



## Small Signal Schottky Diodes



### DESIGN SUPPORT TOOLS

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### 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 guarding
- 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
SD103AW	SD103AW-E3-08 or SD103AW-E3-18	Single	S6	Tape and reel
	SD103AW-HE3-08 or SD103AW-HE3-18			
SD103BW	SD103BW-E3-08 or SD103BW-E3-18	Single	S7	
	SD103BW-HE3-08 or SD103BW-HE3-18			
SD103CW	SD103CW-E3-08 or SD103CW-E3-18	Single	S8	
	SD103CW-HE3-08 or SD103CW-HE3-18			

ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		SD103AW	$V_{RRM}$	40	V
		SD103BW	$V_{RRM}$	30	V
		SD103CW	$V_{RRM}$	20	V
Forward continuous current <sup>(1)</sup>			$I_F$	350	mA
Power dissipation (infinite heat sink) <sup>(1)</sup>			$P_{tot}$	400	mW
Single cycle surge	10 $\mu$ s square wave		$I_{FSM}$	2	A

#### Note

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

THERMAL CHARACTERISTICS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air <sup>(1)</sup>		$R_{thJA}$	300	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



ELECTRICAL CHARACTERISTICS (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	I <sub>R</sub>			5	μA
	V <sub>R</sub> = 20 V	SD103BW	I <sub>R</sub>			5	μA
	V <sub>R</sub> = 10 V	SD103CW	I <sub>R</sub>			5	μA
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 <sub>F</sub> = I <sub>R</sub> = 50 mA to 200 mA, recover to 0.1 I <sub>R</sub>		t <sub>rr</sub>		10		ns

