



## Small Signal Switching Diodes, High Voltage



### MECHANICAL DATA

Case: SOD-323

Weight: approx. 4.3 mg

Packaging codes/options:

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

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

### FEATURES

- Silicon epitaxial planar diodes
- For general purpose
- 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](http://www.vishay.com/doc?99912)



RoHS COMPLIANT

PARTS TABLE					
PART	TYPE DIFFERENTIATION	ORDERING CODE	TYPE MARKING	INTERNAL CONSTRUCTION	REMARKS
BAV19WS	V <sub>R</sub> = 100 V	BAV19WS-E3-08 or BAV19WS-E3-18 BAV19WS-HE3-08 or BAV19WS-HE3-18	A8	Single diode	Tape and reel
BAV20WS	V <sub>R</sub> = 150 V	BAV20WS-E3-08 or BAV20WS-E3-18 BAV20WS-HE3-08 or BAV20WS-HE3-18	A9	Single diode	Tape and reel
BAV21WS	V <sub>R</sub> = 200 V	BAV21WS-E3-08 or BAV21WS-E3-18 BAV21WS-HE3-08 or BAV21WS-HE3-18	AA	Single diode	Tape and reel

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
Forward continuous current <sup>(1)</sup>			I <sub>F</sub>	250	mA
Rectified current (average) half wave rectification with resistive 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			P <sub>tot</sub>	200	mW

### Note

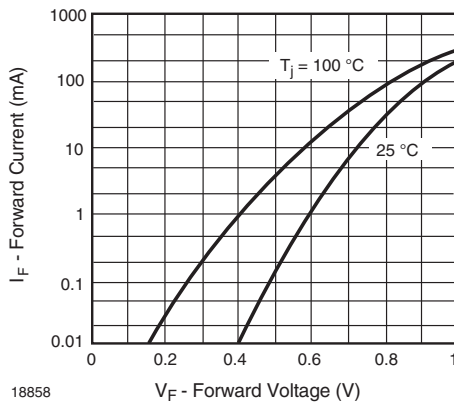
<sup>(1)</sup> Valid provided that leads are kept at ambient temperature

THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)				
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT
Thermal resistance junction to ambient air		R <sub>thJA</sub>	625	K/W
Thermal resistance junction to lead		R <sub>thJL</sub>	450	K/W
Junction temperature		T <sub>J</sub>	150	°C
Storage temperature range		T <sub>stg</sub>	-65 to +150	°C
Operating temperature range		T <sub>op</sub>	-55 to +150	°C



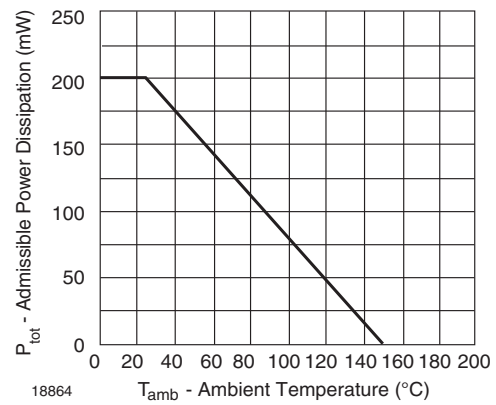
ELECTRICAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 100 mA		V <sub>F</sub>			1	V
	I <sub>F</sub> = 200 mA		V <sub>F</sub>			1.25	V
Reverse leakage current	V <sub>R</sub> = 100 V	BAV19WS	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 100 V, T <sub>J</sub> = 100 °C	BAV19WS	I <sub>R</sub>			15	μA
	V <sub>R</sub> = 150 V	BAV20WS	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 150 V, T <sub>J</sub> = 100 °C	BAV20WS	I <sub>R</sub>			15	μA
	V <sub>R</sub> = 200 V	BAV21WS	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 200 V, T <sub>J</sub> = 100 °C	BAV21WS	I <sub>R</sub>			15	μA
Dynamic forward resistance	I <sub>F</sub> = 10 mA		r <sub>f</sub>		5		Ω
Diode capacitance	V <sub>R</sub> = 0, f = 1 MHz		C <sub>D</sub>			1.5	pF
Reverse recovery time	I <sub>F</sub> = 30 mA, I <sub>R</sub> = 30 mA, i <sub>R</sub> = 3 mA, R <sub>L</sub> = 100 Ω		t <sub>rr</sub>			50	ns

