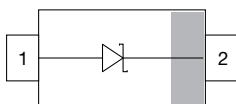
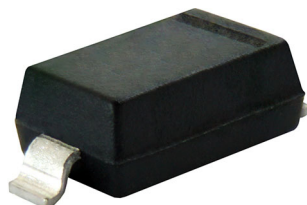


## Small Signal Schottky Diodes



### 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 guardring
- For general purpose applications
- 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



3D Models



Models



Marking



Parametric Search



Order Samples

### 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 |
|---------|------------------|--------------------|--------------|-----------------------|-----------------------------------|------------------------|
| SD103AW | SD103AW-E3-08    | no                 | Z6           | Single                | 3 000<br>(8 mm tape on 7" reel)   | 15 000                 |
|         | SD103AW-HE3_A-08 | yes                |              |                       |                                   |                        |
|         | SD103AW-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|         | SD103AW-HE3_A-18 | yes                |              |                       |                                   |                        |
| SD103BW | SD103BW-E3-08    | no                 | Z7           | Single                | 3 000<br>(8 mm tape on 7" reel)   | 15 000                 |
|         | SD103BW-HE3_A-08 | yes                |              |                       |                                   |                        |
|         | SD103BW-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|         | SD103BW-HE3_A-18 | yes                |              |                       |                                   |                        |
| SD103CW | SD103CW-E3-08    | no                 | Z8           | Single                | 3 000<br>(8 mm tape on 7" reel)   | 15 000                 |
|         | SD103CW-HE3_A-08 | yes                |              |                       |                                   |                        |
|         | SD103CW-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|         | SD103CW-HE3_A-18 | yes                |              |                       |                                   |                        |

### PACKAGE

| PACKAGE NAME | WEIGHT  | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL     | SOLDERING CONDITIONS         |
|--------------|---------|--------------------------------------|--------------------------------|------------------------------|
| SOD-123      | 10.6 mg | UL 94 V-0                            | MSL 1<br>(according J-STD-020) | Peak temperature max. 260 °C |

**ABSOLUTE MAXIMUM RATINGS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

| PARAMETER                                 | TEST CONDITION                                     | PART    | SYMBOL    | VALUE | UNIT |
|---|--|---------|-----------|-------|------|
| Repetitive peak reverse voltage           |  | SD103AW | $V_{RRM}$ | 40    | V    |
|   |  | SD103BW | $V_{RRM}$ | 30    | V    |
|   |  | SD103CW | $V_{RRM}$ | 20    | V    |
| Forward continuous current <sup>(1)</sup> |  |         | $I_F$     | 350   | mA   |
| Power dissipation                         | on FR-4 board with recommended soldering footprint |         | $P_{tot}$ | 270   | mW   |
|   | Infinite heatsink                                  |         |           | 370   | mW   |
| Single cycle surge                        | 10 $\mu$ s square wave                             |         | $I_{FSM}$ | 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 <sup>®</sup> 51-3 on FR-4 board with recommended soldering footprint | $R_{thJA}$ | 370         | K/W                |
| Thermal resistance junction lead           | Infinite heatsink   | $R_{thJL}$ | 270         | 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 +125 | $^{\circ}\text{C}$ |

**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    | $\mu\text{A}$ |
|                       | $V_R = 20\text{ V}$  | SD103BW | $I_R$    |      |      | 5    | $\mu\text{A}$ |
|                       | $V_R = 10\text{ V}$  | SD103CW | $I_R$    |      |      | 5    | $\mu\text{A}$ |
| 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 $200\text{ mA}$ ,<br>recover to $0.1\text{ }I_R$ |         | $t_{rr}$ |      | 10   |      | ns            |



