

Dual Serise Switching Diodes

The BAV99WT1 is a smaller package, equivalent to the BAV99LT1.

Suggested Applications

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

ORDERING INFORMATION

Device	Package	Shipping
BAV99WT1	SOT-323(SC-70)	3000/Tape & Reel
BAV99RWT1	SOT-323(SC-70)	3000/Tape & Reel

Preferred: devices are recommended choices for future use and best overall value.

DEVICE MARKING

BAV99WT1 = A7; BAV99RWT1 = F7

MAXIMUM RATINGS (Each Diode)

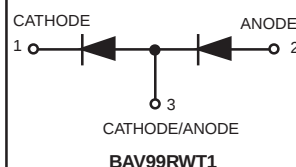
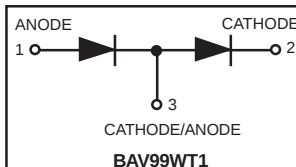
Rating	Symbol	Value	Unit
Reverse Voltage	V_R	70	Vdc
Forward Current	I_F	215	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	mAdc
Repetitive Peak Reverse Voltage	V_{RRM}	70	V
Average Rectified Forward Current (Note 1.) (averaged over any 20 ms period)	$I_{F(AV)}$	715	mA
Repetitive Peak Forward Current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

BAV99WT1 BAV99RWT1



BAV99WT1
CASE 419-02, STYLE 9
SOT-323 (SC-70)
BAV99RWT1
CASE 419-02, STYLE 10
SOT-323 (SC-70)



BAV99WT1 BAV99RWT1

THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (Note 1.) $T_A = 25^\circ\text{C}$ Derate above 25°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°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_{stg}	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)

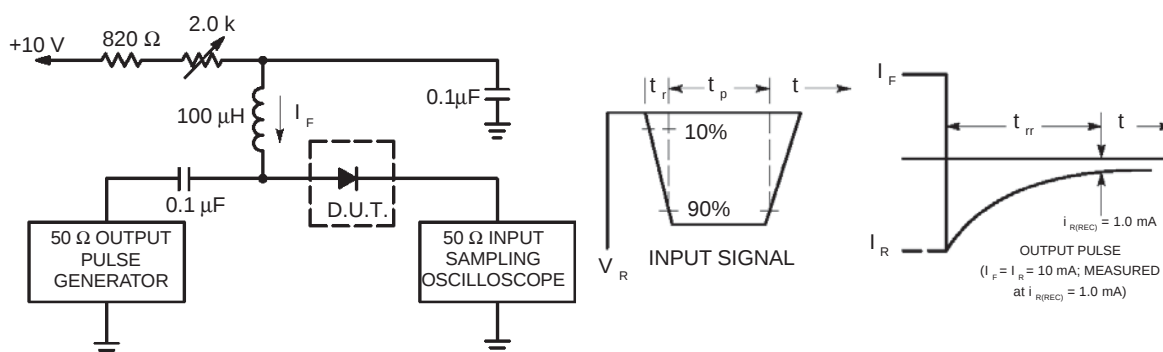
Characteristic	Symbol	Min	Max	Unit
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OFF CHARACTERISTICS

Reverse Breakdown Voltage	($I_{BR} = 100 \mu\text{A}$)	$V_{(BR)}$	70	—	Vdc
Reverse Voltage Leakage Current	($V_R = 70 \text{ Vdc}$)	I_R	—	2.5	μAdc
	($V_R = 25 \text{ Vdc}, T_J = 150^\circ\text{C}$)		—	30	
	($V_R = 70 \text{ Vdc}, T_J = 150^\circ\text{C}$)		—	50	
Diode Capacitance ($V_R = 0, f = 1.0 \text{ MHz}$)		C_D	—	1.5	pF
Forward Voltage	($I_F = 1.0 \text{ mAdc}$)	V_F	—	715	mVdc
	($I_F = 10 \text{ mAdc}$)		—	855	
	($I_F = 50 \text{ mAdc}$)		—	1000	
	($I_F = 150 \text{ mAdc}$)		—	1250	
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 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. $t_p \gg t_{rr}$

Figure 1. Recovery Time Equivalent Test Circuit

BAV99WT1 BAV99RWT1

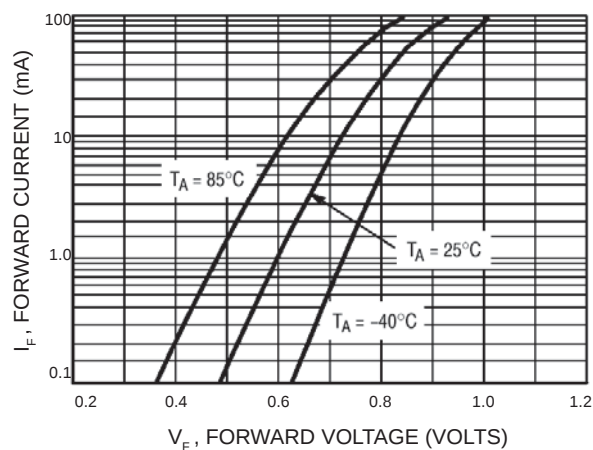


Figure 2. Forward Voltage

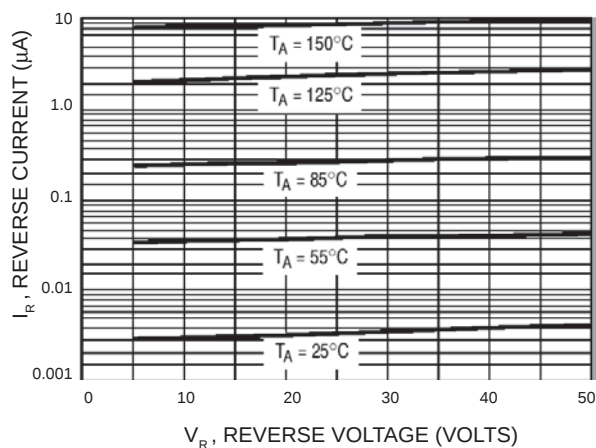


Figure 3. Leakage Current

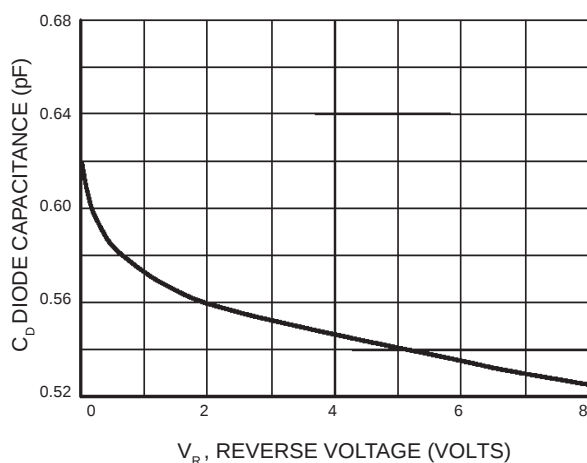


Figure 4. Capacitance