**TYPICAL CHARACTERISTICS** (T<sub>amb</sub> = 25 °C, unless otherwise specified)



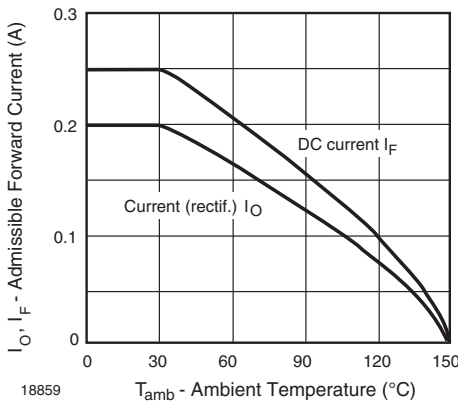
18858

Fig. 1 - Forward Current vs. Forward Voltage



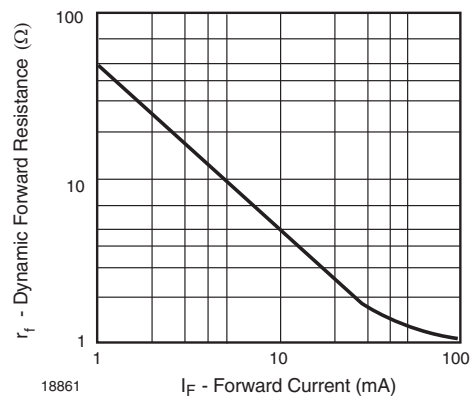
18864

Fig. 3 - Admissible Power Dissipation vs. Ambient Temperature



18859

Fig. 2 - Admissible Forward Current vs. Ambient Temperature



18861

Fig. 4 - Dynamic Forward Resistance vs. Forward Current

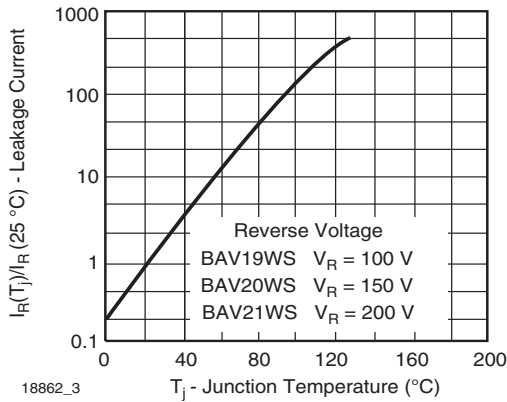


Fig. 5 - Leakage Current vs. Junction Temperature

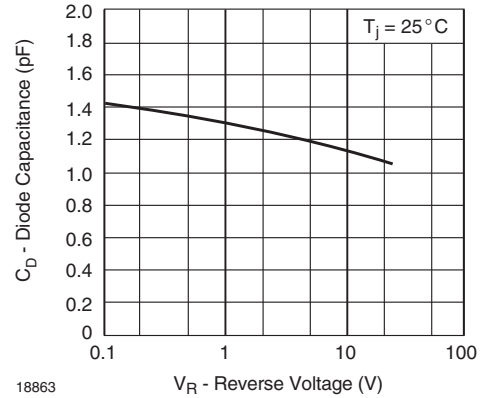
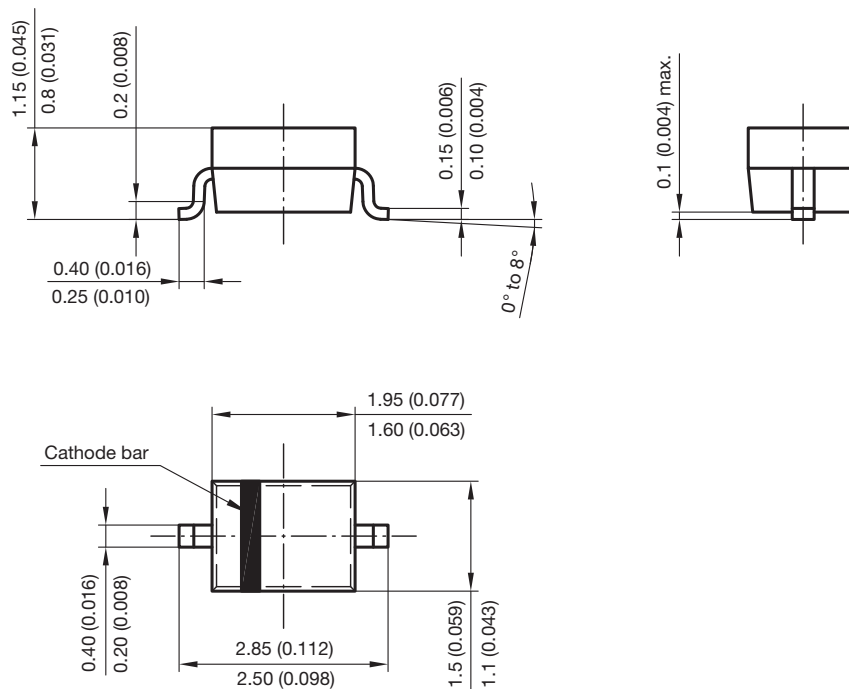
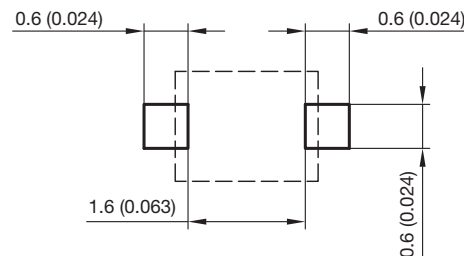