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

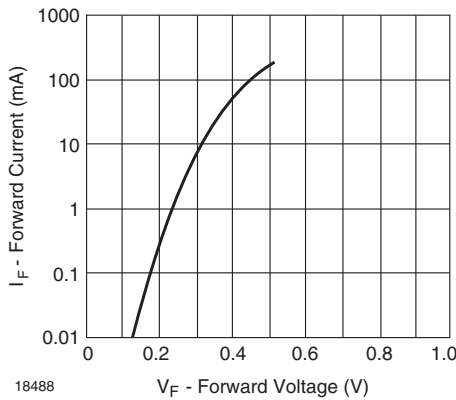


Fig. 1 - Typical Variation of Forward Current vs. Forward Voltage

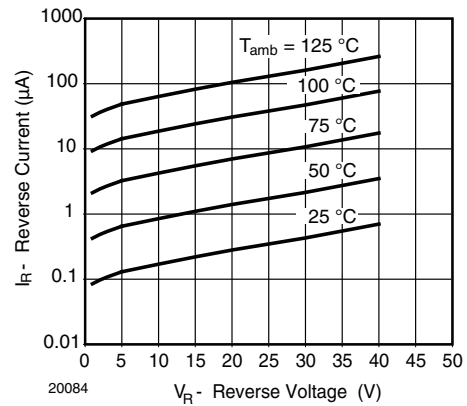


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

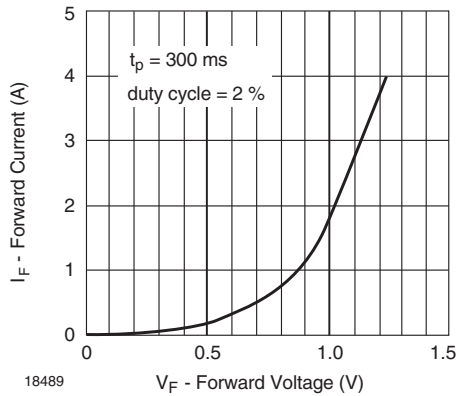


Fig. 2 - Typical High Current Forward Conduction Curve

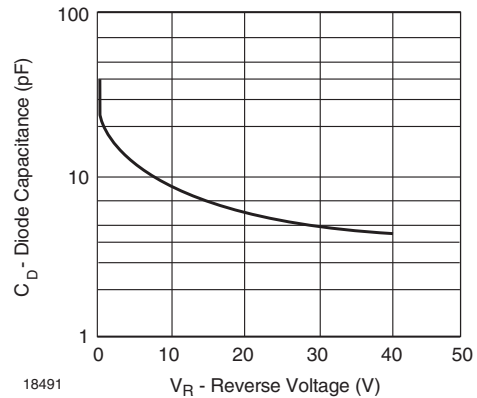


Fig. 4 - Typical Capacitance vs. Reverse Voltage

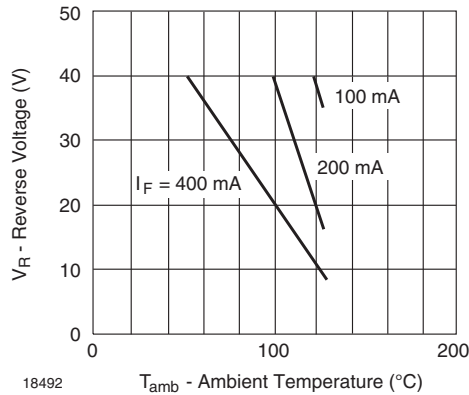
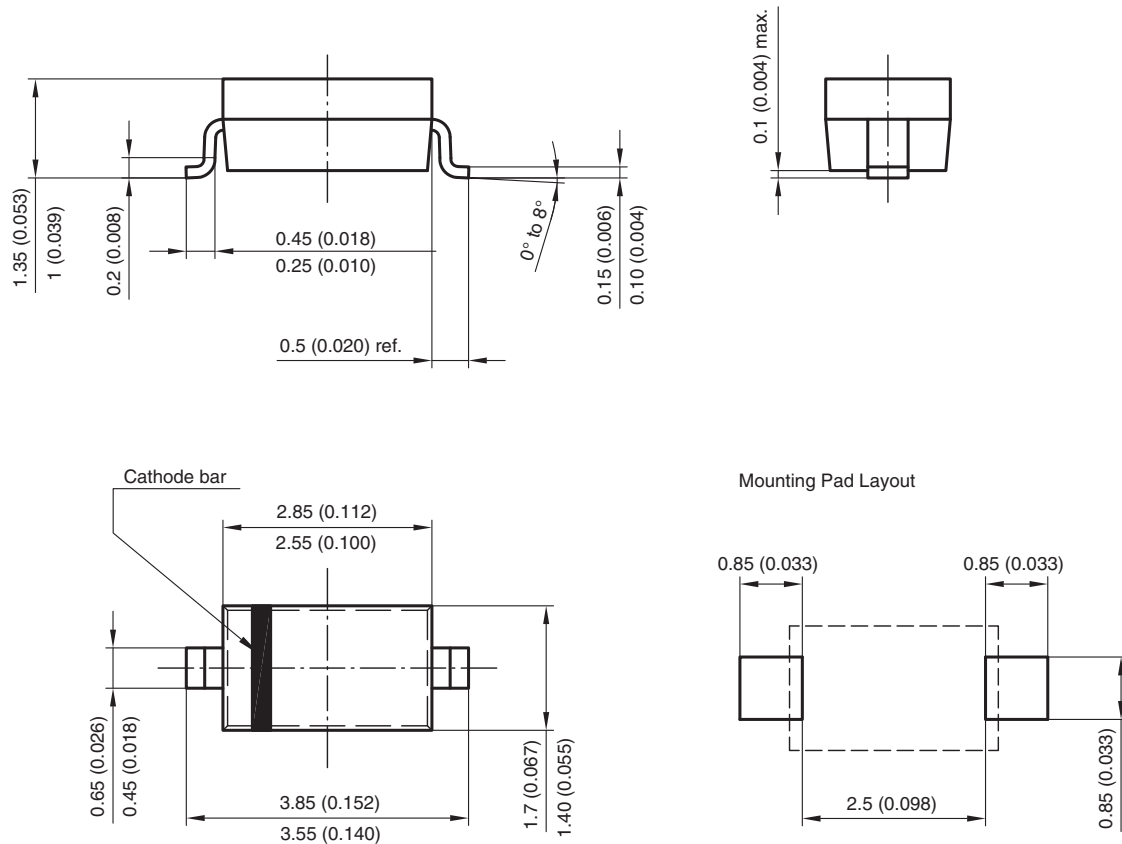


Fig. 5 - Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

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



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