

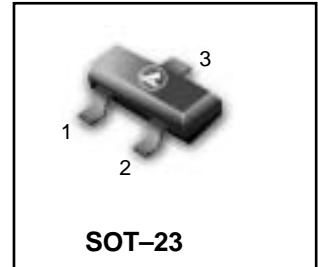
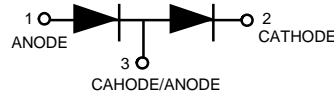
# Dual Series Switching Diode

## LBAV99LT1G

- Pb-Free Package is Available.

### DEVICE MARKING ORDERING INFORMATION

Device	Marking	Shipping
LBAV99LT1G	A7	3000 Tape & Reel
LBAV99LT3G	A7	10000 Tape & Reel



### 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 (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
$t = 1.0 \mu s$		2.0	
$t = 1.0 ms$		1.0	
$t = 1.0 S$		0.5	

### THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board, (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, (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	$T_J, T_{stg}$	-65 to +150	$^\circ C$

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ C$ unless otherwise noted) (EACH DIODE)

Characteristic	Symbol	Min	Max	Unit
----------------	--------	-----	-----	------

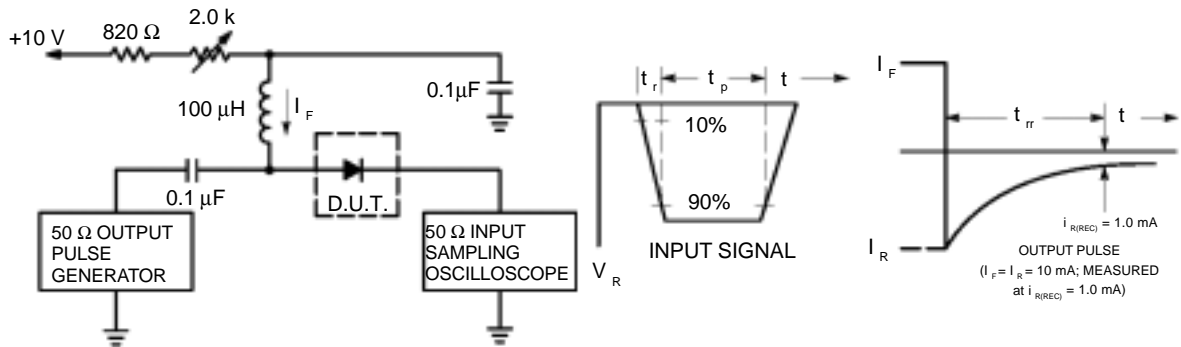
### OFF CHARACTERISTICS

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

1. FR-5 = 1.0 x 0.75 x 0.062 in.

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

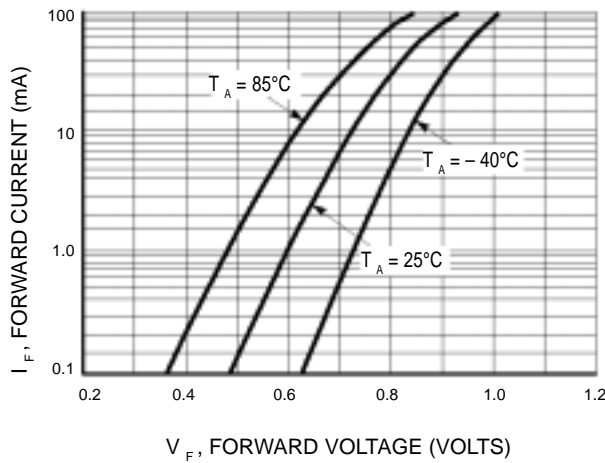
**LBAV99LT1G**



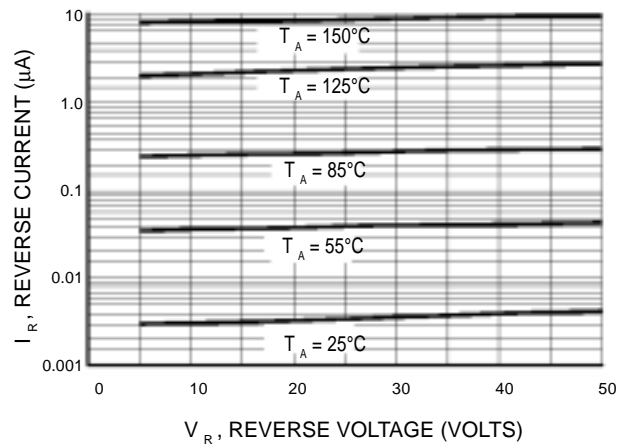
- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.
- 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10mA.
- 3.  $t_p \gg t_{rr}$

