

**Vishay Semiconductors** 

# **Small Signal Switching Diodes, High Voltage**

### **FEATURES**

- Silicon epitaxial planar diodes
- Saving space
- · Hermetic sealed parts
- Fits onto SOD-323/SOT-23 footprints
- · Electrical data identical with the devices BAV100 to BAV103, BAV200 to BAV203
- AEC-Q101 qualified
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

#### APPLICATIONS

General purposes



### **MECHANICAL DATA**

Case: MicroMELF Weight: approx. 12 mg Cathode band color: black Packaging codes / options: TR3/10K per 13" reel (8 mm tape), 10K/box TR/2.5K per 7" reel (8 mm tape), 12.5K/box

PARTS TABLE						
PART	TYPE DIFFERENTIATION	ORDERING CODE	CIRCUIT CONFIGURATION	REMARKS		
BAV300	$V_{RRM} = 60 V$	BAV300-TR3 or BAV300-TR	Single	Tape and reel		
BAV301	V <sub>RRM</sub> = 120 V	BAV301-TR3 or BAV301-TR	Single	Tape and reel		
BAV302	V <sub>RRM</sub> = 200 V	BAV302-TR3 or BAV302-TR	Single	Tape and reel		
BAV303	V <sub>RRM</sub> = 250 V	BAV303-TR3 or BAV303-TR	Single	Tape and reel		

<b>ABSOLUTE MAXIMUM RATINGS</b> (T <sub>amb</sub> = 25 °C, unless otherwise specified)					
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
		BAV300	V <sub>RRM</sub>	60	V
Repetitive peak reverse voltage		BAV301	V <sub>RRM</sub>	120	V
		BAV302	V <sub>RRM</sub>	200	V
		BAV303	V <sub>RRM</sub>	250	V
		BAV300	V <sub>R</sub>	50	V
Deverse veltage		BAV301	V <sub>R</sub>	100	V
Reverse voltage		BAV302	V <sub>R</sub>	150	V
		BAV303	V <sub>R</sub>	200	V
Forward continuous current			I <sub>F</sub>	250	mA
Peak forward surge current	t <sub>p</sub> = 1 s, T <sub>j</sub> = 25 °C		I <sub>FSM</sub>	1	A
Forward peak current	f = 50 Hz		I <sub>FM</sub>	625	mA

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THERMAL CHARACTERISTICS (T <sub>amb</sub> = 25 °C, unless otherwise specified)							
PARAMETER	TEST CONDITION	SYMBOL	VALUE	UNIT			
Thermal resistance junction to ambient air	Mounted on epoxy-glass hard tissue, fig. 4 35 µm copper clad, 0.9 mm <sup>2</sup> copper area per electrode	R <sub>thJA</sub>	500	K/W			
Junction temperature		Tj	175	°C			
Storage temperature range		T <sub>stg</sub>	-65 to +175	°C			

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I <sub>F</sub> = 100 mA		V <sub>F</sub>			1	V
	V <sub>R</sub> = 50 V	BAV300	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 100 V	BAV301	I <sub>R</sub>			100	nA
	V <sub>R</sub> = 150 V	BAV302	I <sub>R</sub>			100	nA
Deverse eurrent	V <sub>R</sub> = 200 V	BAV303	I <sub>R</sub>			100	nA
Reverse current	$T_j = 100 \text{ °C}, V_R = 50 \text{ V}$	BAV300	I <sub>R</sub>			15	μA
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 100 V	BAV301	I <sub>R</sub>			15	μA
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 150 V	BAV302	I <sub>R</sub>			15	μA
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 200 V	BAV303	I <sub>R</sub>			15	μA
	$I_{R} = 100 \ \mu A, \ t_{p}/T = 0.01, \ t_{p} = 0.3 \ ms$	BAV300	V <sub>(BR)</sub>	60			V
Dreekdeurs veltege		BAV301	V <sub>(BR)</sub>	120			V
Breakdown voltage		BAV302	V <sub>(BR)</sub>	200			V
		BAV303	V <sub>(BR)</sub>	250			V
Diode capacitance	$V_R = 0 V$ , f = 1 MHz		CD		1.5		pF
Differential forward resistance	I <sub>F</sub> = 10 mA		r <sub>f</sub>		5		Ω
Reverse recovery time	$I_{\text{F}} = I_{\text{R}} = 30 \text{ mA},  \text{i}_{\text{R}} = 3 \text{ mA}, \\ R_{\text{L}} = 100  \Omega$		t <sub>rr</sub>			50	ns

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### BAV300, BAV301, BAV302, BAV303

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

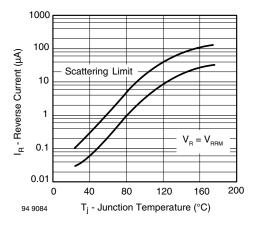


Fig. 1 - Reverse Current vs. Junction Temperature

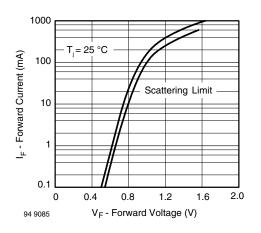


Fig. 2 - Forward Current vs. Forward Voltage

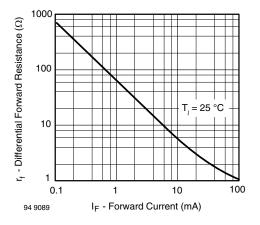


Fig. 3 - Differential Forward Resistance vs. Forward Current

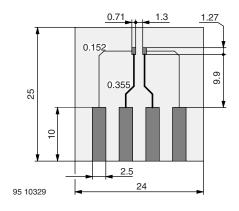


Fig. 4 - Board for R<sub>thJA</sub> Definition (in mm)

Rev. 2.2, 12-Jul-17

3

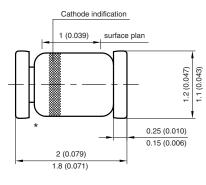
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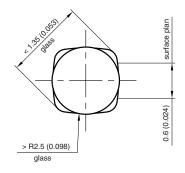


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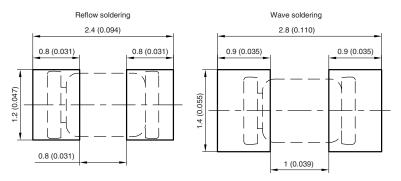
### PACKAGE DIMENSIONS in millimeters (inches): MicroMELF



\* The gap between plug and glass can be either on cathode or anode side



Foot print recommendation:



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