



## Small Signal Schottky Diodes



### DESIGN SUPPORT TOOLS

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### MECHANICAL DATA

Case: SOD-123

Weight: approx. 9.4 mg

#### Packaging codes/options:

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

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

### 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 (part number on request)
- Base P/N-G3 - green, commercial grade
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



| PARTS TABLE |                                |                       |              |               |
|-------------|--------------------------------|-----------------------|--------------|---------------|
| PART        | ORDERING CODE                  | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS       |
| SD101AW-G   | SD101AW-G3-08 or SD101AW-G3-18 | Single                | SK           | Tape and reel |
| SD101BW-G   | SD101BW-G3-08 or SD101BW-G3-18 | Single                | SL           |               |
| SD101CW-G   | SD101CW-G3-08 or SD101CW-G3-18 | Single                | SM           |               |

| ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                   |           |                  |       |      |
|---|-------------------|-----------|------------------|-------|------|
| PARAMETER   | TEST CONDITION    | PART      | SYMBOL           | VALUE | UNIT |
| Repetitive peak reverse voltage   |                   | SD101AW-G | V <sub>RRM</sub> | 60    | V    |
|   |                   | SD101BW-G | V <sub>RRM</sub> | 50    | V    |
|   |                   | SD101CW-G | V <sub>RRM</sub> | 40    | V    |
| Power dissipation (infinite heatsink) <sup>(1)</sup>                            |                   |           | P <sub>tot</sub> | 400   | mW   |
| Forward continuous current  |                   |           | I <sub>F</sub>   | 30    | mA   |
| Maximum single cycle surge  | 10 μs square wave |           | I <sub>FSM</sub> | 2     | A    |

#### Note

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

| THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |                |                   |             |      |
|--|----------------|-------------------|-------------|------|
| PARAMETER  | TEST CONDITION | SYMBOL            | VALUE       | UNIT |
| Thermal resistance junction to ambient air <sup>(1)</sup>                      |                | R <sub>thJA</sub> | 300         | K/W  |
| Junction temperature <sup>(1)</sup>  |                | T <sub>j</sub>    | 125         | °C   |
| Storage temperature range  |                | T <sub>stg</sub>  | -65 to +150 | °C   |
| Operating temperature range  |                | T <sub>op</sub>   | -55 to +125 | °C   |

#### Note

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



| ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified) |   |           |                   |      |      |      |      |
|---|---|-----------|-------------------|------|------|------|------|
| PARAMETER   | TEST CONDITION  | PART      | SYMBOL            | MIN. | TYP. | MAX. | UNIT |
| Reverse breakdown voltage   | I <sub>R</sub> = 10 μA  | SD101AW-G | V <sub>(BR)</sub> | 60   |      |      | V    |
|   |   | SD101BW-G | V <sub>(BR)</sub> | 50   |      |      | V    |
|   |   | SD101CW-G | V <sub>(BR)</sub> | 40   |      |      | V    |
| Leakage current   | V <sub>R</sub> = 50 V   | SD101AW-G | I <sub>R</sub>    |      |      | 200  | nA   |
|   | V <sub>R</sub> = 40 V   | SD101BW-G | I <sub>R</sub>    |      |      | 200  | nA   |
|   | V <sub>R</sub> = 30 V   | SD101CW-G | I <sub>R</sub>    |      |      | 200  | nA   |
| Forward voltage drop  | I <sub>F</sub> = 1 mA   | SD101AW-G | V <sub>F</sub>    |      |      | 410  | mV   |
|   |   | SD101BW-G | V <sub>F</sub>    |      |      | 400  | mV   |
|   |   | SD101CW-G | V <sub>F</sub>    |      |      | 390  | mV   |
|   | I <sub>F</sub> = 15 mA  | SD101AW-G | V <sub>F</sub>    |      |      | 1000 | mV   |
|   |   | SD101BW-G | V <sub>F</sub>    |      |      | 950  | mV   |
|   |   | SD101CW-G | V <sub>F</sub>    |      |      | 900  | mV   |
| Diode capacitance   | V <sub>R</sub> = 0 V, f = 1 MHz                                       | SD101AW-G | C <sub>D</sub>    |      |      | 2    | pF   |
|   |   | SD101BW-G | C <sub>D</sub>    |      |      | 2.1  | pF   |
|   |   | SD101CW-G | C <sub>D</sub>    |      |      | 2.2  | pF   |
| Reverse recovery time   | I <sub>F</sub> = I <sub>R</sub> = 5 mA, recover to 0.1 I <sub>R</sub> |           | t <sub>rr</sub>   |      |      | 1    | ns   |

