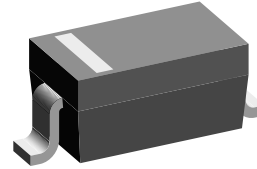




Small Signal Schottky Diodes

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 to SD103CWS.
- For general purpose applications.
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



17431

Mechanical Data

Case: SOD-123 Plastic case

Weight: approx. 9.3 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	Marking	Remarks
SD103AW	SD103AW-GS18 or SD103AW-GS08	S6	Tape and Reel
SD103BW	SD103BW-GS18 or SD103BW-GS08	S7	Tape and Reel
SD103CW	SD103CW-GS18 or SD103CW-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 _{RRM}	40	V
		SD103BW	V _{RRM}	30	V
		SD103CW	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

Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Thermal resistance junction to ambient air		R_{thJA}	300 ¹⁾	$^{\circ}\text{C}/\text{W}$
Junction temperature		T_j	125 ¹⁾	$^{\circ}\text{C}$
Storage temperature range		T_S	- 55 to + 150 ¹⁾	$^{\circ}\text{C}$

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	I_R			5	μA
	$V_R = 20\text{ V}$	SD103BW	I_R			5	μA
	$V_R = 10\text{ V}$	SD103CW	I_R			5	μA
Forward voltage drop	$I_F = 20\text{ mA}$		V_F			0.37	V
	$I_F = 200\text{ mA}$		V_F			0.6	V
Diode capacitance	$V_R = 0\text{ V}$, $f = 1\text{ MHz}$		C_{tot}		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)

