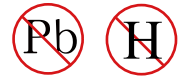




# Dual Serise Switching Diodes



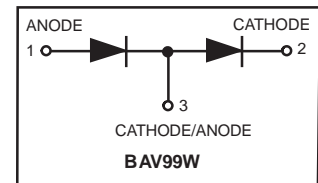
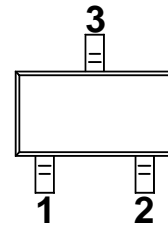
## Features

- The BAV99W is a smaller package, equivalent to the BAV99

## Suggested Applications

- ESD Protection
- Polarity Reversal Protection
- Data Line Protection
- Inductive Load Protection
- Steering Logic

## SOT-323



Marking :A7

## MAXIMUM RATINGS (Each Diode)

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	70	Vdc
Forward Current	$I_F$	215	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc
Repetitive Peak Reverse Voltage	$V_{RRM}$	70	V
Average Rectified Forward Current (Note 1.) (averaged over any 20 ms period)	$I_{F(AV)}$	715	mA
Repetitive Peak Forward Current	$I_{FRM}$	450	mA
Non-Repetitive Peak Forward Current	$I_{FSM}$		A
t = 1.0 $\mu$ s		2.0	
t = 1.0 ms		1.0	
t = 1.0 S		0.5	

1. FR-5 = 1.0  $\times$  0.75  $\times$  0.062 in.

# DEVICE CHARACTERISTICS

## BAV99W

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1.) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	200	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	1.6	$\text{mW}/^\circ\text{C}$
Total Device Dissipation Alumina Substrate, (Note 2.) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	300	mW
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	2.4	$\text{mW}/^\circ\text{C}$
Junction and Storage Temperature	$T_J, T_{slg}$	417	$^\circ\text{C}/\text{W}$
		-65 to +150	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) (Each Diode)

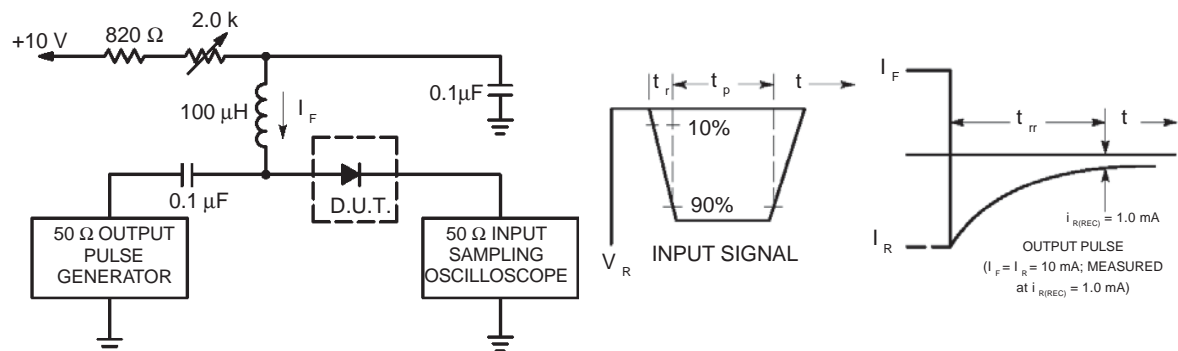
Characteristic	Symbol	Min	Max	Unit
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### OFF CHARACTERISTICS

Reverse Breakdown Voltage ( $I_{(BR)} = 100 \mu\text{A}$ )	$V_{(BR)}$	70	—	Vdc
Reverse Voltage Leakage Current ( $V_R = 70 \text{ Vdc}$ ) ( $V_R = 25 \text{ Vdc}$ , $T_J = 150^\circ\text{C}$ ) ( $V_R = 70 \text{ Vdc}$ , $T_J = 150^\circ\text{C}$ )	$I_R$	—	2.5 30 50	$\mu\text{Adc}$
Diode Capacitance ( $V_R = 0$ , $f = 1.0 \text{ MHz}$ )	$C_D$	—	1.5	pF
Forward Voltage ( $I_F = 1.0 \text{ mAdc}$ ) ( $I_F = 10 \text{ mAdc}$ ) ( $I_F = 50 \text{ mAdc}$ ) ( $I_F = 150 \text{ mAdc}$ )	$V_F$	—	715 855 1000 1250	mVdc
Reverse Recovery Time $R_L = 100 \Omega$ ( $I_F = I_R = 10 \text{ mAdc}$ , $i_{R(REC)} = 1.0 \text{ mAdc}$ ) (Figure 1)	$t_{rr}$	—	6.0	ns
Forward Recovery Voltage ( $I_F = 10 \text{ mA}$ , $t_r = 20 \text{ ns}$ )	$V_{FR}$	—	1.75	V

1. FR-5 =  $1.0 \times 0.75 \times 0.062 \text{ in.}$

2. Alumina =  $0.4 \times 0.3 \times 0.024 \text{ in.}$  99.5% alumina.



Notes: 1. A 2.0 k $\Omega$  variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.

