



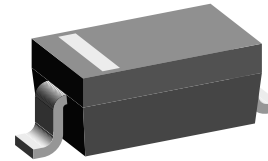
Small Signal Schottky Diodes

Features

- The low forward voltage drop and fast switching make it ideal for protection of MOS devices, steering, biasing, and coupling diodes for fast switching and low logic level applications.
- Other applications are click suppression, efficient full wave bridges in telephone subsets, and blocking diodes in rechargeable low voltage battery systems.
- The SD103 series is a metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring.
- This diode is also available in the MiniMELF case with the type designations LL103A to LL103C, DO-35 case with the type designations SD103A to SD103C and SOD-323 case with type designations SD103AWS-V to SD103CWS-V.
- For general purpose applications
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC



RoHS
COMPLIANT



17431

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	Type marking	Remarks
SD103AW-V	SD103AW-V-GS18 or SD103AW-V-GS08	S6	Tape and reel
SD103BW-V	SD103BW-V-GS18 or SD103BW-V-GS08	S7	Tape and reel
SD103CW-V	SD103CW-V-GS18 or SD103CW-V-GS08	S8	Tape and reel

Absolute Maximum Ratings

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

Parameter	Test condition	Part	Symbol	Value	Unit
Peak reverse voltage		SD103AW-V	V _{RRM}	40	V
		SD103BW-V	V _{RRM}	30	V
		SD103CW-V	V _{RRM}	20	V
Power dissipation (Infinite heat sink)			P _{tot}	400 ¹⁾	mW
Single cycle surge	10 μs square wave		I _{FSM}	2	A

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		R _{thJA}	300 ¹⁾	K/W
Junction temperature		T _j	125	°C
Storage temperature range		T _{stg}	- 55 to + 150	°C

Note

¹⁾ Valid provided that electrodes are kept at ambient temperature

Electrical Characteristics

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

Parameter	Test condition	Part	Symbol	Min.	Typ.	Max.	Unit
Leakage current	$V_R = 30\text{ V}$	SD103AW-V	I_R			5	μA
	$V_R = 20\text{ V}$	SD103BW-V	I_R			5	μA
	$V_R = 10\text{ V}$	SD103CW-V	I_R			5	μA
Forward voltage drop	$I_F = 20\text{ mA}$		V_F			370	mV
	$I_F = 200\text{ mA}$		V_F			600	mV
Diode capacitance	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$		C_D		50		pF
Reverse recovery time	$I_F = I_R = 50\text{ mA}$ to 200 mA , recover to $0.1 I_R$		t_{rr}		10		ns