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

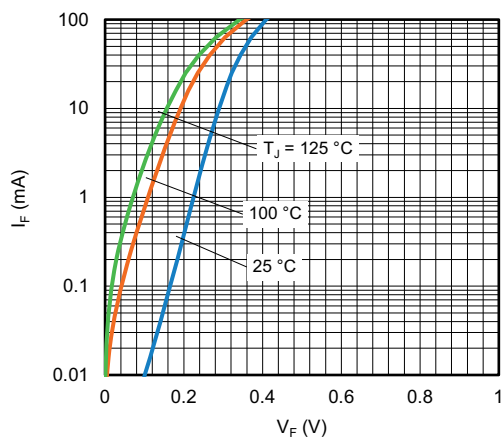


Fig. 1 - Typical Forward Current vs. Forward Voltage

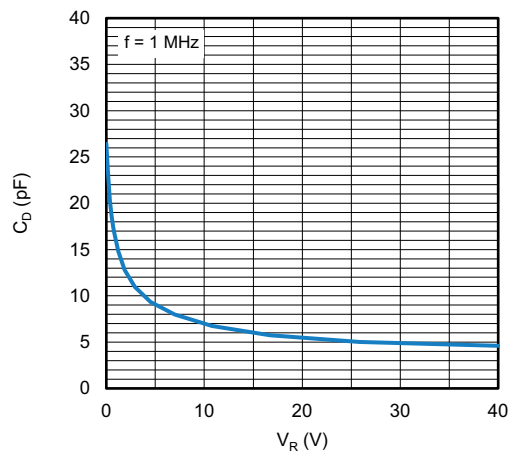


Fig. 3 - Typical Capacitance vs. Reverse Voltages

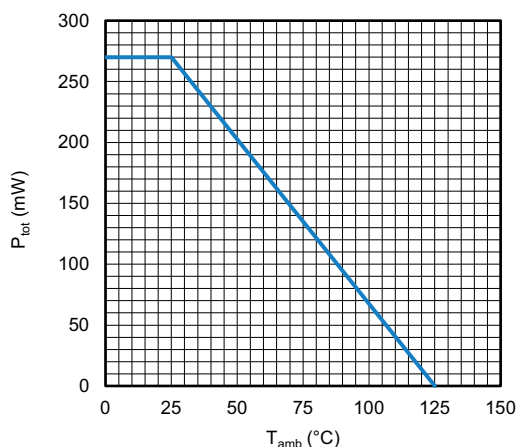


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

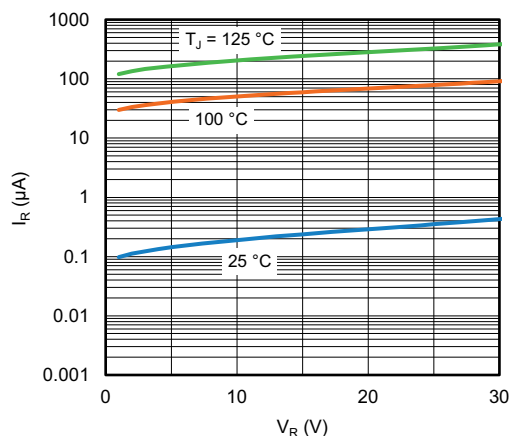
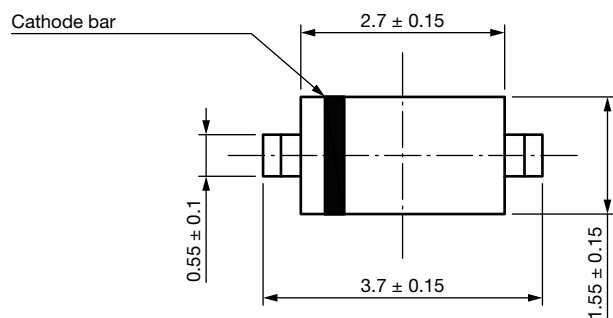
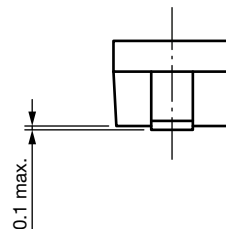
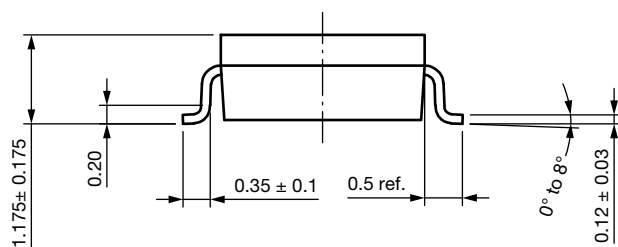


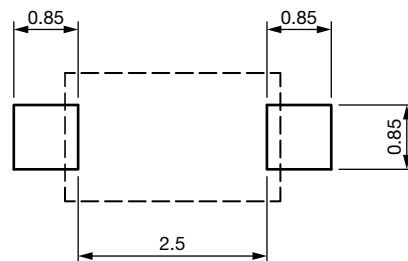
Fig. 4 - Typical Reverse Leakage vs. Reverse Voltage



