

## Small Signal Schottky Diodes



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### MECHANICAL DATA

**Case:** SOD-323

**Weight:** approx. 4.3 mg

**Packaging codes/options:**

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

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

### FEATURES

- For general purpose applications
- The SD101 series is a metal-on-silicon Schottky barrier device which is protected by a PN junction guarding
- 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
- AEC-Q101 qualified available
- 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)



**RoHS**  
COMPLIANT

### PARTS TABLE

| PART     | ORDERING CODE                      | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS       |
|----------|------------------------------------|-----------------------|--------------|---------------|
| SD101AWS | SD101AWS-E3-08 or SD101AWS-E3-18   | Single                | SA           | Tape and reel |
|          | SD101AWS-HE3-08 or SD101AWS-HE3-18 |                       |              |               |
| SD101BWS | SD101BWS-E3-08 or SD101BWS-E3-18   | Single                | SB           |               |
|          | SD101BWS-HE3-08 or SD101BWS-HE3-18 |                       |              |               |
| SD101CWS | SD101CWS-E3-08 or SD101CWS-E3-18   | Single                | SC           |               |
|          | SD101CWS-HE3-08 or SD101CWS-HE3-18 |                       |              |               |

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

| PARAMETER                                            | TEST CONDITION               | PART     | SYMBOL    | VALUE | UNIT |
|------------------------------------------------------|------------------------------|----------|-----------|-------|------|
| Repetitive peak reverse voltage                      |                              | SD101AWS | $V_{RRM}$ | 60    | V    |
|                                                      |                              | SD101BWS | $V_{RRM}$ | 50    | V    |
|                                                      |                              | SD101CWS | $V_{RRM}$ | 40    | V    |
| Power dissipation (infinite heatsink) <sup>(1)</sup> |                              |          | $P_{tot}$ | 150   | mW   |
| Forward continuous current                           |                              |          | $I_F$     | 30    | mA   |
| Maximum single cycle surge                           | 10 $\mu\text{s}$ square wave |          | $I_{FSM}$ | 2     | A    |

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature

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

| PARAMETER                                                 | TEST CONDITION | SYMBOL     | VALUE       | UNIT               |
|-----------------------------------------------------------|----------------|------------|-------------|--------------------|
| Thermal resistance junction to ambient air <sup>(1)</sup> |                | $R_{thJA}$ | 650         | K/W                |
| Junction temperature <sup>(1)</sup>                       |                | $T_j$      | 125         | $^{\circ}\text{C}$ |
| Operating temperature range                               |                | $T_{op}$   | -55 to +125 | $^{\circ}\text{C}$ |
| Storage temperature range                                 |                | $T_{stg}$  | -65 to +150 | $^{\circ}\text{C}$ |

#### Note

<sup>(1)</sup> Valid provided that electrodes are kept at ambient temperature



| ELECTRICAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified) |                                                            |          |            |      |      |      |      |
|---------------------------------------------------------------------------------------------------|------------------------------------------------------------|----------|------------|------|------|------|------|
| PARAMETER                                                                                         | TEST CONDITION                                             | PART     | SYMBOL     | MIN. | TYP. | MAX. | UNIT |
| Reverse breakdown voltage                                                                         | $I_R = 10\text{ }\mu\text{A}$                              | SD101AWS | $V_{(BR)}$ | 60   |      |      | V    |
|                                                                                                   |                                                            | SD101BWS | $V_{(BR)}$ | 50   |      |      | V    |
|                                                                                                   |                                                            | SD101CWS | $V_{(BR)}$ | 40   |      |      | V    |
| Leakage current                                                                                   | $V_R = 50\text{ V}$                                        | SD101AWS | $I_R$      |      |      | 200  | nA   |
|                                                                                                   | $V_R = 40\text{ V}$                                        | SD101BWS | $I_R$      |      |      | 200  | nA   |
|                                                                                                   | $V_R = 30\text{ V}$                                        | SD101CWS | $I_R$      |      |      | 200  | nA   |
| Forward voltage drop                                                                              | $I_F = 1\text{ mA}$                                        | SD101AWS | $V_F$      |      |      | 410  | mV   |
|                                                                                                   |                                                            | SD101BWS | $V_F$      |      |      | 400  | mV   |
|                                                                                                   |                                                            | SD101CWS | $V_F$      |      |      | 390  | mV   |
|                                                                                                   | $I_F = 15\text{ mA}$                                       | SD101AWS | $V_F$      |      |      | 1000 | mV   |
|                                                                                                   |                                                            | SD101BWS | $V_F$      |      |      | 950  | mV   |
|                                                                                                   |                                                            | SD101CWS | $V_F$      |      |      | 900  | mV   |
| Junction capacitance                                                                              | $V_R = 0\text{ V}, f = 1\text{ MHz}$                       | SD101AWS | $C_D$      |      |      | 2.0  | ns   |
|                                                                                                   |                                                            | SD101BWS | $C_D$      |      |      | 2.1  | ns   |
|                                                                                                   |                                                            | SD101CWS | $C_D$      |      |      | 2.2  | ns   |
| Reverse recovery time                                                                             | $I_F = I_R = 5\text{ mA}$ ,<br>recover to $0.1\text{ }I_R$ |          | $t_{rr}$   |      |      | 1    | ns   |

