Small Signal Schottky Diodes



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
- 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

Pb-free

e3

RoHS COMPLIANT

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

PARTS TABLE

PART	ORDERING CODE	INTERNAL CONSTRUCTION	TYPE MARKING	REMARKS
SD103AW	SD103AW-E3-08 or SD103AW-E3-18	Single diode	S6	Tape and reel
	SD103AW-HE3-08 or SD103AW-HE3-18			
SD103BW	SD103BW-E3-08 or SD103BW-E3-18	Single diode	S7	
	SD103BW-HE3-08 or SD103BW-HE3-18			
SD103CW	SD103CW-E3-08 or SD103CW-E3-18	Single diode	S8	
	SD103CW-HE3-08 or SD103CW-HE3-18			

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25 °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 (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	A

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		T_j	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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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		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 °C, unless otherwise specified)

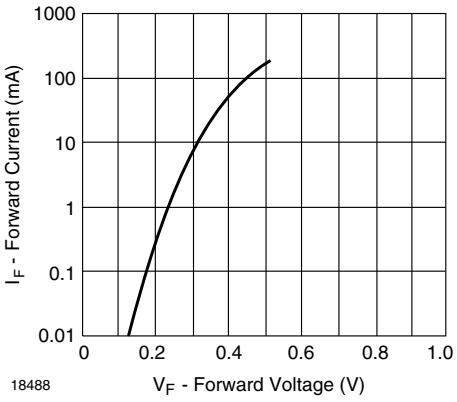


Fig. 1 - Typical Variation of Forward Current vs. Forward Voltage

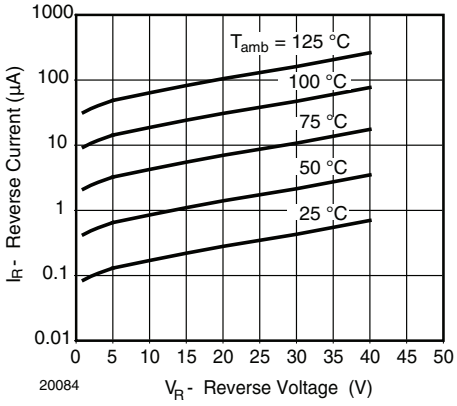


Fig. 3 - Typical Variation of Reverse Current at Various Temperatures

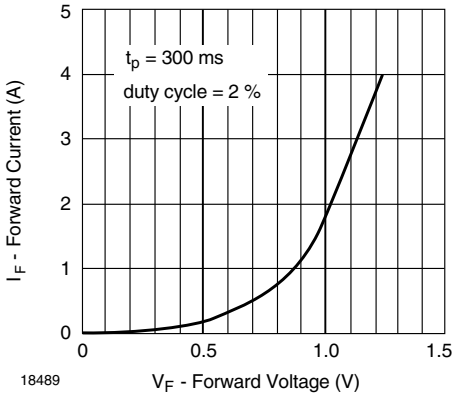


Fig. 2 - Typical High Current Forward Conduction Curve

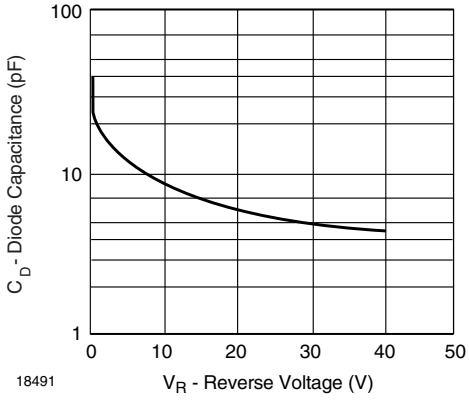


Fig. 4 - Typical Capacitance vs. Reverse Voltage

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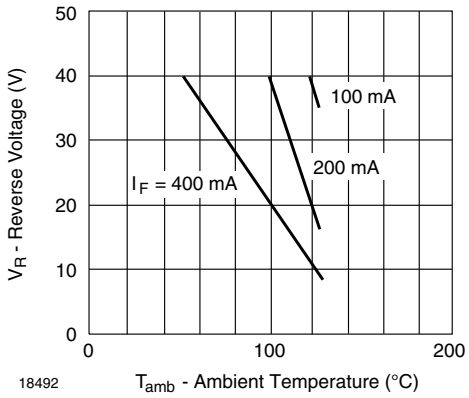
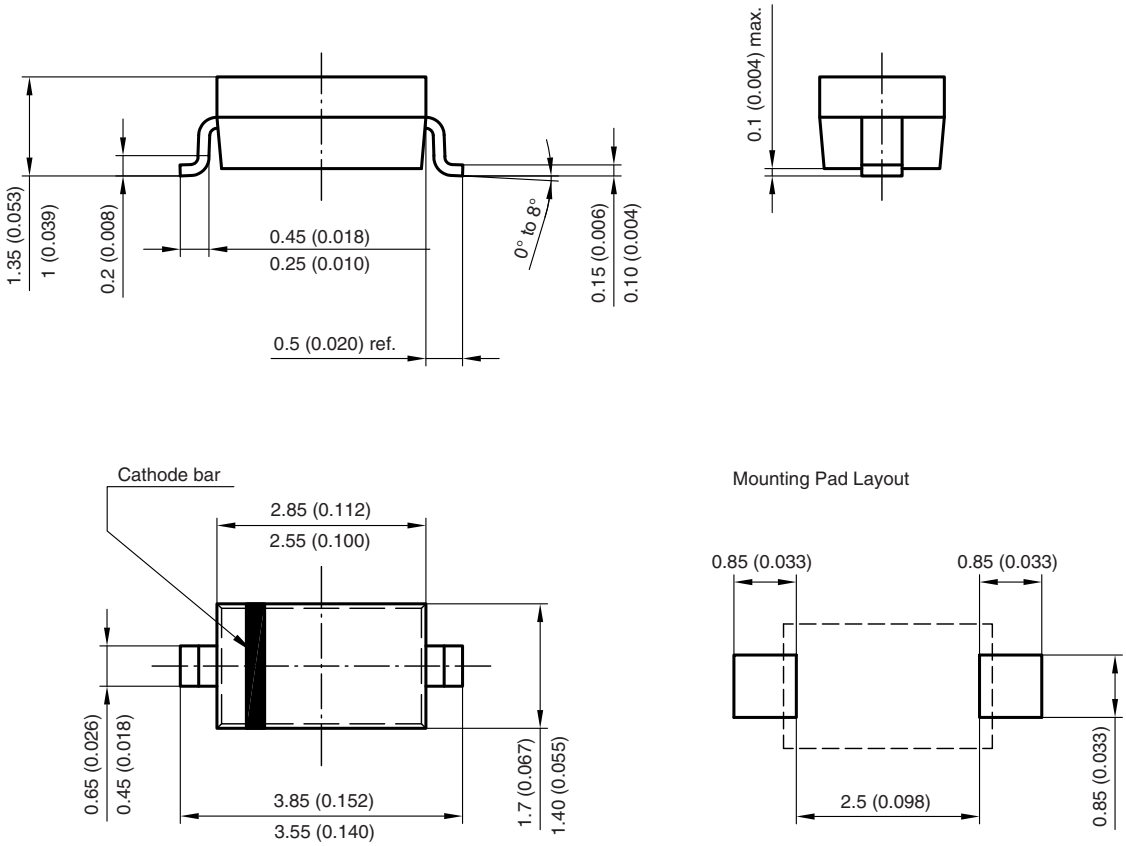


Fig. 5 - Blocking Voltage Deration vs. Temperature at Various Average Forward Currents

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



Rev. 4 - Date: 24. Sep. 2009
Document no.: S8-V-3910.01-001 (4)
17432

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