

Vishay Semiconductors

Small Signal Fast Switching Diodes

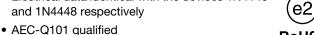


FEATURES

APPLICATIONS

· Extreme fast switches

- Silicon epitaxial planar diode
- · Electrical data identical with the devices 1N4148 and 1N4448 respectively



· Material categorization: for definitions of compliance please see www.vishay.com/doc?99912





DESIGN SUPPORT TOOLS click logo to get started



MECHANICAL DATA

Case: MiniMELF (SOD-80) Weight: approx. 31 mg Cathode band color: black Packaging codes / options:

GS18/10K per 13" reel (8 mm tape), 10K/box GS08/2.5K per 7" reel (8 mm tape), 12.5K/box

PARTS TABLE						
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	CIRCUIT CONFIGURATION	REMARKS	
LL4148	$V_{RRM} = 100 \text{ V},$ $V_{F} = \text{max. } 1000 \text{ mV at } I_{F} = 50 \text{ mA}$	LL4148-GS08 or LL4148-GS18	-	Single	Tape and reel	
LL4448	$V_{RRM} = 100 \text{ V},$ $V_{F} = \text{max. } 1000 \text{ mV at } I_{F} = 100 \text{ mA}$	LL4448-GS08 or LL4448-GS18	-	Single	Tape and reel	

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	Α		
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 (1)		P _{tot}	500	mW		

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

THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT	
Thermal resistance junction to ambient air (1)		R _{thJA}	300	K/W	
Junction temperature		T _J	175	°C	
Storage temperature range		T _{stg}	-65 to +175	°C	

Note

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



Vishay Semiconductors

ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
	I _F = 5 mA	LL4448	V_{F}	0.620		0.720	V
Forward voltage	I _F = 50 mA	LL4148	V_{F}		0.860	1	V
	I _F = 100 mA	LL4448	V_{F}		0.930	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	μΑ
	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
Payaraa raaayan tima	$I_F = I_R = 10 \text{ mA},$ $i_R = 1 \text{ mA}$		t _{rr}			8	- ns
Reverse recovery time	$I_F = 10 \text{ mA}, V_R = 6 \text{ V},$ $i_R = 0.1 \text{ x } I_R, R_L = 100 \Omega$					4	

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

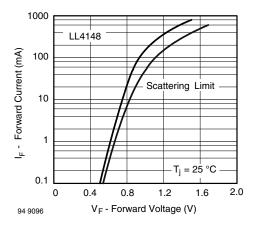


Fig. 1 - Forward Current vs. Forward Voltage

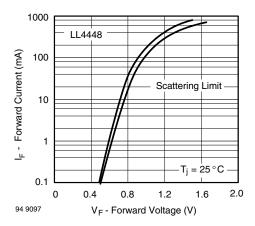


Fig. 2 - Forward Current vs. Forward Voltage

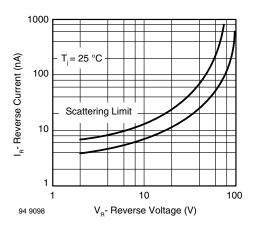


Fig. 3 - Reverse Current vs. Reverse Voltage

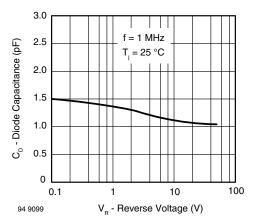
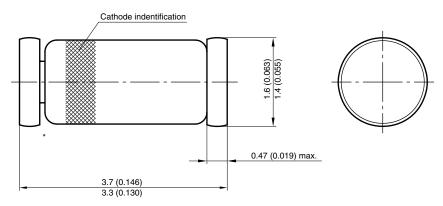


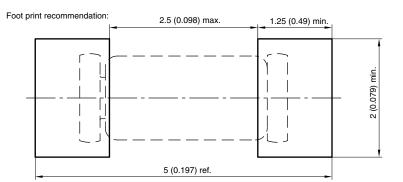
Fig. 4 - Diode Capacitance vs. Reverse Voltage

Vishay Semiconductors

PACKAGE DIMENSIONS in millimeters (inches): MiniMELF (SOD-80)



^{*} The gap between plug and glass can be either on cathode or anode side



Document no.:6.560-5005.01-4 Rev. 8 - Date: 07.June.2006 96 12070



Legal Disclaimer Notice

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. 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.