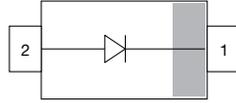




## Small Signal Switching Diodes, High Voltage



### FEATURES

- Silicon epitaxial planar diodes
- For general purpose
- 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\_A - RoHS-compliant, AEC-Q101 qualified
- Material categorization: for definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)



### LINKS TO ADDITIONAL RESOURCES



### MECHANICAL DATA

Case: SOD-323

Weight: approx. 4 mg

Packaging codes / options:

18/10K per 13" reel (8 mm tape), 10K/box

08/3K per 7" reel (8 m tape), 15K/box

PARTS TABLE							
PART	TYPE DIFFERENTIATION	ORDERING CODE	AEC-Q101 QUALIFIED	TYPE MARKING	CIRCUIT CONFIGURATION	TAPED UNITS PER REEL	MINIMUM ORDER QUANTITY
BAV19WS	V <sub>R</sub> = 100 V	BAV19WS-E3-08	No	8A	Single	3 000 (8 mm tape on 7" reel)	15 000
		BAV19WS-HE3_A-08	Yes				
		BAV19WS-E3-18	No			10 000 (8 mm tape on 13" reel)	10 000
		BAV19WS-HE3_A-18	Yes				
BAV20WS	V <sub>R</sub> = 150 V	BAV20WS-E3-08	No	9A	Single	3 000 (8 mm tape on 7" reel)	15 000
		BAV20WS-HE3_A-08	Yes				
		BAV20WS-E3-18	No			10 000 (8 mm tape on 13" reel)	10 000
		BAV20WS-HE3_A-18	Yes				
BAV21WS	V <sub>R</sub> = 200 V	BAV21WS-E3-08	No	7A	Single	3 000 (8 mm tape on 7" reel)	15 000
		BAV21WS-HE3_A-08	Yes				
		BAV21WS-E3-18	No			10 000 (8 mm tape on 13" reel)	10 000
		BAV21WS-HE3_A-18	Yes				

ABSOLUTE MAXIMUM RATINGS (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Continuous reverse voltage		BAV19WS	V <sub>R</sub>	100	V
		BAV20WS	V <sub>R</sub>	150	V
		BAV21WS	V <sub>R</sub>	200	V
Repetitive peak reverse voltage		BAV19WS	V <sub>RRM</sub>	120	V
		BAV20WS	V <sub>RRM</sub>	200	V
		BAV21WS	V <sub>RRM</sub>	250	V
DC Forward current <sup>(1)</sup>			I <sub>F</sub>	225	mA
Rectified current (average) half wave rectification with resist. load <sup>(1)</sup>			I <sub>F(AV)</sub>	200	mA
Repetitive peak forward current <sup>(1)</sup>	f ≥ 50 Hz, θ = 180°		I <sub>FRM</sub>	625	mA
Surge forward current	t < 1 s, T <sub>j</sub> = 25 °C		I <sub>FSM</sub>	1	A
Power dissipation <sup>(1)</sup>			P <sub>tot</sub>	200	mW

### Note

<sup>(1)</sup> Infinite heatsink



<b>THERMAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to lead	Infinite heat sink	$R_{thJL}$	625	K/W
Junction temperature		$T_j$	150	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	-65 to +150	$^{\circ}\text{C}$
Operating temperature range		$T_{op}$	-55 to +150	$^{\circ}\text{C}$

<b>ELECTRICAL CHARACTERISTICS</b> ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	TYP.	MAX.	UNIT
Forward voltage	$I_F = 100\text{ mA}$		$V_F$		1	V
	$I_F = 200\text{ mA}$		$V_F$		1.25	V
Leakage current	$V_R = 100\text{ V}$	BAV19WS	$I_R$		100	nA
	$V_R = 100\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV19WS	$I_R$		15	$\mu\text{A}$
	$V_R = 150\text{ V}$	BAV20WS	$I_R$		100	nA
	$V_R = 150\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV20WS	$I_R$		15	$\mu\text{A}$
	$V_R = 200\text{ V}$	BAV21WS	$I_R$		100	nA
	$V_R = 200\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV21WS	$I_R$		15	$\mu\text{A}$
Dynamic forward resistance	$I_F = 10\text{ mA}$		$r_f$	5		$\Omega$
Diode capacitance	$V_R = 0, f = 1\text{ MHz}$		$C_D$		1.5	pF
Reverse recovery time	$I_F = 30\text{ mA}, I_R = 30\text{ mA}, i_R = 3\text{ mA}, R_L = 100\text{ }\Omega$		$t_{rr}$		50	ns



