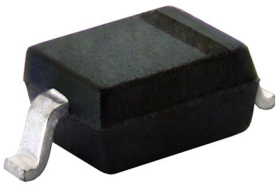
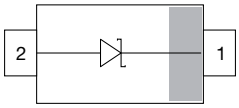
## Small Signal Schottky Diodes






### 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

AUTOMOTIVE GRADE Available

Pb-free

e3

RoHS COMPLIANT

### LINKS TO ADDITIONAL RESOURCES

3D Models | SPICE 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 (8 mm tape on 7” reel) | 15 000 |
| | SD103AWS-HE3_A-08 | Yes | | | | |
| | SD103AWS-E3-18 | No | | | 10 000 (8 mm tape on 13” reel) | 10 000 |
| | SD103AWS-HE3_A-18 | Yes | | | | |
| SD103BWS | SD103BWS-E3-08 | No | 7S | Single | 3000 (8 mm tape on 7” reel) | 15 000 |
| | SD103BWS-HE3_A-08 | Yes | | | | |
| | SD103BWS-E3-18 | No | | | 10 000 (8 mm tape on 13” reel) | 10 000 |
| | SD103BWS-HE3_A-18 | Yes | | | | |
| SD103CWS | SD103CWS-E3-08 | No | 8S | Single | 3000 (8 mm tape on 7” reel) | 15 000 |
| | SD103CWS-HE3_A-08 | Yes | | | | |
| | SD103CWS-E3-18 | No | | | 10 000 (8 mm tape on 13” reel) | 10 000 |
| | 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 (according J-STD-020) | Peak temperature max. 260 °C |

| **ABSOLUTE MAXIMUM RATINGS** ($T_{amb}$ = 25 °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 (1) | | | $I_F$ | 350 | mA |
| Power dissipation (1) | | | $P_{tot}$ | 200 | mW |
| Single cycle surge | 10 µs square wave | | $I_{FSM}$ | 2 | A |

**Note**
(1) Infinite heatsink

| **THERMAL CHARACTERISTICS** ($T_{amb}$ = 25 °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 | °C |
| Storage temperature range | | $T_{stg}$ | -65 to +150 | °C |
| Operating temperature range | | $T_{op}$ | -55 to +125 | °C |

| **ELECTRICAL CHARACTERISTICS** ($T_{amb}$ = 25 °C, unless otherwise specified) | | | | | | |
|---|---|---|---|---|---|---|
| **PARAMETER** | **TEST CONDITION** | **PART** | **SYMBOL** | **TYP.** | **MAX.** | **UNIT** |
| Leakage current | $V_R$ = 30 V | SD103AWS | $I_R$ | | 5 | µA |
| | $V_R$ = 20 V | SD103BWS | $I_R$ | | 5 | µA |
| | $V_R$ = 10 V | SD103CWS | $I_R$ | | 5 | µA |
| Forward voltage drop | $I_F$ = 20 mA | | $V_F$ | | 370 | mV |
| | $I_F$ = 200 mA | | $V_F$ | | 600 | mV |
| Diode capacitance | $V_R$ = 0 V, f = 1 MHz | | $C_D$ | 50 | | pF |
| Reverse recovery time | $I_F$ = $I_R$ = 50 mA to 200 mA, recover to 0.1 $I_R$ | | $t_{rr}$ | 10 | | ns |

