

## Small Signal Schottky Diodes



### DESIGN SUPPORT TOOLS



### 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 guardring
- 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/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
**HALOGEN FREE**  
**GREEN**  
(S-2008)

### 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<sub>amb</sub> = 25 °C, unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		SD103AWS-G	V <sub>RRM</sub>	40	V
		SD103BWS-G	V <sub>RRM</sub>	30	V
		SD103CWS-G	V <sub>RRM</sub>	20	V
Forward continuous current <sup>(1)</sup>			I <sub>F</sub>	350	mA
Single cycle surge	10 µs square wave		I <sub>FSM</sub>	2	A
Power dissipation <sup>(1)</sup>			P <sub>tot</sub>	200	mW

#### 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>	500	K/W
Junction temperature		T <sub>j</sub>	125	°C
Operating temperature range		T <sub>op</sub>	-55 to +125	°C
Storage temperature range		T <sub>stg</sub>	-55 to +150	°C

#### Note

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

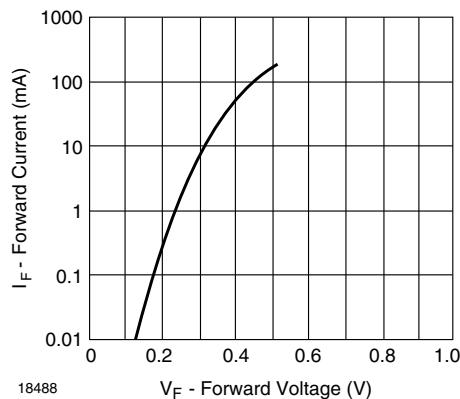
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25$  °C, unless otherwise specified)


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

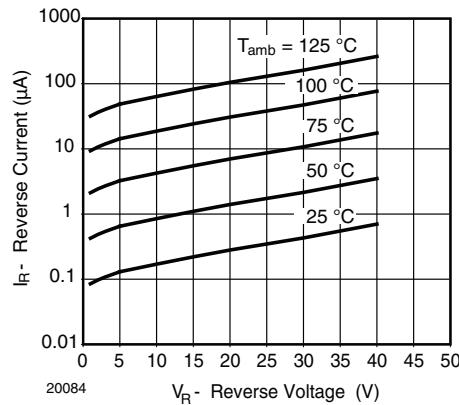


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

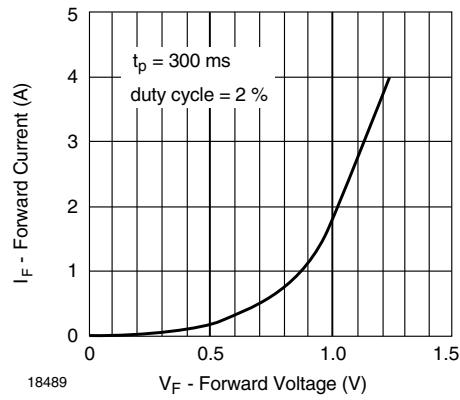


Fig. 2 - Typical High Current Forward Conduction Curve

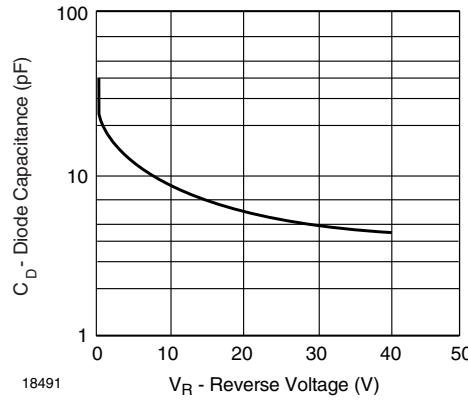


Fig. 4 - Diode Capacitance vs. Reverse Voltage

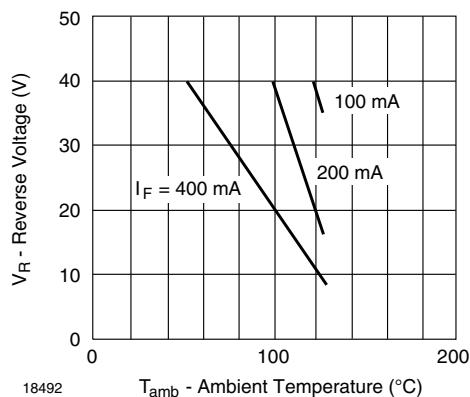
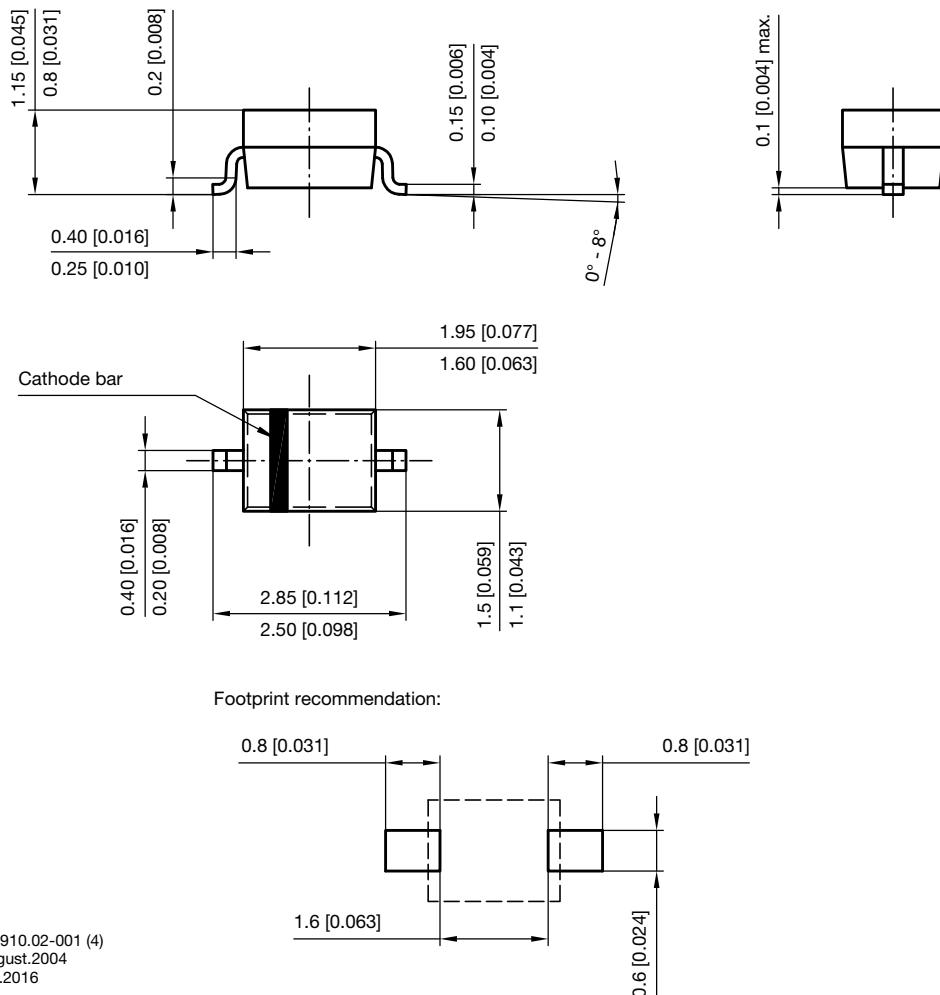


Fig. 5 - Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

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



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