

Small Signal Switching Diodes, High Voltage



FEATURES

- Silicon epitaxial planar diode
- AEC-Q101 qualified
- Material categorization:
For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

APPLICATIONS

- General purposes

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	INTERNAL CONSTRUCTION	REMARKS
BAV100	$V_{RRM} = 60\text{ V}$	BAV100-GS18 or BAV100-GS08	-	Single diode	Tape and reel
BAV101	$V_{RRM} = 120\text{ V}$	BAV101-GS18 or BAV101-GS08	-	Single diode	Tape and reel
BAV102	$V_{RRM} = 200\text{ V}$	BAV102-GS18 or BAV102-GS08	-	Single diode	Tape and reel
BAV103	$V_{RRM} = 250\text{ V}$	BAV103-GS18 or BAV103-GS08	-	Single diode	Tape and reel

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

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		BAV100	V_{RRM}	60	V
		BAV101	V_{RRM}	120	V
		BAV102	V_{RRM}	200	V
		BAV103	V_{RRM}	250	V
Reverse voltage		BAV100	V_R	50	V
		BAV101	V_R	100	V
		BAV102	V_R	150	V
		BAV103	V_R	200	V
Peak forward surge current	$t_p = 1\text{ }\mu\text{s}$		I_{FSM}	1	A
Repetitive peak forward current			I_{FRM}	625	mA
Forward continuous current			I_F	250	mA
Power dissipation			P_{tot}	500	mW

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to lead		R_{thJL}	350	K/W
Thermal resistance junction to ambient air	On PC board 50 mm x 50 mm x 1.6 mm	R_{thJA}	500	K/W
Junction temperature		T_j	175	$^{\circ}\text{C}$
Storage temperature range		T_{stg}	- 65 to + 175	$^{\circ}\text{C}$

ELECTRICAL

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	$I_F = 100\text{ mA}$		V_F			1000	mV
Reverse current	$V_R = 50\text{ V}$	BAV100	I_R			100	nA
	$V_R = 100\text{ V}$	BAV101	I_R			100	nA
	$V_R = 150\text{ V}$	BAV102	I_R			100	nA
	$V_R = 200\text{ V}$	BAV103	I_R			100	nA
	$T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 50\text{ V}$	BAV100	I_R			15	μA
	$T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 100\text{ V}$	BAV101	I_R			15	μA
	$T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 150\text{ V}$	BAV102	I_R			15	μA
	$T_j = 100\text{ }^{\circ}\text{C}$, $V_R = 200\text{ V}$	BAV103	I_R			15	μA
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}$, $t_p/T = 0.01$, $t_p = 0.3\text{ ms}$	BAV100	$V_{(BR)}$	60			V
	$I_R = 100\text{ }\mu\text{A}$, $t_p/T = 0.01$, $t_p = 0.3\text{ ms}$	BAV101	$V_{(BR)}$	120			V
	$I_R = 100\text{ }\mu\text{A}$, $t_p/T = 0.01$, $t_p = 0.3\text{ ms}$	BAV102	$V_{(BR)}$	200			V
	$I_R = 100\text{ }\mu\text{A}$, $t_p/T = 0.01$, $t_p = 0.3\text{ ms}$	BAV103	$V_{(BR)}$	250			V
Diode capacitance	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$, $V_{HF} = 50\text{ mV}$		C_D		1.5		pF
Differential forward current	$I_F = 10\text{ mA}$		r_f		5		Ω
Reverse recovery time	$I_F = I_R = 30\text{ mA}$, $i_R = 3\text{ mA}$, $R_L = 100\text{ }\Omega$		t_{rr}			50	ns

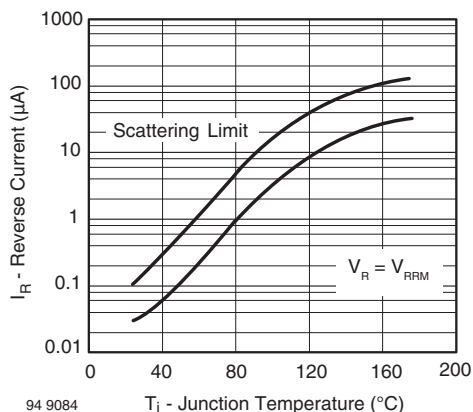
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Fig. 1 - Reverse Current vs. Junction Temperature