**TYPICAL CHARACTERISTICS** ($T_{amb}$ = 25 °C, unless otherwise specified)

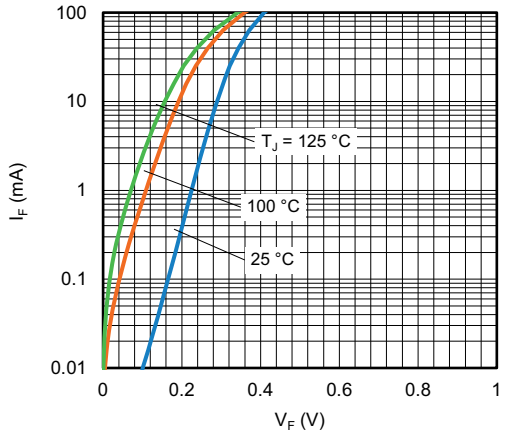



Fig. 1 - Typical Forward Current vs. Forward Voltage

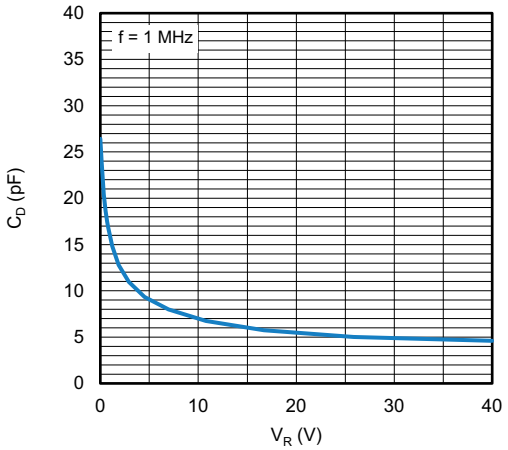



Fig. 3 - Typical Capacitance vs. Reverse Voltages

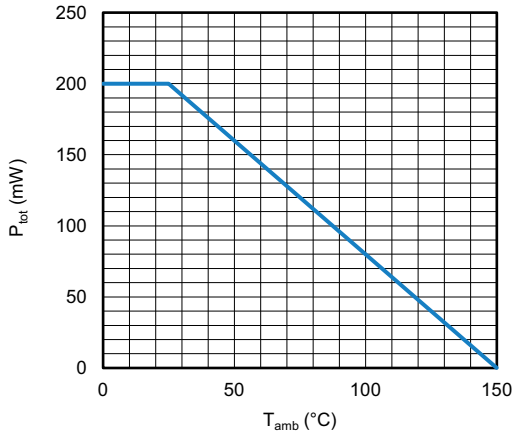



Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

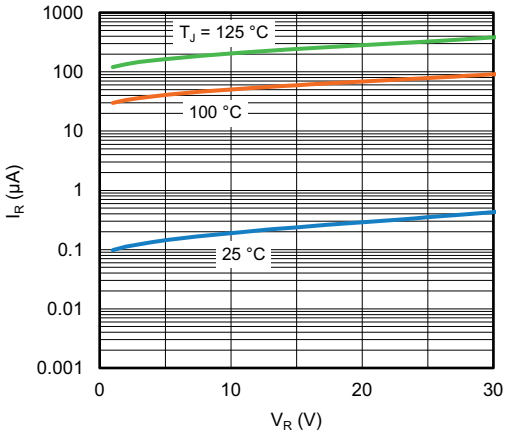
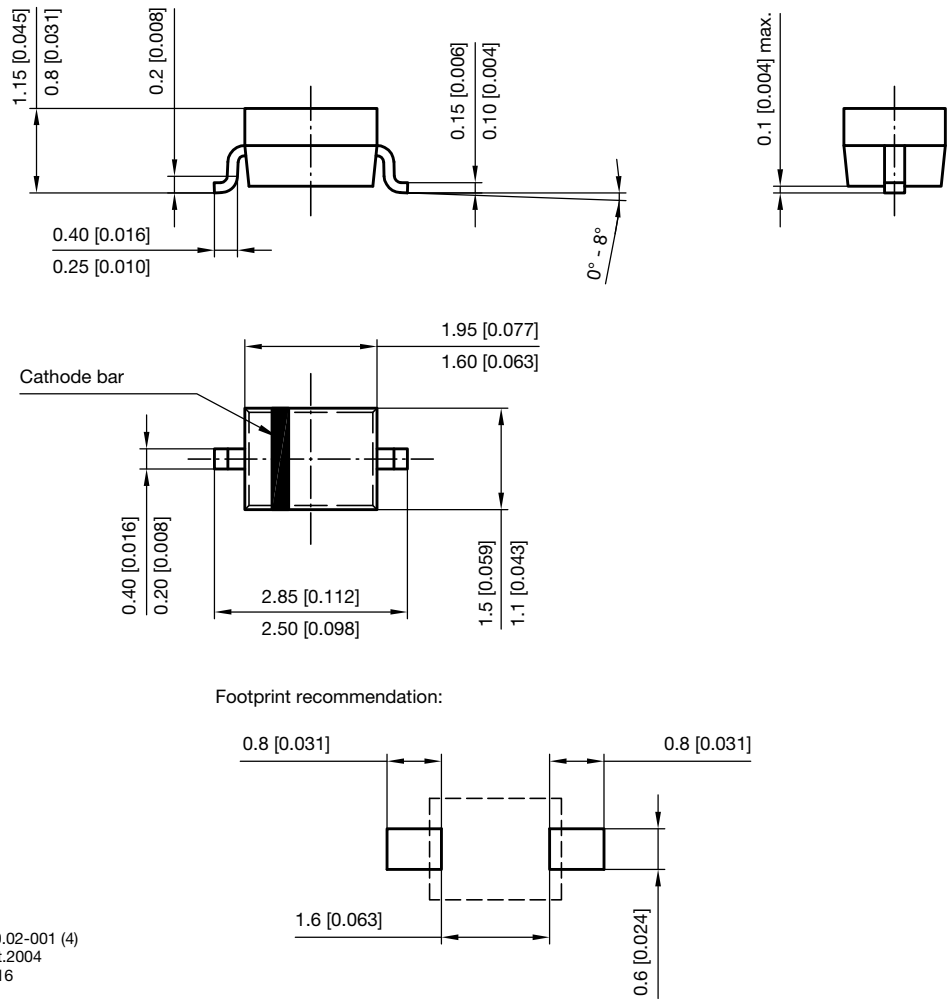



