



## DESCRIPTION

The BAV99L is available in SOT-23 Package.

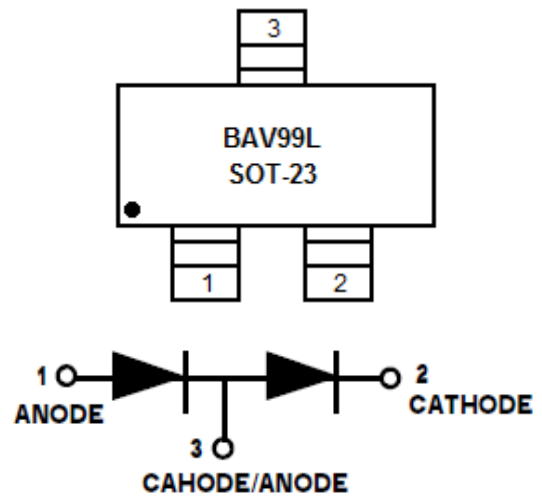
## ORDERING INFORMATION

Package Type	Part Number
SOT-23	BAV99L
Note	3,000pcs/Reel
AiT provides all RoHS Compliant Products	

## FEATURES

- RoHS Compliance
- Available in SOT-23 Package

## PIN DESCRIPTION





## ABSOLUTE MAXIMUM RATINGS

### EACH DIODE

V <sub>R</sub> , Reverse Voltage	70Vdc
I <sub>F</sub> , Forward Current	215mA <sub>dc</sub>
I <sub>FM(surge)</sub> , Peak Forward Surge Current	500mA <sub>dc</sub>
V <sub>RRM</sub> , Repetitive Peak Reverse Voltage	70V
I <sub>F(AV)</sub> , Average Rectified Forward Current <sup>NOTE1</sup> (averaged over any 20 ms period)	715mA
I <sub>FRM</sub> , Repetitive Peak Forward Current	450mA
I <sub>FSM</sub> , Non-Repetitive Peak Forward Current	
t = 1.0μs	2.0A
t = 1.0ms 1.0	1.0A
t = 1.0S 0.5	0.5A

Stresses above may cause permanent damage to the device. These are stress ratings only and functional operation of the device at these or any other conditions beyond those indicated in the Electrical Characteristics are not implied. Exposure to absolute maximum rating conditions for extended periods may affect device reliability.

NOTE1: FR-5 = 1.0 x 0.75 x 0.062 in.

## THERMAL CHARACTERISTICS

Parameter	Symbol	Max	Unit
Total Device Dissipation FR-5 Board <sup>NOTE1</sup> T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	225 1.8	mW mW/°C
Thermal Resistance Junction to Ambient	R <sub>θJA</sub>	556	°C/W
Total Device Dissipation Alumina Substrate <sup>NOTE2</sup> T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	300 2.4	mW mW/°C
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	417	°C/W
Junction and Storage Temperature	T <sub>J</sub> , T <sub>STG</sub>	-65 to +150	°C

NOTE1: FR-5 = 1.0 x 0.75 x 0.062 in.

NOTE2: Alumina = 0.4 x 0.3 x 0.024 in. 99.5% alumina.



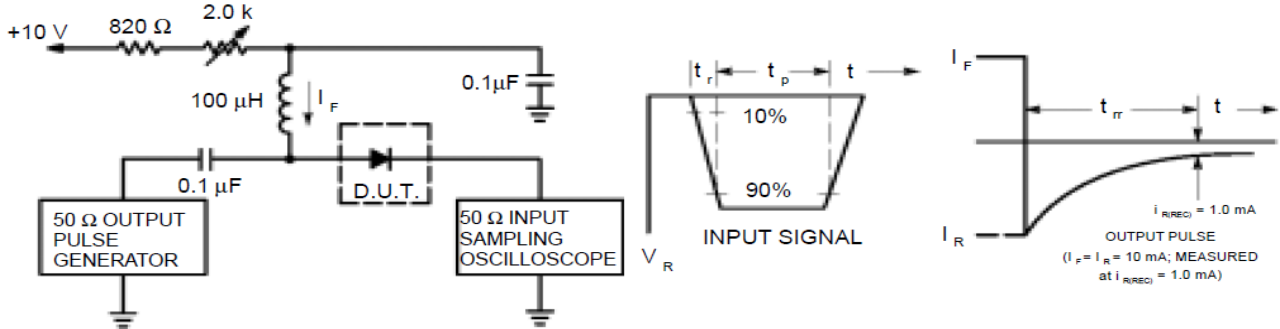
## ELECTRICAL CHARACTERISTICS

T<sub>A</sub> = 25°C unless otherwise noted (EACH DIODE)

