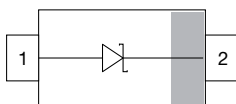


## Small Signal Schottky Diodes



### 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 available
- Molding compound meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level (MSL) 1
- 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)

AUTOMOTIVE  
GRADE  
Available



**RoHS**  
COMPLIANT

### LINKS TO ADDITIONAL RESOURCES



3D Models



Models



Marking



Parametric Search



Order Samples

### MECHANICAL DATA

**Case:** SOD-123

**Weight:** approx. 10.6 mg

**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	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
SD103AW	SD103AW-E3-08	no	Z6	Single	3 000 (8 mm tape on 7" reel)	15 000
	SD103AW-HE3_A-08	yes			10 000 (8 mm tape on 13" reel)	10 000
	SD103AW-E3-18	no				
	SD103AW-HE3_A-18	yes				
SD103BW	SD103BW-E3-08	no	Z7	Single	3 000 (8 mm tape on 7" reel)	15 000
	SD103BW-HE3_A-08	yes			10 000 (8 mm tape on 13" reel)	10 000
	SD103BW-E3-18	no				
	SD103BW-HE3_A-18	yes				
SD103CW	SD103CW-E3-08	no	Z8	Single	3 000 (8 mm tape on 7" reel)	15 000
	SD103CW-HE3_A-08	yes			10 000 (8 mm tape on 13" reel)	10 000
	SD103CW-E3-18	no				
	SD103CW-HE3_A-18	yes				

### PACKAGE

PACKAGE NAME	WEIGHT	MOLDING COMPOUND FLAMMABILITY RATING	MOISTURE SENSITIVITY LEVEL	SOLDERING CONDITIONS
SOD-123	10.6 mg	UL 94 V-0	MSL 1 (according J-STD-020)	Peak temperature max. 260 °C

**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	on FR-4 board with recommended soldering footprint		$P_{tot}$	270	mW
	Infinite heatsink			370	mW
Single cycle surge	10 $\mu$ s square wave		$I_{FSM}$	2	A

**Note**<sup>(1)</sup> Infinite heatsink**THERMAL CHARACTERISTICS** ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air	according to JEDEC <sup>®</sup> 51-3 on FR-4 board with recommended soldering footprint	$R_{thJA}$	370	K/W
Thermal resistance junction lead	Infinite heatsink	$R_{thJL}$	270	K/W
Maximum junction temperature		$T_j$	125	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-65 to +150	$^{\circ}\text{C}$
Operating temperature range		$T_{op}$	-55 to +125	$^{\circ}\text{C}$

