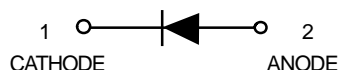


Silicon Hot-Carrier Diodes

Schottky Barrier Diode

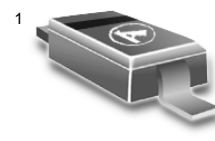
These devices are designed primarily for high-efficiency UHF and VHF detector applications. They are readily adaptable to many other fast switching RF and digital applications. They are supplied in an inexpensive plastic package for low-cost, high-volume consumer and industrial/commercial requirements.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

- Extremely Low Minority Carrier Lifetime – 15 ps (Typ)
- Very Low Capacitance – 1.5 pF (Max) @ $V_R = 15$ V
- Low Reverse Leakage – $I_R = 13$ nAdc (Typ)
- Device Marking: 4T
- We declare that the material of product compliance with RoHS requirements.



LMDL301T1G

30 VOLTS SILICON
HOT-CARRIER DETECTOR
AND SWITCHING DIODES



PLASTIC SOD- 323
CASE 477

MAXIMUM RATINGS ($T_J = 125^\circ\text{C}$ unless otherwise noted)

Symbol	Rating	Value	Unit
V_R	Reverse Voltage	30	Volts

THERMAL CHARACTERISTICS

Symbol	Characteristic	Max	Unit
P_D	Total Device Dissipation FR-5 Board,* $T_A = 25^\circ\text{C}$ Derate above 25°C	200 1.57	mW mW/ $^\circ\text{C}$
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	635	$^\circ\text{C}/\text{W}$
T_J, T_{stg}	Junction and Storage Temperature Range	-55 to +150	$^\circ\text{C}$

*FR-5 Minimum Pad

ORDERING INFORMATION

Device	Marking	Shipping
LMDL301T1G	4T	3000 / Tape & Reel
LMDL301T3G	4T	10000 / Tape & Reel

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R = 10 \mu\text{A}$)	$V_{(BR)R}$	30	—	—	Volts
Diode Capacitance ($V_R = 15$ V, $f = 1.0\text{MHz}$) Figure 1	C_T	—	0.9	1.5	pF
Reverse Leakage ($V_R = 25$ V) Figure 3	I_R	—	13	200	nAdc
Forward Voltage ($I_F = 1.0$ mAdc) Figure 4	V_F	—	0.38	0.45	Vdc
Forward Voltage ($I_F = 10$ mAdc) Figure 4	V_F	—	0.52	0.6	Vdc

