

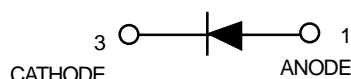
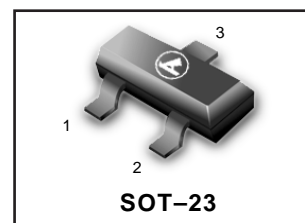
# Silicon Hot–Carrier Diodes

## Schottky Barrier Diodes

These devices are designed primarily for high–efficiency UHF and VHF detector applications. They are readily adaptable to many other fast switching RF and digital applications. They are supplied in an inexpensive plastic package for low–cost, high–volume consumer and industrial/commercial requirements. They are also available in a Surface Mount package.

- EXtremely Low Minority Carrier Lifetime –15ps(Typ)
- Very Low Capacitance –1.5pF(Max)@V<sub>R</sub>=15V
- Low Reverse Leakage –I<sub>R</sub>=13 nAdc(Typ) LMBD301

### LMBD301LT1



#### MAXIMUM RATINGS(T<sub>J</sub>=125°C unless otherwise noted)

		LBD301	LMBD301LT1	
Rating	symbol	value	unit	
Reverse Voltage	V <sub>R</sub>	30	Volts	
Forward Power Dissipation	P <sub>F</sub>			
@TA=25 °C		280	200	mW
Derate above 25 °C		2.8	2.0	mW/°C
Operating Junction Temperature Range	T <sub>J</sub>	–55 to +125	°C	
Storage Temperature Range	T <sub>stg</sub>	–55 to +150	°C	

#### DEVICE MARKING

LMBD301LT1=4T

#### ELECTRICAL CHARACTERISTICS(T<sub>A</sub>=25 °C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage(I <sub>R</sub> =10μA)	V <sub>(BR)R</sub>	30	—	—	Volts
Total Capacitance(V <sub>R</sub> =15V,f=1.0MHz,)Figure1	C <sub>T</sub>	—	0.9	1.5	pF
Reverse Leakage(V <sub>R</sub> =25V)Figure3	I <sub>R</sub>	—	13	200	nAdc
Forward Voltage(IF=1.0mAdc)Figure4	V <sub>F</sub>	—	0.38	0.45	Vdc
Forward Voltage(IF=10mAdc)Figure4	V <sub>F</sub>	—	0.52	0.6	Vdc

