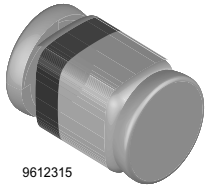
Small Signal Switching Diodes, High Voltage

Features

- Silicon Epitaxial Planar Diodes
- Saving space
- Hermetic sealed parts
- Fits onto SOD323 / SOT23 footprints
- Electrical data identical with the devices BAV100...BAV103 / BAV200...BAV203
- Lead (Pb)-free component
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC



Applications

- General purposes

Mechanical Data

Case: MicroMELF Glass case
Weight: approx. 12 mg
Cathode Band Color: Black
Packaging Codes/Options:
TR3 / 10 k per 13" reel (8 mm tape), 10 k/box
TR / 2.5 k per 7" reel (8 mm tape), 12.5 k/box

Parts Table

Part	Type differentiation	Ordering code	Remarks
BAV300	V_{RRM} = 60 V	BAV300-TR3 or BAV300-TR	Tape and Reel
BAV301	V_{RRM} = 120 V	BAV301-TR3 or BAV301-TR	Tape and Reel
BAV302	V_{RRM} = 200 V	BAV302-TR3 or BAV302-TR	Tape and Reel
BAV303	V_{RRM} = 250 V	BAV303-TR3 or BAV303-TR	Tape and Reel

Absolute Maximum Ratings

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

Parameter	Test condition	Part	Symbol	Value	Unit
Peak reverse voltage		BAV300	V_{RRM}	60	V
		BAV301	V_{RRM}	120	V
		BAV302	V_{RRM}	200	V
		BAV303	V_{RRM}	250	V
Reverse voltage		BAV300	V_R	50	V
		BAV301	V_R	100	V
		BAV302	V_R	150	V
		BAV303	V_R	200	V
Forward continuous current			I_F	250	mA
Peak forward surge current	t_p = 1 s, T_j = 25 °C		I_{FSM}	1	A
Forward peak current	f = 50 Hz		I_{FM}	625	mA

Thermal Characteristics

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

Parameter	Test condition	Symbol	Value	Unit
Junction to ambient air	mounted on epoxy-glass hard tissue, Fig. 4 35 µm copper clad, 0.9 mm^2 copper area per electrode	R_{thJA}	500	K/W
Junction temperature		T_j	175	°C
Storage temperature range		T_{stg}	- 65 to + 175	°C

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			1000	mV
Reverse current	V_R = 50 V	BAV300	I_R			100	nA
	V_R = 100 V	BAV301	I_R			100	nA
	V_R = 150 V	BAV302	I_R			100	nA
	V_R = 200 V	BAV303	I_R			100	nA
	T_j = 100 °C, V_R = 50 V	BAV300	I_R			15	µA
	T_j = 100 °C, V_R = 100 V	BAV301	I_R			15	µA
	T_j = 100 °C, V_R = 150V	BAV302	I_R			15	µA
	T_j = 100 °C, V_R = 200V	BAV303	I_R			15	µA
Breakdown voltage	I_R = 100 µA, t_p/T = 0.01, t_p = 0.3 ms	BAV300	$V_{(BR)}$	60			V
	I_R = 100 µA, t_p/T = 0.01, t_p = 0.3 ms	BAV301	$V_{(BR)}$	120			V
		BAV302	$V_{(BR)}$	200			V
		BAV303	$V_{(BR)}$	250			V
Diode capacitance	V_R = 0, f = 1 MHz		C_D		1.5		pF
Differential forward resistance	I_F = 10 mA		r_f		5		Ω
Reverse recovery time	$I_F = I_R$ = 30 mA, i_R = 3 mA, R_L = 100 Ω		t_{rr}			50	ns

