CHENG-YI
ELECTRONIC

BAV99W-WS

PB FREE PRODUCT

DUAL SERIES SWITCHING DIODE

Features

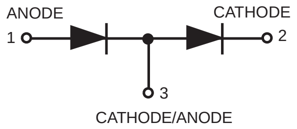
- Pb−Free Package May be Available. The G−Suffix Denotes a Pb−Free Lead Finish

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 (SC-70)



DEVICE MARKING

BAV99W	A7 / KJG

MAXIMUM RATINGS (Each Diode)

Rating	Symbol	Value	Unit
Reverse Voltag	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 μs		2.0	
t = 1.0 ms		1.0	
t = 1.0 S		0.5	

1. FR–5 = 1.0 × 0.75 × 0.062 in.

THERMAL CHARACTERISTICS

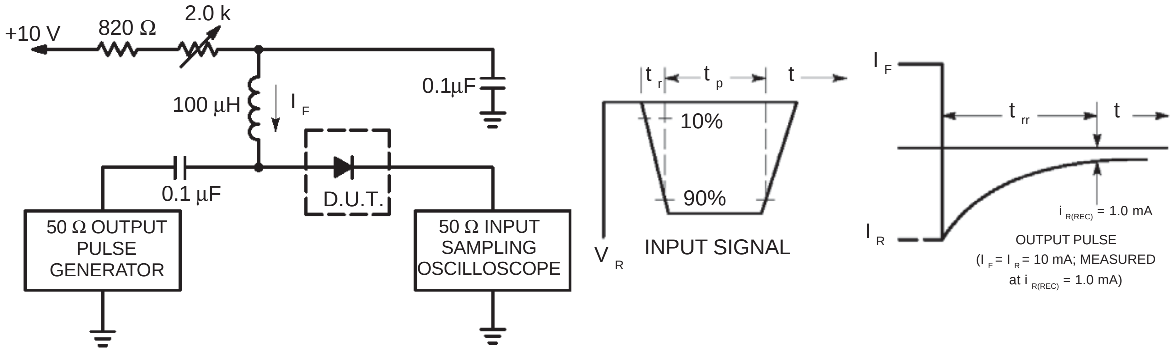
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR–5 Board, (Note 1.) $T_A = 25°C$	P_D	200	mW
Derate above 25°C		1.6	mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	625	°C/W
Total Device Dissipation Alumina Substrate, (Note 2.) $T_A = 25°C$	P_D	300	mW
Derate above 25°C		2.4	mW/°C
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	T_J, T_{stg}	–65 to +150	°C

ELECTRICAL CHARACTERISTICS ($T_A = 25°C$ unless otherwise noted) (Each Diode)

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

1. FR–5 = 1.0 × 0.75 × 0.062 in.

2. Alumina = 0.4 × 0.3 × 0.024 in. 99.5% alumina.



Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current (I_F) of 10mA.
2. Input pulse is adjusted so $I_{R(peak)}$ is equal to 10mA.
3. $t_p » t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

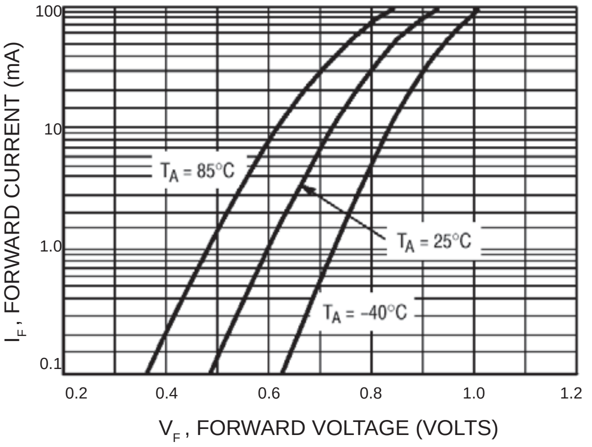


Figure 2. Forward Voltage

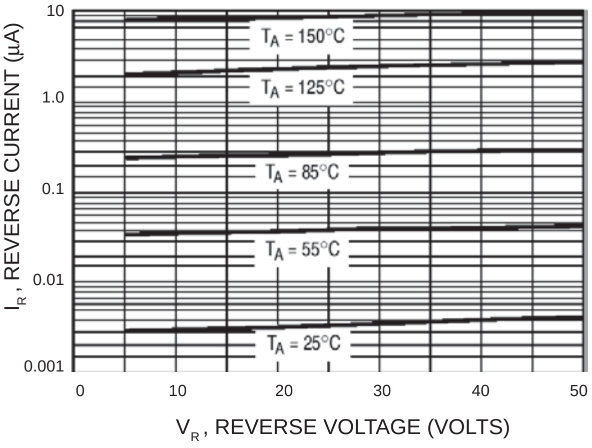


Figure 3. Leakage Current

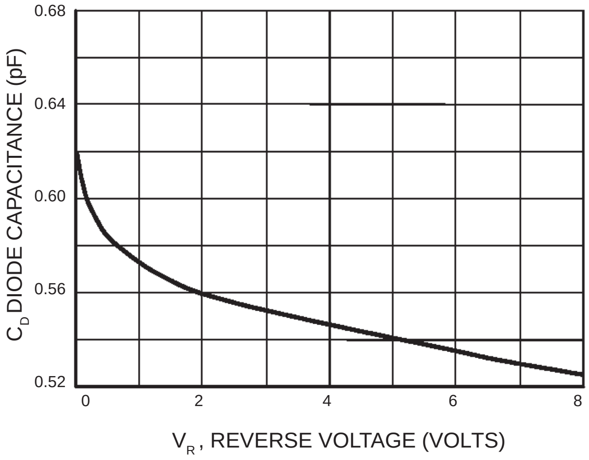
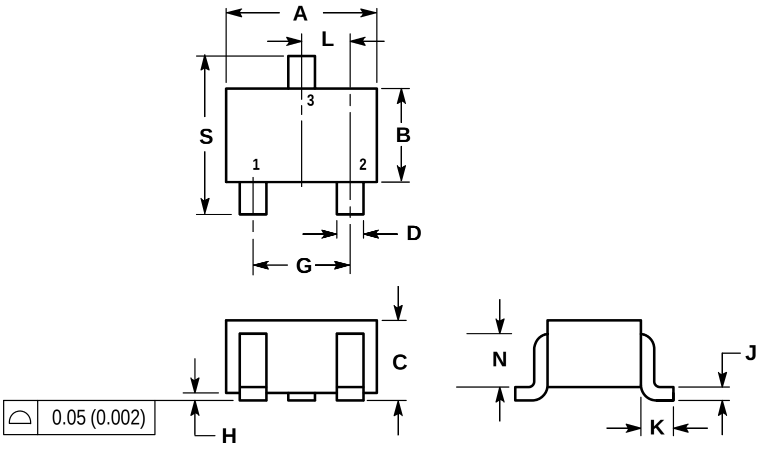


Figure 4. Capacitance

SC−70 / 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