# Small Signal Schottky Diodes

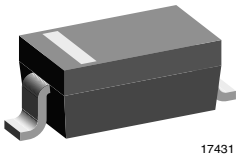
## Features

- 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 guard ring
- These diodes are also available in the Mini-MELF case with type designations LL101A to LL101C, in the DO-35 case with type designations SD101A to SD101C and in the SOD-323 case with type designations SD101AWS-V to SD101CWS-V
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC

Pb-free

e3

RoHS COMPLIANT




## Mechanical Data

**Case:** SOD-123

**Weight:** approx. 10.3 mg

**Packaging Codes/Options:**

GS18/10 k per 13" reel (8 mm tape), 10 k/box

GS08/3 k per 7" reel (8 mm tape), 15 k/box

## Parts Table

| Part | Ordering code | Type Marking | Remarks |
|---|---|---|---|
| SD101AW-V | SD101AW-V-GS18 or SD101AW-V-GS08 | SA | Tape and Reel |
| SD101BW-V | SD101BW-V-GS18 or SD101BW-V-GS08 | SB | Tape and Reel |
| SD101CW-V | SD101CW-V-GS18 or SD101CW-V-GS08 | SC | Tape and Reel |

## Absolute Maximum Ratings

$T_{amb}$ = 25 °C, unless otherwise specified

| Parameter | Test condition | Part | Symbol | Value | Unit |
|---|---|---|---|---|---|
| Peak reverse voltage | | SD101AW-V | $V_{RRM}$ | 60 | V |
| | | SD101BW-V | $V_{RRM}$ | 50 | V |
| | | SD101CW-V | $V_{RRM}$ | 40 | V |
| Power dissipation (Infinite heatsink) | | | $P_{tot}$ | 400[1)] | mW |
| Forward continuous current | | | $I_F$ | 30 | mA |
| Maximum single cycle surge | 10 µs square wave | | $I_{FSM}$ | 2 | A |

## Thermal Characteristics

$T_{amb}$ = 25 °C, unless otherwise specified

| Parameter | Test condition | Symbol | Value | Unit |
|---|---|---|---|---|
| Thermal resistance junction to ambient air | | $R_{thJA}$ | 300[1)] | K/W |
| Junction temperature | | $T_j$ | 125[1)] | °C |
| Storage temperature range | | $T_{stg}$ | - 65 to + 150 | °C |

[1)] Valid provided that electrodes are kept at ambient temperature

## Electrical Characteristics

$T_{amb}$ = 25 °C, unless otherwise specified

| Parameter | Test condition | Part | Symbol | Min | Typ. | Max | Unit |
|---|---|---|---|---|---|---|---|
| Reverse breakdown voltage | $I_R$ = 10 µA | SD101AW-V | $V_{(BR)}$ | 60 | | | V |
| | | SD101BW-V | $V_{(BR)}$ | 50 | | | V |
| | | SD101CW-V | $V_{(BR)}$ | 40 | | | V |
| Leakage current | $V_R$ = 50 V | SD101AW-V | $I_R$ | | | 200 | nA |
| | $V_R$ = 40 V | SD101BW-V | $I_R$ | | | 200 | nA |
| | $V_R$ = 30 V | SD101CW-V | $I_R$ | | | 200 | nA |
| Forward voltage drop | $I_F$ = 1 mA | SD101AW-V | $V_F$ | | | 410 | mV |
| | | SD101BW-V | $V_F$ | | | 400 | mV |
| | | SD101CW-V | $V_F$ | | | 390 | mV |
| | $I_F$ = 15 mA | SD101AW-V | $V_F$ | | | 1000 | mV |
| | | SD101BW-V | $V_F$ | | | 950 | mV |
| | | SD101CW-V | $V_F$ | | | 900 | mV |
| Diode capacitance | $V_R$ = 0 V, f = 1 MHz | SD101AW-V | $C_D$ | | | 2 | pF |
| | | SD101BW-V | $C_D$ | | | 2.1 | pF |
| | | SD101CW-V | $C_D$ | | | 2.2 | pF |
| Reverse recovery time | $I_F$ = $I_R$ = 5 mA, recover to 0.1 $I_R$ | | $t_{rr}$ | | | 1 | ns |

## Typical Characteristics

$T_{amb}$ = 25 °C, unless otherwise specified

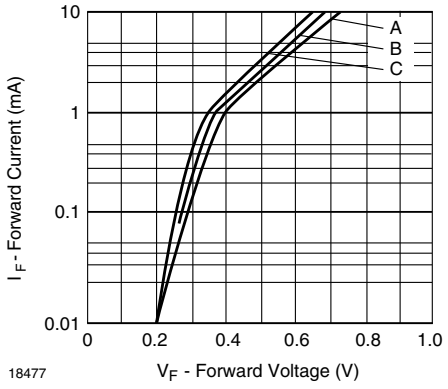



Figure 1. Typical Variation of Forward Current vs. Forward Voltage

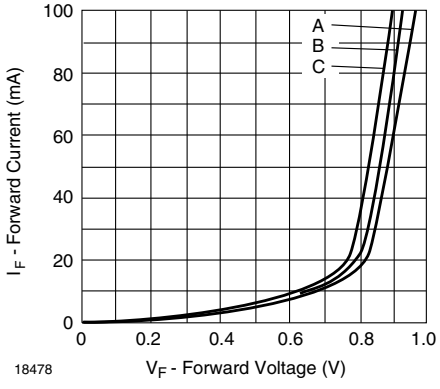



Figure 2. Typical Forward Conduction Curve



For technical questions within your region, please contact one of the following:
DiodesAmericas@vishay.com, DiodesAsia@vishay.com, DiodesEurope@vishay.com

