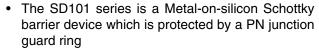


Vishay Semiconductors

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



- These diodes are also available in the Mini-MELF case with type designations LL101A to LL101C, in the DO35 case with type designations SD101A to SD101C and in the SOD323 case with type designations SD101AWS-V to SD101CWS-V
- · Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



Mechanical Data

Case: SOD123 Plastic case **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

| Test condition | Part | Symbol | Value | Unit |
|-------------------|-----------|-------------------------------------|--|--|
| | SD101AW-V | V _{RRM} | 60 | V |
| | SD101BW-V | V _{RRM} | 50 | V |
| | SD101CW-V | V _{RRM} | 40 | V |
| | | P _{tot} | 400 ¹⁾ | mW |
| | | I _F | 30 | mA |
| 10 μs square wave | | I _{FSM} | 2 | Α |
| | | SD101AW-V SD101BW-V SD101CW-V | SD101AW-V V _{RRM} SD101BW-V V _{RRM} SD101CW-V V _{RRM} P _{tot} I _F | SD101AW-V V _{RRM} 60 SD101BW-V V _{RRM} 50 SD101CW-V V _{RRM} 40 P _{tot} 400 ¹) |

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SD101AW-V/101BW-V/101CW-V

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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 | | Tj | 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 | Тур. | 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 | | | 2.0 | pF |
| | | SD101BW-V | C _D | | | 2.1 | pF |
| | | SD101CW-V | C _D | | | 2.2 | pF |
| Reverse recovery time | $I_F = I_R = 5 \text{ mA},$ | | t _{rr} | | | 1 | |
| | recover to 0.1 I _R | | | | | | |

Typical Characteristics

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

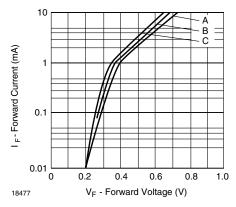


Figure 1. Typical Variation of Forward Current vs. Forward Voltage

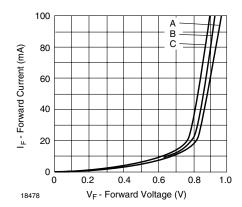


Figure 2. Typical Forward Conduction Curve

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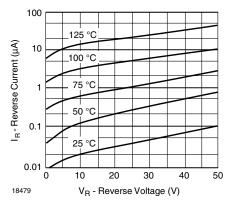


Figure 3. Typical Variation of Reverse Current at Various Temperatures

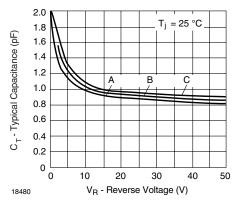
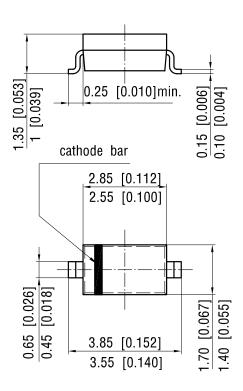
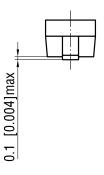


Figure 4. Typical Capacitance Curve as a Function of Reverse Voltage

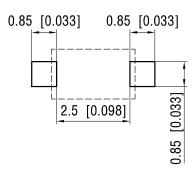
Package Dimensions in mm (Inches): SOD123



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foot print recommendation:



SD101AW-V/101BW-V/101CW-V

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Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

- 1. Meet all present and future national and international statutory requirements.
- 2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

- 1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
- 2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
- 3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

> We reserve the right to make changes to improve technical design and may do so without further notice.

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