

## 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](http://www.vishay.com/doc?99912)



**RoHS**  
COMPLIANT  
HALOGEN  
**FREE**

### 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

### APPLICATIONS

- General purposes

### PARTS TABLE

PART	TYPE DIFFERENTIATION	ORDERING CODE	INTERNAL CONSTRUCTION	REMARKS
BAV300	$V_{RRM} = 60\text{ V}$	BAV300-TR3 or BAV300-TR	Single diode	Tape and reel
BAV301	$V_{RRM} = 120\text{ V}$	BAV301-TR3 or BAV301-TR	Single diode	Tape and reel
BAV302	$V_{RRM} = 200\text{ V}$	BAV302-TR3 or BAV302-TR	Single diode	Tape and reel
BAV303	$V_{RRM} = 250\text{ V}$	BAV303-TR3 or BAV303-TR	Single diode	Tape and reel

### ABSOLUTE MAXIMUM RATINGS ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT
Repetitive 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	$t_p = 1\text{ s}, T_j = 25\text{ }^{\circ}\text{C}$		$I_{FSM}$	1	A
Forward peak current	$f = 50\text{ Hz}$		$I_{FM}$	625	mA



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		T <sub>j</sub>	175	°C
Storage temperature range		T <sub>stg</sub>	- 65 to + 175	°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>			1000	mV
Reverse current	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
	V <sub>R</sub> = 200 V	BAV303	I <sub>R</sub>			100	nA
	T <sub>j</sub> = 100 °C, V <sub>R</sub> = 50 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
Breakdown voltage	I <sub>R</sub> = 100 µA, t <sub>p</sub> /T = 0.01, t <sub>p</sub> = 0.3 ms	BAV300	V <sub>(BR)</sub>	60			V
		BAV301	V <sub>(BR)</sub>	120			V
		BAV302	V <sub>(BR)</sub>	200			V
		BAV303	V <sub>(BR)</sub>	250			V
Diode capacitance	V <sub>R</sub> = 0 V, f = 1 MHz		C <sub>D</sub>		1.5		pF
Differential forward resistance	I <sub>F</sub> = 10 mA		r <sub>f</sub>		5		Ω
Reverse recovery time	I <sub>F</sub> = 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 ( $T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified)

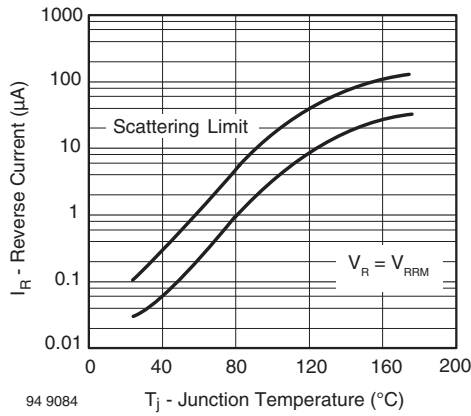


Fig. 1 - Reverse Current vs. Junction Temperature

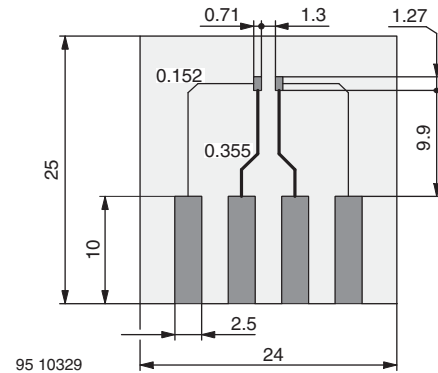


Fig. 4 - Board for  $R_{thJA}$  Definition (in mm)

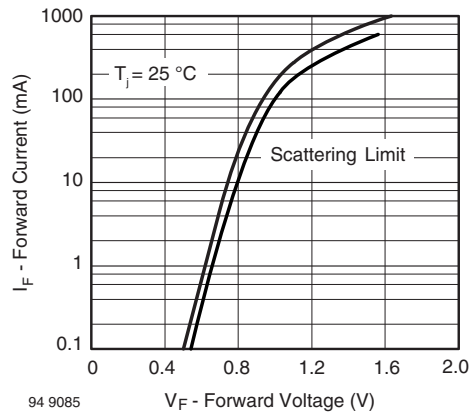


Fig. 2 - Forward Current vs. Forward Voltage

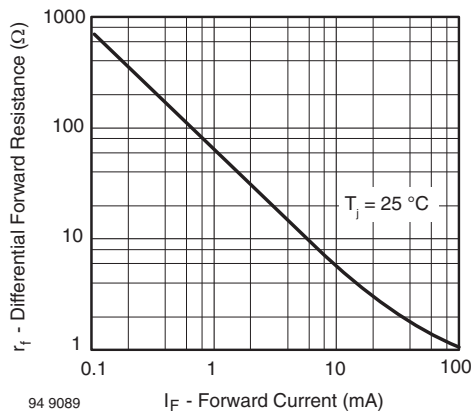
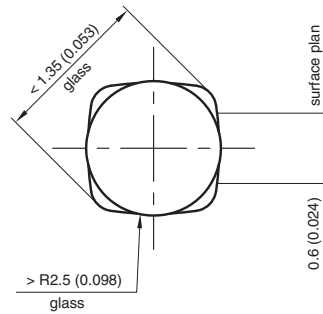
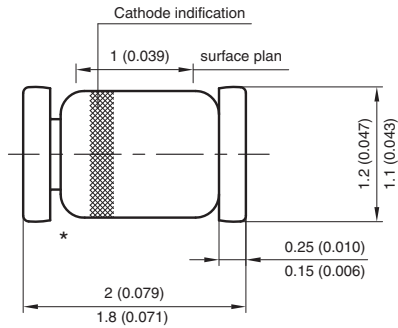


Fig. 3 - Differential Forward Resistance vs. Forward Current

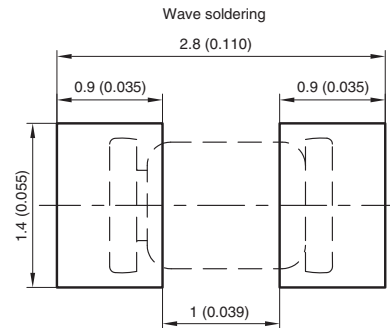
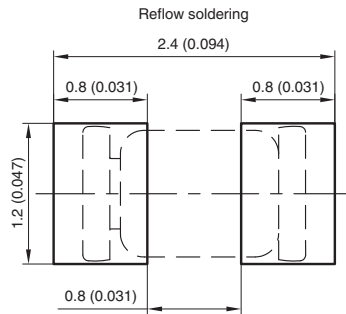


## PACKAGE DIMENSIONS in millimeters (inches): **MicromELF**



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

Foot print recommendation:



Created - Date: 26.July.1996  
 Rev. 13 - Date: 07.June.2006  
 Document no.:6.560-5007.01-4  
 96 12072



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