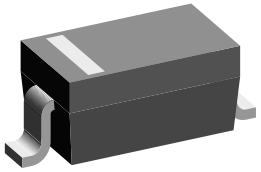
Small Signal Schottky Diodes

Features

- For general purpose applications
- 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.
- The SD101 series is a Metal-on-silicon Schottky barrier device which is protected by a PN junction guard ring.
- These diodes are also available in the Mini-MELF case with type designations LL101A to LL101C, in the DO-35 case with type designations SD101A through SD101C and in the SOD-323 case with type designations SD101AWS through SD101CWS.
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



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	Type Marking	Remarks
SD101AW	SD101AW-GS18 or SD101AW-GS08	SA	Tape and Reel
SD101BW	SD101BW-GS18 or SD101BW-GS08	SB	Tape and Reel
SD101CW	SD101CW-GS18 or SD101CW-GS08	SC	Tape and Reel

Absolute Maximum Ratings

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

Parameter	Test condition	Part	Symbol	Value	Unit
Peak reverse voltage		SD101AW	V_{RRM}	60	V
		SD101BW	V_{RRM}	50	V
		SD101CW	V_{RRM}	40	V
Power dissipation (Infinite heatsink)			P_{tot}	400[1)]	mW
Forward current			I_F	30	mA
Maximum single cycle surge	10 µs square wave		I_{FSM}	2	A

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[1)]	°C
Storage temperature range		T_{stg}	- 65 to + 150	°C

[1)] Valid provided that electrodes are kept at ambient temperature

Electrical Characteristics

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

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Reverse breakdown voltage	I_R = 10 µA	SD101AW	$V_{(BR)R}$	60			V
		SD101BW	$V_{(BR)R}$	50			V
		SD101CW	$V_{(BR)R}$	40			V
Leakage current	V_R = 50 V	SD101AW	I_R			200	nA
	V_R = 40 V	SD101BW	I_R			200	nA
	V_R = 30 V	SD101CW	I_R			200	nA
Forward voltage drop	I_F = 1 mA	SD101AW	V_F			0.41	V
		SD101BW	V_F			0.40	V
		SD101CW	V_F			0.39	V
	I_F = 15 mA	SD101AW	V_F			1.0	V
		SD101BW	V_F			0.95	V
		SD101CW	V_F			0.90	V
Diode capacitance	V_R = 0 V, f = 1 MHz	SD101AW	C_{tot}			2.0	pF
		SD101BW	C_{tot}			2.1	pF
		SD101CW	C_{tot}			2.2	pF
Reverse recovery time	I_F = I_R = 5 mA, recover to 0.1 I_R		t_{rr}			1	

Typical Characteristics (Tamb = 25 °C unless otherwise specified)

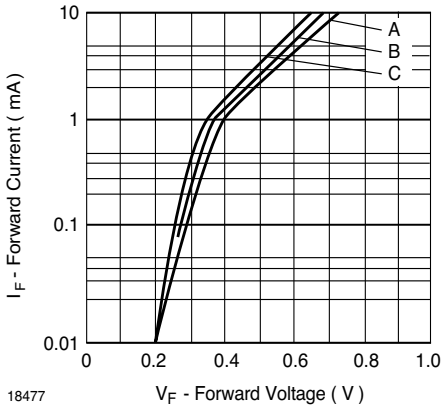


Figure 1. Typical Variation of Forward Current vs. Forward Voltage

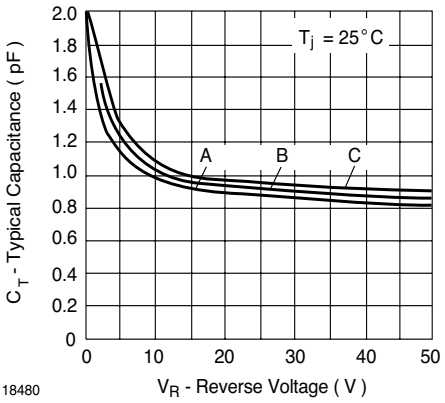


Figure 4. Typical Capacitance Curve as a Function of Reverse Voltage

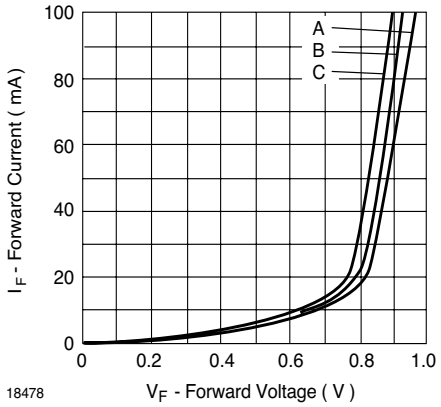


Figure 2. Typical Forward Conduction Curve

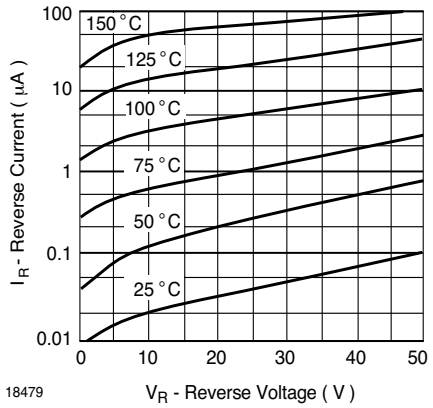
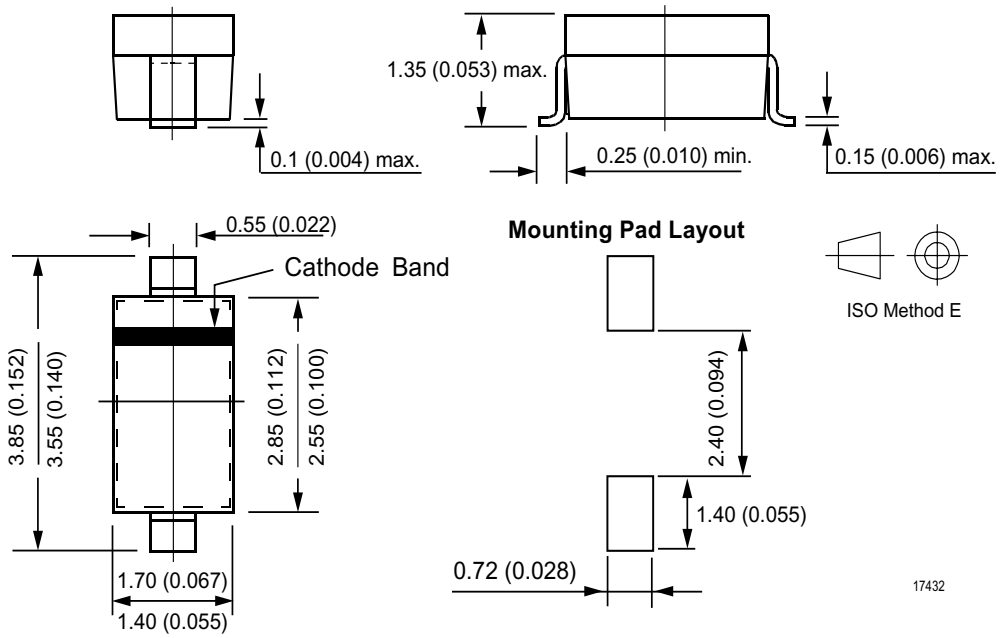


Figure 3. Typical Variation of Reverse Current at Various Temperatures

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.

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

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