

# 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.
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



**LMDL301T1G**  
**S-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 $25^\circ\text{C}$	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

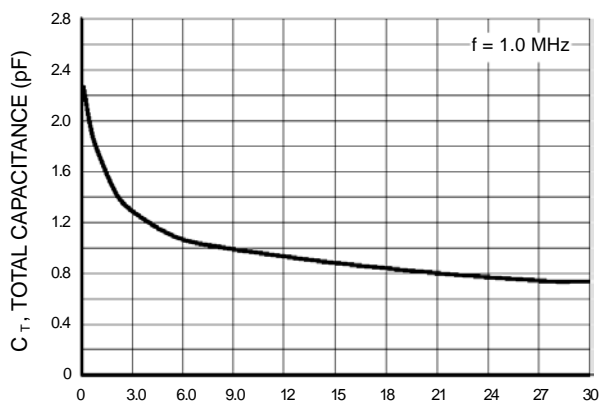
Device	Marking	Shipping
LMDL301T1G S-LMDL301T1G	4T	3000 / Tape & Reel
LMDL301T3G S-LMDL301T3G	4T	10000 / Tape & Reel

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

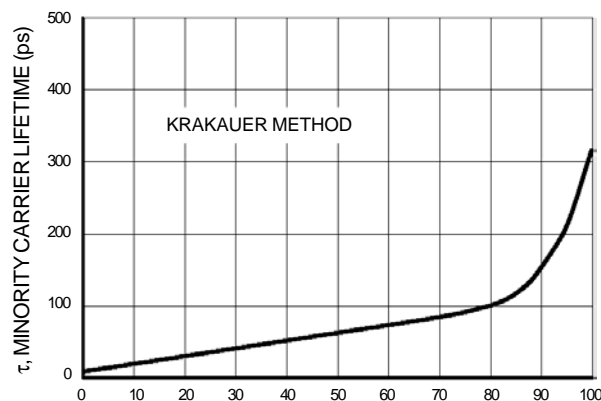
Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ( $I_R = 10 \mu\text{A}$ )	$V_{(BR)R}$	30	—	—	Volts
Diode Capacitance ( $V_R = 15$ V, $f = 1.0$ MHz) Figure 1	$C_T$	—	0.9	1.5	pF
Reverse Leakage ( $V_R = 25$ V) Figure 3	$I_R$	—	13	200	nAdc
Forward Voltage ( $I_F = 1.0$ mAdc) Figure 4	$V_F$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

**LMDL301T1G , LMDL301T1G**

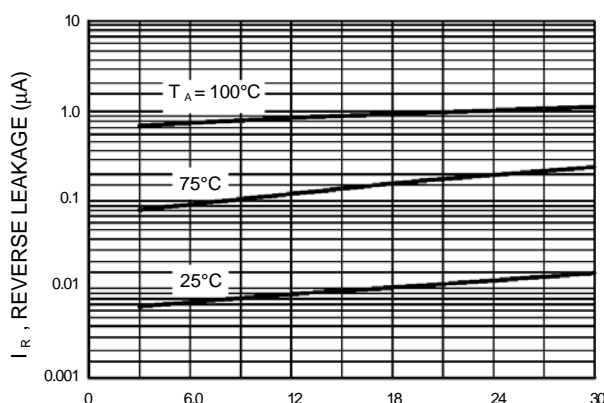
**TYPICAL ELECTRICAL CHARACTERISTICS**



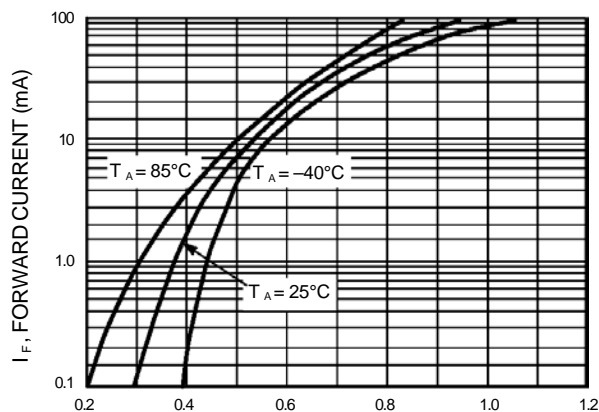
$V_R$ , REVERSE VOLTAGE (VOLTS)  
**Figure 1. Total Capacitance**



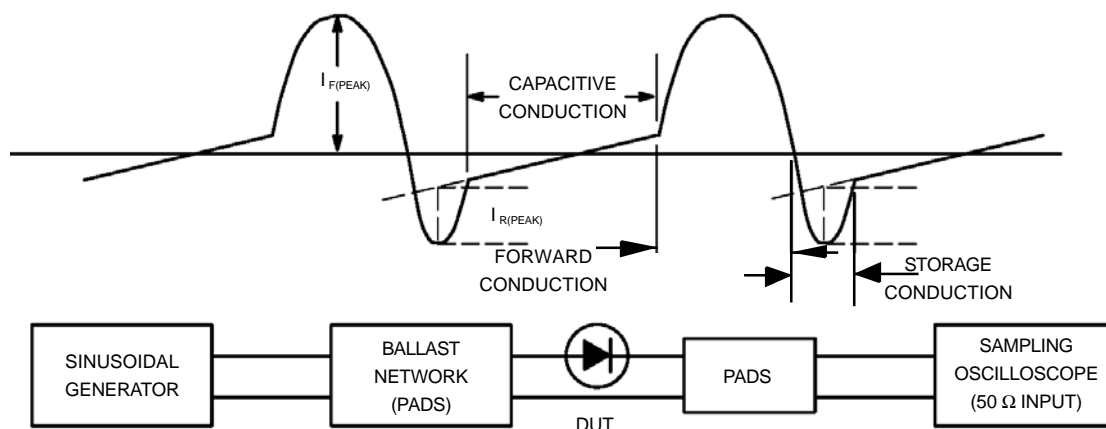
$I_F$ , FORWARD CURRENT (mA)  
**Figure 2. Minority Carrier Lifetime**



$V_R$ , REVERSE VOLTAGE (VOLTS)  
**Figure 3. Reverse Leakage**



$V_F$ , FORWARD VOLTAGE (VOLTS)  
**Figure 4. Forward Voltage**

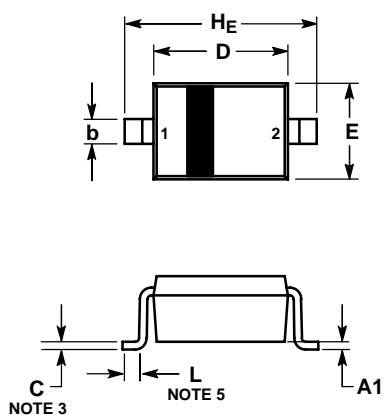


**Figure 5. Krakauer Method of Measuring Lifetime**

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**PACKAGE DIMENSIONS**

**SOD-323**

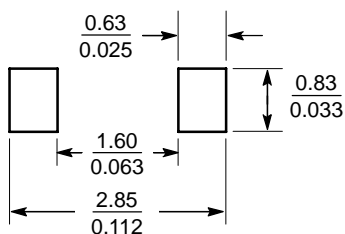


NOTES:

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\***



单击下面可查看定价，库存，交付和生命周期等信息

[>>LRC\(乐山无线电\)](#)