MMDL301T1

Preferred Device

Silicon Hot-Carrier Diodes

Schottky Barrier Diode

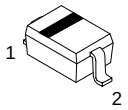
These devices are designed primarily for high–efficiency UHF and VHF detector applications. They are readily adaptable to many other fast switching RF and digital applications. They are supplied in an inexpensive plastic package for low–cost, high–volume consumer and industrial/commercial requirements.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

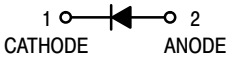
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30 VOLTS SILICON HOT–CARRIER DETECTOR AND SWITCHING DIODES



PLASTIC SOD–323 CASE 477



MAXIMUM RATINGS (T_J = 125°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°C Derate above 25°C	200 1.57	mW mW/°C
$R_{\theta JA}$	Thermal Resistance Junction to Ambient	635	°C/W
T_J, T_{stg}	Junction and Storage Temperature Range	–55 to +150	°C

*FR–5 Minimum Pad

ORDERING INFORMATION

Device	Package	Shipping
MMDL301T1	SOD–323	3000 / Tape & Reel

Preferred devices are recommended choices for future use and best overall value.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage (I_R = 10 μA)	$V_{(BR)R}$	30	—	—	Volts
Total 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

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TYPICAL ELECTRICAL CHARACTERISTICS

