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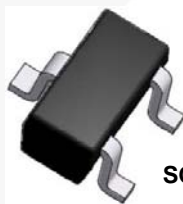


August 2015

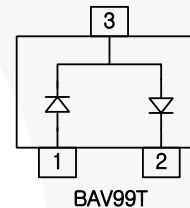
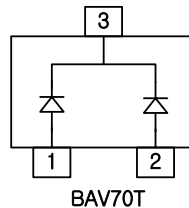
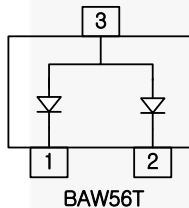
# BAW56T / BAV70T / BAV99T Fast Switching Diode

## Features

- Fast Switching Diodes with  $T_{rr} < 4.0$  nsec
- Surface Mount Device at 0.95 mm Maximum Height
- MSL 1 per J-STD-020
- Pb Free and RoHS Compliant
- Matte Sn Lead Finish
- Green Mold Compound



SOT-523



## Ordering Information

Part Number	Top Mark	Package	Packing Method
BAW56T	JD	SOT-523 3L	Tape and Reel
BAV70T	JJ	SOT-523 3L	Tape and Reel
BAV99T	JE	SOT-523 3L	Tape and Reel

## Absolute Maximum Ratings

Stresses exceeding the absolute maximum ratings may damage the device. The device may not function or be operable above the recommended operating conditions and stressing the parts to these levels is not recommended. In addition, extended exposure to stresses above the recommended operating conditions may affect device reliability. The absolute maximum ratings are stress ratings only. Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$V_{RRM}$	Maximum Repetitive Reverse Voltage	85	V
$I_{F(AV)}$	Average Rectified Forward Current	Single Diode	150
		Dual Diodes	75
$T_J$	Operating Junction Temperature	125	$^\circ\text{C}$
$T_{STG}$	Storage Temperature Range	-55 to +125	$^\circ\text{C}$

BAW56T / BAV70T / BAV99T — Fast Switching Diode

**Thermal Characteristics<sup>(1)</sup>**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted.

Symbol	Parameter	Value	Unit
$P_D$	Power Dissipation	150	mW
$R_{\theta JA}$	Thermal Resistance, Junction-to-Ambient	500	$^\circ\text{C}/\text{W}$
$\Psi_{JL}$	Junction-to-Lead Thermal Characteristics, Thermocouple Soldered to Cathode	195	$^\circ\text{C}/\text{W}$

**Note:**

1. Device mounted on FR-4 PCB minimum land pad

**Electrical Characteristics**

Values are at  $T_A = 25^\circ\text{C}$  unless otherwise noted. Parameters are tested per individual diode.

Symbol	Parameter	Conditions	Min.	Max.	Unit
$BV_R$	Reverse Breakdown Voltage	$I_R = 1 \mu\text{A}$	85		V
$I_R$	Reverse Leakage Current	$V_R = 75 \text{ V}$		2	$\mu\text{A}$
		$V_R = 25 \text{ V}$		0.03	
$V_F$	Forward Voltage	$I_F = 1 \text{ mA}$		0.715	V
		$I_F = 10 \text{ mA}$		0.855	
		$I_F = 50 \text{ mA}$		1.00	
		$I_F = 150 \text{ mA}$		1.25	
$C_D$	Diode Capacitance	$V_R = 0 \text{ V}$ , $f = 1 \text{ MHz}$		4	pF
$T_{rr}$	Reverse Recovery Time	$I_F = I_R = 10 \text{ mA}$ , $I_{RR} = 0.1 \times I_R$ $R_L = 100 \Omega$		4	ns