**NOTE:**LMBD301LT1 is also available in bulk packaging.Use LMBD301L as the device title to order this device in bulk.

## LMBD301LT1

### TYPICAL ELECTRICAL CHARACTERISTICS

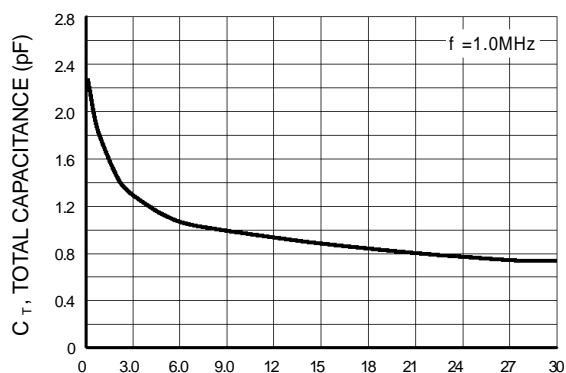


Figure 1. Total Capacitance

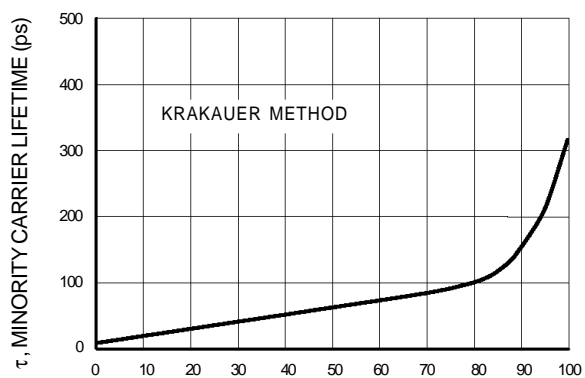


Figure 2. Minority Carrier Lifetime

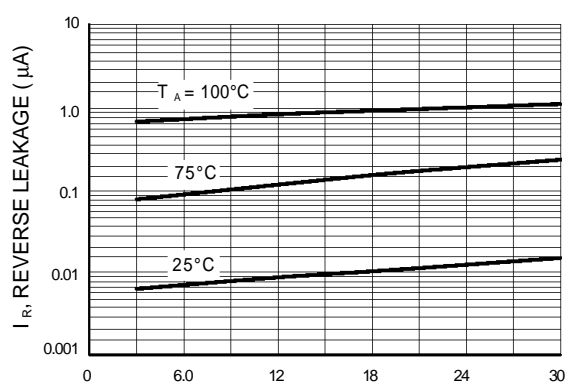


Figure 3. Reverse Leakage

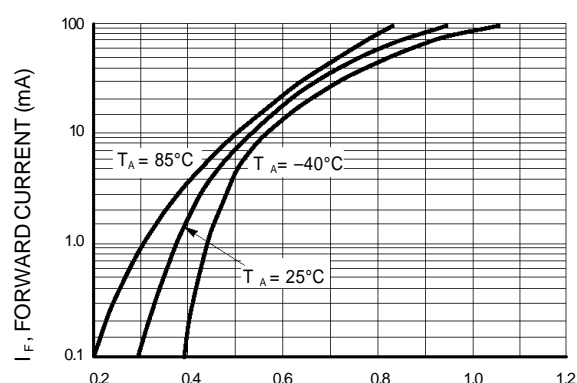


Figure 4. Forward Voltage

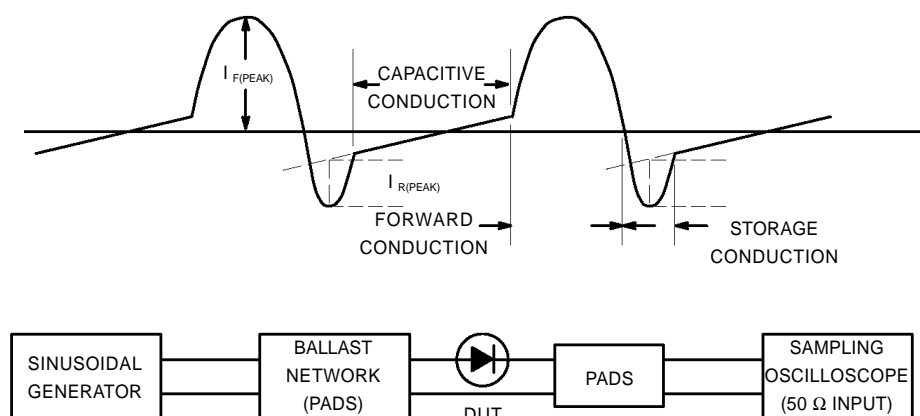
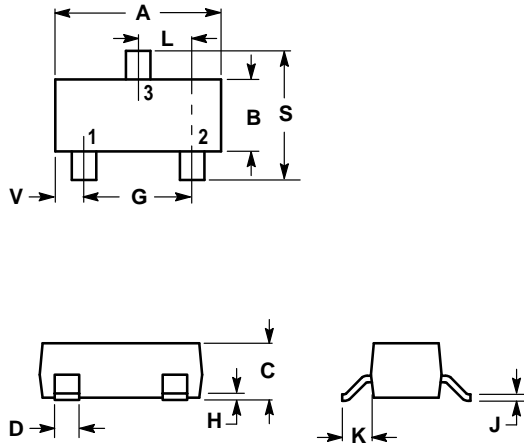


Figure 5. Krakauer Method of Measuring Lifetime

LMBD301LT1

## 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

