



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



## Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



## Small Signal Fast Switching Diode



### FEATURES

- Silicon epitaxial planar diode
- Fast switching diodes
- AEC-Q101 qualified
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 10.3 mg

**Packaging codes/options:**

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

### PARTS TABLE

PART	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
1N4148W	1N4148W-E3-08 or 1N4148W-E3-18	A2	Single diode	Tape and reel
	1N4148W-HE3-08 or 1N4148W-HE3-18			

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Reverse voltage		$V_R$	75	V
Repetitive peak reverse voltage		$V_{RRM}$	100	V
Average rectified current half wave rectification with resistive load <sup>(1)</sup>	$f \geq 50\text{ Hz}$	$I_{F(AV)}$	150	mA
Surge forward current	$t_p < 1\text{ s}$	$I_{FSM}$	500	mA
	$t_p = 1\text{ }\mu\text{s}$	$I_{FSM}$	2	A
Power dissipation <sup>(1)</sup>		$P_{tot}$	350	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 <sup>(1)</sup>		$R_{thJA}$	357	K/W
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	- 65 to + 150	$^{\circ}\text{C}$
Operating temperature range		$T_{op}$	- 55 to + 150	$^{\circ}\text{C}$

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature.

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 10\text{ mA}$	$V_F$			1	V
	$I_F = 100\text{ mA}$	$V_F$			1.2	V
Leakage current	$V_R = 20\text{ V}$	$I_R$			25	nA
	$V_R = 75\text{ V}$	$I_R$			5	$\mu\text{A}$
	$V_R = 100\text{ V}$	$I_R$			100	$\mu\text{A}$
	$V_R = 20\text{ V}, T_J = 150\text{ }^{\circ}\text{C}$	$I_R$			50	$\mu\text{A}$
Diode capacitance	$V_F = V_R = 0\text{ V}$	$C_D$			4	pF
Voltage rise when switching ON	Tested with 50 mA pulses, $t_p = 0.1\text{ }\mu\text{s}$ , rise time < 30 ns, $f_p = (5\text{ to }100)\text{ kHz}$	$V_{fr}$			2.5	V
Reverse recovery time	$I_F = 10\text{ mA}, I_R = 1\text{ mA}, V_R = 6\text{ V},$ $R_L = 100\text{ }\Omega$	$t_{rr}$			4	ns

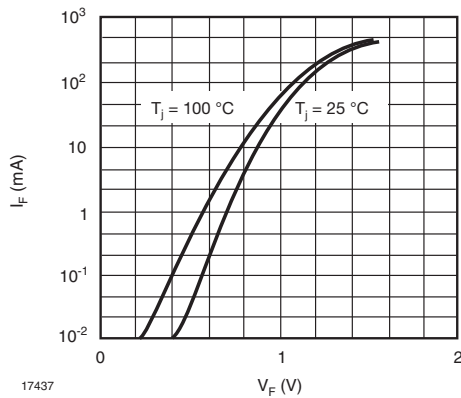
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Forward Characteristics