### Typical Performance Characteristics

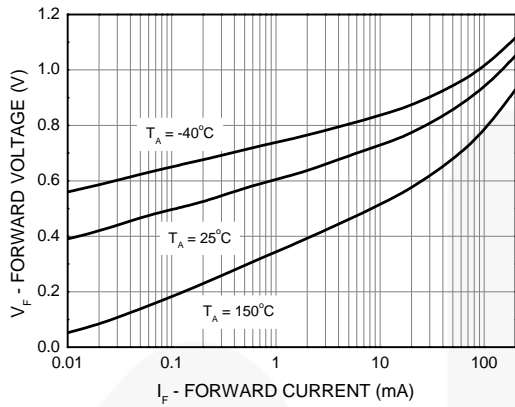


Figure 1. Forward Voltage vs. Forward Current

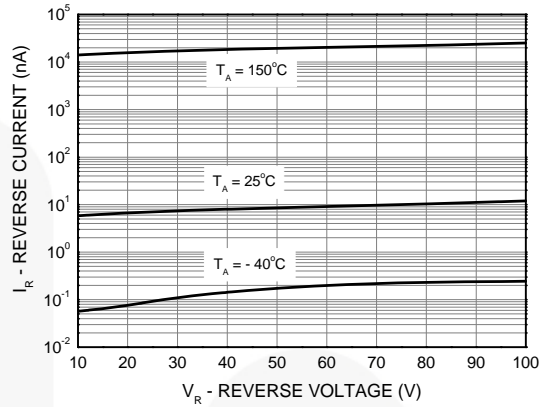


Figure 2. Reverse Current vs. Reverse Voltage

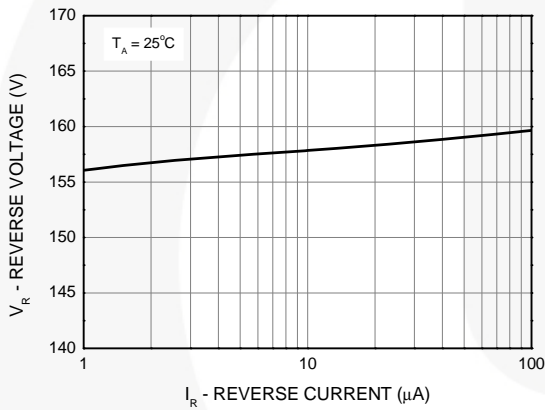


Figure 3. Reverse Voltage vs. Reverse Current

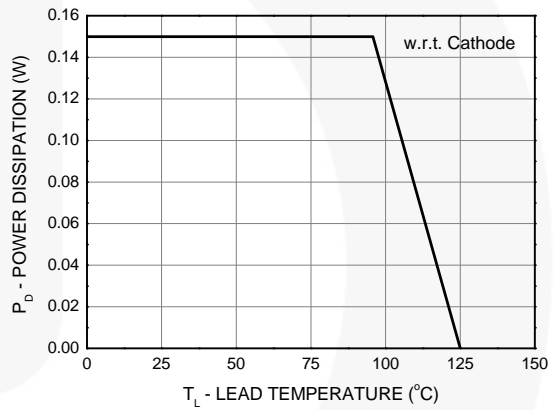


Figure 4. Power Derating Curve

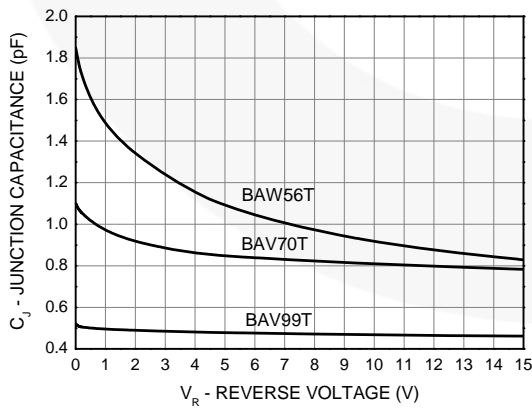
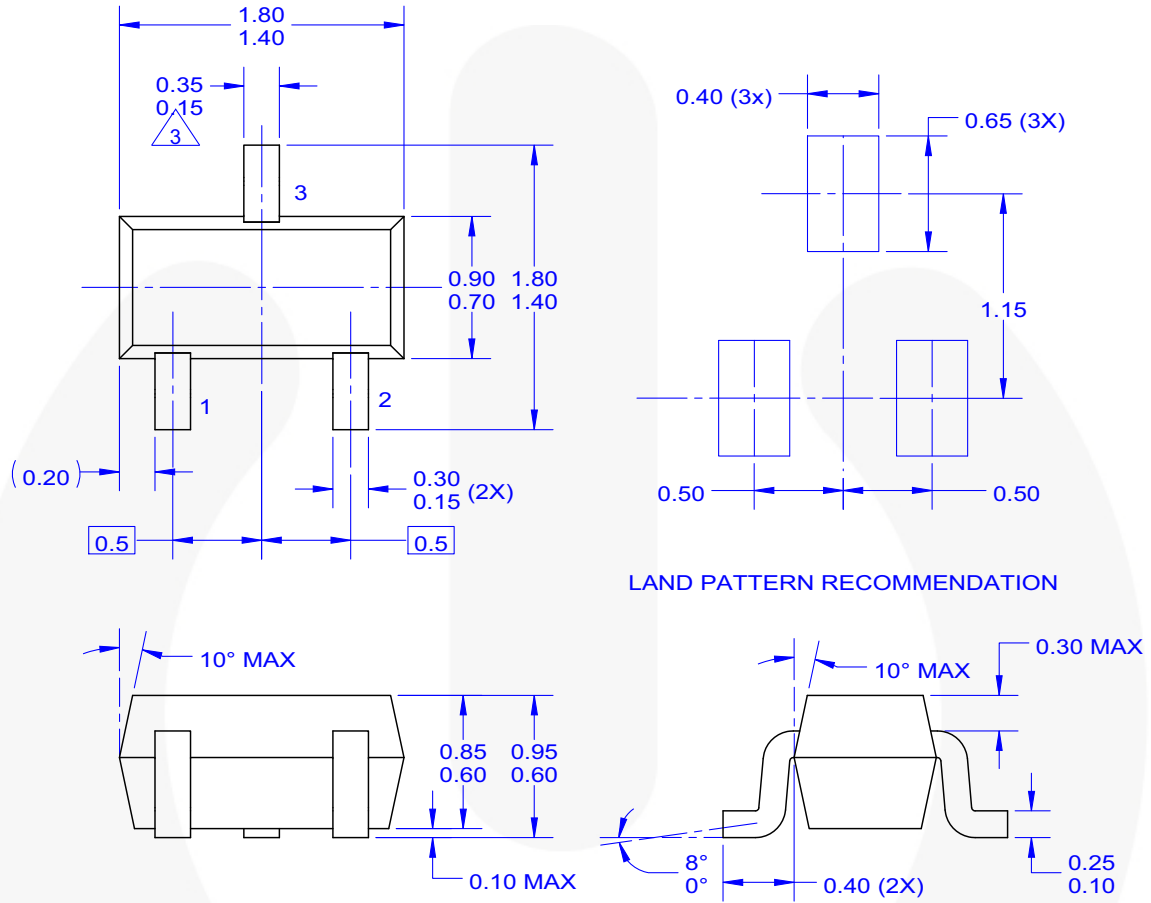


Figure 5. Total Capacitance vs. Reverse Voltage

Physical Dimensions



NOTES:

- A. REFERENCE TO EIAJ SC75 STANDARD.
- B. ALL DIMENSIONS ARE IN MILLIMETERS.
- C. DOES NOT COMPLY EIAJ SC75 STANDARD.
- D. DIMENSIONS ARE EXCLUSIVE OF BURRS, MOLD FLASH AND TIE BAR PROTRUSIONS.
- E. LAND PATTERN RECOMMENDATION BASE FROM EIAJ STD.
- F. DRAWING FILE NAME: MKT-MAD03B REV1




Figure 6. 3-Lead, SOT523





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No Identification Needed	Full Production	Datasheet contains final specifications. Fairchild Semiconductor reserves the right to make changes at any time without notice to improve the design.
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