

# BAV99LT1

Preferred Device

## Dual Series Switching Diode

### Features

- Pb-Free Packages are Available

### 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 $t = 1.0 \mu s$ $t = 1.0 ms$ $t = 1.0 s$	$I_{FSM}$	2.0 1.0 0.5	A

Maximum ratings are those values beyond which device damage can occur. Maximum ratings applied to the device are individual stress limit values (not normal operating conditions) and are not valid simultaneously. If these limits are exceeded, device functional operation is not implied, damage may occur and reliability may be affected.

### THERMAL CHARACTERISTICS

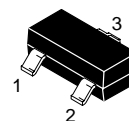
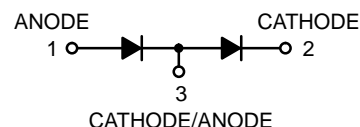
Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 1) $T_A = 25^\circ C$ Derate above $25^\circ C$	$P_D$	225 1.8	mW mW/ $^\circ C$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	556	$^\circ C/W$
Total Device Dissipation Alumina Substrate (Note 2) $T_A = 25^\circ C$ Derate above $25^\circ C$	$P_D$	300 2.4	mW mW/ $^\circ C$
Thermal Resistance, Junction-to-Ambient	$R_{\theta JA}$	417	$^\circ C/W$
Junction and Storage Temperature Range	$T_J, T_{stg}$	-65 to +150	$^\circ C$

- FR-5 =  $1.0 \times 0.75 \times 0.062$  in.
- Alumina =  $0.4 \times 0.3 \times 0.024$  in 99.5% alumina.



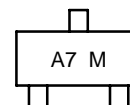
ON Semiconductor®

<http://onsemi.com>



CASE 318  
SOT-23  
STYLE 11

### MARKING DIAGRAM



A7 = Device Code  
M = Date Code

### ORDERING INFORMATION

Device	Package	Shipping†
BAV99LT1	SOT-23	3000/Tape & Reel
BAV99LT1G	SOT-23 (Pb-Free)	3000/Tape & Reel
BAV99LT3	SOT-23	10,000/Tape & Reel
BAV99LT3G	SOT-23 (Pb-Free)	10,000/Tape & Reel

†For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specifications Brochure, BRD8011/D.

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

# BAV99LT1

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

Characteristic	Symbol	Min	Max	Unit
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	$\mu\text{A}$ dc
Diode Capacitance, ( $V_R = 0$ , $f = 1.0 \text{ MHz}$ )	$C_D$	–	1.5	pF
Forward Voltage, ( $I_F = 1.0 \text{ mA}$ dc) ( $I_F = 10 \text{ mA}$ dc) ( $I_F = 50 \text{ mA}$ dc) ( $I_F = 150 \text{ mA}$ dc)	$V_F$	– – – –	715 855 1000 1250	mVdc
Reverse Recovery Time, ( $I_F = I_R = 10 \text{ mA}$ dc, $i_{R(REC)} = 1.0 \text{ mA}$ dc) $R_L = 100 \Omega$	$t_{rr}$	–	6.0	ns
Forward Recovery Voltage, ( $I_F = 10 \text{ mA}$ , $t_r = 20 \text{ ns}$ )	$V_{FR}$	–	1.75	V

