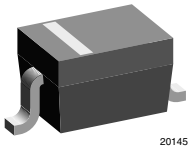
Small Signal Switching Diodes, High Voltage

Features

- Silicon Epitaxial Planar Diodes
- For general purpose
- These diodes are also available in other case styles including: the DO35 case with the type designation BAV19 - BAV21, the MiniMELF case with the type designation BAV100 - BAV103, the SOT23 case with the type designation BAS19 - BAS21 and the SOD123 case with the type designation BAV19W-V - BAV21W-V
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



Mechanical Data

Case: SOD323 Plastic case

Weight: approx. 5.0 mg

Packaging Codes/Options:

GS18/10 k per 13" reel (8 mm tape), 10 k/box

GS08/3 k per 7" reel (8 mm tape), 15 k/box

Parts Table

Part	Type differentiation	Ordering code	Type Marking	Remarks
BAV19WS-V	V_R = 100 V	BAV19WS-V-GS18 or BAV19WS-V-GS08	A8	Tape and Reel
BAV20WS-V	V_R = 150 V	BAV20WS-V-GS18 or BAV20WS-V-GS08	A9	Tape and Reel
BAV21WS-V	V_R = 200 V	BAV21WS-V-GS18 or BAV21WS-V-GS08	AA	Tape and Reel

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Absolute Maximum Ratings

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Value	Unit
Continuous reverse voltage		BAV19WS-V	V_R	100	V
		BAV20WS-V	V_R	150	V
		BAV21WS-V	V_R	200	V
Repetitive peak reverse voltage		BAV19WS-V	V_{RRM}	120	V
		BAV20WS-V	V_{RRM}	200	V
		BAV21WS-V	V_{RRM}	250	V
Forward continuous current	T_{amb} = 25 °C		I_F	250[1)]	mA
Rectified current (average) half wave rectification with resist. load	T_{amb} = 25 °C		$I_{F(AV)}$	200[1)]	mA
Repetitive peak forward current	f ≥ 50 Hz, θ = 180 °, T_{amb} = 25 °C		I_{FRM}	625[1)]	mA
Surge forward current	t < 1 s, T_j = 25 °C		I_{FSM}	1	A
Power dissipation	T_{amb} = 25 °C		P_{tot}	200[1)]	mW

1) Valid provided that leads 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		R_{thJA}	650[1)]	K/W
Junction temperature		T_j	150[1)]	°C
Storage temperature range		T_{stg}	- 65 to + 150[1)]	°C

1) Valid provided that leads are kept at ambient temperature

Electrical Characteristics

T_{amb} = 25 °C, unless otherwise specified

Parameter	Test condition	Part	Symbol	Min	Typ.	Max	Unit
Forward voltage	I_F = 100 mA		V_F			1.00	V
	I_F = 200 mA		V_F			1.25	V
Leakage current	V_R = 100 V	BAV19WS-V	I_R			100	nA
	V_R = 100 V, T_j = 100 °C	BAV19WS-V	I_R			15	µA
	V_R = 150 V	BAV20WS-V	I_R			100	nA
	V_R = 150 V, T_j = 100 °C	BAV20WS-V	I_R			15	µA
	V_R = 200 V	BAV21WS-V	I_R			100	nA
	V_R = 200 V, T_j = 100 °C	BAV21WS-V	I_R			15	µA
Dynamic forward resistance	I_F = 10 mA		r_f		5		Ω
Diode capacitance	V_R = 0, f = 1 MHz		C_D			1.5	pF
Reverse recovery time	I_F = 30 mA, I_R = 30 mA, I_{rr} = 3 mA, R_L = 100 Ω		t_{rr}			50	ns