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

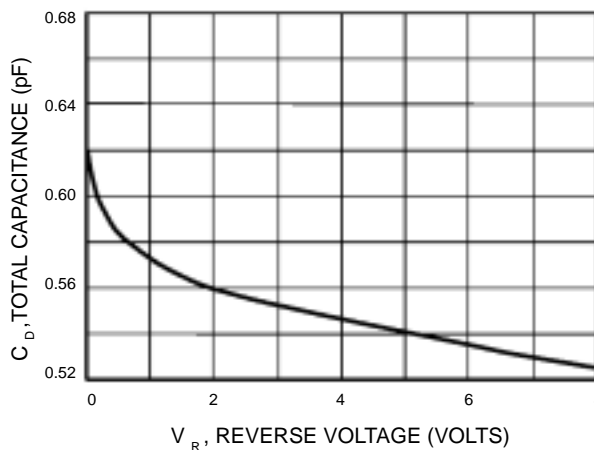
**CURVES APPLICABLE TO EACH DIODE**



**Figure 2. Forward Voltage**



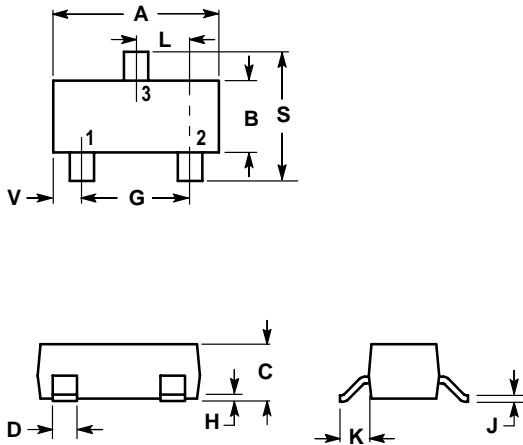
**Figure 3. Leakage Current**



**Figure 4. Capacitance**

**LBAV99LT1G**

**SOT-23**

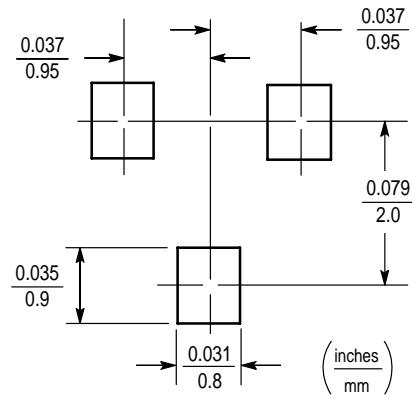


NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

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

- PIN 1. ANODE  
 2. CAHODE  
 3. CAHODE/ANODE

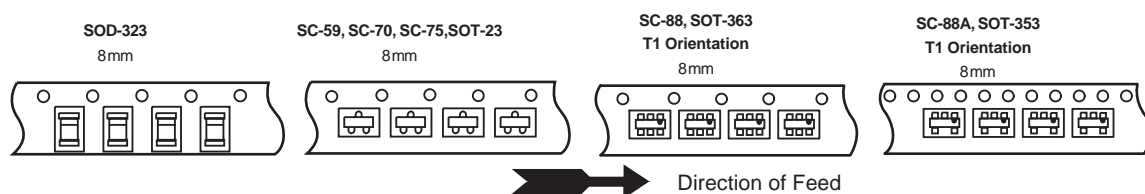


## Tape & Reel and Packaging Specifications for Small-Signal Transistors, FETs and Diodes

Embossed Tape and Reel is used to facilitate automatic pick and place equipment feed requirements. The tape is used as the shipping container for various products and requires a minimum of handling. The antistatic/conductive tape provides a secure cavity for the product when sealed with the “peel-back” cover tape.