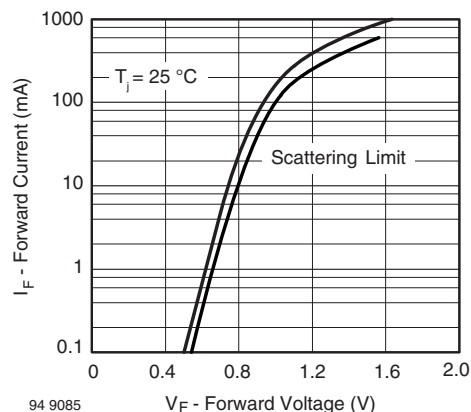


Fig. 2 - Forward Current vs. Forward Voltage

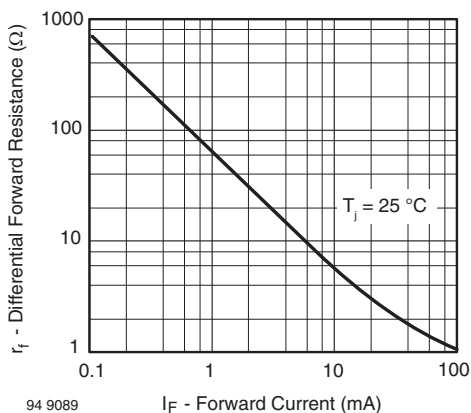
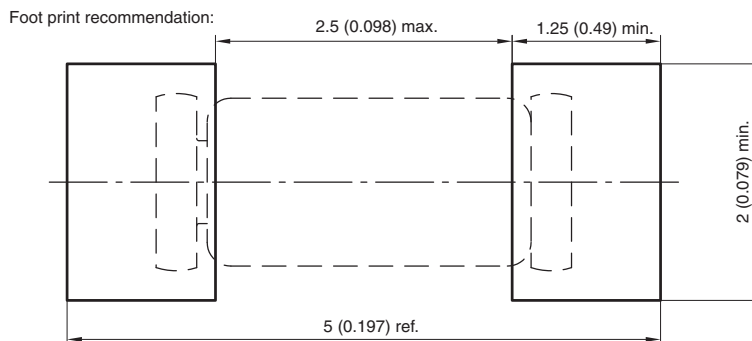
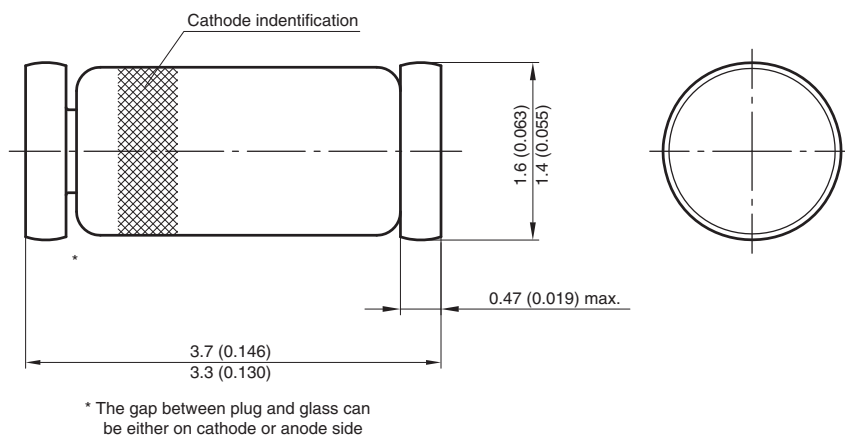


Fig. 3 - Differential Forward Resistance vs. Forward Current

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



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



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.

Material Category Policy

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.

Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.

Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.