

### **Vishay Semiconductors**

# **Small Signal Fast Switching Diode**

#### **Features**

- Silicon epitaxial planar diodes
- · Low forward voltage drop
- · High forward current capability
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC







### **Applications**

 High speed switch and general purpose use in computer and industrial applications

#### **Mechanical Data**

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

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

#### **Parts Table**

Part	Ordering code	Type Marking	Remarks	
LL4150	LL4150GS18 or LL4150GS08	-	Tape and Reel	

#### **Absolute Maximum Ratings**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Repetitive peak reverse voltage		V <sub>RRM</sub>	50	V
Reverse voltage		V <sub>R</sub>	50	V
Peak forward surge current	t <sub>p</sub> = 1 μs	I <sub>FSM</sub>	4	Α
Forward continuous current		I <sub>F</sub>	600	mA
Average forward current	V <sub>R</sub> = 0	I <sub>FAV</sub>	300	mA
Power dissipation		P <sub>tot</sub>	500	mW

### **Thermal Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air	On PC board 50 mm x 50 mm x 1.6 mm	R <sub>thJA</sub>	300	K/W
Junction temperature		T <sub>j</sub>	175	°C
Storage temperature range		T <sub>stg</sub>	- 65 to + 175	°C

### **Vishay Semiconductors**



#### **Electrical Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

Parameter	Test condition	Symbol	Min.	Тур.	Max.	Unit
Forward voltage	I <sub>F</sub> = 1 mA	$V_{F}$	540		620	mV
	I <sub>F</sub> = 10 mA	V <sub>F</sub>	660		740	mV
	I <sub>F</sub> = 50 mA	V <sub>F</sub>	760		860	mV
	I <sub>F</sub> = 100 mA	V <sub>F</sub>	820		920	mV
	I <sub>F</sub> = 200 mA	$V_{F}$	870		1000	mV
Reverse current	V <sub>R</sub> = 50 V	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 50 V, T <sub>j</sub> = 150 °C	I <sub>R</sub>			100	μΑ
Diode capacitance	$V_R = 0$ , $f = 1$ MHz, $V_{HF} = 50$ mV	C <sub>D</sub>			2.5	pF
Reverse recovery time	$I_F = I_R = 10 \text{ to } 100 \text{ mA},$ $I_R = 0.1 \text{ x } I_R, R_L = 100 \Omega$	t <sub>rr</sub>			4	ns

### **Typical Characteristics**

T<sub>amb</sub> = 25 °C, unless otherwise specified

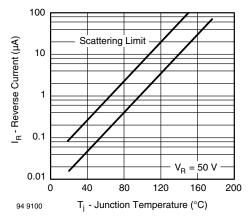


Figure 1. Reverse Current vs. Junction Temperature

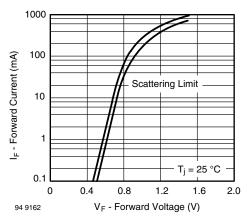
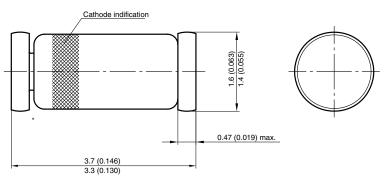


Figure 2. Forward Current vs. Forward Voltage



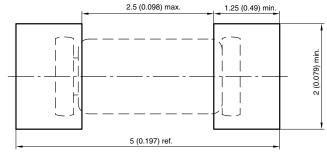
### **Vishay Semiconductors**

### Package Dimensions in millimeters (inches): MiniMELF SOD-80



<sup>\*</sup> The gap between plug and glass can be either on cathode or anode side

Foot print recommendation:



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

## **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 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.

Document Number: 91000 www.vishay.com
Revision: 11-Mar-11 1