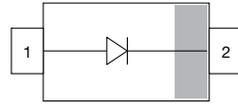


Small Signal Switching Diodes, High Voltage



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

 AUTOMOTIVE
GRADE
Available

RoHS
COMPLIANT

LINKS TO ADDITIONAL RESOURCES



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 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
BAV19W	$V_R = 100\text{ V}$	BAV19W-E3-08	no	AS	Single	3 000 (8 mm tape on 7" reel)	15 000
		BAV19W-HE3_A-08	yes				
		BAV19W-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
		BAV19W-HE3_A-18	yes				
BAV20W	$V_R = 150\text{ V}$	BAV20W-E3-08	no	AT	Single	3 000 (8 mm tape on 7" reel)	15 000
		BAV20W-HE3_A-08	yes				
		BAV20W-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
		BAV20W-HE3_A-18	yes				
BAV21W	$V_R = 200\text{ V}$	BAV21W-E3-08	no	AU	Single	3 000 (8 mm tape on 7" reel)	15 000
		BAV21W-HE3_A-08	yes				
		BAV21W-E3-18	no			10 000 (8 mm tape on 13" reel)	10 000
		BAV21W-HE3_A-18	yes				

ABSOLUTE MAXIMUM RATINGS ($T_{amb} = 25\text{ }^\circ\text{C}$, unless otherwise specified)						
PARAMETER	TEST CONDITION		PART	SYMBOL	VALUE	UNIT
Continuous reverse voltage			BAV19W	V_R	100	V
			BAV20W	V_R	150	V
			BAV21W	V_R	200	V
Repetitive peak reverse voltage			BAV19W	V_{RRM}	120	V
			BAV20W	V_{RRM}	200	V
			BAV21W	V_{RRM}	250	V
DC Forward current ⁽¹⁾				I_F	300	mA
Rectified current (average) half wave rectification with resist. load ⁽¹⁾				$I_{F(AV)}$	200	mA
Repetitive peak forward current ⁽¹⁾	$f \geq 50\text{ Hz}$, $\theta = 180^\circ$			I_{FRM}	625	mA
Surge forward current	$t < 1\text{ s}$, $T_j = 25\text{ }^\circ\text{C}$			I_{FSM}	1	A
Power dissipation	On FR-4 board with recommended soldering footprint			P_{tot}	300	mW
	Infinite heatsink				410	mW

Note
⁽¹⁾ 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 [®] 51-3 on FR-4 board with recommended soldering footprint	R_{thJA}	420	K/W
Thermal resistance junction to lead	Infinite heat sink	R_{thJL}	300	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	$^{\circ}\text{C}$

ELECTRICAL CHARACTERISTICS ($T_{amb} = 25\text{ }^{\circ}\text{C}$, 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	$V_R = 100\text{ V}$	BAV19W	I_R		100	nA
	$V_R = 100\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV19W	I_R		15	μA
	$V_R = 150\text{ V}$	BAV20W	I_R		100	nA
	$V_R = 150\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV20W	I_R		15	μA
	$V_R = 200\text{ V}$	BAV21W	I_R		100	nA
	$V_R = 200\text{ V}, T_j = 100\text{ }^{\circ}\text{C}$	BAV21W	I_R		15	μA
Dynamic forward resistance	$I_F = 10\text{ mA}$		r_f	5		Ω
Diode capacitance	$V_R = 0, f = 1\text{ MHz}$		C_D	0.5		pF
Reverse recovery time	$I_F = 30\text{ mA}, I_R = 30\text{ mA}, i_R = 3\text{ mA}, R_L = 100\ \Omega$		t_{rr}		50	ns



