



## Small Signal Schottky Diodes



**DESIGN SUPPORT TOOLS** click logo to get started

**MECHANICAL DATA**

**Case:** SOD-323

**Weight:** approx. 4.3 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 guard ring
- 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
- For general purpose applications
- AEC-Q101 qualified available
- Base P/N-E3 - RoHS-compliant, commercial grade
- Base P/N-HE3 - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT

**PARTS TABLE**

PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
SD103AWS	SD103AWS-E3-08 or SD103AWS-E3-18	Single	S6	Tape and reel
	SD103AWS-HE3-08 or SD103AWS-HE3-18			
SD103BWS	SD103BWS-E3-08 or SD103BWS-E3-18	Single	S7	
	SD103BWS-HE3-08 or SD103BWS-HE3-18			
SD103CWS	SD103CWS-E3-08 or SD103CWS-E3-18	Single	S8	
	SD103CWS-HE3-08 or SD103CWS-HE3-18			

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

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		SD103AWS	$V_{RRM}$	40	V
		SD103BWS	$V_{RRM}$	30	V
		SD103CWS	$V_{RRM}$	20	V
Forward continuous current <sup>(1)</sup>			$I_F$	350	mA
Power dissipation <sup>(1)</sup>			$P_{tot}$	200	mW
Single cycle surge	10 $\mu\text{s}$ square wave		$I_{FSM}$	2	A

**Note**

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

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

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	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**

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



<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Leakage current	$V_R = 30\text{ V}$	SD103AWS	$I_R$			5	$\mu\text{A}$
	$V_R = 20\text{ V}$	SD103BWS	$I_R$			5	$\mu\text{A}$
	$V_R = 10\text{ V}$	SD103CWS	$I_R$			5	$\mu\text{A}$
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 $200\text{ mA}$ , recover to $0.1\text{ }I_R$		$t_{rr}$		10		ns

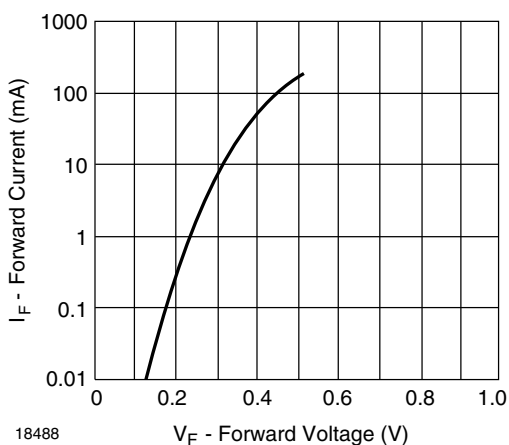
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

