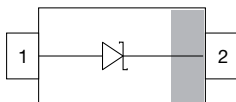


## Small Signal Schottky Diodes



### 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<br>(8 mm tape on 7" reel)   | 15 000                 |
|         | SD101AW-HE3_A-08 | yes                |              |                       |                                   |                        |
|         | SD101AW-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|         | SD101AW-HE3_A-18 | yes                |              |                       |                                   |                        |
| SD101BW | SD101BW-E3-08    | no                 | SL           | Single                | 3 000<br>(8 mm tape on 7" reel)   | 15 000                 |
|         | SD101BW-HE3_A-08 | yes                |              |                       |                                   |                        |
|         | SD101BW-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|         | SD101BW-HE3_A-18 | yes                |              |                       |                                   |                        |
| SD101CW | SD101CW-E3-08    | no                 | SM           | Single                | 3 000<br>(8 mm tape on 7" reel)   | 15 000                 |
|         | SD101CW-HE3_A-08 | yes                |              |                       |                                   |                        |
|         | SD101CW-E3-18    | no                 |              |                       | 10 000<br>(8 mm tape on 13" reel) | 10 000                 |
|         | 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   |

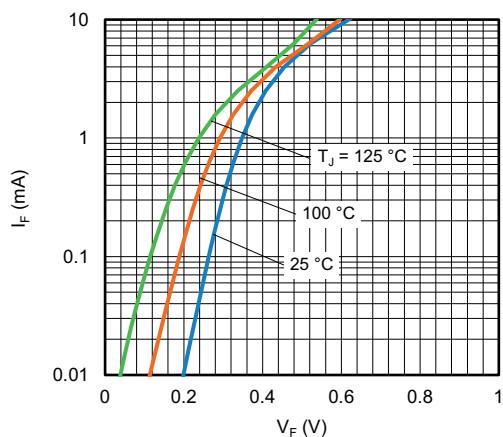
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)


Fig. 1 - Typical Forward Current vs. Forward Voltage

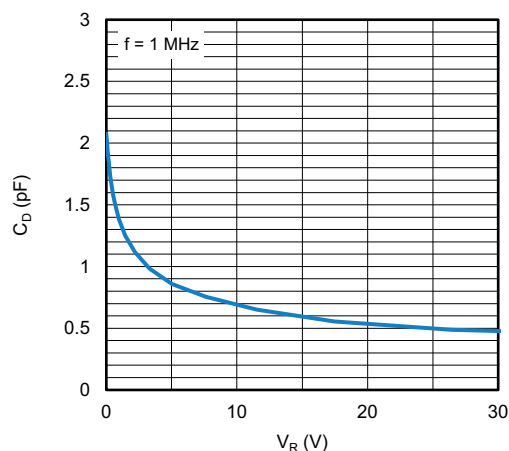


Fig. 3 - Typical Capacitance vs. Reverse Voltage

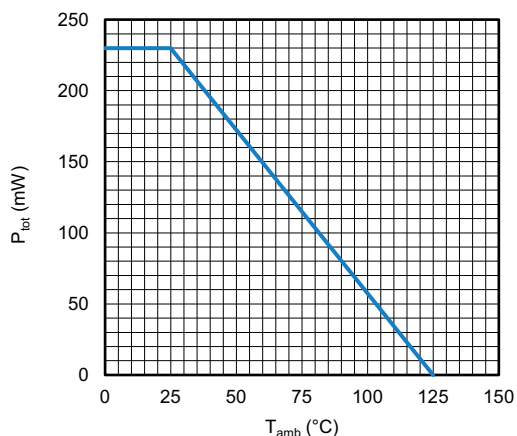


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

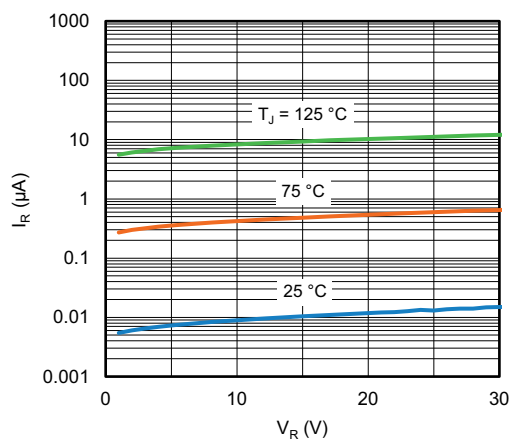
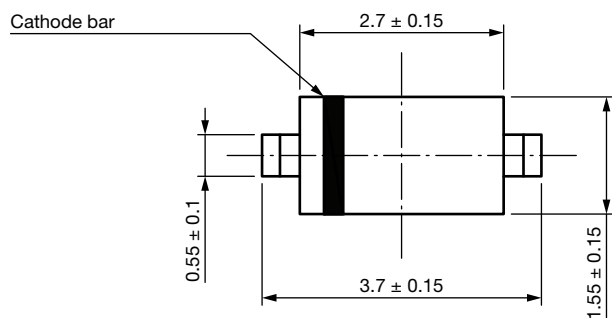
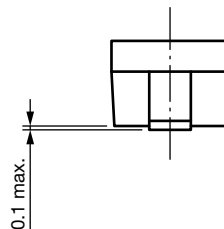
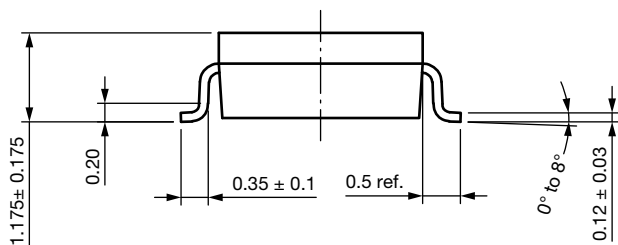