# BAV99LT1

## CURVES APPLICABLE TO EACH DIODE

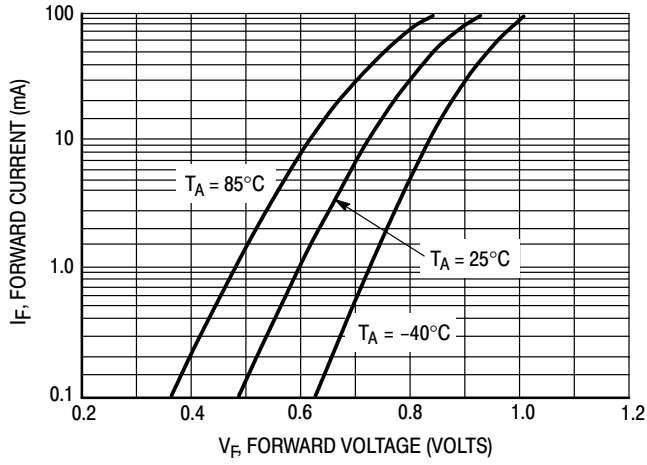


Figure 1. Forward Voltage

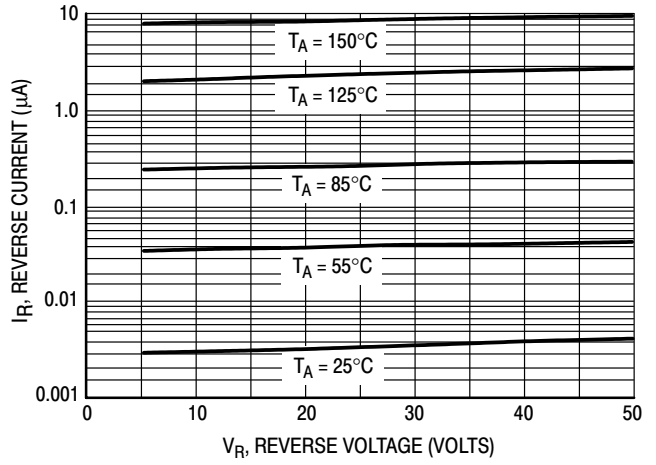


Figure 2. Leakage Current

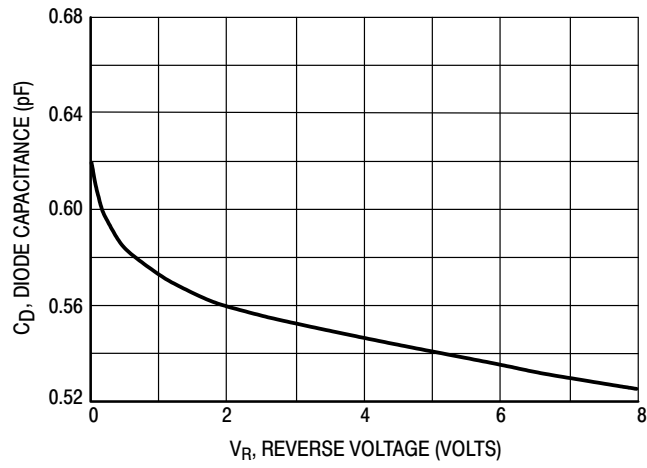
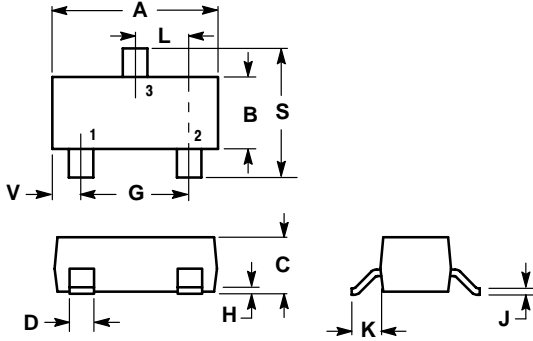


Figure 3. Capacitance

# BAV99LT1

## PACKAGE DIMENSIONS

**SOT-23 (TO-236)**  
**PLASTIC PACKAGE**  
**CASE 318-08**  
**ISSUE AK**



**NOTES:**

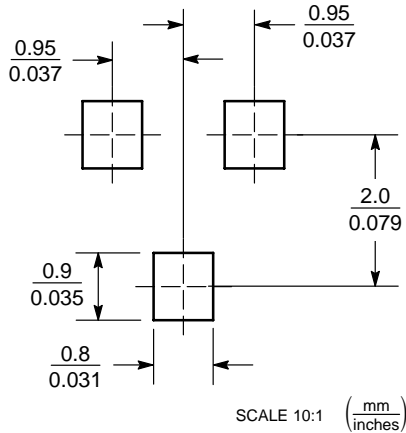
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318-01 THRU -07 AND -09 OBSOLETE, NEW STANDARD 318-08.

DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

**STYLE 11:**

- PIN 1: ANODE
- CATHODE
- CATHODE-ANODE

### SOLDERING FOOTPRINT\*



\*For additional information on our Pb-Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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