SD103AW, SD103BW, SD103CW

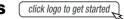
Vishay Semiconductors

Small Signal Schottky Diodes



www.vishay.com

DESIGN SUPPORT TOOLS





MECHANICAL DATA

Case: SOD-123

Weight: approx. 10.3 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

 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
- 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
- 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 <u>www.vishay.com/doc?99912</u>

PARTS TABLE						
PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS		
SD103AW	SD103AW-E3-08 or SD103AW-E3-18	Single	S6	Tape and reel		
	SD103AW-HE3-08 or SD103AW-HE3-18	Single				
SD103BW	SD103BW-E3-08 or SD103BW-E3-18	Single	S7			
	SD103BW-HE3-08 or SD103BW-HE3-18	Single	57			
SD103CW	SD103CW-E3-08 or SD103CW-E3-18	Single	S8			
	SD103CW-HE3-08 or SD103CW-HE3-18	Single	30			

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

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

THERMAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT		
Thermal resistance junction to ambient air ⁽¹⁾		R _{thJA}	300	K/W		
Junction temperature		Tj	125	°C		
Operating temperature range		T _{op}	-55 to +125	°C		
Storage temperature range		T _{stg}	-55 to +150	°C		

Note

⁽¹⁾ Valid provided that electrodes are kept at ambient temperature

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SD103AW, SD103BW, SD103CW



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ELECTRICAL CHARACTERISTICS (T _{amb} = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Leakage current	V _R = 30 V	SD103AW	I _R			5	μA
	V _R = 20 V	SD103BW	I _R			5	μA
	V _R = 10 V	SD103CW	I _R			5	μA
Forward voltage drop	I _F = 20 mA		VF			370	mV
	I _F = 200 mA		V _F			600	mV
Diode capacitance	V _R = 0 V, f = 1 MHz		CD		50		pF
Reverse recovery time	$I_{F} = I_{R} = 50 \text{ mA to } 200 \text{ mA},$ recover to 0.1 I_{R}		t _{rr}		10		ns

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

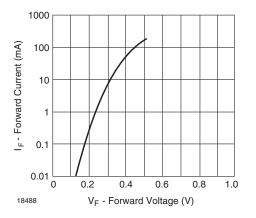


Fig. 1 - Typical Variation of Forward Current vs. Forward Voltage

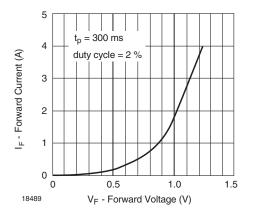


Fig. 2 - Typical High Current Forward Conduction Curve

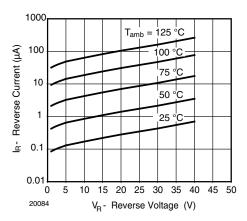


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

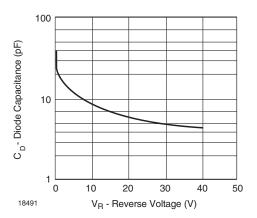


Fig. 4 - Typical Capacitance vs. Reverse Voltage

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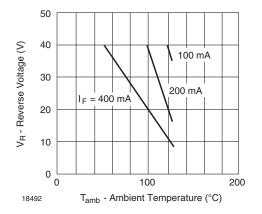
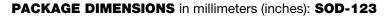
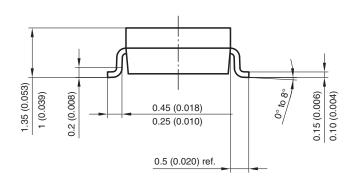
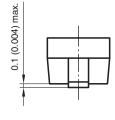
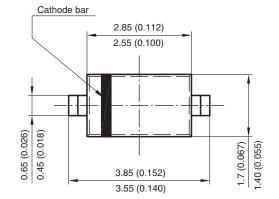


Fig. 5 - Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

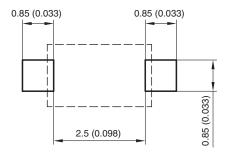








Mounting Pad Layout



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