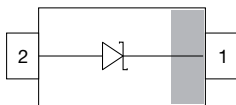


## Small Signal Schottky Diodes



### 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\_A - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

### LINKS TO ADDITIONAL RESOURCES



3D Models



Models



Marking



Parametric Search



Order Samples

### MECHANICAL DATA

**Case:** SOD-323

**Weight:** approx. 4 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 |
|----------|-------------------|--------------------|--------------|-----------------------|-----------------------------------|------------------------|
| SD103AWS | SD103AWS-E3-08    | No                 | 6S           | Single                | 3000<br>(8 mm tape on 7" reel)    | 15 000                 |
|          | SD103AWS-HE3_A-08 | Yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|          | SD103AWS-E3-18    | No                 |              |                       |                                   |                        |
|          | SD103AWS-HE3_A-18 | Yes                |              |                       |                                   |                        |
| SD103BWS | SD103BWS-E3-08    | No                 | 7S           | Single                | 3000<br>(8 mm tape on 7" reel)    | 15 000                 |
|          | SD103BWS-HE3_A-08 | Yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|          | SD103BWS-E3-18    | No                 |              |                       |                                   |                        |
|          | SD103BWS-HE3_A-18 | Yes                |              |                       |                                   |                        |
| SD103CWS | SD103CWS-E3-08    | No                 | 8S           | Single                | 3000<br>(8 mm tape on 7" reel)    | 15 000                 |
|          | SD103CWS-HE3_A-08 | Yes                |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|          | SD103CWS-E3-18    | No                 |              |                       |                                   |                        |
|          | SD103CWS-HE3_A-18 | Yes                |              |                       |                                   |                        |

### PACKAGE

| PACKAGE NAME | WEIGHT | MOLDING COMPOUND FLAMMABILITY RATING | MOISTURE SENSITIVITY LEVEL     | SOLDERING CONDITIONS         |
|--------------|--------|--------------------------------------|--------------------------------|------------------------------|
| SOD-323      | 4 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           |                        | SD103AWS | $V_{RRM}$ | 40    | V    |
|                                           |                        | SD103BWS | $V_{RRM}$ | 30    | V    |
|                                           |                        | SD103CWS | $V_{RRM}$ | 20    | V    |
| Forward continuous current <sup>(1)</sup> |                        |          | $I_F$     | 350   | mA   |
| Power dissipation <sup>(1)</sup>          |                        |          | $P_{tot}$ | 200   | 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 lead | Infinite heatsink | $R_{thJL}$ | 500         | 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   | TYP. | MAX. | UNIT          |
|-----------------------|------------------------------------------------------------|----------|----------|------|------|---------------|
| Leakage current       | $V_R = 30\text{ V}$                                        | SD103AWS | $I_R$    |      | 5    | $\mu\text{A}$ |
|                       | $V_R = 20\text{ V}$                                        | SD103BWS | $I_R$    |      | 5    | $\mu\text{A}$ |
|                       | $V_R = 10\text{ V}$                                        | SD103CWS | $I_R$    |      | 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 mA, recover to 0.1 $I_R$ |          | $t_{rr}$ | 10   |      | ns            |