- Two Reel Sizes Available (7" and 13")
- Used for Automatic Pick and Place Feed Systems
- Minimizes Product Handling
- EIA 481, -1, -2
- SOT-23, SC-70/SOT-323, SC-89, SC-88/SOT-363, SC-88A/SOT-353, SOD-323, SOD-523 in 8 mm Tape

Use the standard device title and add the required suffix as listed in the option table below (Table 1). Note that the individual reels have a finite number of devices depending on the type of product contained in the tape. Also note the minimum lot size is one full reel for each line item, and orders are required to be in increments of the single reel quantity.

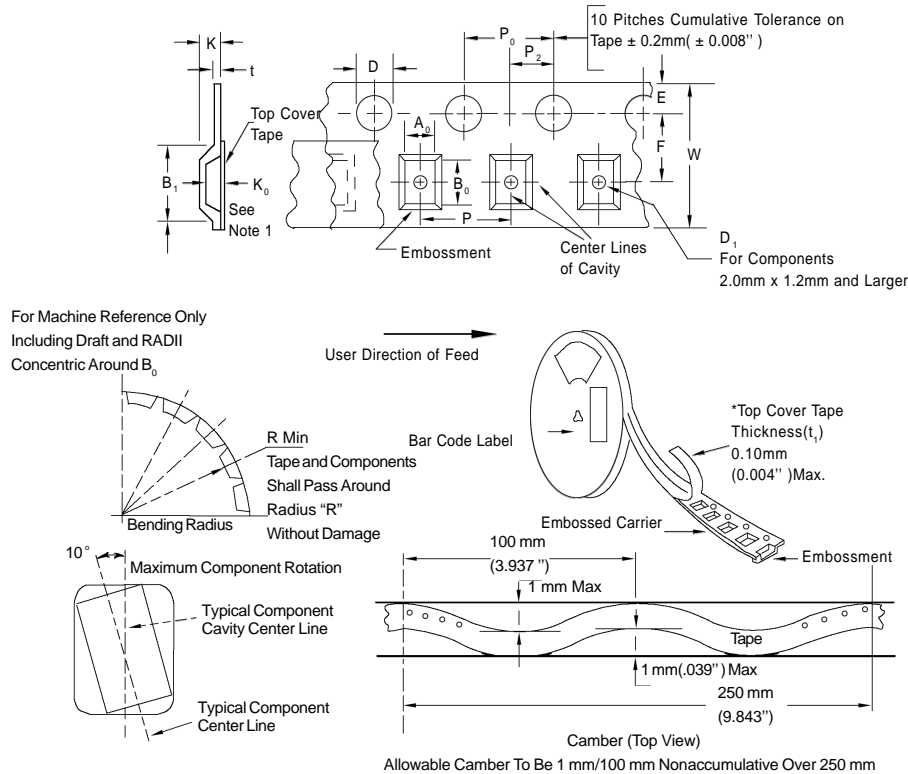


Typical Reel Orientations

Table 1. EMBOSSED TAPE AND REEL ORDERING INFORMATION

Package	Tape Width (mm)	Pitch mm	Reel Size mm(inch)	Devices Per Reel and Minimum Order Quantity	Device Suffix
SOT-23	8	4	178	(7)	3,000 T1
	8		330	(13)	10,000 T3
SC-70/SOT-323	8	4	178	(7)	3,000 T1
	8		330	(13)	10,000 T3
SC-89	8	4	178	(7)	3,000 T1
	8		330	(13)	10,000 T3
SC-88/SOT-363	8	4	178	(7)	3,000 T1
	8		330	(13)	10,000 T3
SC-88A/SOT-353	8	4	178	(7)	3,000 T1
	8		330	(13)	10,000 T3
SOD-323	8	4	178	(7)	3,000 T1
	8		330	(13)	10,000 T3
SOD-523	8	4	178	(7)	3,000 T1
	8		330	(13)	10,000 T3