2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10mA.

3.  $t_p \gg t_{rr}$

**Figure 1. Recovery Time Equivalent Test Circuit**

# DEVICE CHARACTERISTICS

## BAV99W

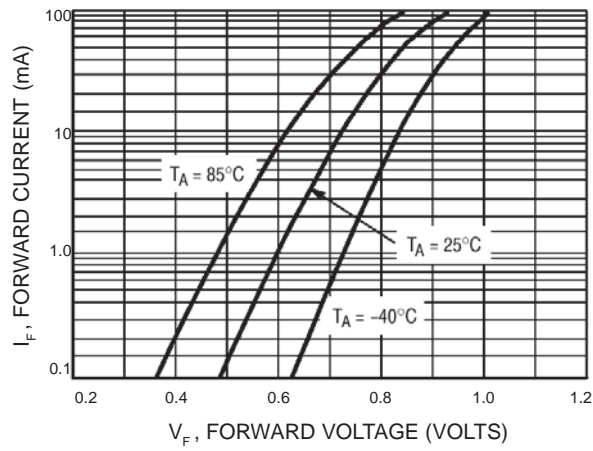


Figure 2. Forward Voltage

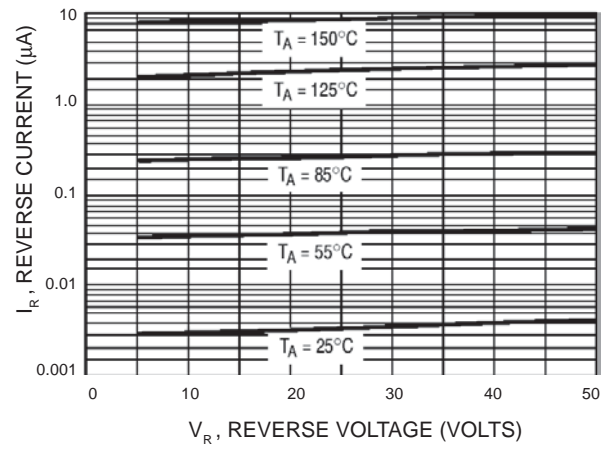


Figure 3. Leakage Current

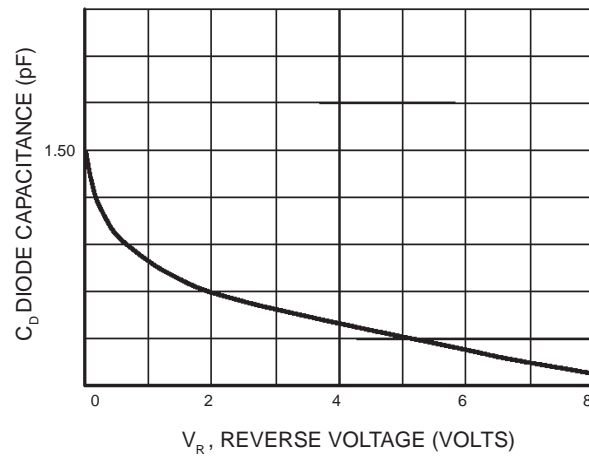


Figure 4. Capacitance

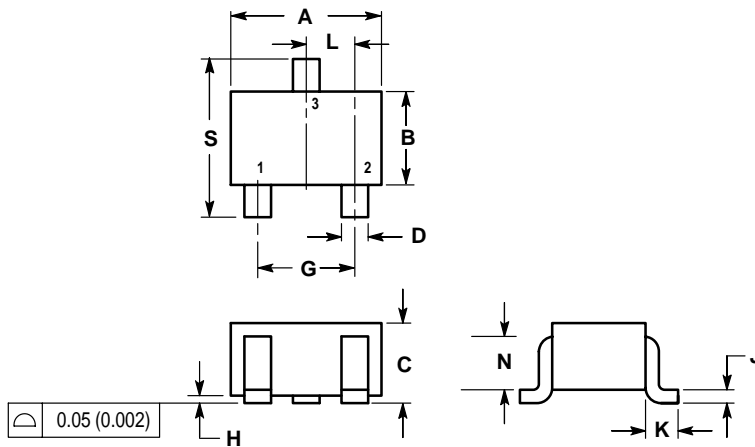
# PACKAGE OUTLINE AND DIMENSIONS

## BAV99W

SOT-323

NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.032	0.040	0.80	1.00
D	0.012	0.016	0.30	0.40
G	0.047	0.055	1.20	1.40
H	0.000	0.004	0.00	0.10
J	0.004	0.010	0.10	0.25
K	0.017 REF		0.425 REF	
L	0.026 BSC		0.650 BSC	
N	0.028 REF		0.700 REF	
S	0.079	0.095	2.00	2.40

## SOLDERING FOOTPRINT