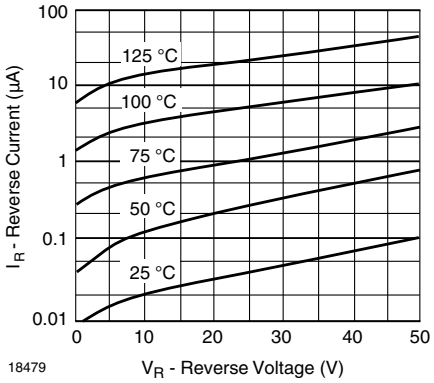



Figure 3. Typical Variation of Reverse Current at Various Temperatures

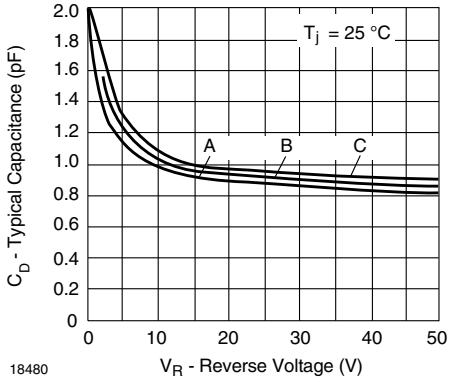
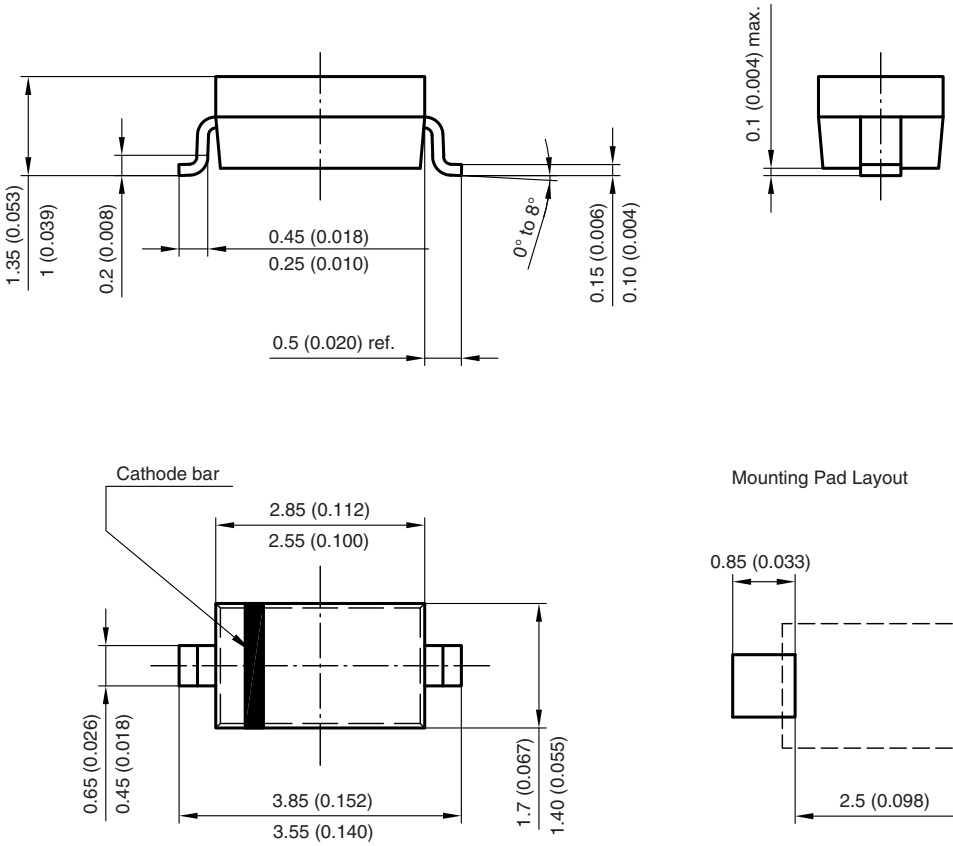



Figure 4. Typical Capacitance Curve as a Function of Reverse Voltage

## **Package Dimensions** in millimeters (inches): **SOD-123**




Rev. 4 - Date: 24. Sep. 2009
Document no.: S8-V-3910.01-001 (4)
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