

Small Signal Fast Switching Diode

Features

 These diodes are also available in other case styles including the DO-35 case with the type designation 1N4148, the MiniMELF case with the type designation LL4148, and the SOT-23 case with the type designation IMBD4148-V.





· Silicon epitaxial planar diode

- · Fast switching diodes
- · AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Mechanical Data

Case: SOD-123

Weight: approx. 10.3 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	Marking	Remarks	
1N4148W-V	1N4148W-V-GS18 or 1N4148W-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 ≥ 50 Hz	I _{F(AV)}	150 ¹⁾	mA	
Surge forward current	$t < 1 \text{ s and } T_j = 25 ^{\circ}\text{C}$	I _{FSM}	500	mA	
Power dissipation		P _{tot}	350 ¹⁾	mW	

Note:

Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit	
Thermal resistance junction to ambient air		R_{thJA}	357 ¹⁾	K/W	
Junction temperature		T _j	150	°C	
Storage temperature		T _{stg}	- 65 to + 150	°C	

Note:

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

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

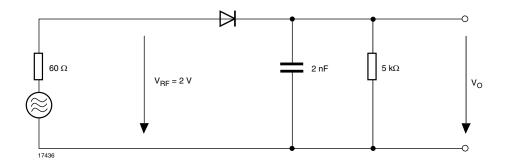


Electrical Characteristics

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

Parameter	Test condition	Symbol	Min.	Тур.	Max.	Unit
Forward voltage	I _F = 10 mA	V_{F}			1000	mV
	I _F = 100 mA	V _F			1200	mV
Leakage current	V _R = 20 V	I _R			25	nA
	V _R = 75 V	I _R			5	μΑ
	V _R = 100 V	I _R			100	μΑ
	V _R = 20 V, T _J = 150 °C	I _R			50	μΑ
Diode capacitance	$V_F = V_R = 0 V$	C _D			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





Typical Characteristics

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

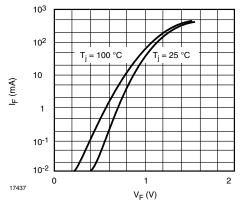


Figure 1. Forward characteristics

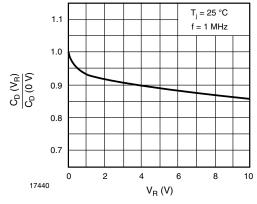


Figure 4. Relative Capacitance vs. Reverse Voltage

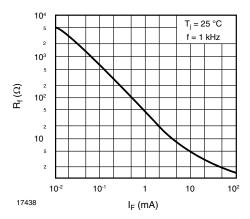


Figure 2. Dynamic Forward Resistance vs. Forward Current

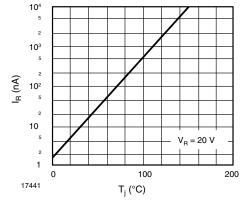


Figure 5. Leakage Current vs. Junction Temperature

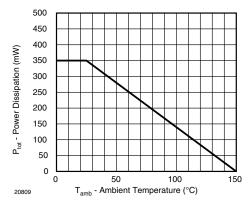


Figure 3. Admissible Power Dissipation vs. Ambient Temperature



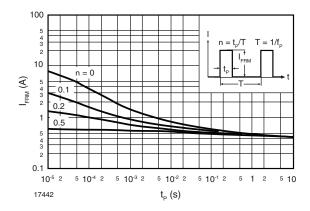
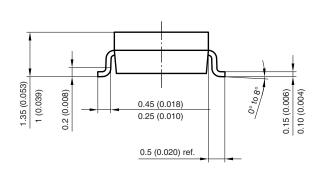
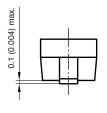


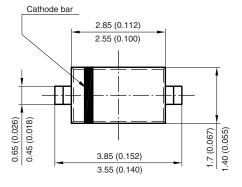
Figure 6. Admissible Repetitive Peak Forward Current vs. Pulse Duration

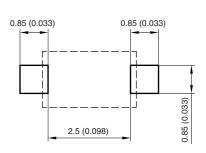
Package Dimensions in millimeters (inches): SOD-123





Mounting Pad Layout





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





Vishay

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 and agree to fully indemnify and hold Vishay and its distributors harmless from and against any and all claims, liabilities, expenses and damages arising or resulting in connection with such use or sale, including attorneys fees, even if such claim alleges that Vishay or its distributor was negligent regarding the design or manufacture of the part. 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.

Revision: 11-Mar-11