LMDL301T1G

TYPICAL ELECTRICAL CHARACTERISTICS

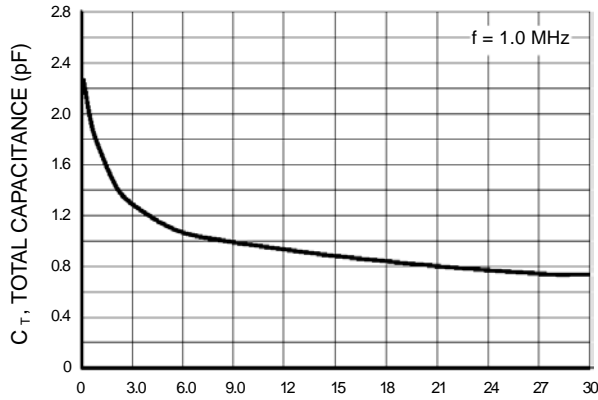


Figure 1. Total Capacitance

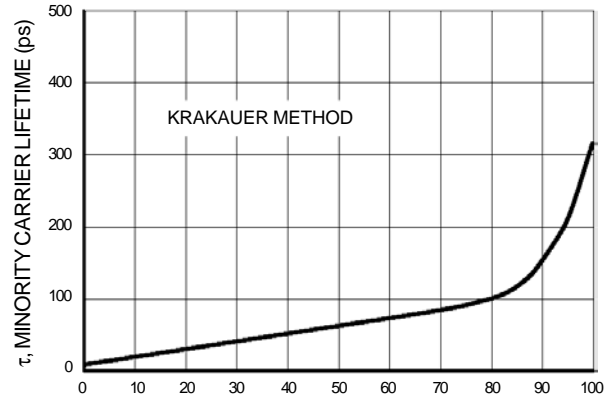


Figure 2. Minority Carrier Lifetime

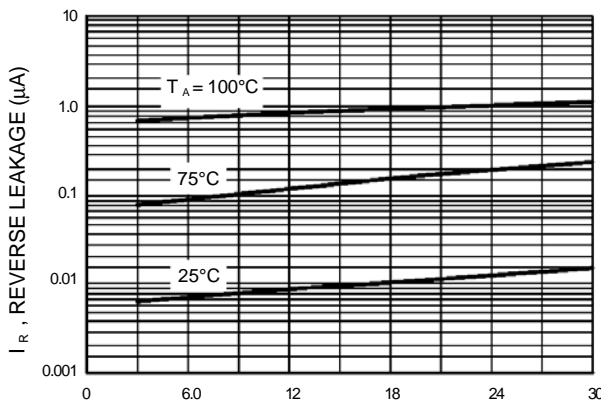


Figure 3. Reverse Leakage

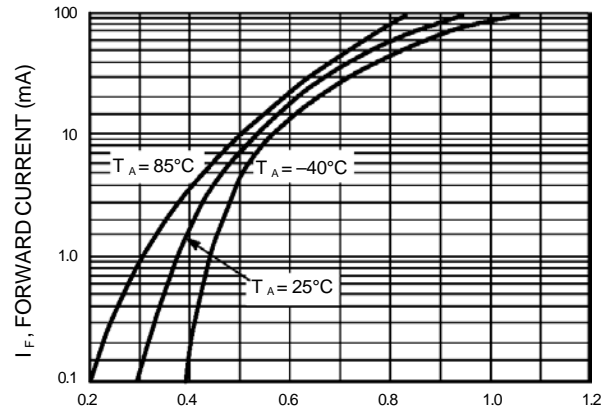


Figure 4. Forward Voltage

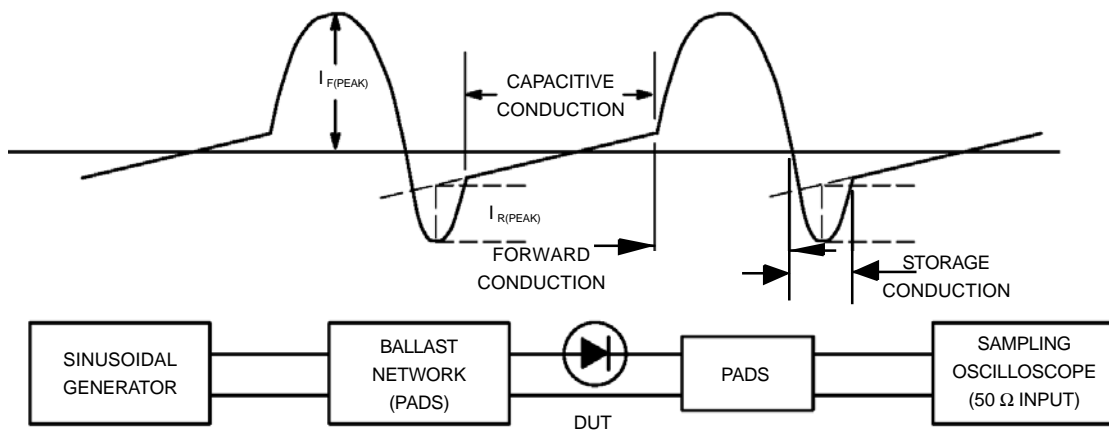
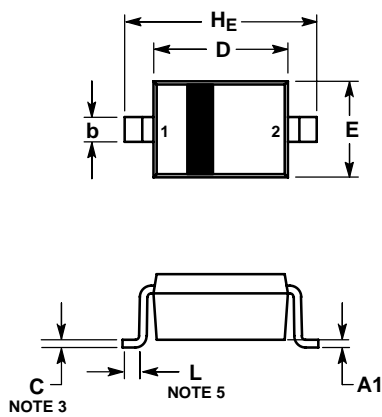


Figure 5. Krakauer Method of Measuring Lifetime

LMDL301T1G

PACKAGE DIMENSIONS

SOD-323



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: MILLIMETERS.
3. LEAD THICKNESS SPECIFIED PER L/F DRAWING WITH SOLDER PLATING.
4. DIMENSIONS A AND B DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.
5. DIMENSION L IS MEASURED FROM END OF RADIUS.

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.80	0.90	1.00	0.031	0.035	0.040
A1	0.00	0.05	0.10	0.000	0.002	0.004
A3	0.15 REF			0.006 REF		
b	0.25	0.32	0.4	0.010	0.012	0.016
C	0.089	0.12	0.177	0.003	0.005	0.007
D	1.60	1.70	1.80	0.062	0.066	0.070
E	1.15	1.25	1.35	0.045	0.049	0.053
L	0.08			0.003		
HE	2.30	2.50	2.70	0.090	0.098	0.105

SOLDERING FOOTPRINT*