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

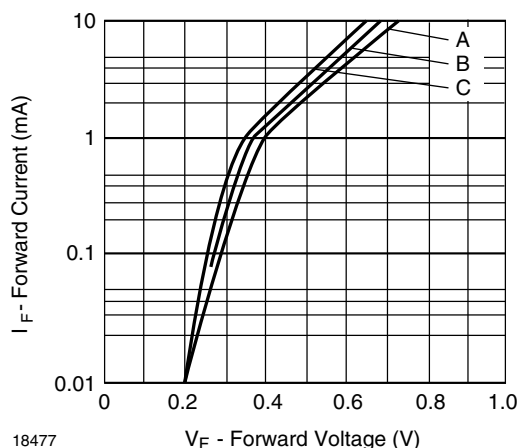


Fig. 1 - Typical Variation of Forward Current vs. Forward Voltage

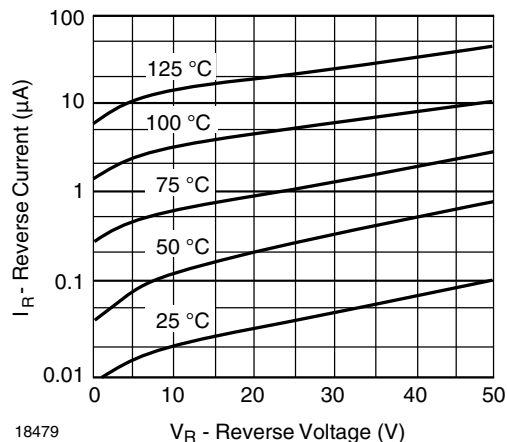


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

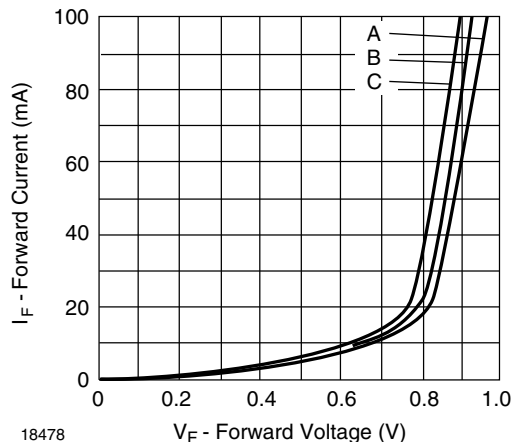


Fig. 2 - Typical Forward Conduction Curve

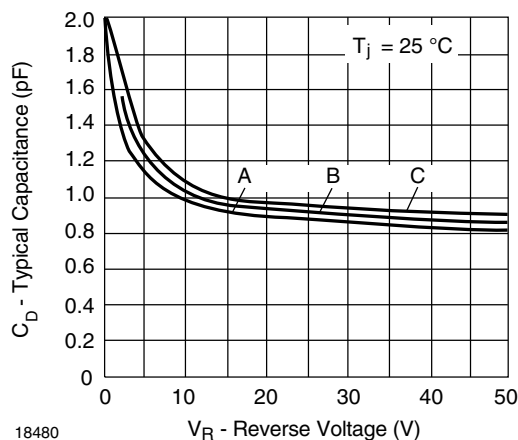
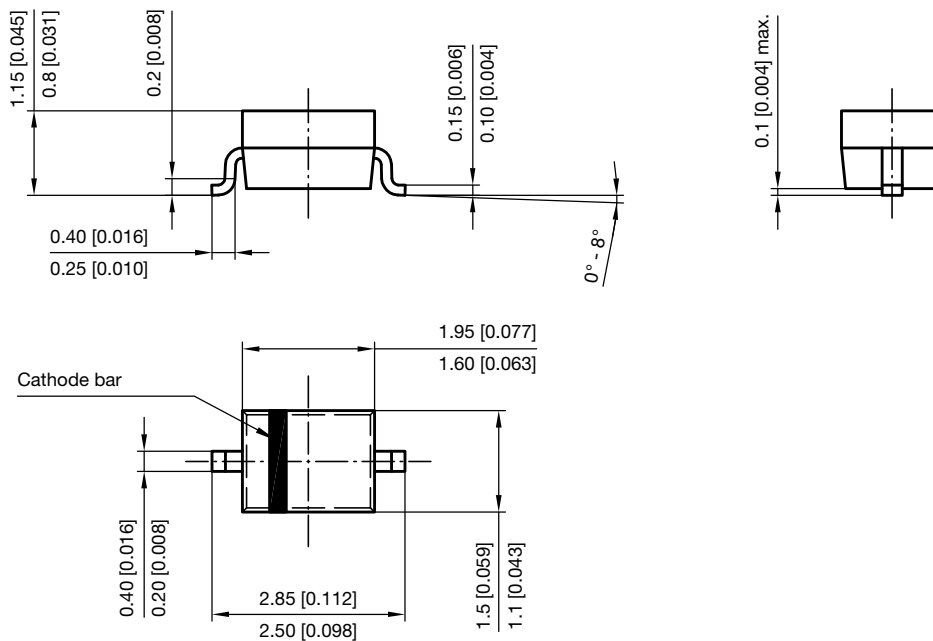


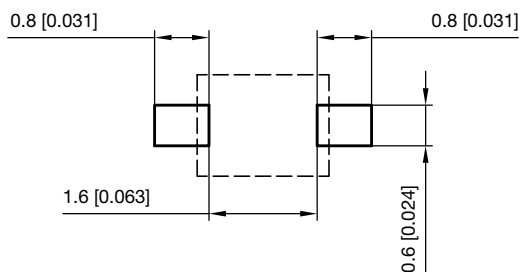
Fig. 4 - Typical Capacitance Curve as a Function of Reverse Voltage



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



Footprint recommendation:



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17443



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