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

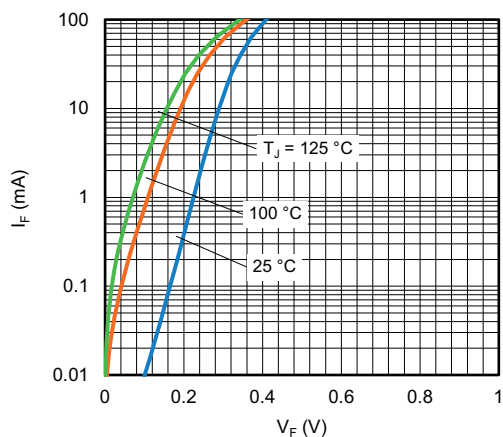


Fig. 1 - Typical Forward Current vs. Forward Voltage

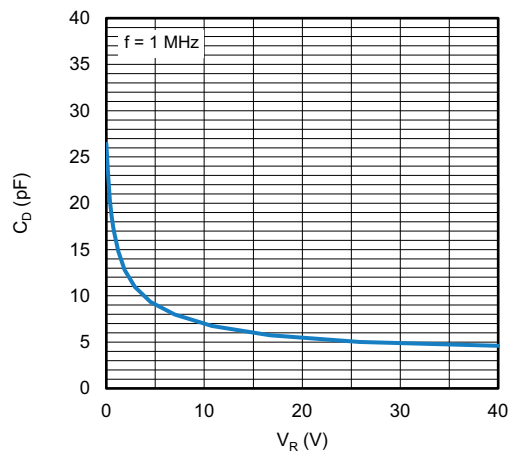


Fig. 3 - Typical Capacitance vs. Reverse Voltages

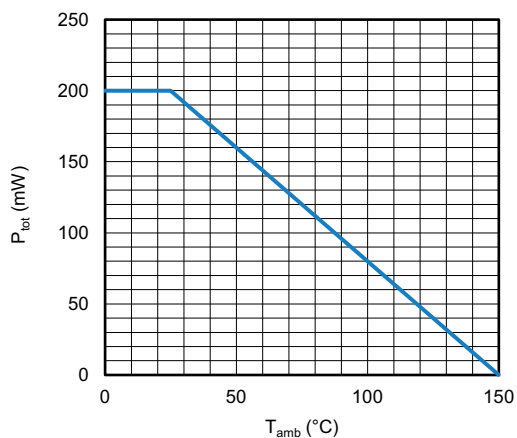


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

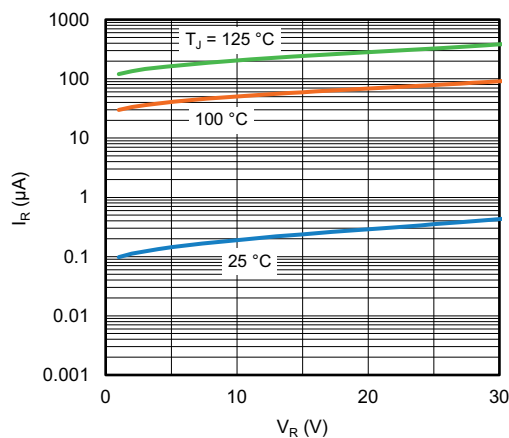
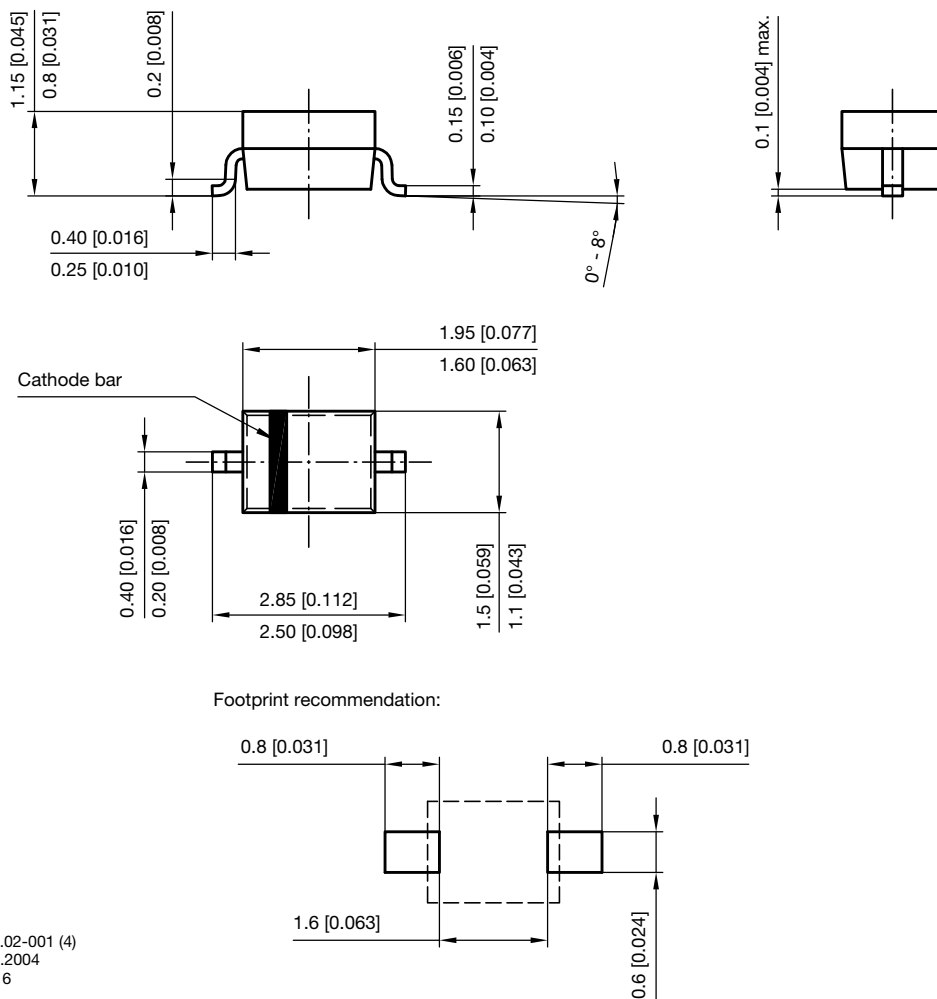