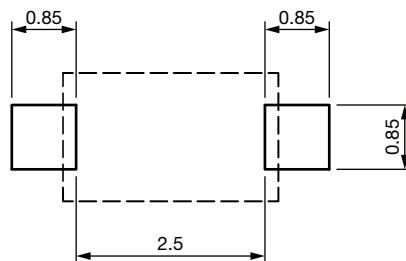
Fig. 4 - Typical Reverse Leakage vs. Reverse Voltage



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



Foot print recommendation



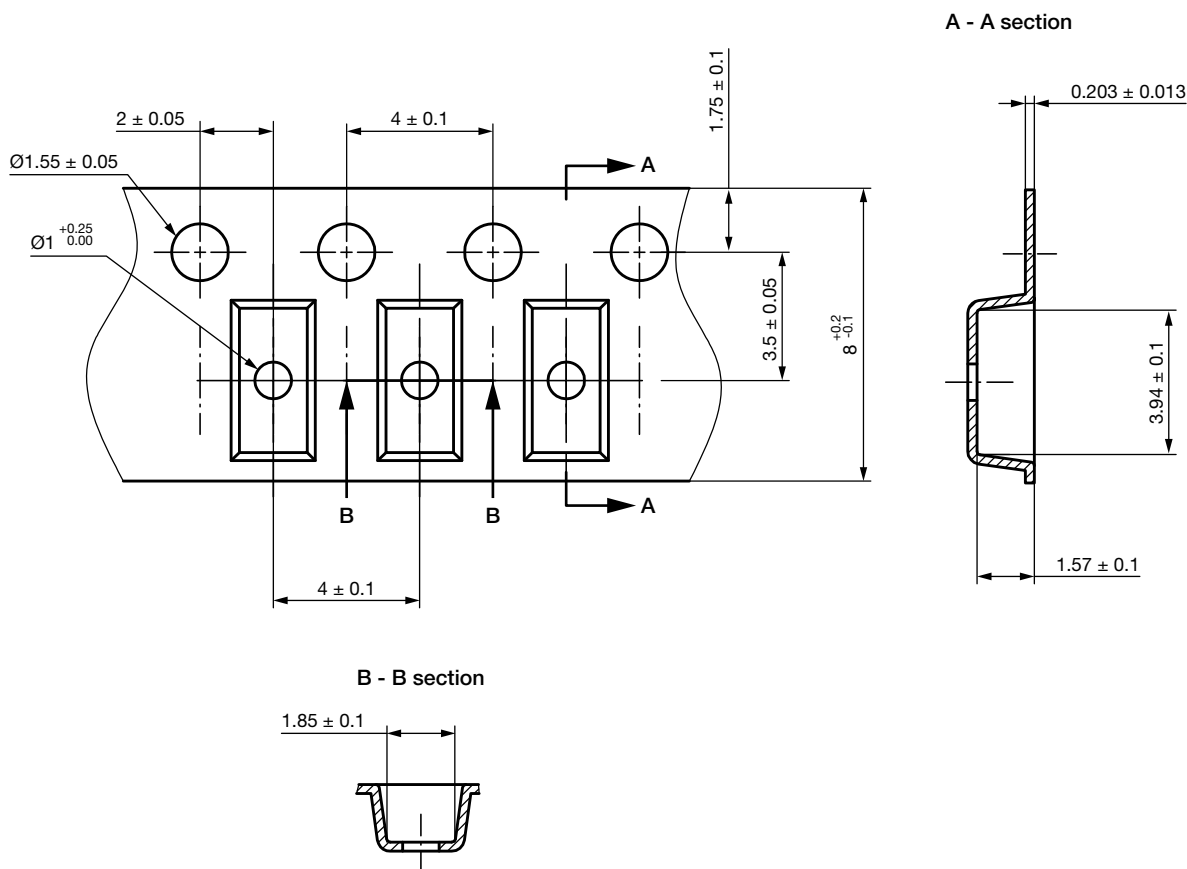
Rev. 01 - Date: 18. Jan. 2022

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

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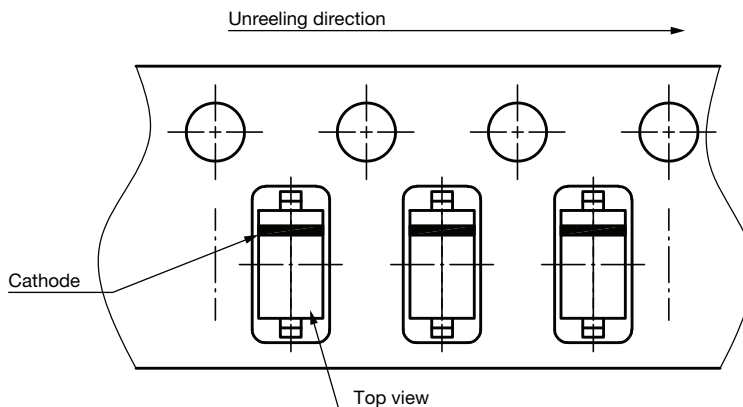
**CARRIER TAPE SOD-123**



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

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**ORIENTATION IN CARRIER TAPE SOD-123**



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

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