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



Foot print recommendation



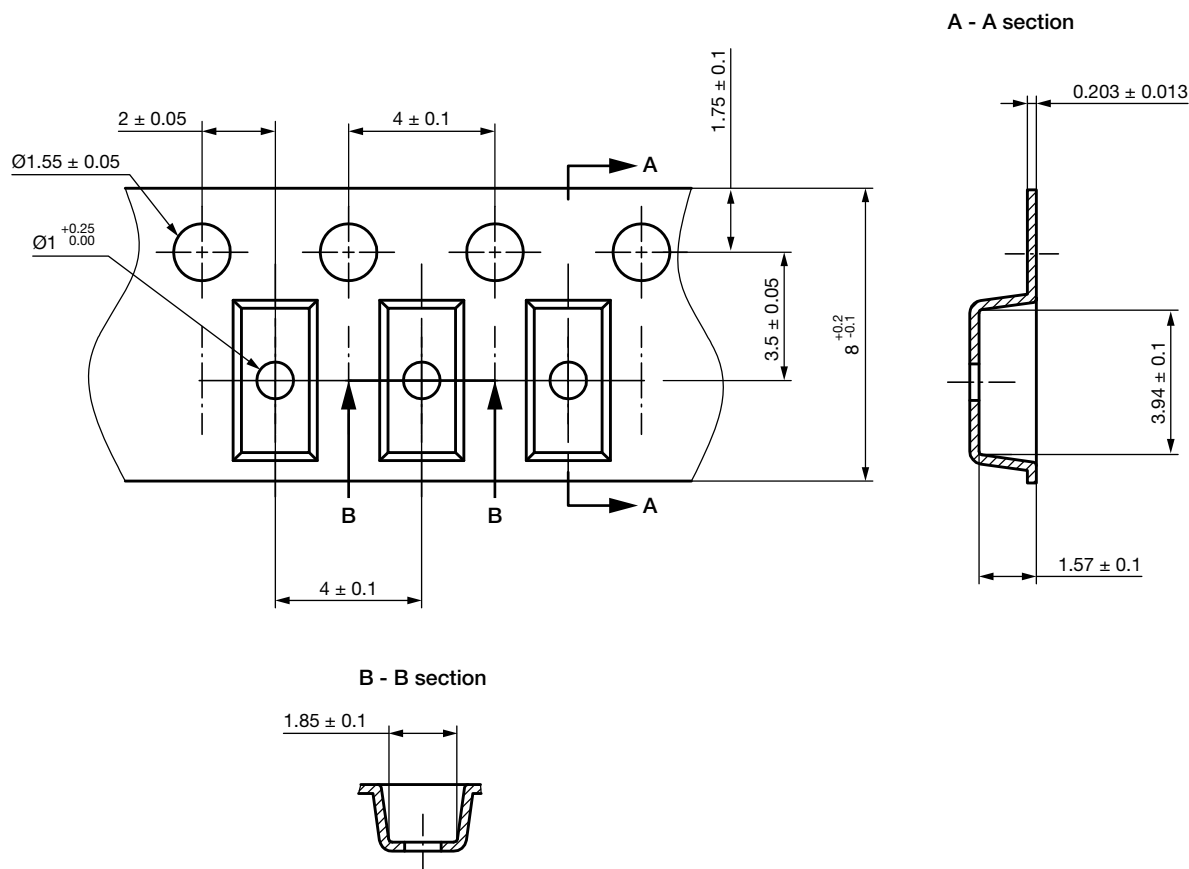
Rev. 01 - Date: 18. Jan. 2022

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

23223



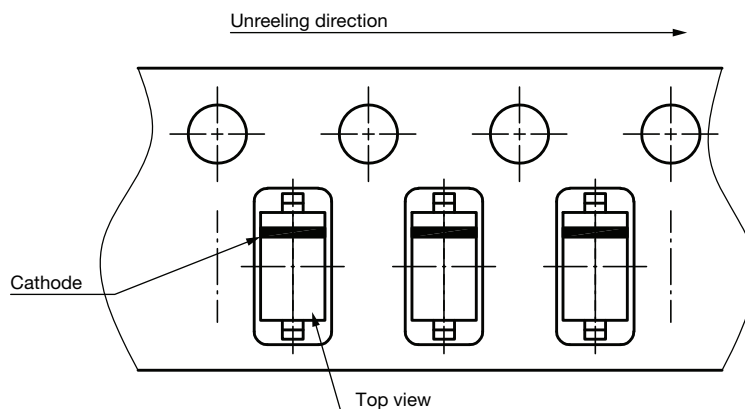
**CARRIER TAPE SOD-123**



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.

Vishay products are not designed for use in life-saving or life-sustaining applications or any application in which the failure of the Vishay product could result in personal injury or death unless specifically qualified in writing by Vishay. 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.