**TYPICAL CHARACTERISTICS** (T<sub>amb</sub> = 25 °C, unless otherwise specified)

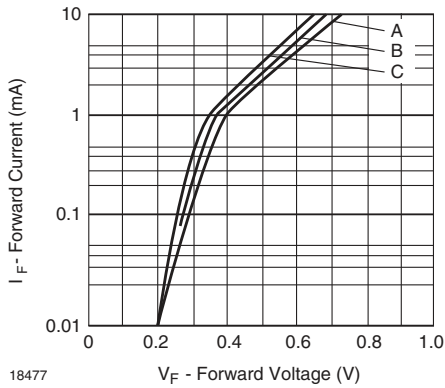


Fig. 1 - Typical Variation of Forward Current vs. Forward Voltage

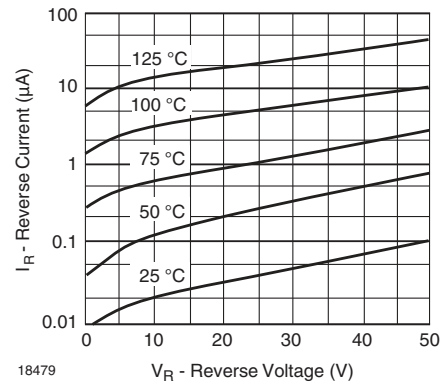


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

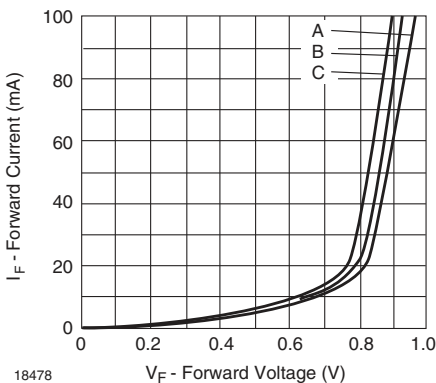


Fig. 2 - Typical Forward Conduction Curve

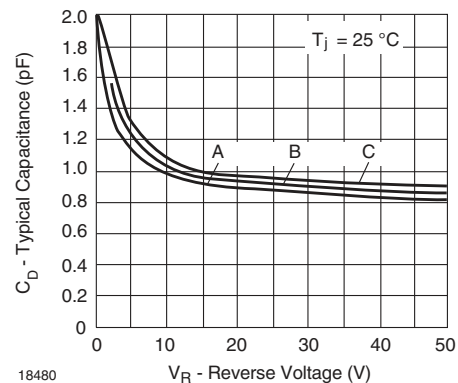
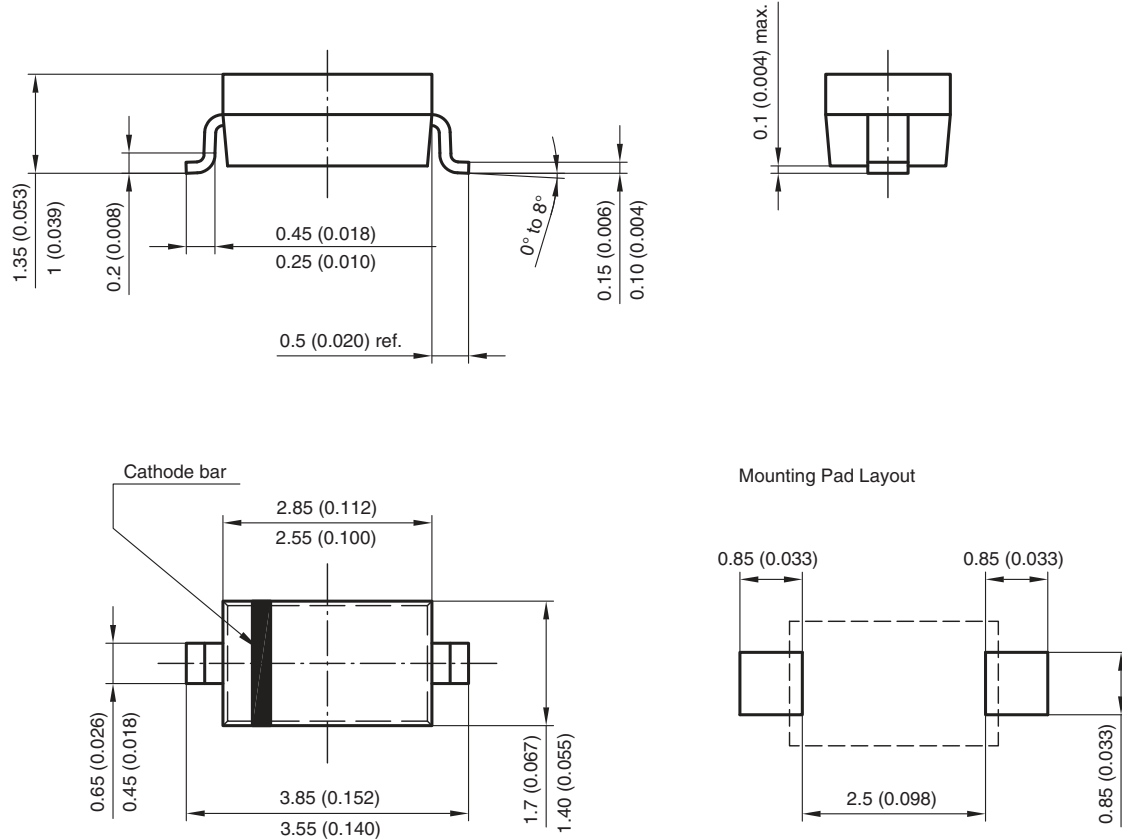


Fig. 4 - Typical Capacitance Curve as a Function of Reverse Voltage



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



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