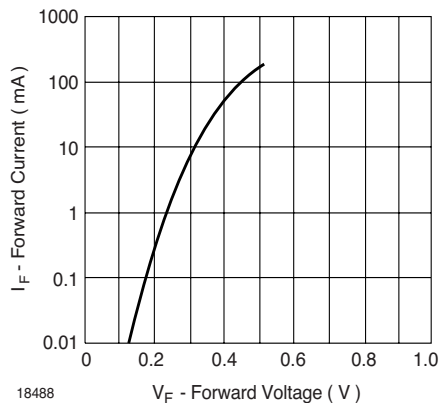


Figure 1. Typical Variation of Forward Current vs. Forward Voltage

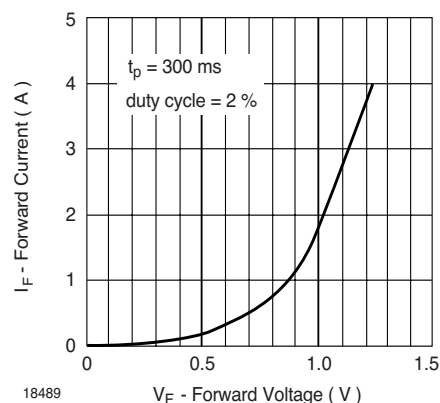


Figure 2. Typical High Current Forward Conduction Curve

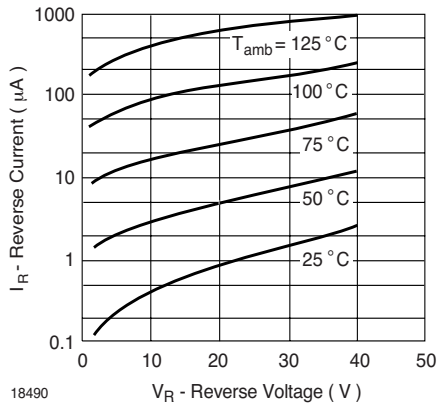


Figure 3. Typical Variation of Reverse Current at Various Temperatures

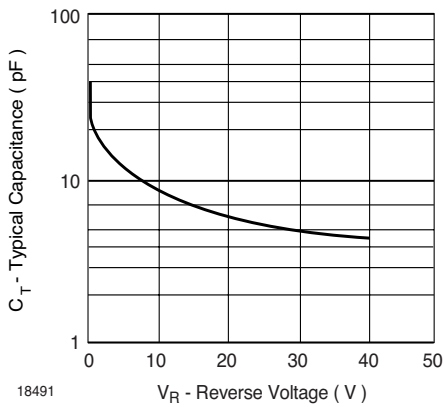


Figure 4. Typical Capacitance vs. Reverse Voltage

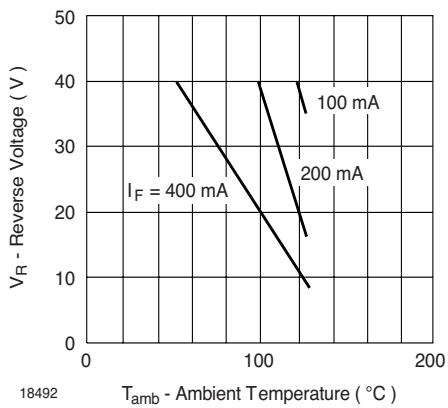


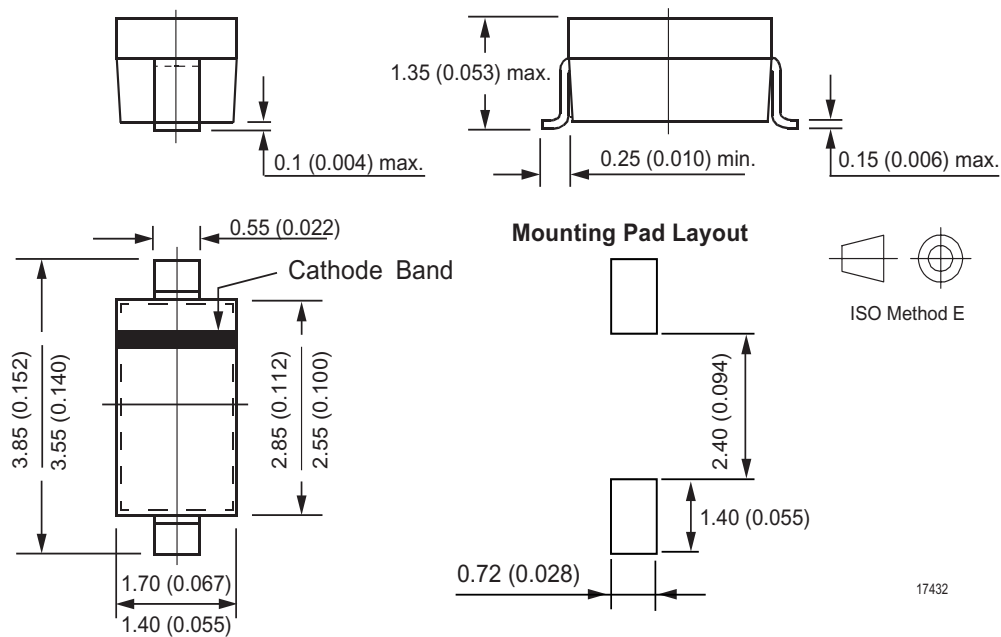
Figure 5. Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

SD103AW / 103BW / 103CW



Vishay Semiconductors

Package Dimensions in mm (Inches)





Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design and may do so without further notice.

Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany



Notice

Specifications of the products displayed herein are subject to change without notice. Vishay Intertechnology, Inc., or anyone on its behalf, assumes no responsibility or liability for any errors or inaccuracies.

Information contained herein is intended to provide a product description only. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document. Except as provided in Vishay's terms and conditions of sale for such products, Vishay assumes no liability whatsoever, and disclaims any express or implied warranty, relating to sale and/or use of Vishay products including liability or warranties relating to fitness for a particular purpose, merchantability, or infringement of any patent, copyright, or other intellectual property right.

The products shown herein are not designed for use in medical, life-saving, or life-sustaining applications. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Vishay for any damages resulting from such improper use or sale.