



Small Signal Schottky Diodes



DESIGN SUPPORT TOOLS click logo to get started



MECHANICAL DATA

Case: SOD-323

Weight: approx. 4.0 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

- The SD103 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
- Other applications are click suppression, efficient full wave bridges in telephone subsets, and blocking diodes in rechargeable low voltage battery systems
- For general purpose applications
- AEC-Q101 qualified available
- Base P/N-G3 - green, commercial grade
- Base P/N-HG3 - green, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc299912



RoHS
COMPLIANT
HALOGEN
FREE
GREEN
(5-2008)

PARTS TABLE

| PARTS TABLE | | | | |
|-------------|------------------------------------|-----------------------|--------------|---------------|
| PART | ORDERING CODE | CIRCUIT CONFIGURATION | TYPE MARKING | REMARKS |
| SD103AWS-G | SD103AWS-G3-08 or SD103AWS-G3-18 | Single | Z6 | Tape and reel |
| | SD103AWS-HG3-08 or SD103AWS-HG3-18 | | | |
| SD103BWS-G | SD103BWS-G3-08 or SD103BWS-G3-18 | Single | Z7 | |
| | SD103BWS-HG3-08 or SD103BWS-HG3-18 | | | |
| SD103CWS-G | SD103CWS-G3-08 or SD103CWS-G3-18 | Single | Z8 | |
| | SD101CWS-HG3-08 or SD101CWS-HG3-18 | | | |

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

| PARAMETER | TEST CONDITION | PART | SYMBOL | VALUE | UNIT |
|---|------------------------------|------------|-----------|-------|------|
| Repetitive peak reverse voltage | | SD103AWS-G | V_{RRM} | 40 | V |
| | | SD103BWS-G | V_{RRM} | 30 | V |
| | | SD103CWS-G | V_{RRM} | 20 | V |
| Forward continuous current ⁽¹⁾ | | | I_F | 350 | mA |
| Single cycle surge | 10 μs square wave | | I_{FSM} | 2 | A |
| Power dissipation ⁽¹⁾ | | | P_{tot} | 200 | mW |

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperatureTHERMAL CHARACTERISTICS ($T_{amb} = 25^{\circ}\text{C}$, unless otherwise specified)

| PARAMETER | TEST CONDITION | SYMBOL | VALUE | UNIT |
|---|----------------|------------|-------------|--------------------|
| Thermal resistance junction to ambient air ⁽¹⁾ | | R_{thJA} | 500 | K/W |
| Junction temperature | | T_j | 125 | $^{\circ}\text{C}$ |
| Operating temperature range | | T_{op} | -55 to +125 | $^{\circ}\text{C}$ |
| Storage temperature range | | T_{stg} | -55 to +150 | $^{\circ}\text{C}$ |

Note

⁽¹⁾ 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 |
| Leakage current | $V_R = 30\text{ V}$ | SD103AWS-G | I_R | | | 5 | μA |
| | $V_R = 20\text{ V}$ | SD103BWS-G | I_R | | | 5 | μA |
| | $V_R = 10\text{ V}$ | SD103CWS-G | I_R | | | 5 | μA |
| Forward voltage drop | $I_F = 20\text{ mA}$ | | V_F | | | 370 | mV |
| | $I_F = 200\text{ mA}$ | | V_F | | | 600 | mV |
| Diode capacitance | $V_R = 0\text{ V}$, $f = 1\text{ MHz}$ | | C_D | | 50 | | pF |
| Reverse recovery time | $I_F = I_R = 50\text{ mA}$ to 200 mA , recover to $0.1 I_R$ | | t_{rr} | | 10 | | ns |

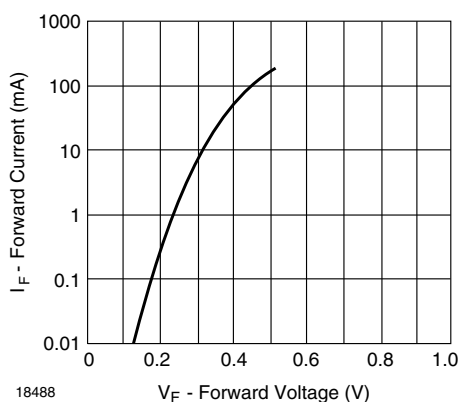
TYPICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