Typical Characteristics

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

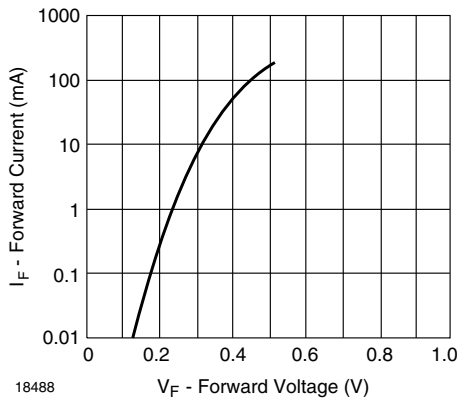


Figure 1. Typical Variation of Forward Current vs. Forward Voltage

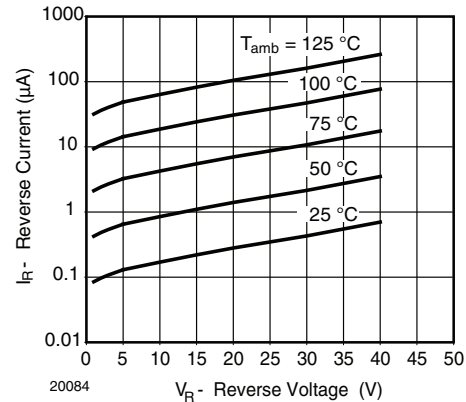


Figure 3. Typical Variation of Reverse Current at Various Temperatures

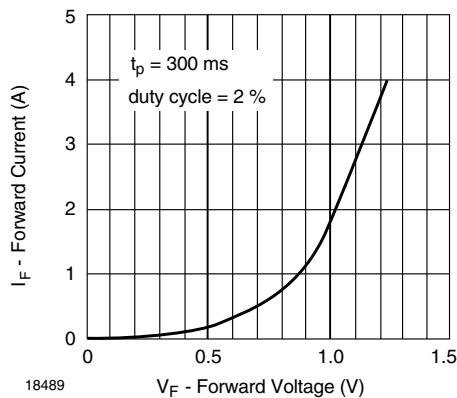


Figure 2. Typical High Current Forward Conduction Curve

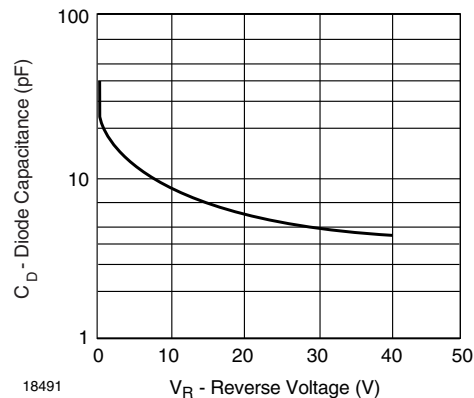


Figure 4. Typical Capacitance vs. Reverse Voltage

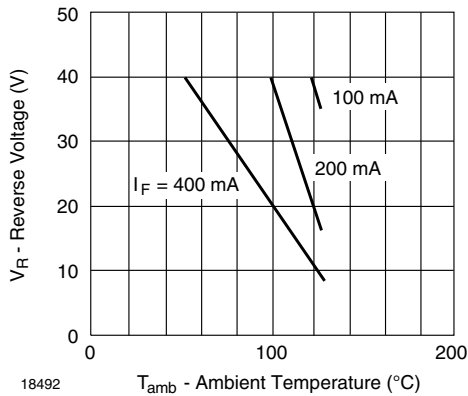
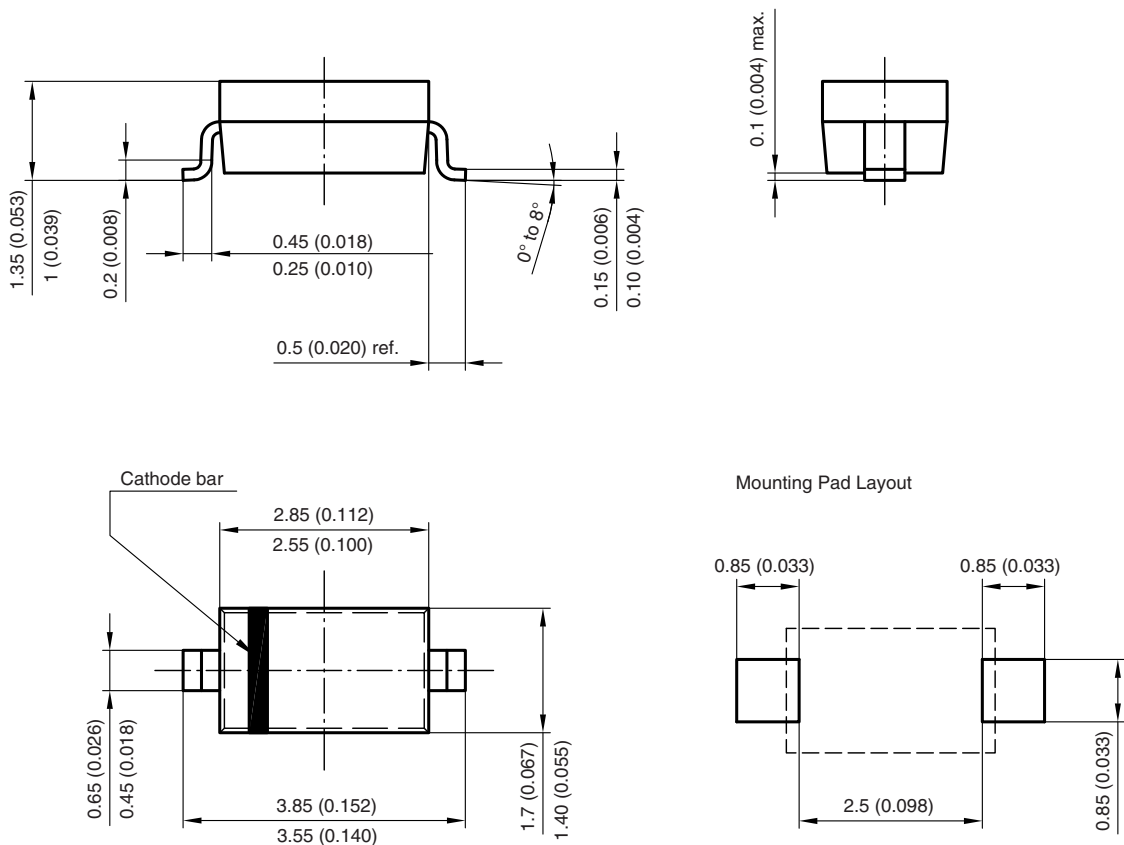


Figure 5. Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

Package Dimensions in millimeters (inches): SOD-123



Rev. 4 - Date: 24. Sep. 2009
 Document no.: S8-V-3910.01-001 (4)
 17432



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.