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

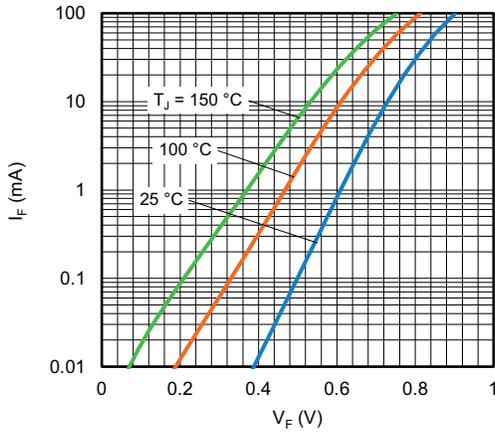


Fig. 1 - Typical Forward Current vs. Forward Voltage

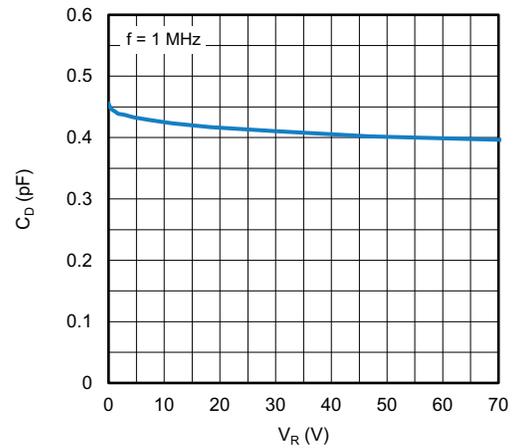


Fig. 3 - Typical Capacitance vs. Reverse Voltage

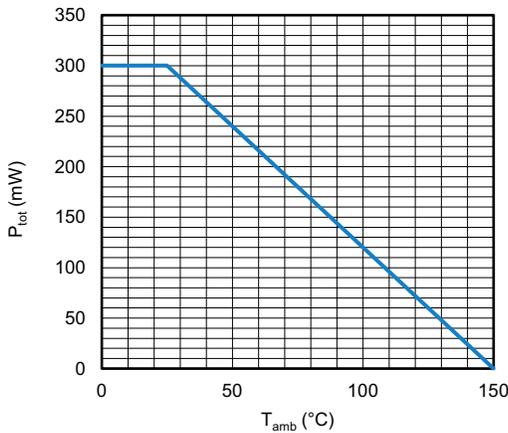


Fig. 2 - Admissible Power Dissipation vs. Ambient Temperature

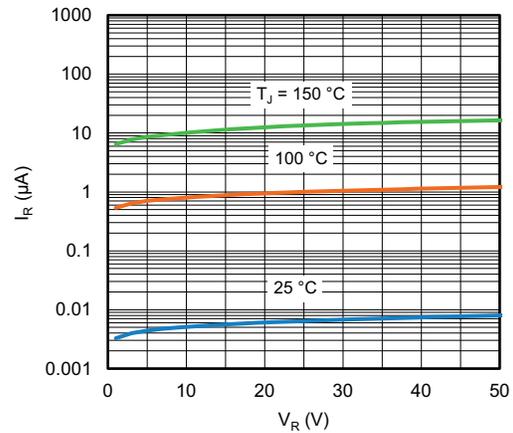
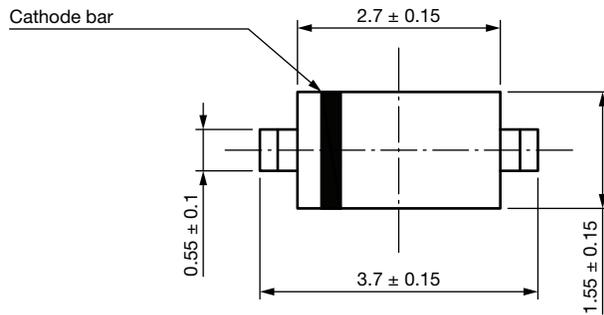
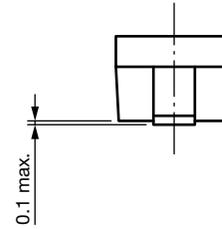
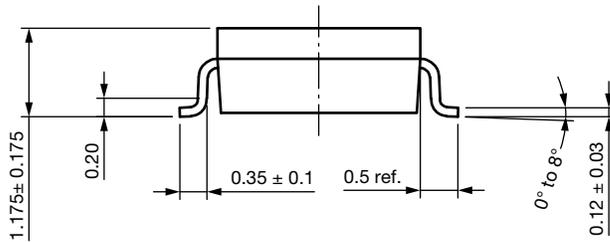


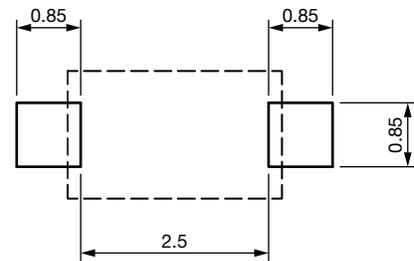
Fig. 4 - Typical Reverse Leakage Current vs. Reverse Voltage