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

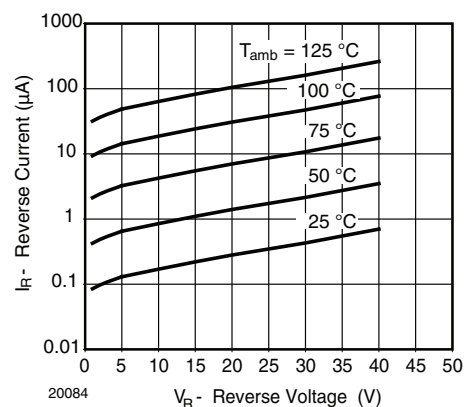


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

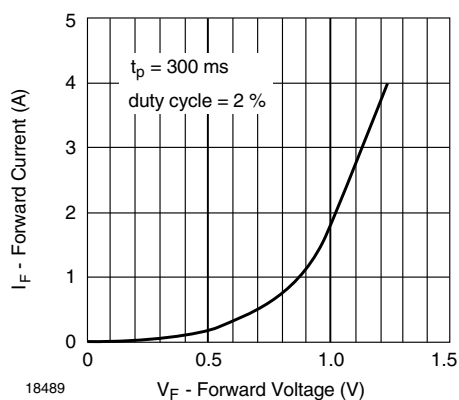


Fig. 2 - Typical High Current Forward Conduction Curve

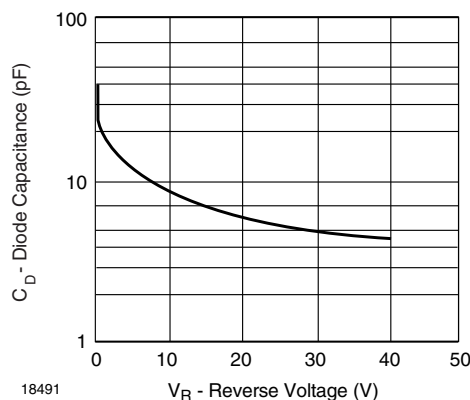


Fig. 4 - Diode Capacitance vs. Reverse Voltage

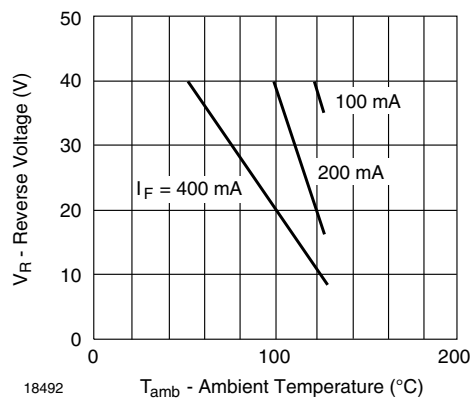
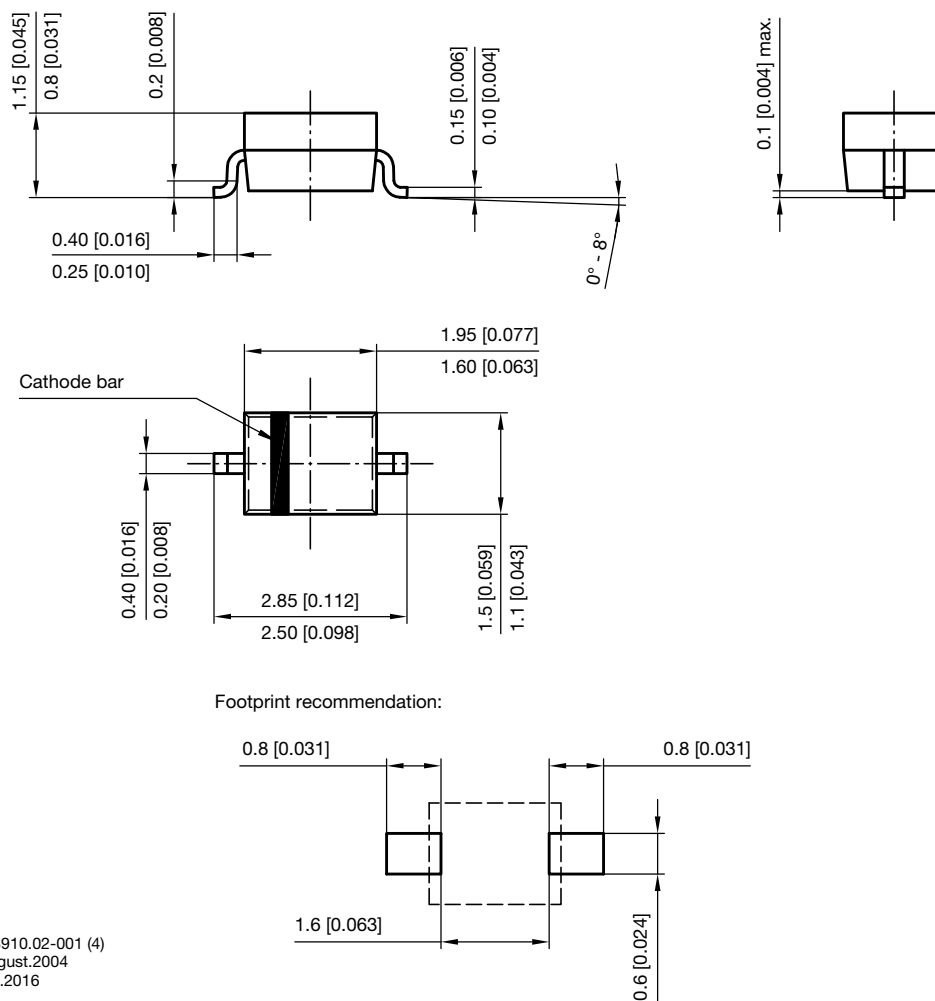


Fig. 5 - Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

PACKAGE DIMENSIONS in millimeters (inches): SOD-323



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