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

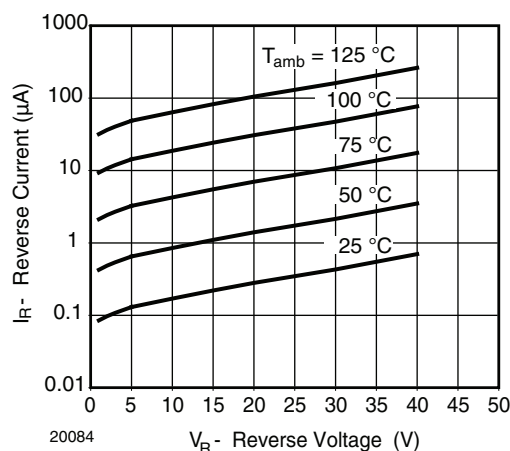


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

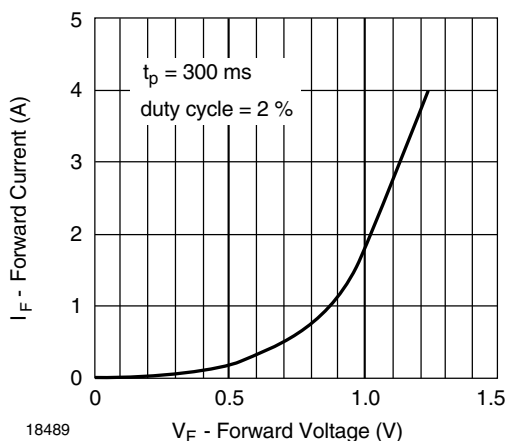


Fig. 2 - Typical High Current Forward Conduction Curve

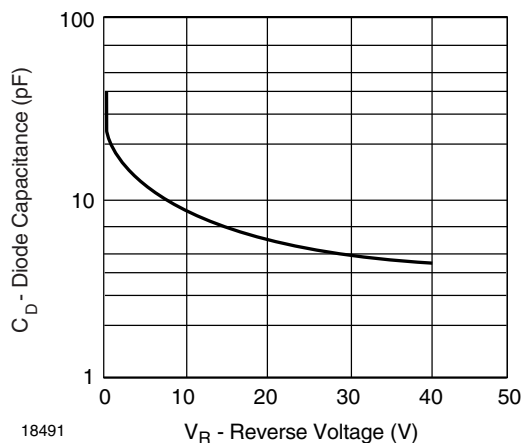


Fig. 4 - Diode Capacitance vs. Reverse Voltage

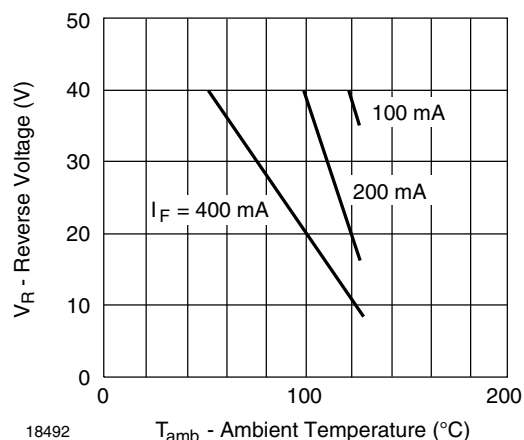
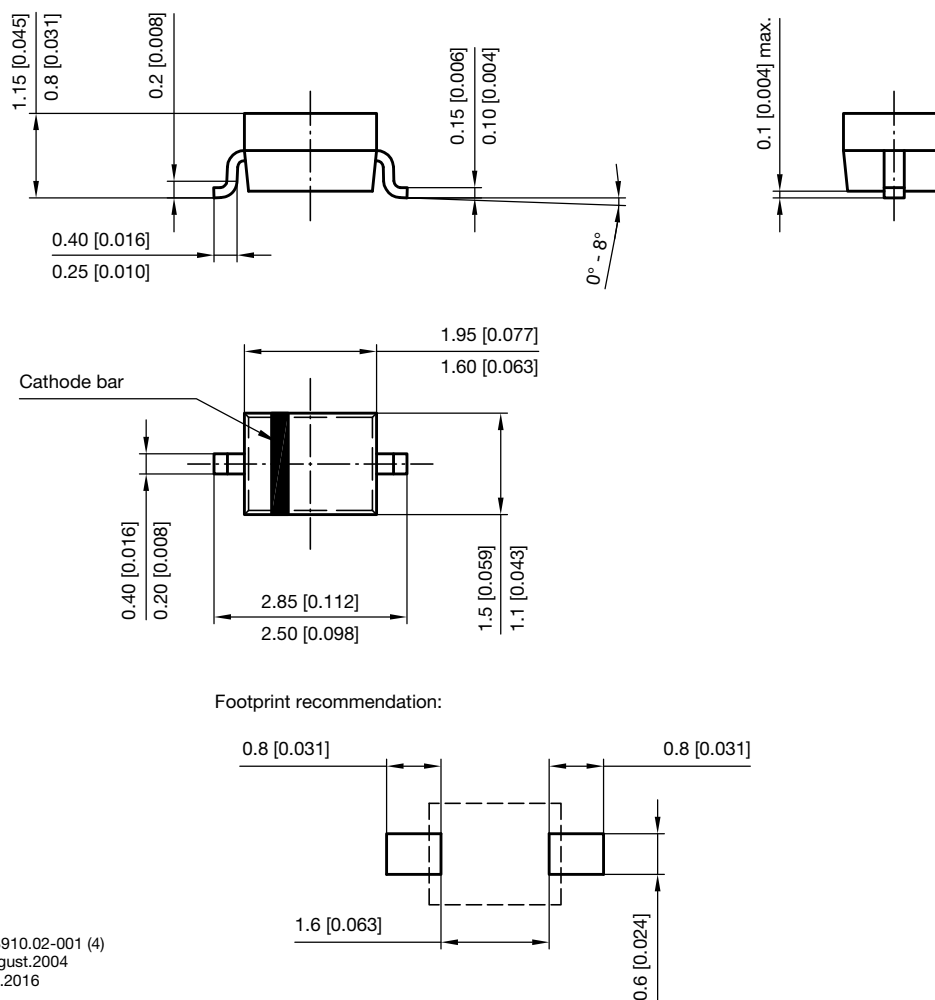


Fig. 5 - Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

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



Document no.: S8-V-3910.02-001 (4)  
Created - Date: 24.August.2004  
Rev. 6 - Date: 23.Sept.2016  
17443



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