Parameter	Symbol	Conditions	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>					
Reverse Breakdown Voltage	V <sub>(BR)</sub>	I <sub>(BR)</sub> = 100µA	70	-	Vdc
Reverse Voltage Leakage Current	I <sub>R</sub>	V <sub>R</sub> = 70Vdc	-	2.5	µAdc
		V <sub>R</sub> = 25Vdc, T <sub>J</sub> = 150°C	-	30	
		V <sub>R</sub> = 70Vdc, T <sub>J</sub> = 150°C	-	50	
Diode Capacitance	C <sub>D</sub>	V <sub>R</sub> = 0, f = 1.0MHz	-	1.5	pF
Forward Voltage	V <sub>F</sub>	I <sub>F</sub> = 1.0mAdc	-	715	mVdc
		I <sub>F</sub> = 10mAdc	-	855	
		I <sub>F</sub> = 50mAdc	-	1000	
		I <sub>F</sub> = 150mAdc	-	1250	
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = I <sub>R</sub> = 10mAdc, i <sub>R(REC)</sub> = 1.0mAdc, R <sub>L</sub> = 100Ω(Figure 1)	-	6.0	ns
Forward Recovery Voltage	V <sub>FR</sub>	I <sub>F</sub> = 10mA, t <sub>r</sub> = 20ns	-	1.75	V

## TYPICAL CHARACTERISTICS

Figure 1. Recovery Time Equivalent Test Circuit



NOTE1: A 2.0kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.

NOTE2: Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10mA.

NOTE3:  $t_p \gg t_{rr}$

## CURVES APPLICABLE TO EACH DIODE

Figure 2. Forward Voltage

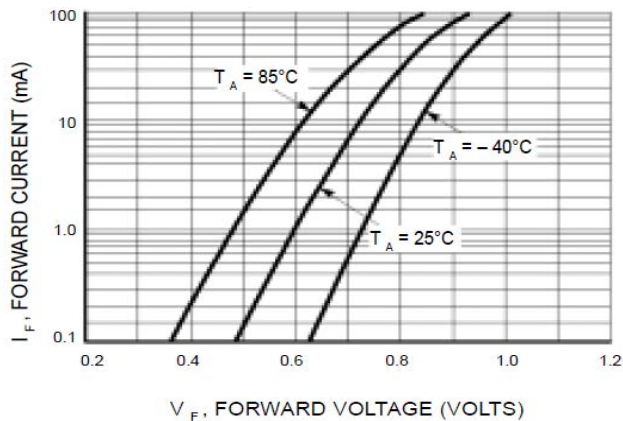


Figure 3. Leakage Current

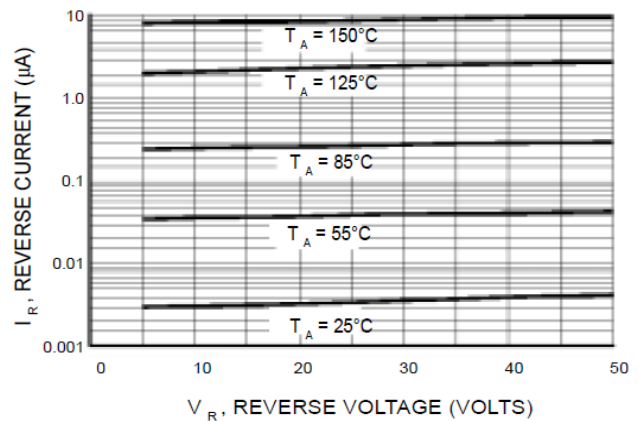
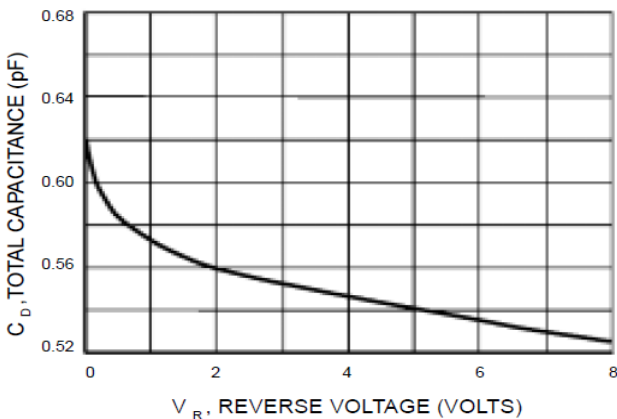


