

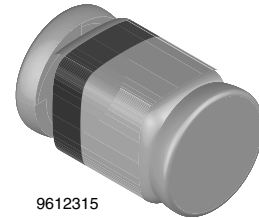
## Small Signal Switching Diodes, High Voltage

### Features

- Silicon Epitaxial Planar Diodes
- Saving space
- Hermetic sealed parts
- Fits onto SOD-323 / SOT-23 footprints
- Electrical data identical with the devices BAV100...BAV103 / BAV200...BAV203
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21 definition



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



9612315

### Applications

- General purposes

### Mechanical Data

**Case:** MicroMELF

**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	$V_{RRM} = 60\text{ V}$	BAV300-TR3 or BAV300-TR	Tape and Reel
BAV301	$V_{RRM} = 120\text{ V}$	BAV301-TR3 or BAV301-TR	Tape and Reel
BAV302	$V_{RRM} = 200\text{ V}$	BAV302-TR3 or BAV302-TR	Tape and Reel
BAV303	$V_{RRM} = 250\text{ V}$	BAV303-TR3 or BAV303-TR	Tape and Reel

### Absolute Maximum Ratings

$T_{amb} = 25\text{ °C}$ , 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	$t_p = 1\text{ s}, T_j = 25\text{ °C}$		$I_{FSM}$	1	A
Forward peak current	$f = 50\text{ Hz}$		$I_{FM}$	625	mA

### Thermal Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Symbol	Value	Unit
Junction to ambient air	Mounted on epoxy-glass hard tissue, fig. 4 35 $\mu\text{m}$ copper clad, 0.9 $\text{mm}^2$ copper area per electrode	$R_{thJA}$	500	K/W
Junction temperature		$T_j$	175	$^{\circ}\text{C}$
Storage temperature range		$T_{stg}$	- 65 to + 175	$^{\circ}\text{C}$

### Electrical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

Parameter	Test condition	Part	Symbol	Min.	Typ.	Max.	Unit
Forward voltage	$I_F = 100\text{ mA}$		$V_F$			1000	mV
Reverse current	$V_R = 50\text{ V}$	BAV300	$I_R$			100	nA
	$V_R = 100\text{ V}$	BAV301	$I_R$			100	nA
	$V_R = 150\text{ V}$	BAV302	$I_R$			100	nA
	$V_R = 200\text{ V}$	BAV303	$I_R$			100	nA
	$T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 50\text{ V}$	BAV300	$I_R$			15	$\mu\text{A}$
	$T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 100\text{ V}$	BAV301	$I_R$			15	$\mu\text{A}$
	$T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 150\text{ V}$	BAV302	$I_R$			15	$\mu\text{A}$
	$T_j = 100\text{ }^{\circ}\text{C}$ , $V_R = 200\text{ V}$	BAV303	$I_R$			15	$\mu\text{A}$
Breakdown voltage	$I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$	BAV300	$V_{(BR)}$	60			V
	$I_R = 100\text{ }\mu\text{A}$ , $t_p/T = 0.01$ , $t_p = 0.3\text{ ms}$	BAV301	$V_{(BR)}$	120			V
		BAV302	$V_{(BR)}$	200			V
		BAV303	$V_{(BR)}$	250			V
Diode capacitance	$V_R = 0$ , $f = 1\text{ MHz}$		$C_D$		1.5		pF
Differential forward resistance	$I_F = 10\text{ mA}$		$r_f$		5		$\Omega$
Reverse recovery time	$I_F = I_R = 30\text{ mA}$ , $i_R = 3\text{ mA}$ , $R_L = 100\text{ }\Omega$		$t_{rr}$			50	ns

