

## Small Signal Schottky Diodes



### DESIGN SUPPORT TOOLS

**3D**  
Models Available

*click logo to get started*



**RoHS**  
COMPLIANT  
**HALOGEN FREE**  
**GREEN**  
(S-2008)

### 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 (part number on request)
- Base P/N-G3 - green, commercial grade
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)

### 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

### PARTS TABLE

PART	ORDERING CODE	CIRCUIT CONFIGURATION	TYPE MARKING	REMARKS
SD103AW-G	SD103AW-G3-08 or SD103AW-G3-18	Single	Z6	Tape and reel
SD103BW-G	SD103BW-G3-08 or SD103BW-G3-18	Single	Z7	
SD103CW-G	SD103CW-G3-08 or SD103CW-G3-18	Single	Z8	

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

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage		SD103AW-G	$V_{RRM}$	40	V
		SD103BW-G	$V_{RRM}$	30	V
		SD103CW-G	$V_{RRM}$	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 ( $T_{amb} = 25^{\circ}C$ , 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	°C
Operating temperature range		$T_{op}$	-55 to +125	°C
Storage temperature range		$T_{stg}$	-55 to +150	°C

#### Note

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

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

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Leakage current	$V_R = 30 V$	SD103AW-G	$I_R$			5	$\mu A$
	$V_R = 20 V$	SD103BW-G	$I_R$			5	$\mu A$
	$V_R = 10 V$	SD103CW-G	$I_R$			5	$\mu A$
Forward voltage drop	$I_F = 20 mA$		$V_F$			370	$mV$
	$I_F = 200 mA$		$V_F$			600	$mV$
Diode capacitance	$V_R = 0 V, f = 1 MHz$		$C_D$		50		$pF$
Reverse recovery time	$I_F = I_R = 50 mA$ to $200 mA$ , recover to $0.1 I_R$		$t_{rr}$		10		$ns$

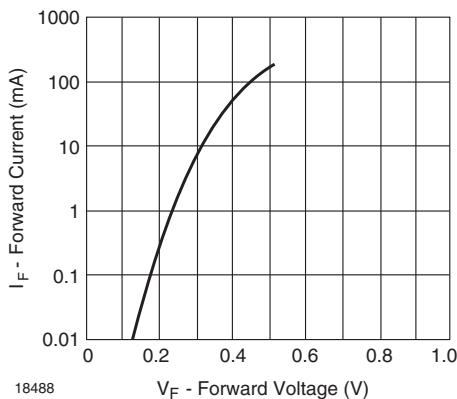
**TYPICAL CHARACTERISTICS** ( $T_{amb} = 25^{\circ}C$ , unless otherwise specified)