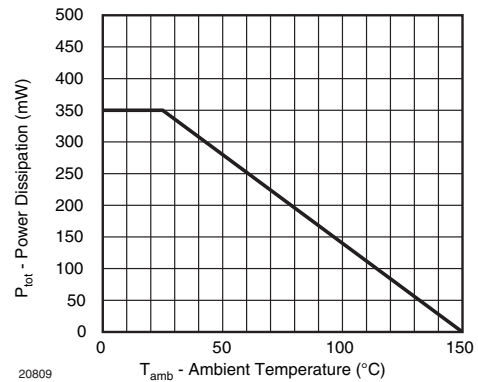


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

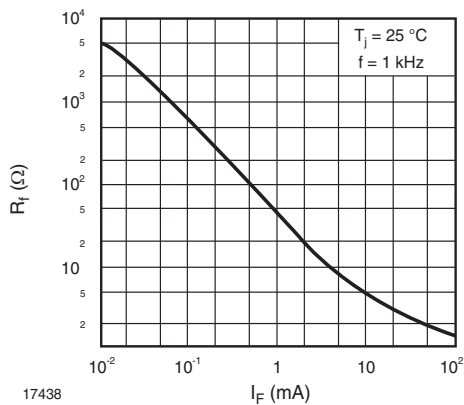


Fig. 2 - Dynamic Forward Resistance vs. Forward Current

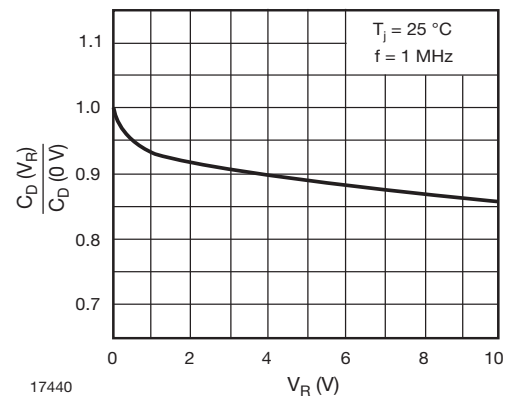


Fig. 4 - Relative Capacitance vs. Reverse Voltage

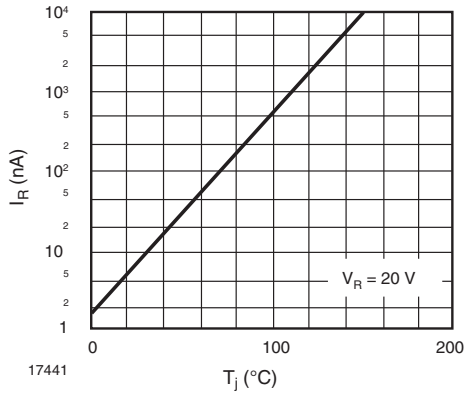


Fig. 5 - Leakage Current vs. Junction Temperature

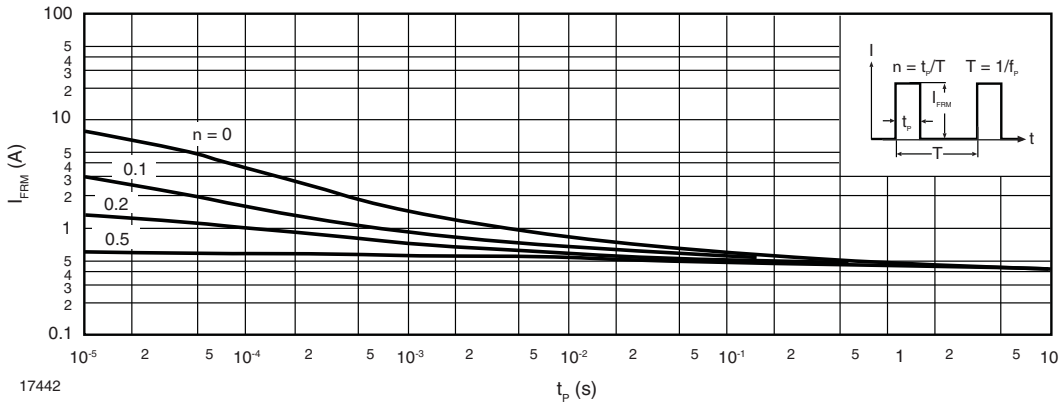
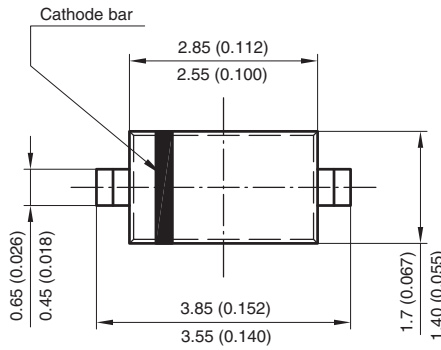
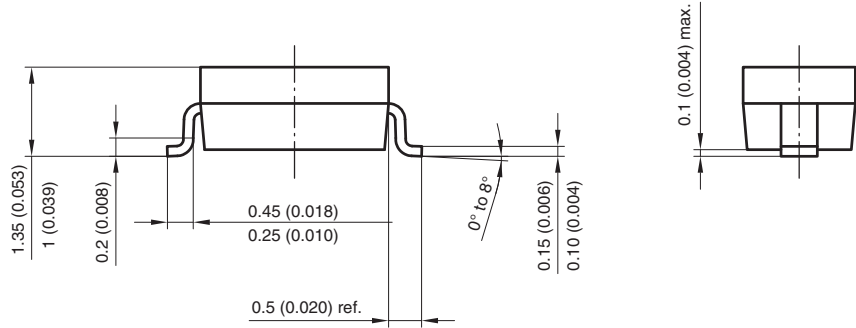


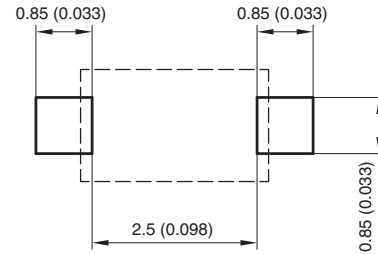
Fig. 6 - Admissible Repetitive Peak Forward Current vs. Pulse Duration



**PACKAGE DIMENSIONS** in millimeters (inches): **SOD-123**



Mounting Pad Layout



Rev. 4 - Date: 24. Sep. 2009  
Document no.: S8-V-3910.01-001 (4)  
17432



## **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.