Typical Characteristics

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

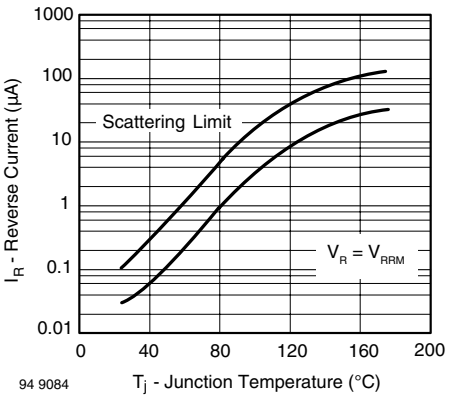


Figure 1. Reverse Current vs. Junction Temperature

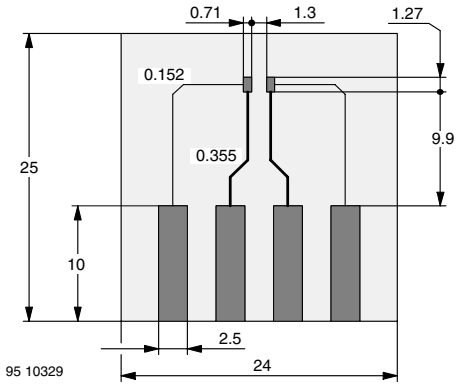


Figure 4. Board for R_{thJA} definition (in mm)

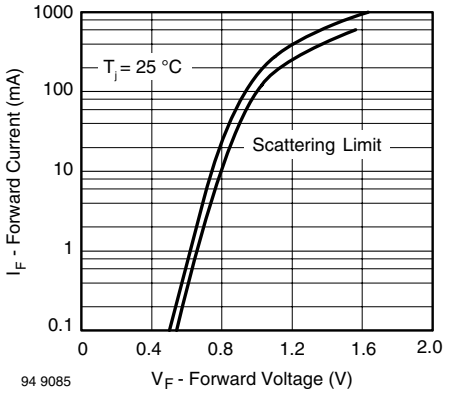


Figure 2. Forward Current vs. Forward Voltage

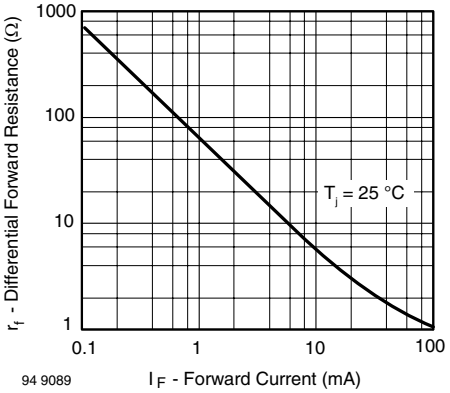
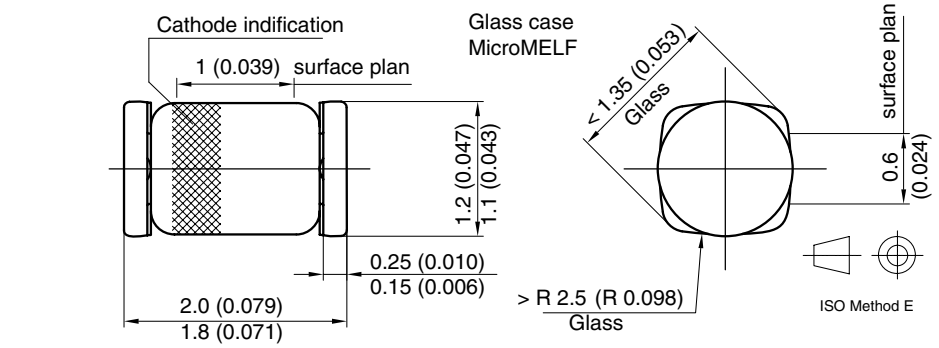
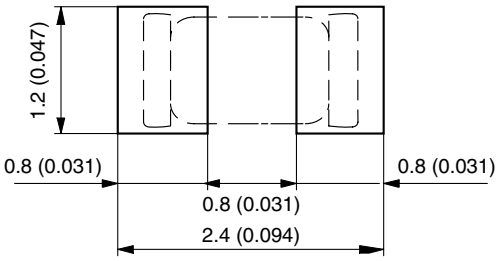


Figure 3. Differential Forward Resistance vs. Forward Current

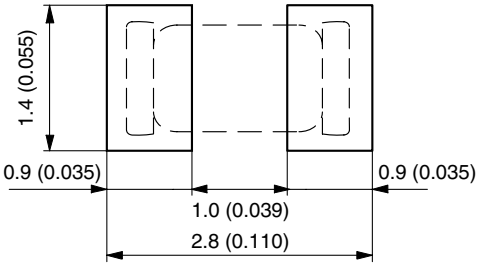
Package Dimensions in mm (Inches)



Reflow Soldering



Wave Soldering



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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.

Vishay Semiconductor GmbH, P.O.B. 3535, D-74025 Heilbronn, Germany

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