Small Signal Fast Switching Diodes

FEATURES

- Silicon epitaxial planar diode
- Automotive graded device
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

AUTOMOTIVE GRADE

Pb

e2

RoHS COMPLIANT

HALOGEN FREE

APPLICATIONS

- Extreme fast switches

DESIGN SUPPORT TOOLS click logo to get started

3D Models Available

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
1N4148-P	1N4148-P-TAP or 1N4148-P-TR	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	A
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
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 +150	°C

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
Reverse current	V_R = 20 V	I_R			25	nA
	V_R = 20 V, T_j = 150 °C	I_R			50	µA
	V_R = 75 V	I_R			5	µA
Breakdown voltage	I_R = 100 µA, t_p/T = 0.01, t_p = 0.3 ms	$V_{(BR)}$	100			V
Diode capacitance	V_R = 0 V, f = 1 MHz, V_{HF} = 50 mV	C_D			4	pF
Rectification efficiency	V_{HF} = 2 V, f = 100 MHz	η_r	45			%
Reverse recovery time	I_F = I_R = 10 mA, i_R = 1 mA	t_{rr}			8	ns
	I_F = 10 mA, V_R = 6 V, i_R = 0.1 x I_R, R_L = 100 Ω	t_{rr}			4	ns

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

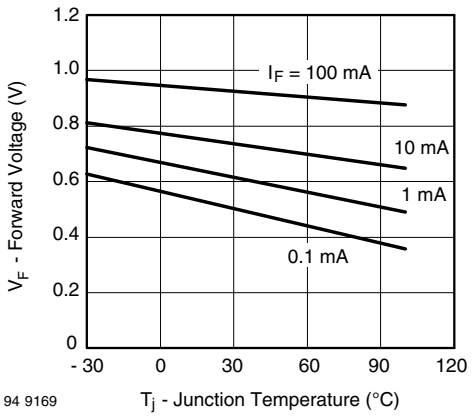


Fig. 1 - Forward Voltage vs. Junction Temperature

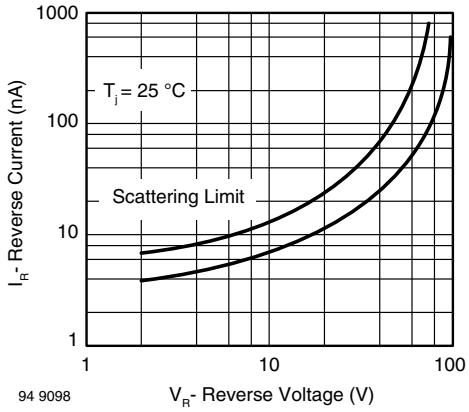


Fig. 3 - Reverse Current vs. Reverse Voltage

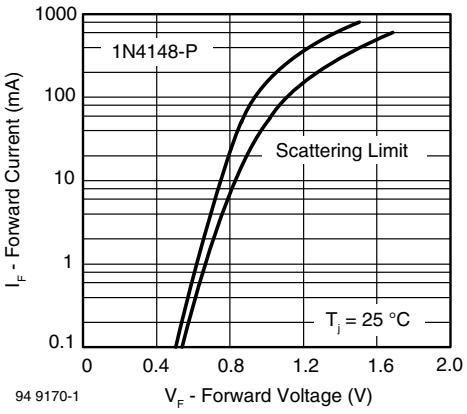
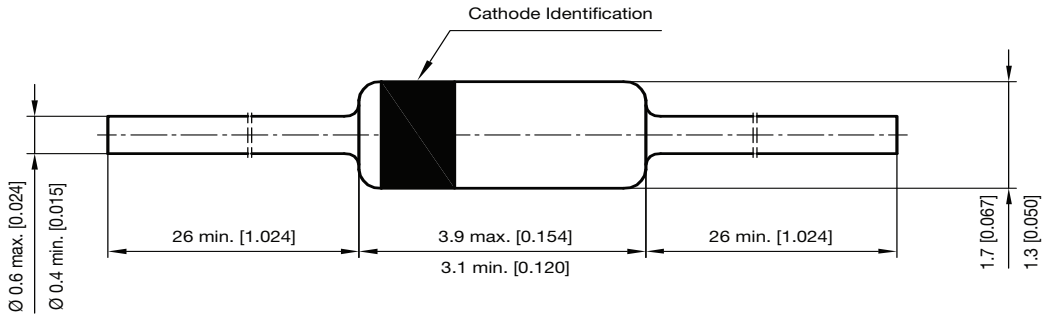


Fig. 2 - Forward Current vs. Forward Voltage

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



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

Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, “Vishay”), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay’s knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer’s responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and / or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer’s technical experts. Product specifications do not expand or otherwise modify Vishay’s terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.