

# Monolithic Dual Switching Diodes

## FETURE

- Pb-Free Package is available.

## ORDERING INFORMATION

Device	Marking	Shipping
LMBD2837LT1	A5	3000/Tape&Reel
LMBD2837LT1G	A5(Pb-Free)	3000/Tape&Reel
LMBD2838LT1	MA6	3000/Tape&Reel
LMBD2838LT1G	MA6(Pb-Free)	3000/Tape&Reel

## MAXIMUM RATINGS(EACH DIODE)

Rating	Symbol	Value	Unit
Peak Reverse Voltage	$V_{RM}$	75	Vdc
D.C Reverse Voltage	LMBD2837LT1 $V_R$ LMBD2838LT1	30 50	Vdc
Peak Forward Current	$I_{FM}$	450 300	mAdc
Average Rectified Current	$I_O$	150 100	mAdc

## THERMAL CHARACTERISTICS

Characteristic	Symbol	Max	Unit
Total Device Dissipation FR-5 Board <sup>(1)</sup> $T_A = 25^\circ\text{C}$	$P_D$	225	mW
Derate above $25^\circ\text{C}$		1.8	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	°C/W
Total Device Dissipation Alumina Substrate, <sup>(2)</sup> $T_A = 25^\circ\text{C}$	$P_D$	300	mW
Derate above $25^\circ\text{C}$		2.4	mW/°C
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	°C/W
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	°C

## DEVICE MARKING

LMBD2837LT1 = A5; LMBD2838LT1 = MA6

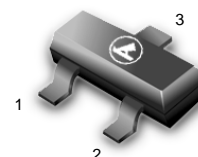
## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted) (EACH DIODE)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Reverse Breakdown Voltage( $I_{(BR)} = 100\mu\text{Adc}$ )	LMBD2837LT1 $V_{(BR)}$ LMBD2838LT1	35 75	—	Vdc
Reverse Voltage Leakage Current ( $V_R = 30\text{ Vdc}$ )	$I_R$ LMBD2837LT1	—	0.1	$\mu\text{Adc}$
( $V_R = 50\text{ Vdc}$ )	LMBD2838LT1	—	0.1	
Diode Capacitance ( $V_R = 0\text{ V}$ , $f = 1.0\text{ MHz}$ )	$C_T$	—	4.0	pF
Forward Voltage( $I_F = 10\text{ mAdc}$ )	$V_F$	—	1.0	Vdc
( $I_F = 50\text{ mAdc}$ )		—	1.0	
( $I_F = 100\text{ mAdc}$ )		—	1.2	
Reverse Recovery Time( $I_F = I_R = 10\text{ mAdc}$ , $I_{R(REC)} = 1.0\text{ mAdc}$ )(Figure 1) $t_{rr}$		—	4.0	ns

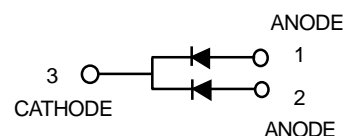
1. FR-5 = 1.0 x 0.75 x 0.062 in.

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

**LMBD2837LT1**  
**LMBD2838LT1**



SOT- 23 (TO-236AB)



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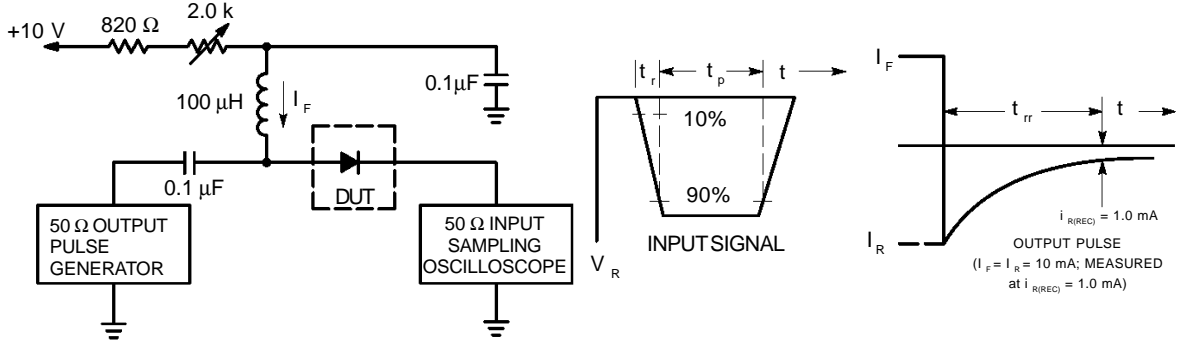
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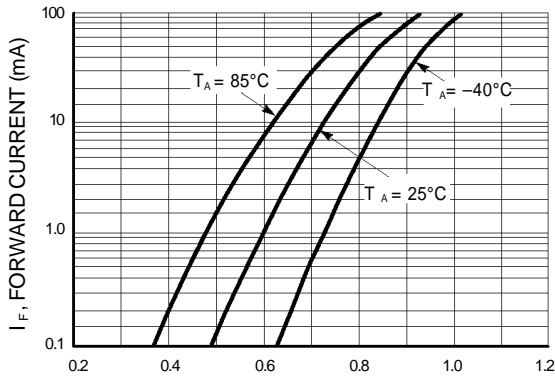
**LMBD2837LT1 LMBD2838LT1**



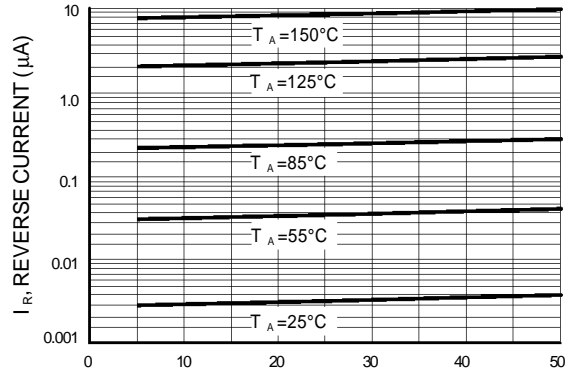
- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.
- 2. Input pulse is adjusted so  $I_{R(peak)}$  is equal to 10mA.
- 3.  $t_p \gg t_{rr}$

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

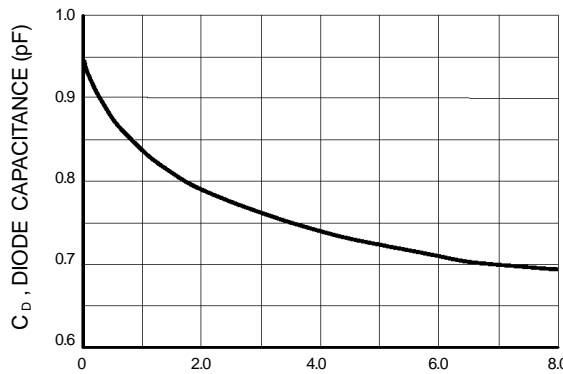
**CURVES APPLICABLE TO EACH CATHODE**



**Figure 2. Forward Voltage**



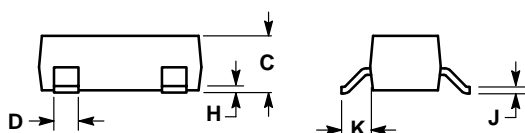
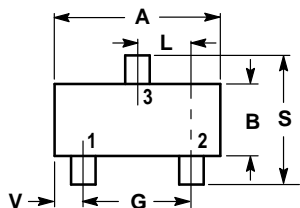
**Figure 3. Leakage Current**



**Figure 4. Capacitance**

**LMBD2837LT1 LMBD2838LT1**

**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. NO CONNECTION  
 3. CATHODE