PACKAGE DIMENSIONS in millimeters (inches): SOD-123



Foot print recommendation



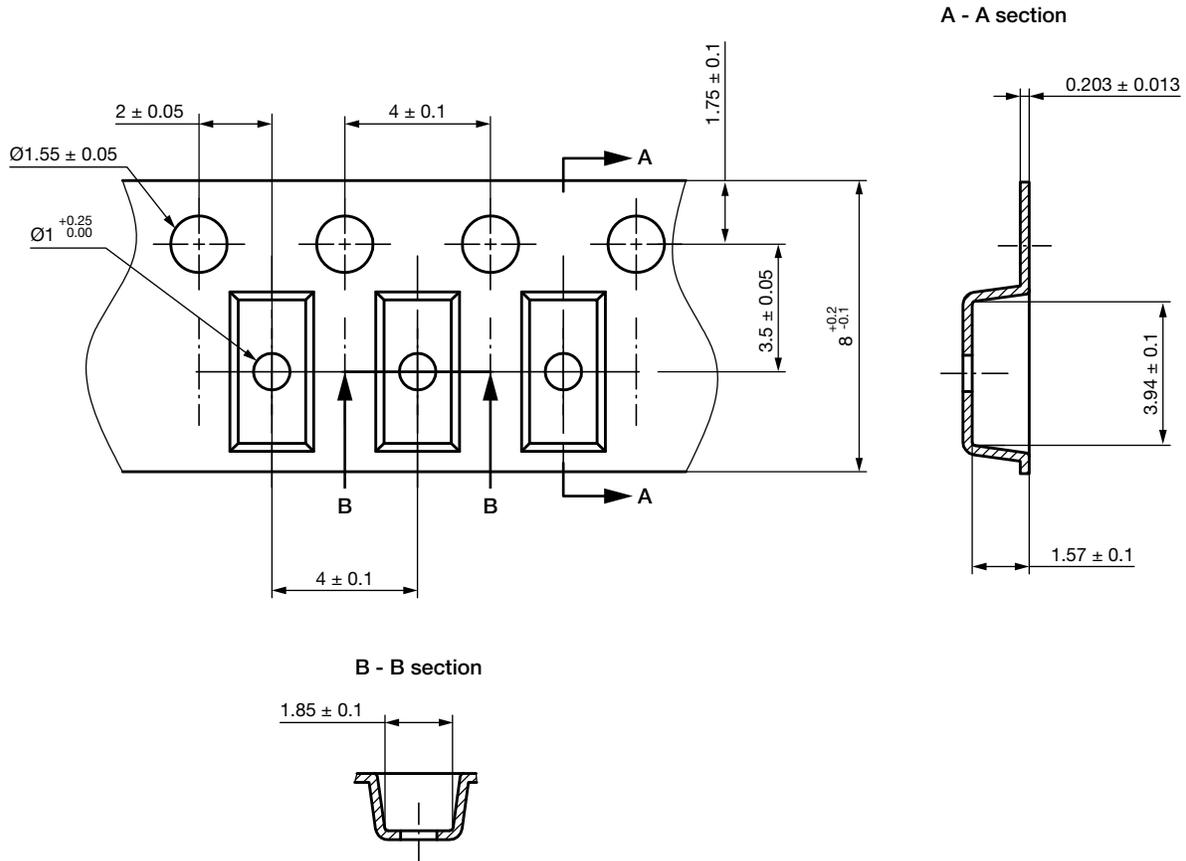
Rev. 01 - Date: 18. Jan. 2022

Document no.: S8-V-3910.01-003 (4)

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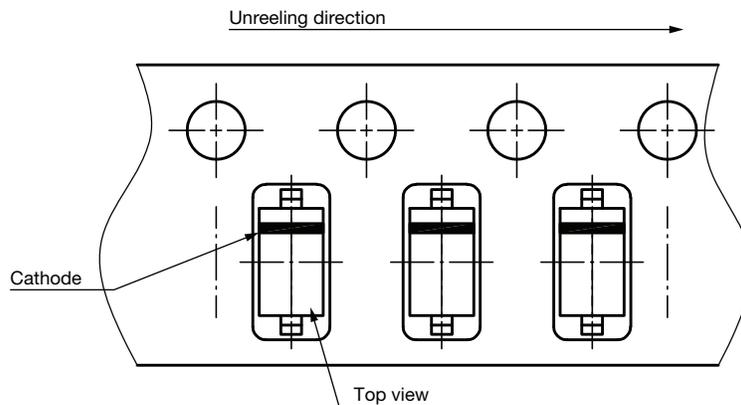
CARRIER TAPE SOD-123



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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