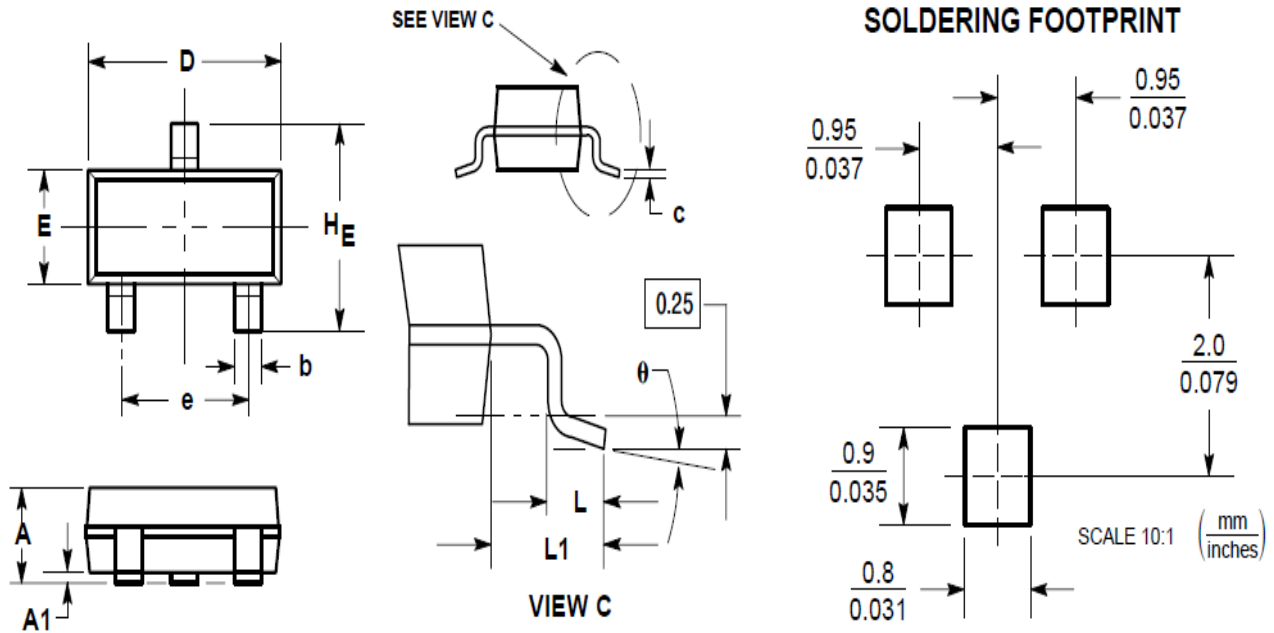
Figure 4. Capacitance





**PACKAGE INFORMATION**

Dimension in SOT-23 Package (Unit: mm)



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.035	0.044	0.89	1.11
A1	0.001	0.004	0.01	0.10
b	0.015	0.020	0.37	0.50
c	0.003	0.007	0.09	0.18
D	0.110	0.120	2.80	3.04
E	0.047	0.055	1.20	1.40
e	0.070	0.081	1.78	2.04
L	0.004	0.012	0.10	0.30
L1	0.014	0.029	0.35	0.69
HE	0.083	0.104	2.10	2.64



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