## Typical Characteristics

$T_{amb} = 25\text{ }^{\circ}\text{C}$ , unless otherwise specified

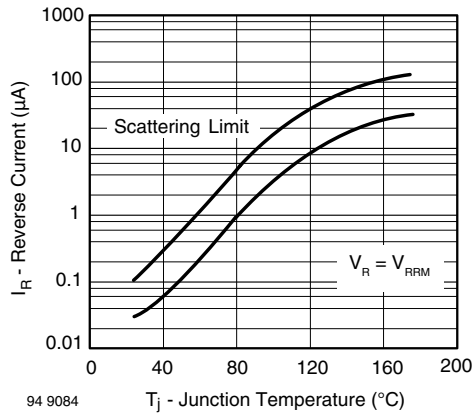


Figure 1. Reverse Current vs. Junction Temperature

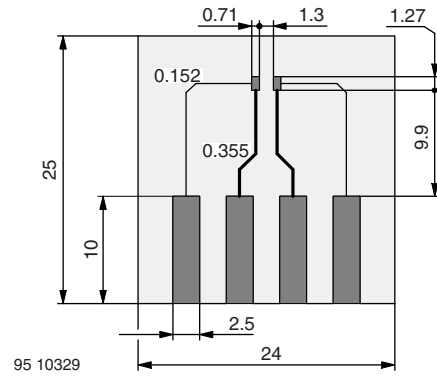


Figure 4. Board for  $R_{thJA}$  Definition (in mm)

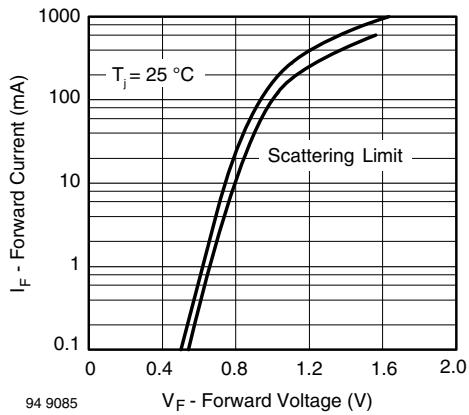


Figure 2. Forward Current vs. Forward Voltage

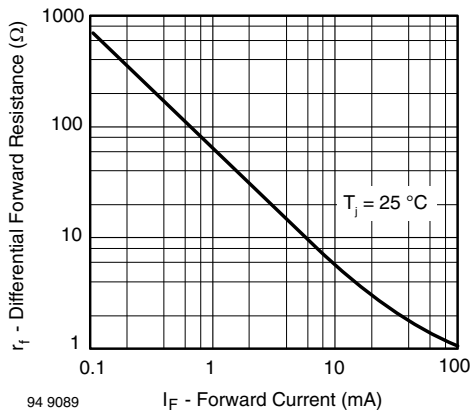


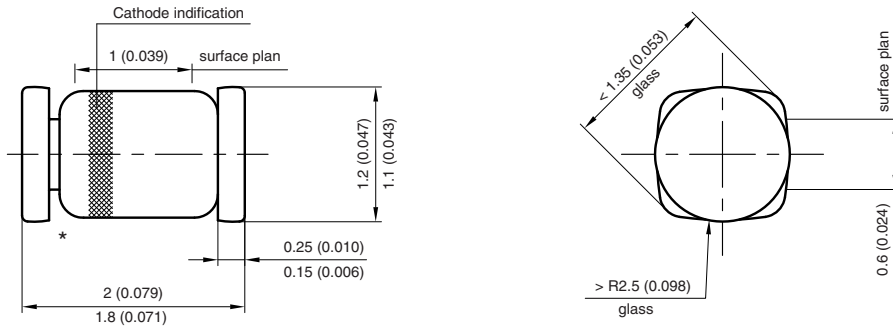
Figure 3. Differential Forward Resistance vs. Forward Current

# BAV300, BAV301, BAV302, BAV303



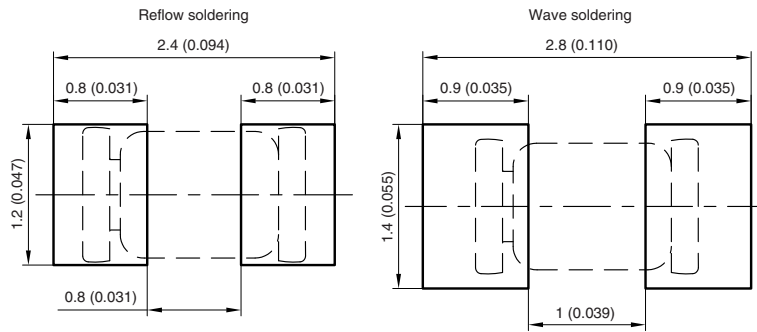
Vishay Semiconductors

## 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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Rev. 13 - Date: 07.June.2006  
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96 12072



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