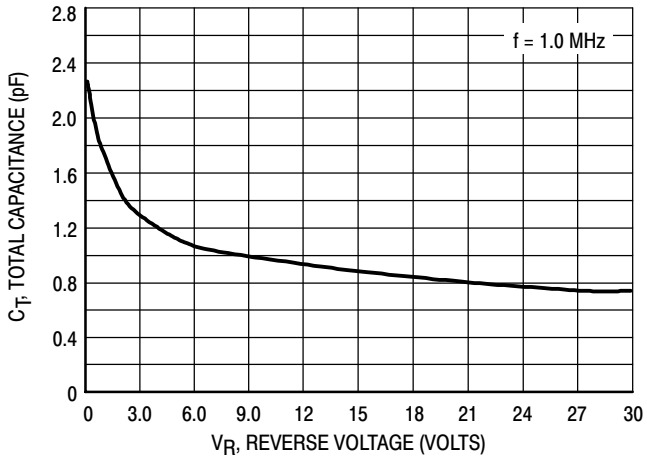


Figure 1. Total Capacitance

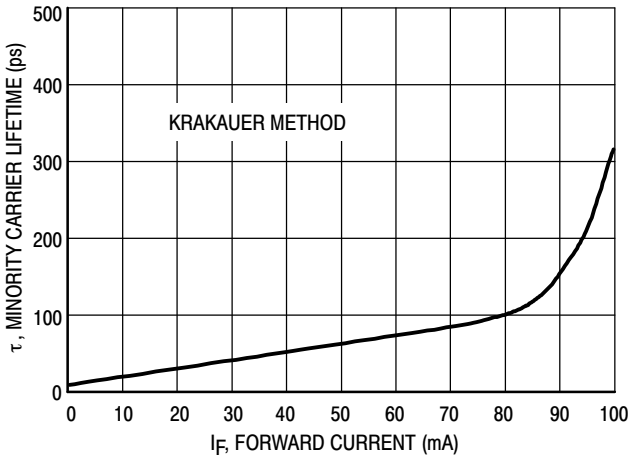


Figure 2. Minority Carrier Lifetime

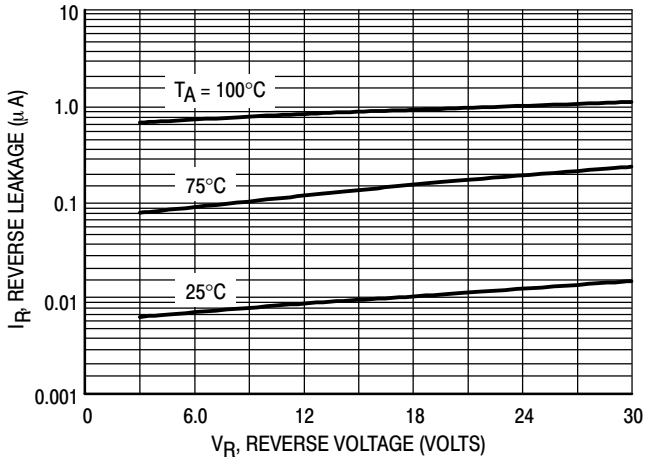


Figure 3. Reverse Leakage

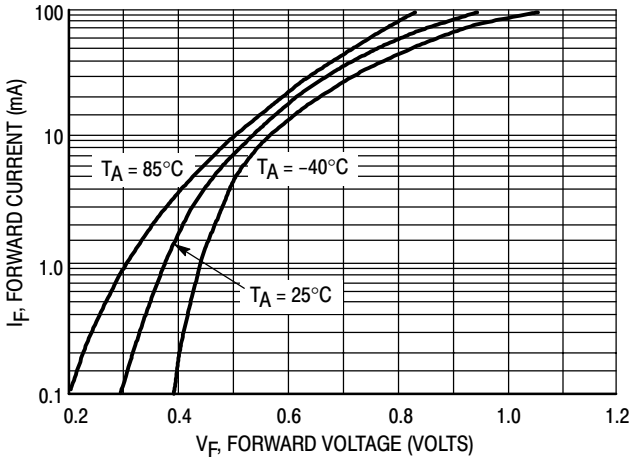


Figure 4. Forward Voltage

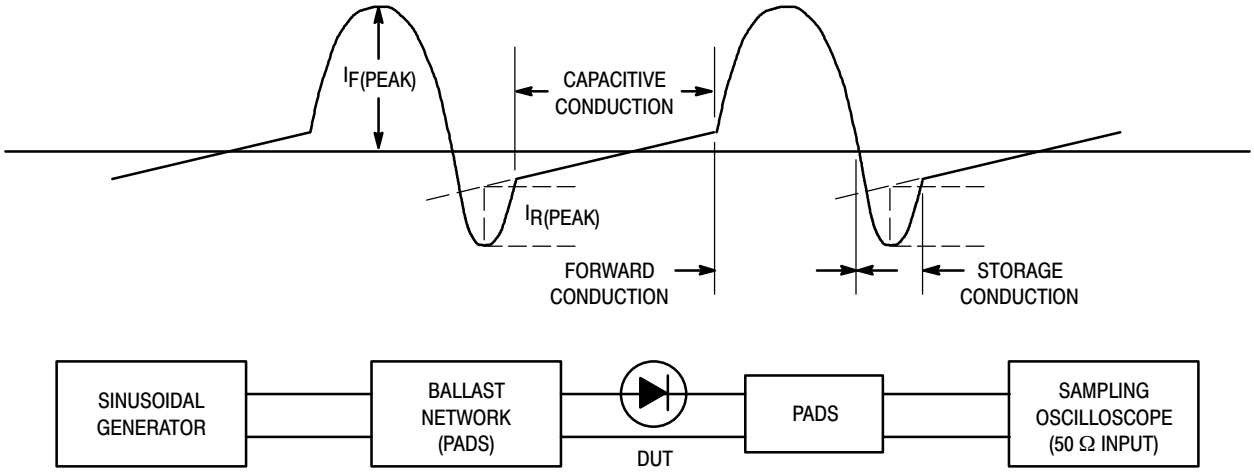
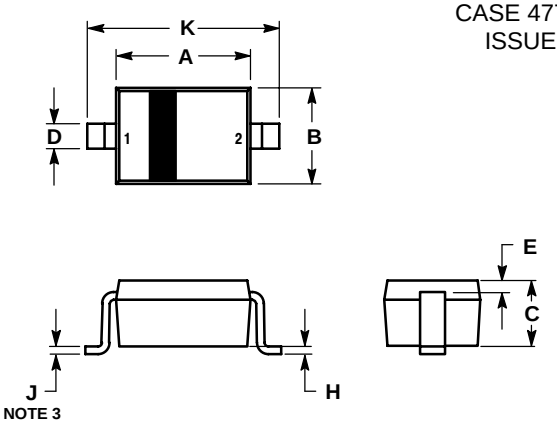


Figure 5. Krakauer Method of Measuring Lifetime

PACKAGE DIMENSIONS

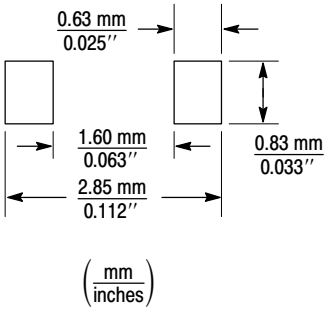
SOD–323
PLASTIC PACKAGE
CASE 477–02
ISSUE A



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.

	MILLIMETERS		INCHES	
DIM	MIN	MAX	MIN	MAX
A	1.60	1.80	0.063	0.071
B	1.15	1.35	0.045	0.053
C	0.80	1.00	0.031	0.039
D	0.25	0.40	0.010	0.016
E	0.15 REF		0.006 REF	
H	0.00	0.10	0.000	0.004
J	0.089	0.177	0.0035	0.0070
K	2.30	2.70	0.091	0.106

STYLE 1:
PIN 1. CATHODE
2. ANODE



SOD–323
Soldering Footprint

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