

# Dual Switching Diode

- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish

## ORDERING INFORMATION

Device	Package	Shipping
LMBD7000LT1	SOT-23	3000/Tape & Reel
LMBD7000LT1G	SOT-23	3000/Tape & Reel

## MAXIMUM RATINGS(EACH DIODE)

Rating	Symbol	Value	Unit
Reverse Voltage	$V_R$	100	Vdc
Forward Current	$I_F$	200	mAdc
Peak Forward Surge Current	$I_{FM(surge)}$	500	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/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ\text{C/W}$
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/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	417	$^\circ\text{C/W}$
Junction and Storage Temperature	$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

## DEVICEMARKING

LMBD7000LT1 = M5C

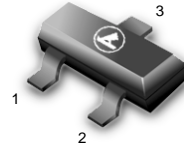
## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise noted)(EACH DIODE)

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Reverse Breakdown Voltage ( $I_{(BR)} = 100 \mu\text{Adc}$ )	$V_{(BR)}$	100	—	Vdc
Reverse Voltage Leakage Current ( $V_R = 50 \text{ Vdc}$ )	$I_R$	—	1.0	$\mu\text{Adc}$
( $V_R = 100 \text{ Vdc}$ )	$I_{R2}$	—	3.0	
( $V_R = 50 \text{ Vdc}, 125^\circ\text{C}$ )	$I_{R3}$	—	100	
Forward Voltage ( $I_F = 1.0 \text{ mAdc}$ )	$V_F$	0.55	0.7	Vdc
( $I_F = 10 \text{ mAdc}$ )		0.67	0.82	
( $I_F = 100 \text{ mAdc}$ )		0.75	1.1	
Reverse Recovery Time ( $I_F = I_R = 10 \text{ mAdc}$ ) (Figure 1)	$t_{rr}$	—	4.0	ns
Capacitance ( $V_R = 0\text{V}$ )	C	—	1.5	pF

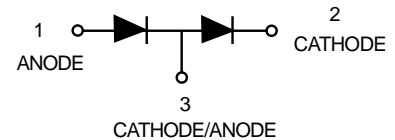
1. FR-5 =  $1.0 \times 0.75 \times 0.062 \text{ in.}$

2. Alumina =  $0.4 \times 0.3 \times 0.024 \text{ in.}$  99.5% alumina.

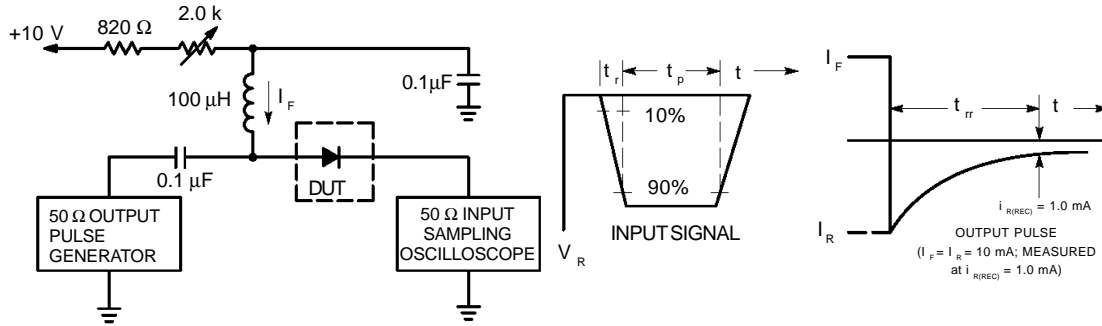
## LMBD7000LT1



SOT-23



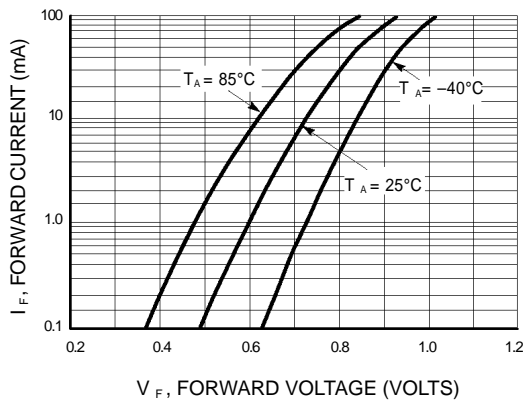
**LMBD7000LT1**



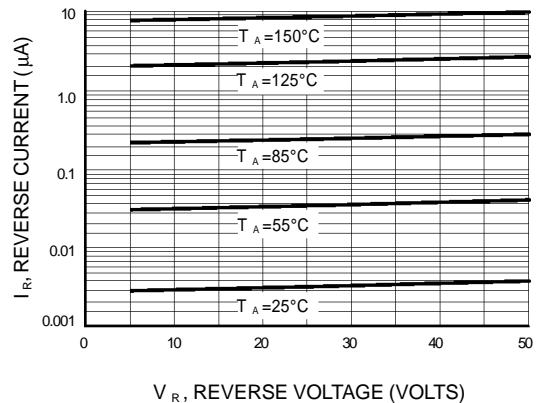
- Notes: 1. A 2.0 kΩ variable resistor adjusted for a Forward Current ( $I_F$ ) of 10mA.
- 2. Input pulse is adjusted so  $I_{R(\text{peak})}$  is equal to 10mA.
- 3.  $t_p \gg t_{rr}$

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

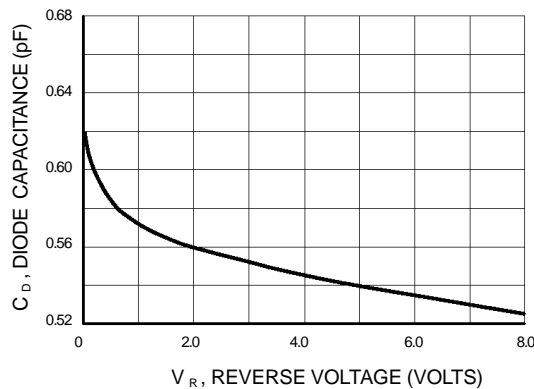
**CURVES APPLICABLE TO EACH CATHODE**



**Figure 2. Forward Voltage**



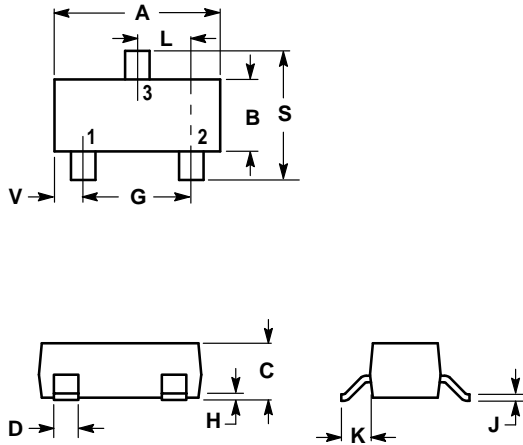
**Figure 3. Leakage Current**



**Figure 4. Capacitance**

**LMBD7000LT1**

**SOT-23**



**NOTES:**

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

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

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

