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Vishay Semiconductors

HALOGEN

FREE

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 <u>www.vishay.com/doc?99912</u>



• 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	$V_{RRM} = 60 \text{ V}$	BAV300-TR3 or BAV300-TR	Single	Tape and reel		
BAV301	V _{RRM} = 120 V	BAV301-TR3 or BAV301-TR	Single	Tape and reel		
BAV302	V _{RRM} = 200 V	BAV302-TR3 or BAV302-TR	Single	Tape and reel		
BAV303	V _{RRM} = 250 V	BAV303-TR3 or BAV303-TR	Single	Tape and reel		

ABSOLUTE MAXIMUM RATINGS (T _{amb} = 25 °C, unless otherwise specified)						
PARAMETER	TEST CONDITION	PART	SYMBOL	VALUE	UNIT	
		BAV300	V_{RRM}	60	V	
Popotitivo poek roverso voltago		BAV301	V_{RRM}	120	V	
Repetitive peak reverse voltage		BAV302	V_{RRM}	200	V	
		BAV303	V_{RRM}	250	V	
		BAV300	V_R	50	V	
Povorce voltage		BAV301	V_R	100	V	
Reverse voltage		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	Α	
Forward peak current	f = 50 Hz		I _{FM}	625	mA	



BAV300, BAV301, BAV302, BAV303

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THERMAL CHARACTERISTICS (T _{amb} = 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 ² copper area per electrode	R _{thJA}	500	K/W			
Junction temperature		Tj	175	°C			
Storage temperature range		T _{stg}	-65 to +175	°C			

PARAMETER	TEST CONDITION	PART	SYMBOL	MIN.	TYP.	MAX.	UNIT
Forward voltage	I _F = 100 mA		V_{F}			1	V
	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
Develope accurant	V _R = 200 V	BAV303	I _R			100	nA
Reverse current	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 = 150 V	BAV302	I _R			15	μA
	T _j = 100 °C, V _R = 200 V	BAV303	I _R			15	μA
	$I_R = 100 \mu A, t_p/T = 0.01,$ $t_p = 0.3 \text{ ms}$	BAV300	V _(BR)	60			V
Develope a allow		BAV301	V _(BR)	120			V
Breakdown voltage		BAV302	V _(BR)	200			V
		BAV303	V _(BR)	250			V
Diode capacitance	V _R = 0 V, 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, $R_L = 100 \Omega$		t _{rr}			50	ns

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TYPICAL CHARACTERISTICS (T_{amb} = 25 °C, unless otherwise specified)

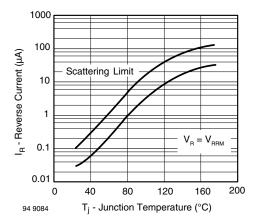


Fig. 1 - Reverse Current vs. Junction Temperature

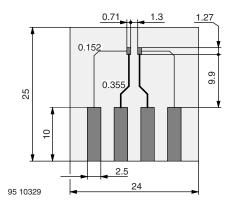


Fig. 4 - Board for R_{thJA} Definition (in mm)

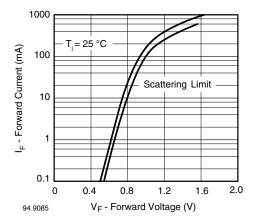


Fig. 2 - Forward Current vs. Forward Voltage

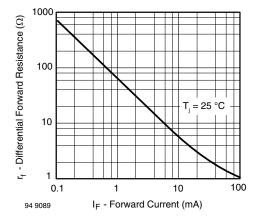


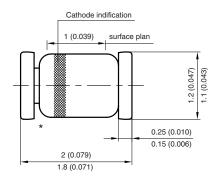
Fig. 3 - Differential Forward Resistance vs. Forward Current

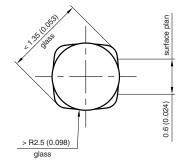


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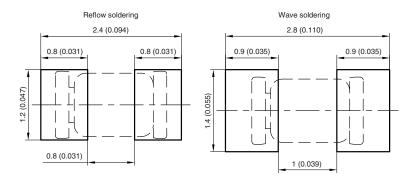
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PACKAGE DIMENSIONS in millimeters (inches): MicroMELF





Foot print recommendation:



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

^{*} The gap between plug and glass can be either on cathode or anode side



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