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Typical Characteristics

T_{amb} = 25 °C, unless otherwise specified

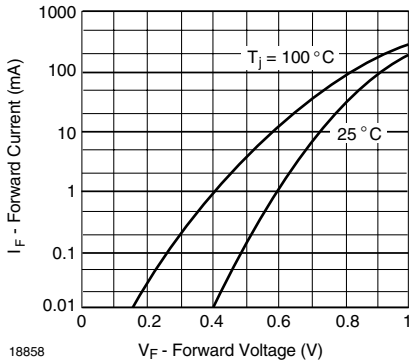

Figure 1. Forward Current vs. Forward Voltage

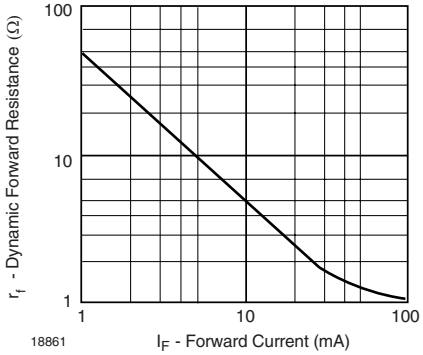

Figure 4. Dynamic Forward Resistance vs. Forward Current

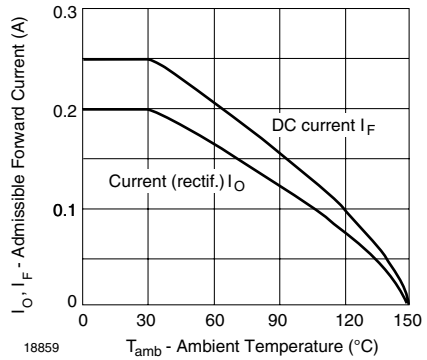

Figure 2. Admissible Forward Current vs. Ambient Temperature

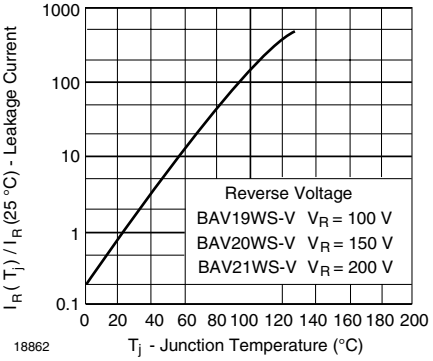

Figure 5. Leakage Current vs. Junction Temperature

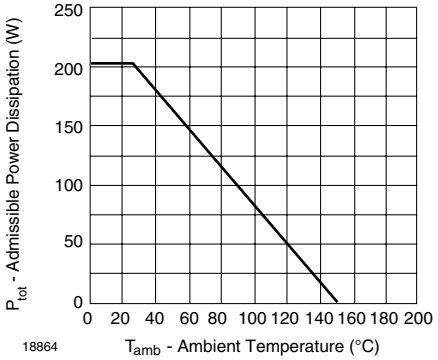

Figure 3. Admissible Power Dissipation vs. Ambient Temperature

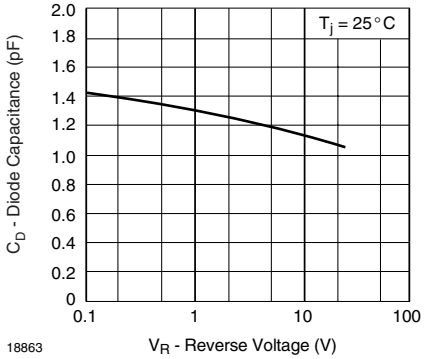

Figure 6. Capacitance vs. Reverse Voltage

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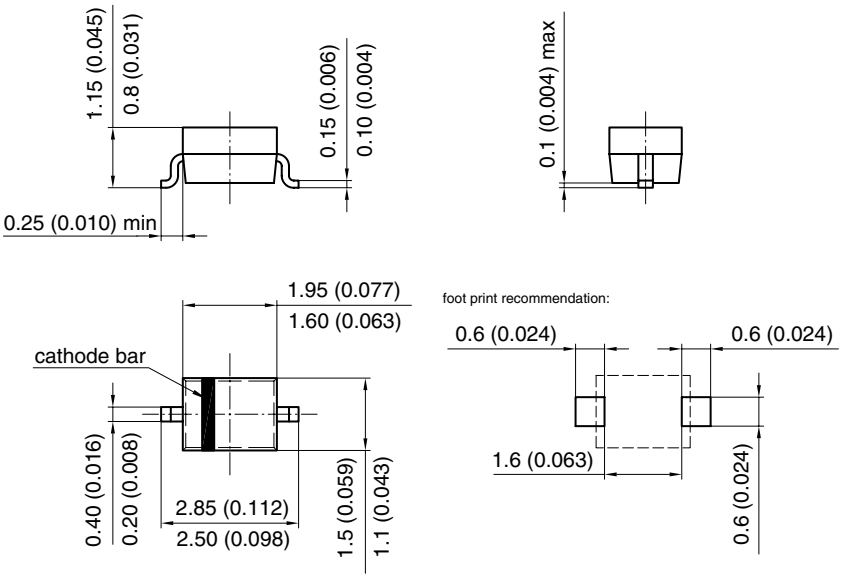
Package Dimensions in mm (Inches): SOD323



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Ozone Depleting Substances Policy Statement

It is the policy of Vishay Semiconductor GmbH to

1. Meet all present and future national and international statutory requirements.
2. Regularly and continuously improve the performance of our products, processes, distribution and operating systems with respect to their impact on the health and safety of our employees and the public, as well as their impact on the environment.

It is particular concern to control or eliminate releases of those substances into the atmosphere which are known as ozone depleting substances (ODSs).

The Montreal Protocol (1987) and its London Amendments (1990) intend to severely restrict the use of ODSs and forbid their use within the next ten years. Various national and international initiatives are pressing for an earlier ban on these substances.

Vishay Semiconductor GmbH has been able to use its policy of continuous improvements to eliminate the use of ODSs listed in the following documents.

1. Annex A, B and list of transitional substances of the Montreal Protocol and the London Amendments respectively
2. Class I and II ozone depleting substances in the Clean Air Act Amendments of 1990 by the Environmental Protection Agency (EPA) in the USA
3. Council Decision 88/540/EEC and 91/690/EEC Annex A, B and C (transitional substances) respectively.

Vishay Semiconductor GmbH can certify that our semiconductors are not manufactured with ozone depleting substances and do not contain such substances.

We reserve the right to make changes to improve technical design
and may do so without further notice.
Parameters can vary in different applications. All operating parameters must be validated for each customer application by the customer. Should the buyer use Vishay Semiconductors products for any unintended or unauthorized application, the buyer shall indemnify Vishay Semiconductors against all claims, costs, damages, and expenses, arising out of, directly or indirectly, any claim of personal damage, injury or death associated with such unintended or unauthorized use.

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