Fig. 4 - Typical Reverse Leakage vs. Reverse Voltage

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




Footprint recommendation:

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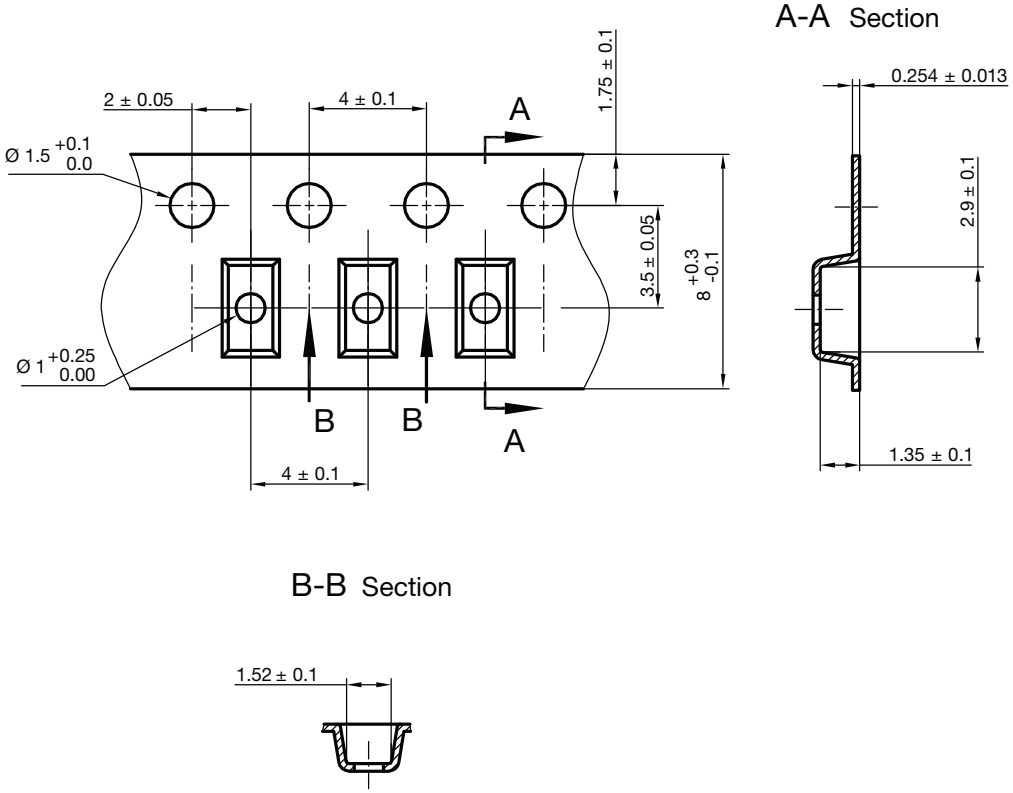
## CARRIER TAPE SOD-323

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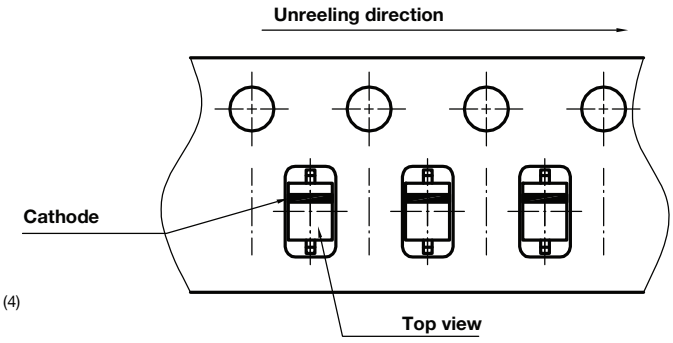
## ORIENTATION IN CARRIER TAPE SOD-323

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