

# Surface Mount Switching Diode

## BAV99 Thru BAW56 Voltage: 70 Volts Current: 215mA



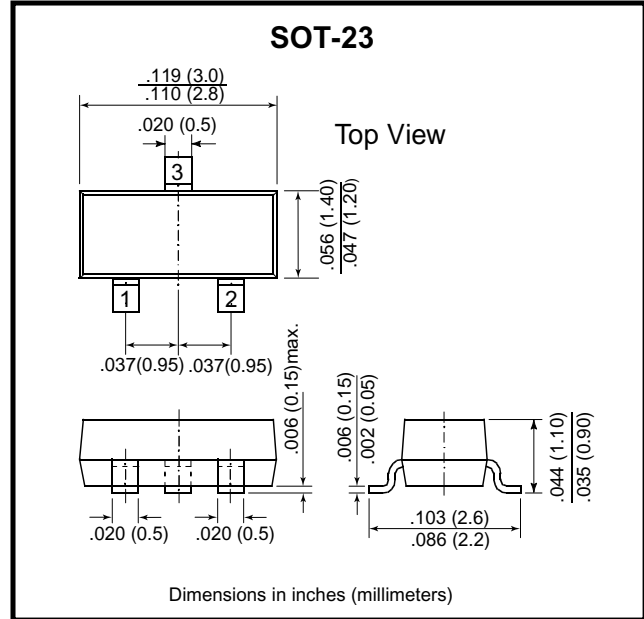
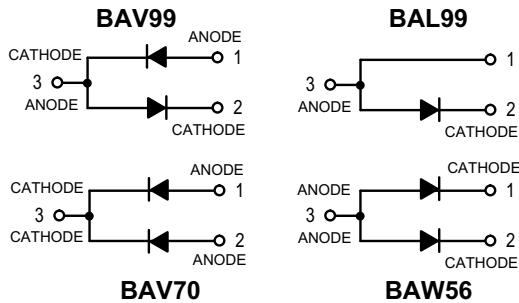
### Features

- Fast Switching Speed
- Surface Mount Package Ideally Suited for Automatic Insertion
- For General Purpose Switching Applications
- High Conductance

### Mechanical data

Case: SOT-23, Plastic  
Approx. Weight: 0.008 gram

This diodes is also available in other configurations including a dual common cathode with type designation BAV70, a dual common anodes with type designation BAW56 and single chip inside with type Designation BAL99



### Maximum Ratings

Rating	Symbol	Value	Units
Continuous Reverse Voltage	$V_R$	70	$V_{DC}$
Peak Forward Current	$I_F$	215	mAdc
Peak Forward Surge Current	$I_{FM}(\text{surge})$	500	mAdc

### Thermal Characteristics

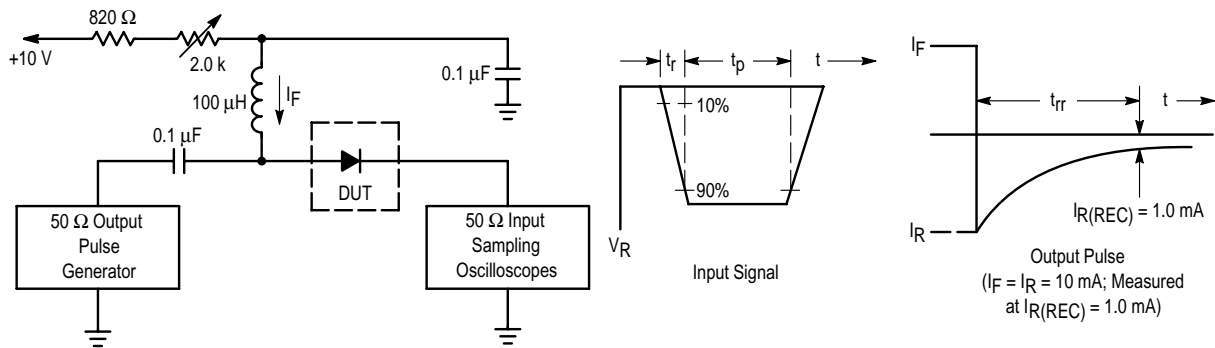
Characteristic	Symbol	Max	Units
Total Device Dissipation FR-5 Board(1) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	225	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
Total Device Dissipation Alumina Substrate,(2) $T_A = 25^\circ\text{C}$ Derate above $25^\circ\text{C}$	$P_D$	300	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