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

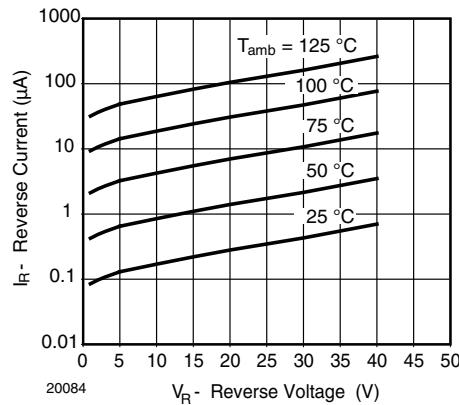


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

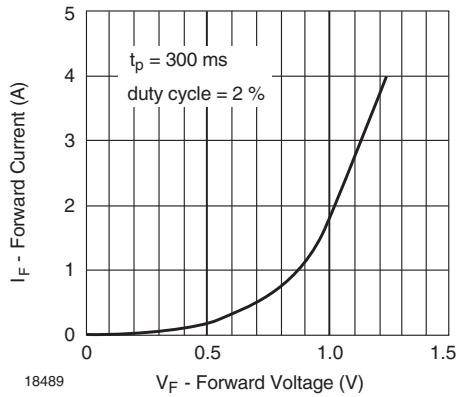


Fig. 2 - Typical High Current Forward Conduction Curve

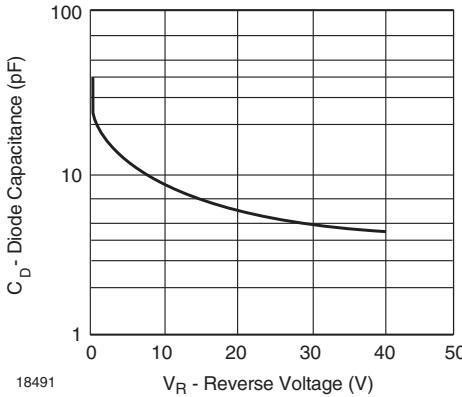


Fig. 4 - Typical Capacitance vs. Reverse Voltage

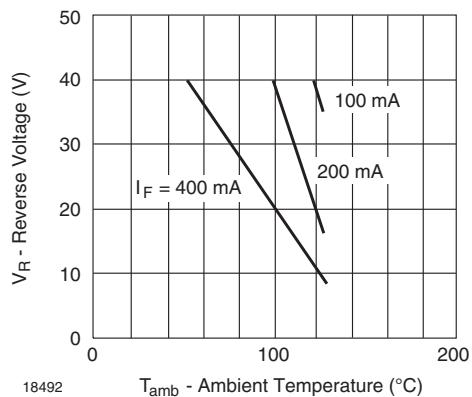
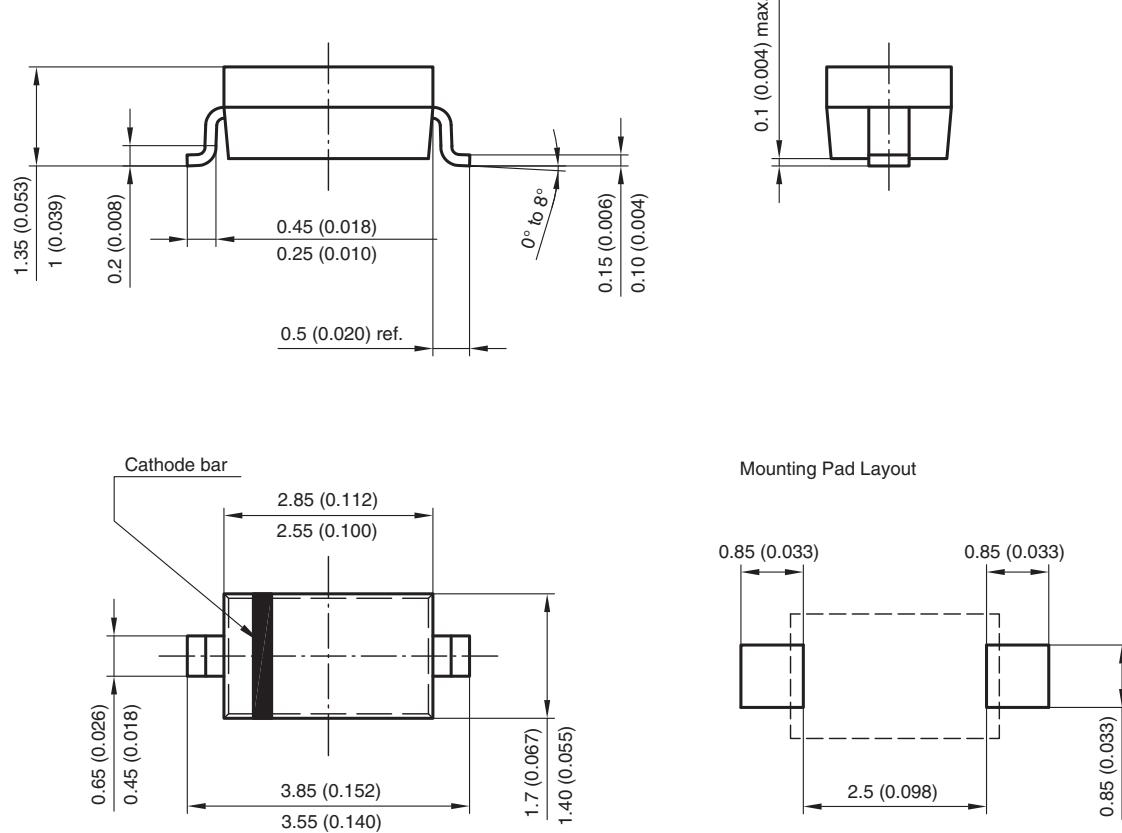


Fig. 5 - Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

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



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