## EMBOSSED TAPE AND REEL DATA FOR DISCRETES CARRIER TAPE SPECIFICATIONS



### DIMENSIONS

Tape Size	$B_1$ Max	D	$D_1$	E	F	K	$P_0$	$P_2$	RMin	TMax	WMax
8mm	4.55mm (.179")	1.5+0.1mm - 0.0	1.0Min (.039")	1.75±0.1mm (.069±.004)	3.5±0.05mm (.138±.002")	2.4mmMax (.094")	4.0 ± 0.1mm (.157 ± .004")	2.0 ± 0.1mm (.079 ± .002")	25mm (.98")	0.6mm (.024")	8.3mm (.327")
12mm	8.2mm (.323")	(.059+.004" -0.0)	1.5mmMin (.060")		5.5±0.05mm (.217±.002")	6.4mmMax (.252")			30mm (1.18")		12 ± .30mm (.470±.012")
16mm	12.1mm (.476")				7.5±0.10mm (.295±.004")	7.9mmMax (.311")					16.3mm (.642")
24mm	20.1mm (.791")				11.5±0.1mm (.453±.004")	11.9mmMax (.468")					24.3mm (.957")

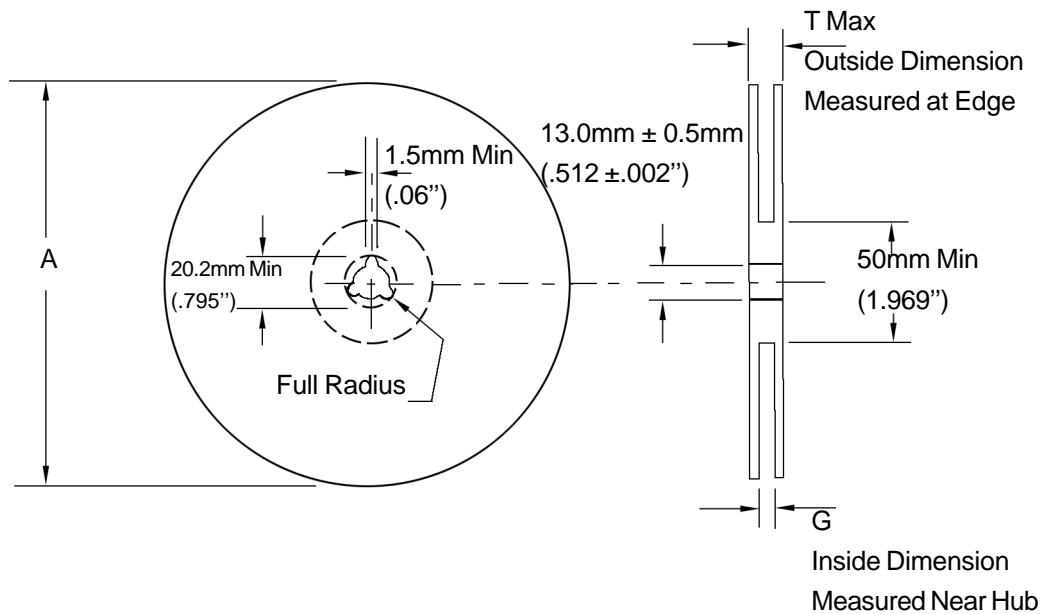
Metric dimensions govern - English are in parentheses for reference only.

NOTE 1:  $A_0$ ,  $B_0$ , and  $K_0$  are determined by component size. The clearance between the components and the cavity must be within .05 mm min. to .50 mm max.,

NOTE 2: the component cannot rotate more than 10° within the determined cavity.

NOTE 3: If  $B_1$  exceeds 4.2 mm (.165") for 8 mm embossed tape, the tape may not feed through all tape feeders.

## EMBOSSED TAPE AND REEL DATA FOR DISCRETES



Size	A Max	G	T Max
8 mm	330mm (12.992")	8.4mm+1.5mm, -0.0 (.33"+.059", -0.00)	14.4mm (.56")
12mm	330mm (12.992")	12.4mm+2.0mm, -0.0 (.49 "+ .079", -0.00)	18.4mm (.72")
16mm	360mm (14.173")	16.4mm+2.0mm, -0.0 (.646"+.078", -0.00)	22.4mm (.882")
24 mm	360mm (14.173")	24.4mm+2.0mm, -0.0 (.961"+.070", -0.00)	30.4mm (1.197")

### Reel Dimensions

Metric Dimensions Govern — English are in parentheses for reference only

### Storage Conditions

Temperature: 5 to 40 Deg.C (20 to 30 Deg. C is preferred)

Humidity: 30 to 80 RH (40 to 60 is preferred )

Recommended Period: One year after manufacturing

(This recommended period is for the soldering condition only. The characteristics and reliabilities of the products are not restricted to this limitation)