### Electrical Characteristics ( $T_A = 25^\circ\text{C}$ unless otherwise noted)

Characteristic (OFF CHARACTERISTICS)	Symbol	Min	Max	Units
Reverse Breakdown Voltage ( $I_{(BR)} = 100 \mu\text{Adc}$ )	$V_{(BR)}$	70	-	Vdc
Reverse Voltage Leakage Current $V_R = 25 \text{ Vdc}, T_J = 150^\circ\text{C}$ $V_R = 70 \text{ Vdc}$ $V_R = 70 \text{ Vdc}, T_J = 150^\circ\text{C}$	$I_R$	-	30	$\mu\text{Adc}$
		-	2.5	$\mu\text{Adc}$
		-	50	$\mu\text{Adc}$
Diode Capacitance ( $V_R = 0, f = 1.0 \text{ MHz}$ )	$C_D$	-	1.5	pF
Forward Voltage $I_F = 1.0 \text{ mAdc}$ $I_F = 10 \text{ mAdc}$ $I_F = 50 \text{ mAdc}$ $I_F = 150 \text{ mAdc}$	VF	-	715	mV
		-	855	
		-	1000	
		-	1250	
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mAdc}, I_{R(REC)} = 1.0 \text{ mAdc}$ ) $R_L = 100\Omega$	$T_{rr}$	-	6.0	nS

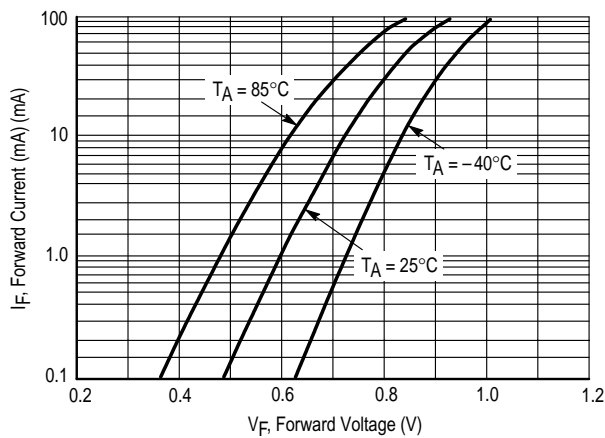
1.FR-5 = 1.0 X 0.75X 0.062 in. 2.Aluminum = 0.4X 0.3X 0.024 in. 99.5% aluminum.

## RATING AND CHARACTERISTIC CURVES (BAV99 Thru BAW56)

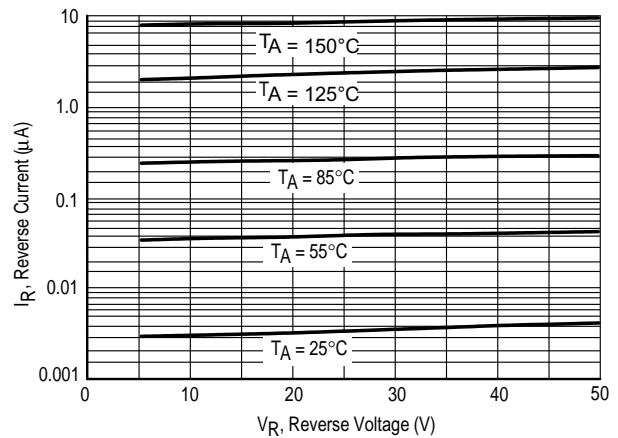


- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10 mA.  
 2. Input pulse is adjusted so  $I_R(\text{peak})$  is equal to 10 mA.  
 3.  $t_p \gg t_{rr}$

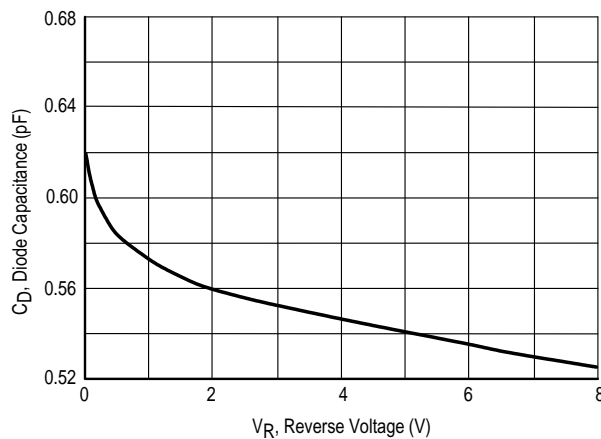
**Figure 1. Recovery Time Equivalent Test Circuit**



**Figure 2. Forward Voltage**



**Figure 3. Leakage Current**



**Figure 4. Capacitance**

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