.12-4 Created - Date: 17. March 2008

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