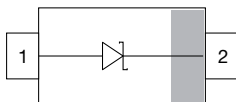


## Small Signal Schottky Diodes



### 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 guarding
- AEC-Q101 qualified available
- Molding compound meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level (MSL) 1
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

AUTOMOTIVE  
GRADE  
Available



RoHS  
COMPLIANT

### LINKS TO ADDITIONAL RESOURCES



### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 10.6 mg

**Packaging codes/options:**

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 mm tape), 15K/box

### PARTS TABLE

PART	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
SD101AW	SD101AW-E3-08	no	SK	Single	3 000 (8 mm tape on 7" reel)	15 000
	SD101AW-HE3_A-08	yes			10 000 (8 mm tape on 13" reel)	10 000
	SD101AW-E3-18	no				
	SD101AW-HE3_A-18	yes				
SD101BW	SD101BW-E3-08	no	SL	Single	3 000 (8 mm tape on 7" reel)	15 000
	SD101BW-HE3_A-08	yes			10 000 (8 mm tape on 13" reel)	10 000
	SD101BW-E3-18	no				
	SD101BW-HE3_A-18	yes				
SD101CW	SD101CW-E3-08	no	SM	Single	3 000 (8 mm tape on 7" reel)	15 000
	SD101CW-HE3_A-08	yes			10 000 (8 mm tape on 13" reel)	10 000
	SD101CW-E3-18	no				
	SD101CW-HE3_A-18	yes				

### ABSOLUTE MAXIMUM RATINGS (T<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		SD101AW	V <sub>RRM</sub>	60	V
		SD101BW	V <sub>RRM</sub>	50	V
		SD101CW	V <sub>RRM</sub>	40	V
Power dissipation	on FR-4 board with recommended soldering footprint		P <sub>tot</sub>	230	mW
	Infinite heatsink			330	mW
Forward continuous current <sup>(1)</sup>			I <sub>F</sub>	100	mA
Maximum single cycle surge	10 μs square wave		I <sub>FSM</sub>	2	A

#### Note

<sup>(1)</sup> Infinite heatsink

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	according to JEDEC® 51-3 on FR-4 board with recommended soldering footprint	$R_{thJA}$	420	K/W
Thermal resistance junction lead	Infinite heatsink	$R_{thJL}$	300	K/W
Maximum junction temperature		$T_j$	125	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-65 to +150	$^{\circ}\text{C}$
Operating temperature range		$T_{op}$	-55 to +150	$^{\circ}\text{C}$

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

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Reverse breakdown voltage	$I_R = 10\text{ }\mu\text{A}$	SD101AW	$V_{(BR)}$	60			V
		SD101BW	$V_{(BR)}$	50			V
		SD101CW	$V_{(BR)}$	40			V
Leakage current	$V_R = 50\text{ V}$	SD101AW	$I_R$			200	nA
	$V_R = 40\text{ V}$	SD101BW	$I_R$			200	nA
	$V_R = 30\text{ V}$	SD101CW	$I_R$			200	nA
Forward voltage drop	$I_F = 1\text{ mA}$	SD101AW	$V_F$			410	mV
		SD101BW	$V_F$			400	mV
		SD101CW	$V_F$			390	mV
	$I_F = 15\text{ mA}$	SD101AW	$V_F$			1000	mV
		SD101BW	$V_F$			950	mV
		SD101CW	$V_F$			900	mV
Diode capacitance	$V_R = 0\text{ V}$ , $f = 1\text{ MHz}$	SD101AW	$C_D$			2	pF
		SD101BW	$C_D$			2.1	pF
		SD101CW	$C_D$			2.2	pF
Reverse recovery time	$I_F = I_R = 5\text{ mA}$ , recover to $0.1\text{ }I_R$		$t_{rr}$			1	ns