Fig. 4 - Typical Reverse Leakage vs. Reverse Voltage



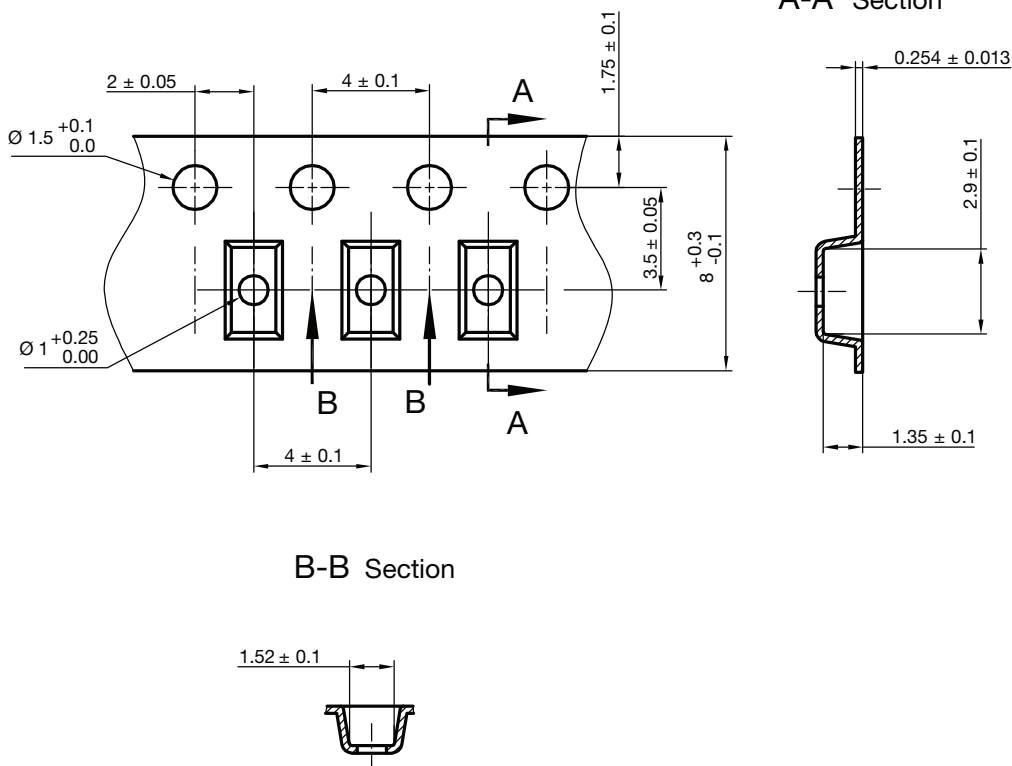
## PACKAGE DIMENSIONS in millimeters (inches) SOD-323



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Rev. 6 - Date: 23.Sept.2016  
22771

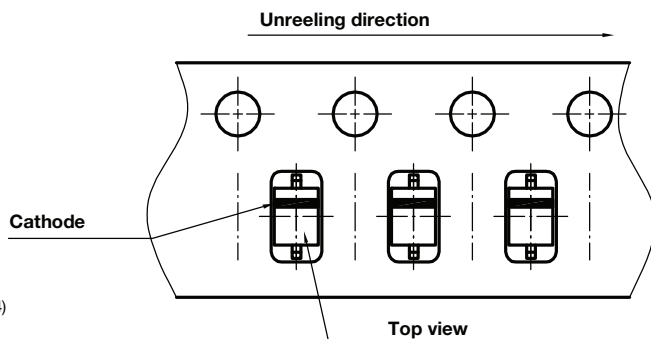


## CARRIER TAPE SOD-323



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22824

## ORIENTATION IN CARRIER TAPE SOD-323



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22772



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