

Vishay Semiconductors



Small Signal Fast Switching Diode

Features

- These diodes are also available in other case styles including the DO35 case with the type designation 1N4148, the MiniMELF case with the type designation LL4148, and the SOT23 case with the type designation IMBD4148-V
- Silicon epitaxial planar diode
- Fast switching diodes
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

Mechanical Data

Case: SOD323 plastic case Weight: approx. 4.3 mg Packaging Codes/Options: GS18/10 k per 13" reel (8 mm tape), 10 k/box

GS08/3 k per 7" reel (8 mm tape), 15 k/box

Parts Table

Part	Ordering code	Type Marking	Remarks	
1N4148WS-V	1N4148WS-V-GS18 or 1N4148WS-V-GS08	A2	Tape and Reel	

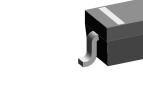
Absolute Maximum Ratings

T_{amb} = 25 °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	$f \ge 50 Hz$	I _{F(AV)}	150 ¹⁾	mA	
Surge forward current	t < 1 s and T_j = 25 °C	I _{FSM}	350	mA	
Power dissipation		P _{tot}	200 ¹⁾	mW	

Note:

¹⁾ Valid provided that electrodes are kept at ambient temperature.



VISHAY.

Vishay Semiconductors

Thermal Characteristics

 $T_{amb} = 25 \ ^{\circ}C$, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit	
Thermal resistance junction to ambient air		R _{thJA}	650 ¹⁾	K/W	
Junction temperature		Tj	150	°C	
Storage temperature		T _{stg}	- 65 to + 150	°C	

Note:

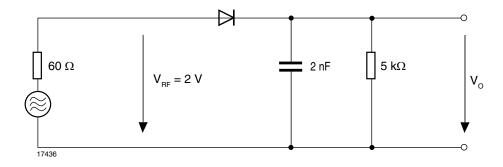
¹⁾ Valid provided that electrodes are kept at ambient temperature.

Electrical Characteristics

 $T_{amb} = 25 \ ^{\circ}C$, unless otherwise specified

Parameter	Test condition	Symbol	Min	Тур.	Max	Unit
Forward voltage	I _F = 10 mA	V _F			1000	mV
	l _F = 100 mA	V _F			1200	mV
Leakage current	V _R = 20 V	I _R			25	nA
	V _R = 75 V	I _R			5	μA
	V _R = 100 V	I _R			100	μA
	V _R = 20 V, T _j = 150 °C	I _R			50	μA
Diode capacitance	$V_F = V_R = 0 V$	CD			4	pF
Voltage rise when switching ON (tested with 50 mA pulses)	tested with 50 mA pulses, $t_p = 0.1 \ \mu s$, rise time < 30 ns, $f_p = (5 \text{ to } 100) \text{ kHz}$	V _{fr}			2.5	V
Reverse recovery time	$I_F = 10 \text{ mA}, I_R = 1 \text{ mA}, V_R = 6 \text{ V},$ $R_L = 100 \Omega$	t _{rr}			4	ns
Rectification efficiency	f = 100 MHz, V _{RF} = 2 V	ην	0.45			

Rectification Efficiency Measurement Circuit





Vishay Semiconductors



Typical Characteristics

T_{amb} = 25 °C, unless otherwise specified

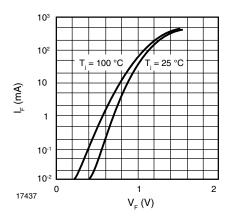


Figure 1. Forward characteristics

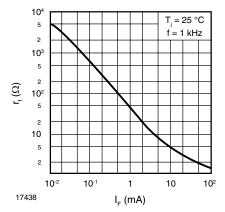


Figure 2. Dynamic Forward Resistance vs. Forward Current

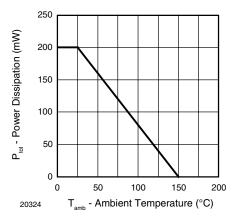


Figure 3. Admissible Power Dissipation vs. Ambient Temperature

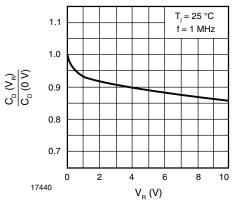


Figure 4. Relative Capacitance vs. Reverse Voltage

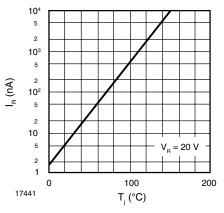


Figure 5. Leakage Current vs. Junction Temperature

Document Number 85751 Rev. 1.7, 14-Sep-07

1N4148WS-V

Vishay Semiconductors



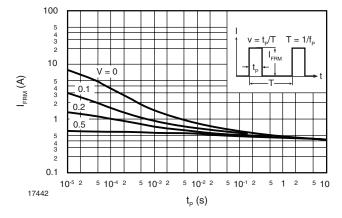
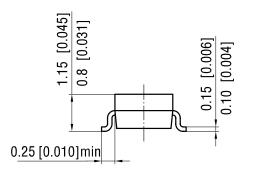
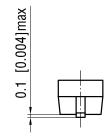
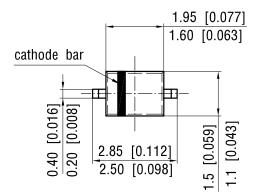


Figure 6. Admissible Repetitive Peak Forward Current vs. Pulse Duration

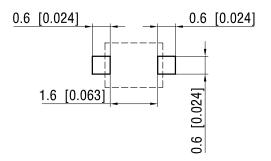
Package Dimensions in millimeters (inches): SOD323







Rev. 03 - Date: 08. November 2004 Document no.: S8-V-3910.02-001 (4) 17443 foot print recommendation:







Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

- 1. Meet all present and future national and international statutory requirements.
- 2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

- 1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
- 2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
- 3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design and may do so without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany



Vishay

Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.