Fig. 6 - Capacitance vs. Reverse Voltage

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



Foot print recommendation:



Document no.:S8-V-3910.02-001 (4)  
 Created - Date: 24.August.2004  
 Rev. 5 - Date: 23.Sept.2009  
 17443



## Disclaimer

ALL PRODUCT, PRODUCT SPECIFICATIONS AND DATA ARE SUBJECT TO CHANGE WITHOUT NOTICE TO IMPROVE RELIABILITY, FUNCTION OR DESIGN OR OTHERWISE.

Vishay Intertechnology, Inc., its affiliates, agents, and employees, and all persons acting on its or their behalf (collectively, "Vishay"), disclaim any and all liability for any errors, inaccuracies or incompleteness contained in any datasheet or in any other disclosure relating to any product.

Vishay makes no warranty, representation or guarantee regarding the suitability of the products for any particular purpose or the continuing production of any product. To the maximum extent permitted by applicable law, Vishay disclaims (i) any and all liability arising out of the application or use of any product, (ii) any and all liability, including without limitation special, consequential or incidental damages, and (iii) any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.

Statements regarding the suitability of products for certain types of applications are based on Vishay's knowledge of typical requirements that are often placed on Vishay products in generic applications. Such statements are not binding statements about the suitability of products for a particular application. It is the customer's responsibility to validate that a particular product with the properties described in the product specification is suitable for use in a particular application. Parameters provided in datasheets and/or specifications may vary in different applications and performance may vary over time. All operating parameters, including typical parameters, must be validated for each customer application by the customer's technical experts. Product specifications do not expand or otherwise modify Vishay's terms and conditions of purchase, including but not limited to the warranty expressed therein.

Except as expressly indicated in writing, Vishay products are not designed for use in medical, life-saving, or life-sustaining applications or for any other application in which the failure of the Vishay product could result in personal injury or death. Customers using or selling Vishay products not expressly indicated for use in such applications do so at their own risk. Please contact authorized Vishay personnel to obtain written terms and conditions regarding products designed for such applications.

No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document or by any conduct of Vishay. Product names and markings noted herein may be trademarks of their respective owners.

## Material Category Policy

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as RoHS-Compliant fulfill the definitions and restrictions defined under Directive 2011/65/EU of The European Parliament and of the Council of June 8, 2011 on the restriction of the use of certain hazardous substances in electrical and electronic equipment (EEE) - recast, unless otherwise specified as non-compliant.**

**Please note that some Vishay documentation may still make reference to RoHS Directive 2002/95/EC. We confirm that all the products identified as being compliant to Directive 2002/95/EC conform to Directive 2011/65/EU.**

**Vishay Intertechnology, Inc. hereby certifies that all its products that are identified as Halogen-Free follow Halogen-Free requirements as per JEDEC JS709A standards. Please note that some Vishay documentation may still make reference to the IEC 61249-2-21 definition. We confirm that all the products identified as being compliant to IEC 61249-2-21 conform to JEDEC JS709A standards.**



**Стандарт  
Электрон  
Связь**

Мы молодая и активно развивающаяся компания в области поставок электронных компонентов. Мы поставляем электронные компоненты отечественного и импортного производства напрямую от производителей и с крупнейших складов мира.

Благодаря сотрудничеству с мировыми поставщиками мы осуществляем комплексные и плановые поставки широчайшего спектра электронных компонентов.

Собственная эффективная логистика и склад в обеспечивает надежную поставку продукции в точно указанные сроки по всей России.

Мы осуществляем техническую поддержку нашим клиентам и предпродажную проверку качества продукции. На все поставляемые продукты мы предоставляем гарантию .

Осуществляем поставки продукции под контролем ВП МО РФ на предприятия военно-промышленного комплекса России , а также работаем в рамках 275 ФЗ с открытием отдельных счетов в уполномоченном банке. Система менеджмента качества компании соответствует требованиям ГОСТ ISO 9001.

Минимальные сроки поставки, гибкие цены, неограниченный ассортимент и индивидуальный подход к клиентам являются основой для выстраивания долгосрочного и эффективного сотрудничества с предприятиями радиоэлектронной промышленности, предприятиями ВПК и научно-исследовательскими институтами России.

С нами вы становитесь еще успешнее!

**Наши контакты:**

**Телефон:** +7 812 627 14 35

**Электронная почта:** [sales@st-electron.ru](mailto:sales@st-electron.ru)

**Адрес:** 198099, Санкт-Петербург,  
Промышленная ул, дом № 19, литера Н,  
помещение 100-Н Офис 331