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

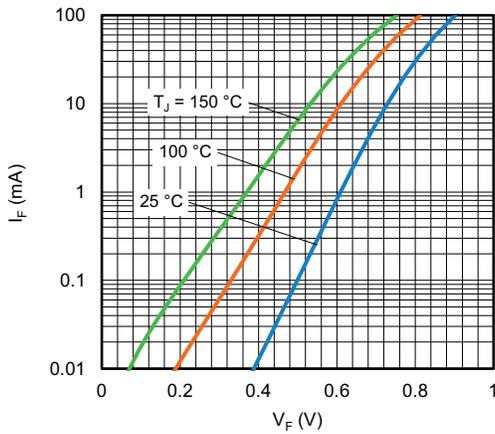


Fig. 1 - Typical Forward Current vs. Forward Voltage

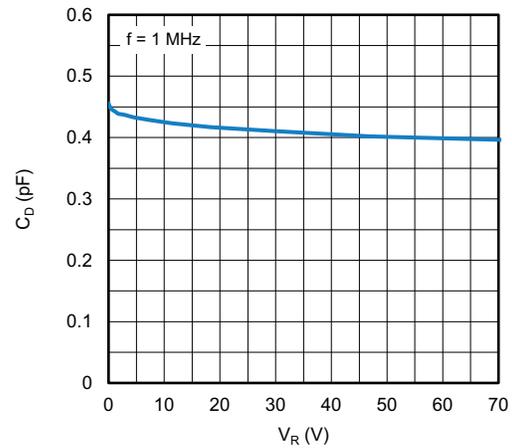


Fig. 3 - Typical Capacitance vs. Reverse Voltage

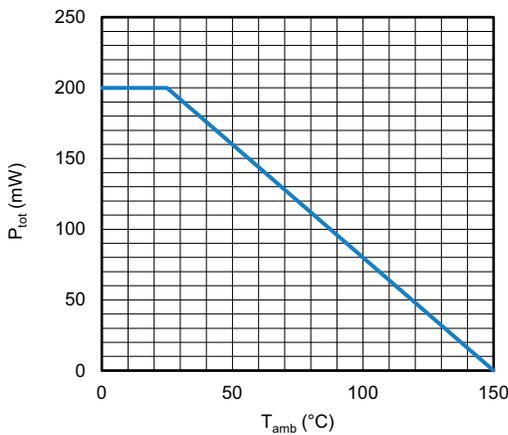


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

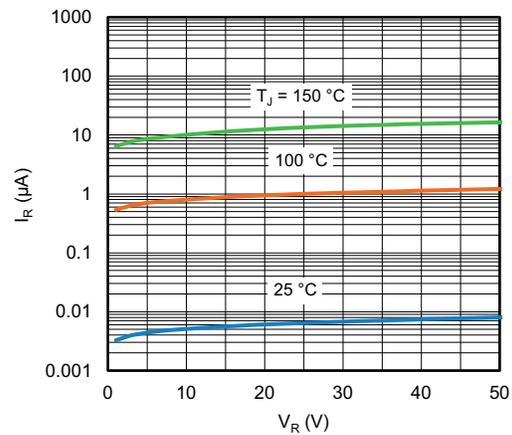
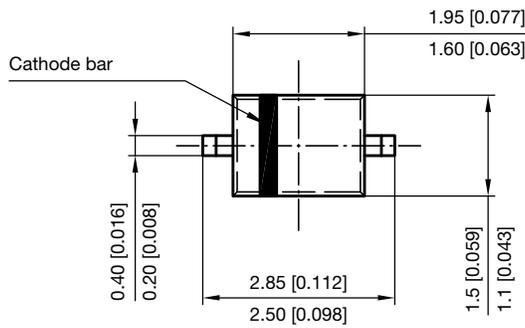
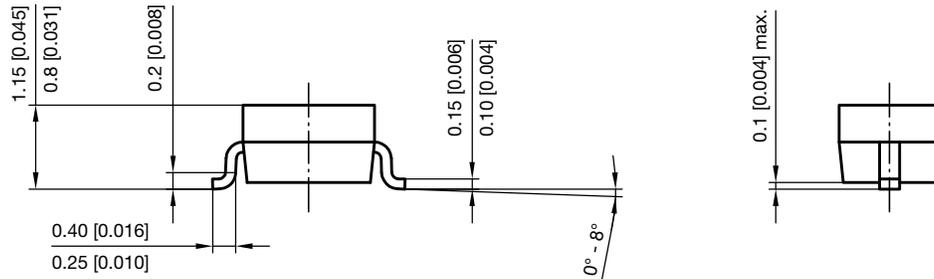