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

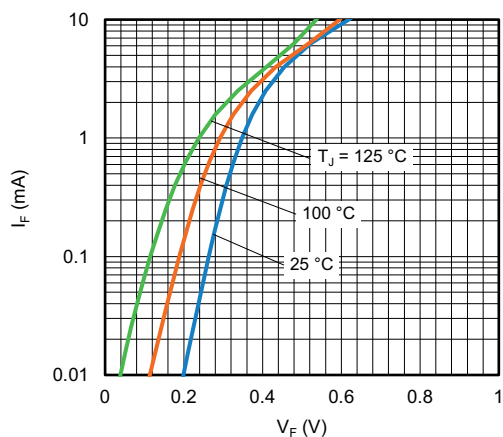


Fig. 1 - Typical Forward Current vs. Forward Voltage

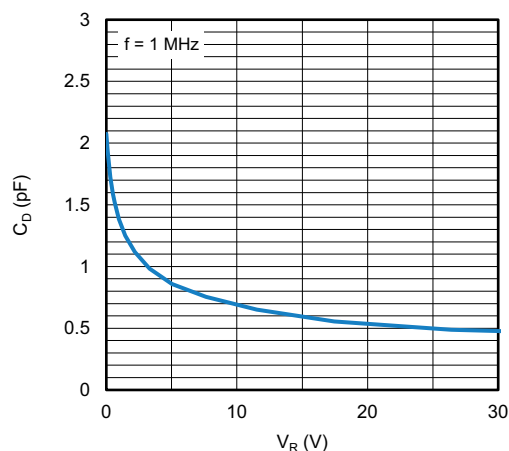


Fig. 3 - Typical Capacitance vs. Reverse Voltage

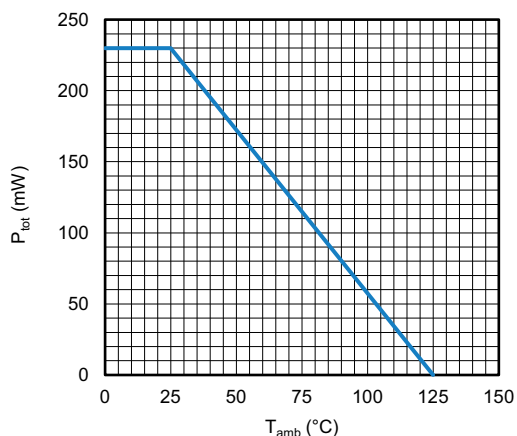


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

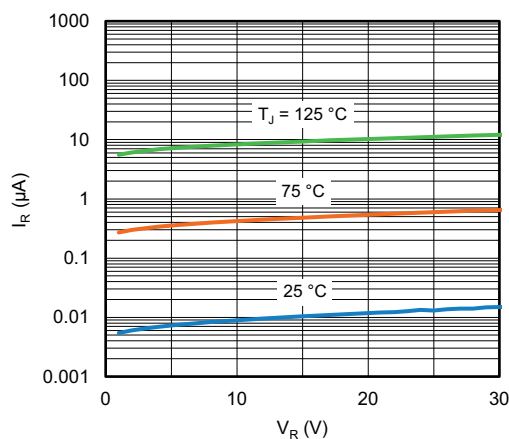
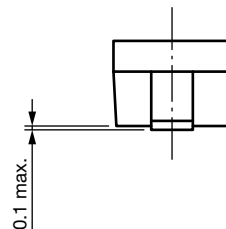


Fig. 4 - Typical Reverse Leakage vs. Reverse Voltage



## PACKAGE DIMENSIONS in millimeters (inches): SOD-123



Foot print recommendation



Rev. 01 - Date: 18. Jan. 2022

Document no.: S8-V-3910.01-003 (4)

23223



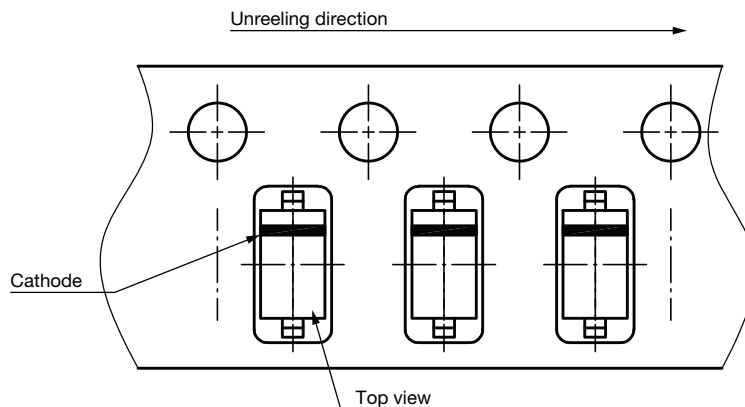
**CARRIER TAPE SOD-123**



Rev. 02 - Date: 21. Jan. 2014  
Document no.: S8-V-3717.10-002 (4)

23224

**ORIENTATION IN CARRIER TAPE SOD-123**



Rev. 02 - Date: 07. Nov. 2022  
Document no.: S8-V-3717.10-003 (4)

23225



## 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.