Small Signal Schottky Diode

FEATURES

- For general purpose applications
- This diode features low turn-on voltage and high break-down voltage. This device is protected by a PN junction guardring against excessive voltage, such as electrostatic discharges
- This diode is also available in the DO-35 (DO-204AH) case with type designation BAT46 and in the SOD-123 case with type designation BAT46W-V
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

LINKS TO ADDITIONAL RESOURCES

3D Models

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	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
LL46	LL46-GS18 or LL46-GS08	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
Forward continuous current (1)		I_F	150	mA
Repetitive peak forward current (1)	$t_p < 1$ s, $\delta < 0.5$	I_{FRM}	350	mA
Surge forward current (1)	t_p = 10 ms	I_{FSM}	750	mA
Power dissipation (1)	T_{amb} = 80 °C	P_{tot}	200	mW

Note

(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	125	°C
Ambient operating temperature range		T_{amb}	-55 to +125	°C
Storage temperature range		T_{stg}	-65 to +150	°C

Note

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

ELECTRICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)						
PARAMETER	**TEST CONDITION**	**SYMBOL**	**MIN.**	**TYP.**	**MAX.**	**UNIT**
Reverse breakdown voltage	I_R = 100 µA (pulsed)	$V_{(BR)}$	100			V
Leakage current [1]	V_R = 1.5 V	I_R			0.5	µA
	V_R = 1.5 V, T_j = 60 °C	I_R			5	µA
	V_R = 10 V	I_R			0.8	µA
	V_R = 10 V, T_j = 60 °C	I_R			7.5	µA
	V_R = 50 V	I_R			2	µA
	V_R = 50 V, T_j = 60 °C	I_R			15	µA
	V_R = 75 V	I_R			5	µA
	V_R = 75 V, T_j = 60 °C	I_R			20	µA
Forward voltage [1]	I_F = 0.1 mA	V_F			250	mV
	I_F = 10 mA	V_F			450	mV
	I_F = 250 mA	V_F			1000	mV
Diode capacitance	V_R = 0 V, f = 1 MHz	C_D		10		pF
	V_R = 1 V, f = 1 MHz	C_D		6		pF

Note

[1] Pulse test t_p < 300 µs, δ < 2 %

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

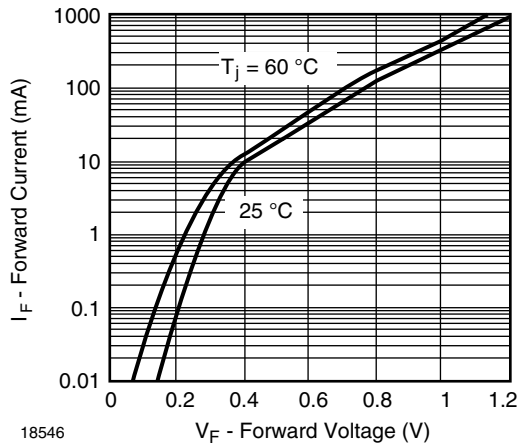


Fig. 1 - Typical Instantaneous Forward Characteristics

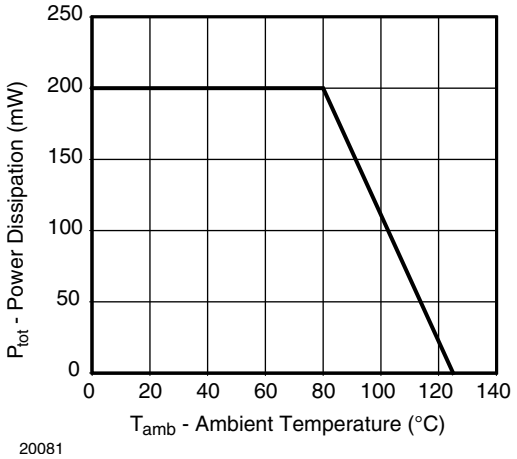


Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature

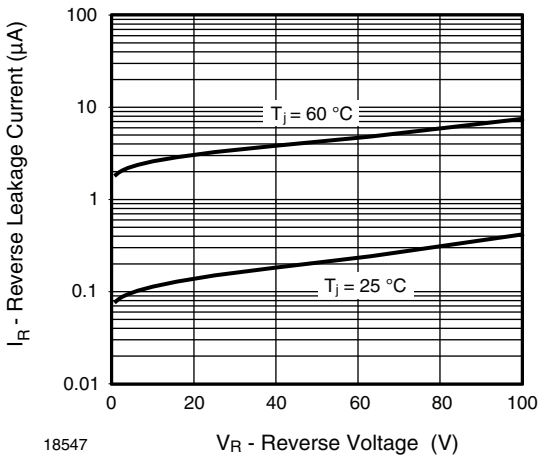
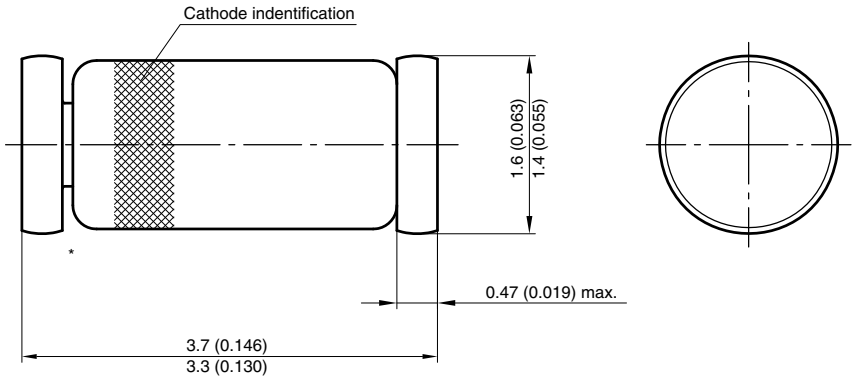


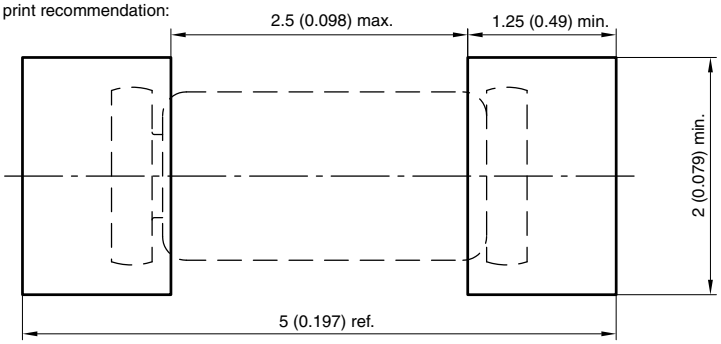
Fig. 2 - Typical Reverse Characteristics

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



* 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
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.

Hyperlinks included in this datasheet may direct users to third-party websites. These links are provided as a convenience and for informational purposes only. Inclusion of these hyperlinks does not constitute an endorsement or an approval by Vishay of any of the products, services or opinions of the corporation, organization or individual associated with the third-party website. Vishay disclaims any and all liability and bears no responsibility for the accuracy, legality or content of the third-party website or for that of subsequent links.

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.