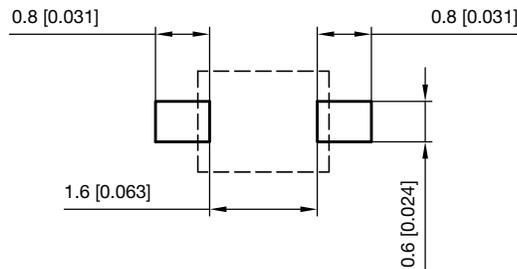
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



## PACKAGE DIMENSIONS in millimeters (inches) SOD-323



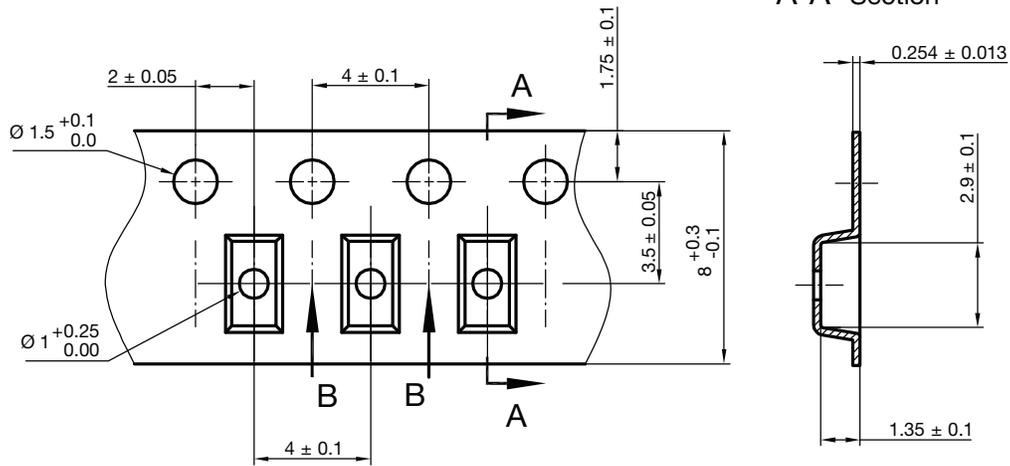
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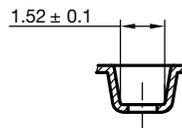
Document no.: S8-V-3910.02-001 (4)  
 Created - Date: 24.August.2004  
 Rev. 6 - Date: 23.Sept.2016  
 22771



## CARRIER TAPE SOD-323

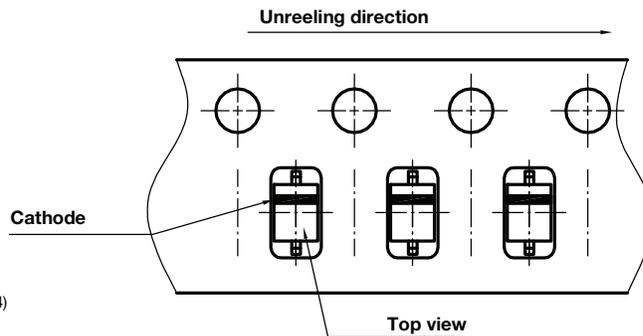


B-B Section



Document no.: S8-V-3717.07-002 (4)  
Created - Date: 09. Feb. 2010  
22824

## ORIENTATION IN CARRIER TAPE SOD-323



Document no.: S8-V-3717.07-003 (4)  
Created - Date: 09. Feb. 2010  
22772



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