## SD103AW-G, SD103BW-G, SD103CW-G

Vishay Semiconductors

# **Small Signal Schottky Diodes**



#### **DESIGN SUPPORT TOOLS**

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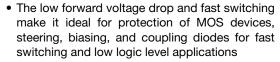
#### **MECHANICAL DATA**

Case: SOD-123

Weight: approx. 9.4 mg
Cathode band color: black
Packaging codes/options:

18/10K per 13" reel (8 mm tape), 10K/box 08/3K per 7" reel (8 mm tape), 15K/box

#### **FEATURES**







COMPLIANT
HALOGEN
FREE
GREEN

- Other applications are click suppression, efficient full wave bridges in telephone subsets, and blocking diodes in rechargeable low voltage battery systems
- The SD103 series is a metal-on-silicon Schottky barrier device which is protected by a PN junction guardring
- For general purpose applications
- AEC-Q101 qualified available (part number on request)
- Base P/N-G3 green, commercial grade
- Material categorization: for definitions of compliance please see <a href="https://www.vishay.com/doc?99912"><u>www.vishay.com/doc?99912</u></a>

PARTS TABLE						
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS		
SD103AW-G	SD103AW-G3-08 or SD103AW-G3-18	Single	Z6			
SD103BW-G	SD103BW-G3-08 or SD103BW-G3-18	Single	<b>Z</b> 7	Tape and reel		
SD103CW-G	SD103CW-G3-08 or SD103CW-G3-18	Single	Z8			

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
		SD103AW-G	$V_{RRM}$	40	V	
Repetitive peak reverse voltage		SD103BW-G	$V_{RRM}$	30	V	
		SD103CW-G	$V_{RRM}$	20	V	
Forward continuous current (1)			I <sub>F</sub>	350	mA	
Power dissipation (infinite heat sink) (1)			P <sub>tot</sub>	400	mW	
Single cycle surge	10 μs square wave		I <sub>FSM</sub>	2	Α	

#### 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 (1)		R <sub>thJA</sub>	300	K/W	
Junction temperature		Tj	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



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<b>ELECTRICAL CHARACTERISTICS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Leakage current	V <sub>R</sub> = 30 V	SD103AW-G	I <sub>R</sub>			5	μA
	V <sub>R</sub> = 20 V	SD103BW-G	I <sub>R</sub>			5	μΑ
	V <sub>R</sub> = 10 V	SD103CW-G	I <sub>R</sub>			5	μΑ
Forward voltage drop	I <sub>F</sub> = 20 mA		V <sub>F</sub>			370	mV
	I <sub>F</sub> = 200 mA		V <sub>F</sub>			600	mV
Diode capacitance	V <sub>R</sub> = 0 V, f = 1 MHz		C <sub>D</sub>		50		pF
Reverse recovery time	$I_F = I_R = 50$ mA to 200 mA, recover to 0.1 $I_R$		t <sub>rr</sub>		10		ns

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

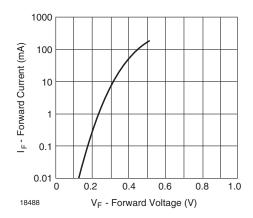


Fig. 1 - Typical Variation of Forward Current vs. Forward Voltage

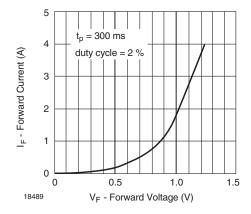


Fig. 2 - Typical High Current Forward Conduction Curve

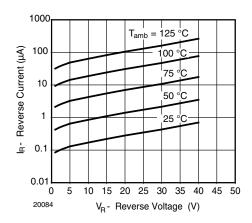


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

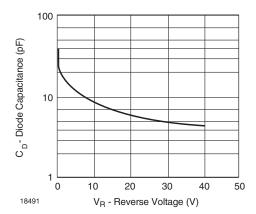


Fig. 4 - Typical Capacitance vs. Reverse Voltage

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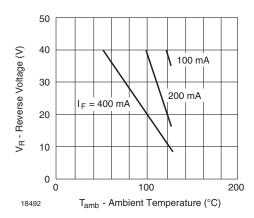
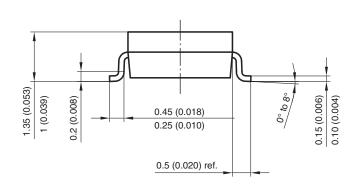
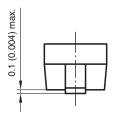


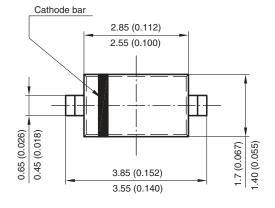
Fig. 5 - Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

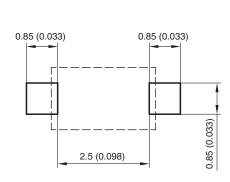
### PACKAGE DIMENSIONS in millimeters (inches): SOD-123





Mounting Pad Layout





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