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

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



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

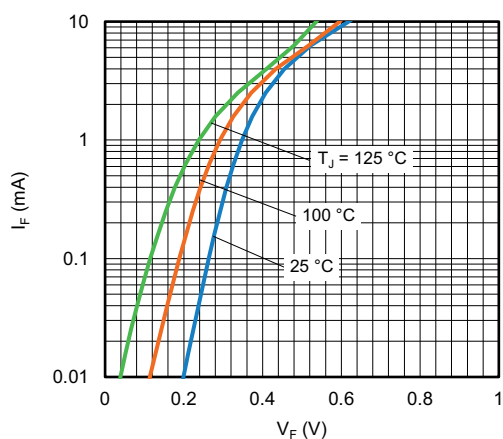


Fig. 1 - Typical Forward Current vs. Forward Voltage

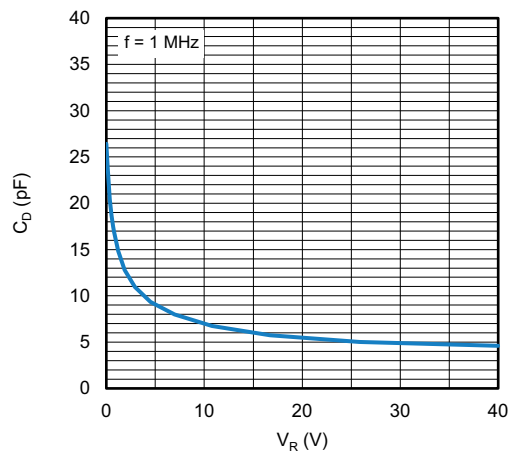


Fig. 3 - Typical Capacitance vs. Reverse Voltages

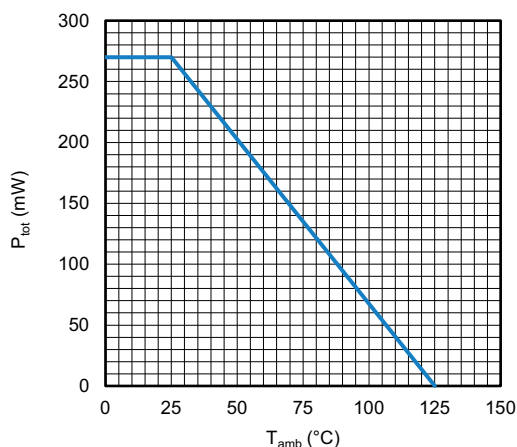


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

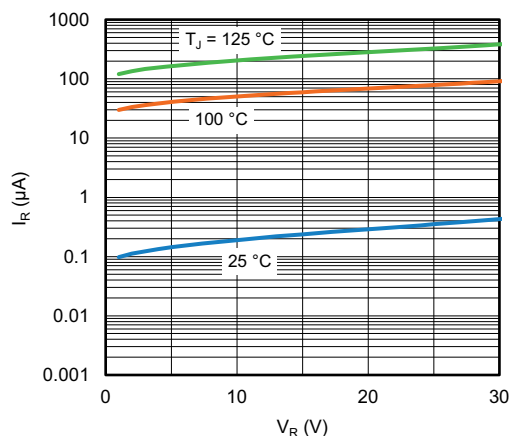
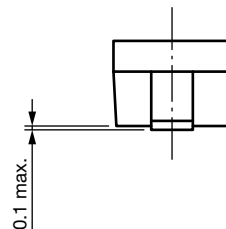
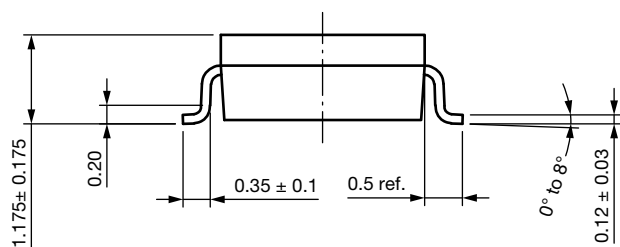


Fig. 4 - Typical Reverse Leakage vs. Reverse Voltage



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



Foot print recommendation



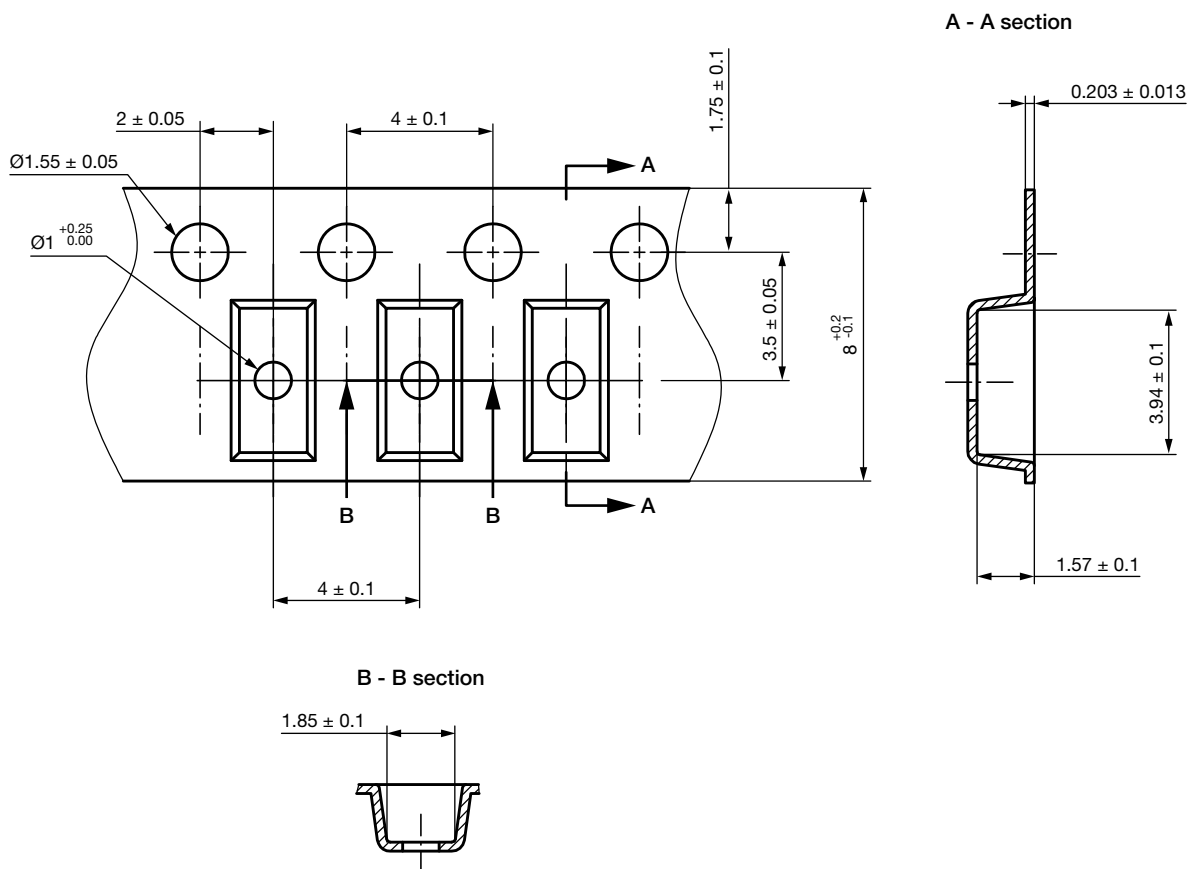
Rev. 01 - Date: 18. Jan. 2022

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**CARRIER TAPE SOD-123**



Rev. 02 - Date: 21. Jan. 2014  
Document no.: S8-V-3717.10-002 (4)

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**ORIENTATION IN CARRIER TAPE SOD-123**



Rev. 02 - Date: 07. Nov. 2022  
Document no.: S8-V-3717.10-003 (4)

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