

Small Signal Schottky Diodes



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
- 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



RoHS
COMPLIANT

PARTS TABLE

PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
SD103AWS	SD103AWS-E3-08 or SD103AWS-E3-18	Single diode	S6	Tape and reel
	SD103AWS-HE3-08 or SD103AWS-HE3-18			
SD103BWS	SD103BWS-E3-08 or SD103BWS-E3-18	Single diode	S7	
	SD103BWS-HE3-08 or SD103BWS-HE3-18			
SD103CWS	SD103CWS-E3-08 or SD103CWS-E3-18	Single diode	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 ⁽¹⁾			I_F	350	mA
Power dissipation ⁽¹⁾			P_{tot}	200	mW
Single cycle surge	10 μs square wave		$I_{FS,M}$	2	A

Note

⁽¹⁾ 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 ⁽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	I_R			5	μA
	$V_R = 20\text{ V}$	SD103BWS	I_R			5	μA
	$V_R = 10\text{ V}$	SD103CWS	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 $0.1\text{ }I_R$		t_{rr}		10		ns

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

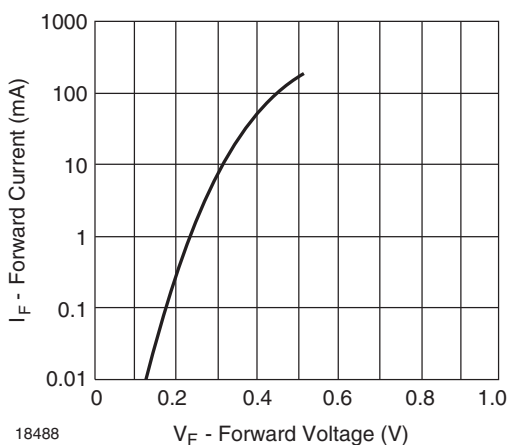


Fig. 1 - Typical Variation of Forward Current vs. Forward Voltage

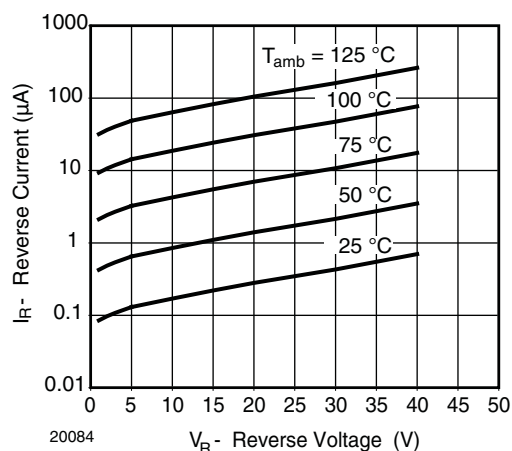


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

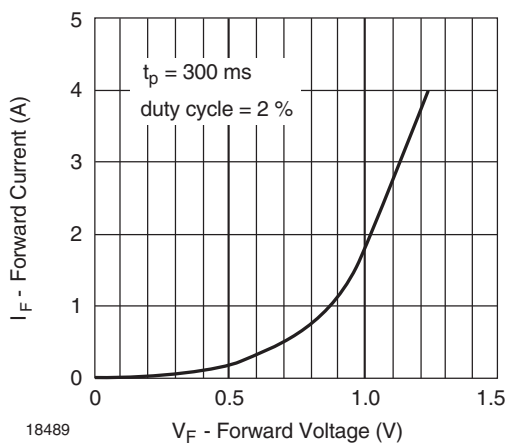


Fig. 2 - Typical High Current Forward Conduction Curve

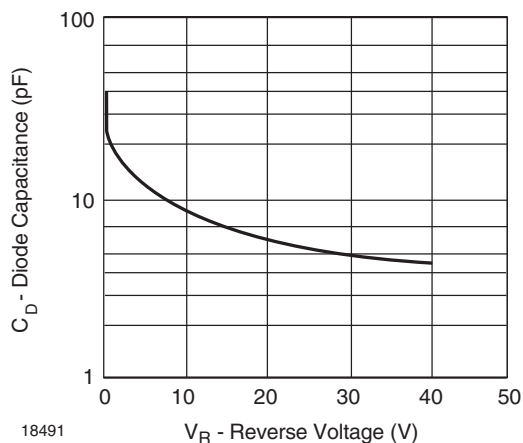


Fig. 4 - Diode Capacitance vs. Reverse Voltage

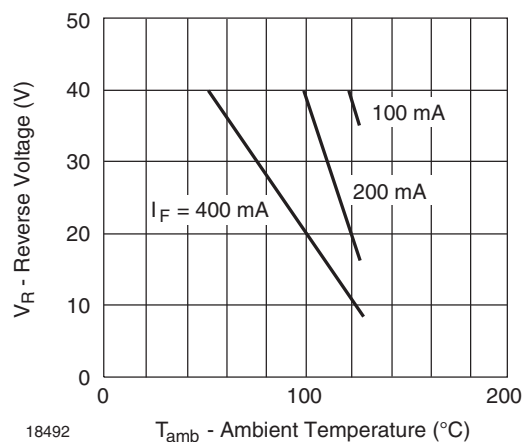
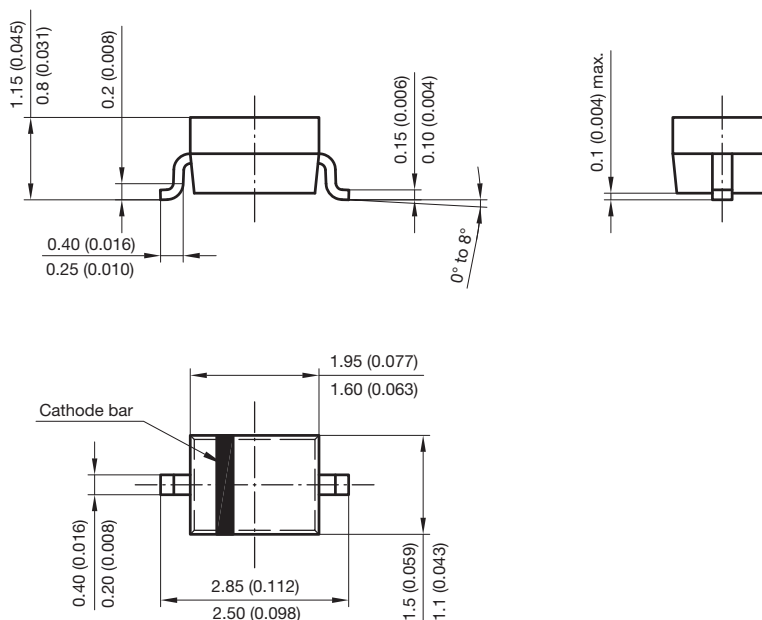
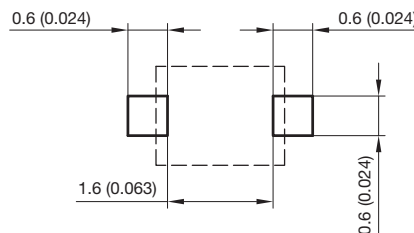


Fig. 5 - Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

PACKAGE DIMENSIONS in millimeters (inches): SOD-323



Foot print recommendation:



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