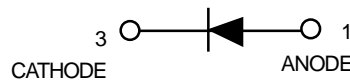


# Silicon Hot-Carrier Diodes

## 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)@VR=15V
- CLow Reverse Leakage –IR=13 nAdc(Typ)MBD301,MMBD301



### MMBD301LT1

**30 VOLTS  
SILICON HOT-CARRIER  
DETECTOR AND SWITCHING  
DIODES**



**CASE 318-08, STYLE 6  
SOT- 23 (TO-236AB)**

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

	MBD301	MMBD301LT1	
Rating	symbol	value	unit
Reverse Voltage	V <sub>R</sub>	30	Volts
Forward Power Dissipation	P <sub>F</sub>		
@TA=25 °C		280	mW
Derate above 25 °C		2.8	mW/°C
Operating Junction	T <sub>J</sub>		°C
Temperature Range		-55 to +125	
Storage Temperature Range	T <sub>stg</sub>	-55 to +150	°C

#### DEVICE MARKING

MMBD301LT1=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:MMBD301LT1** is also available in bulk packaging. Use **MMBD301L** as the device title to order this device in bulk.

TYPICAL ELECTRICAL CHARACTERISTICS

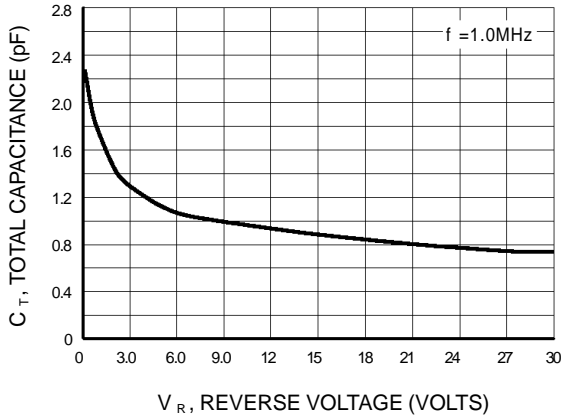


Figure 1. Total Capacitance

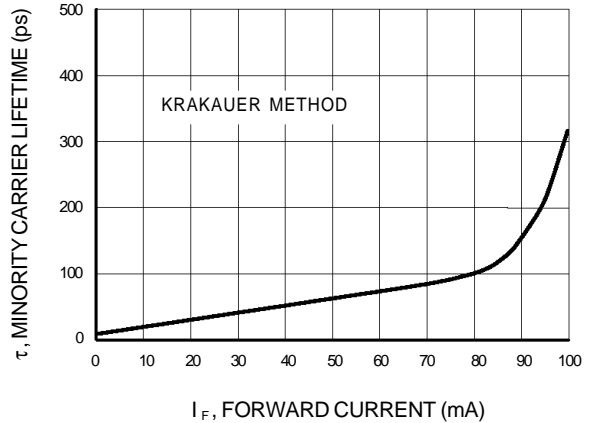


Figure 2. Minority Carrier Lifetime

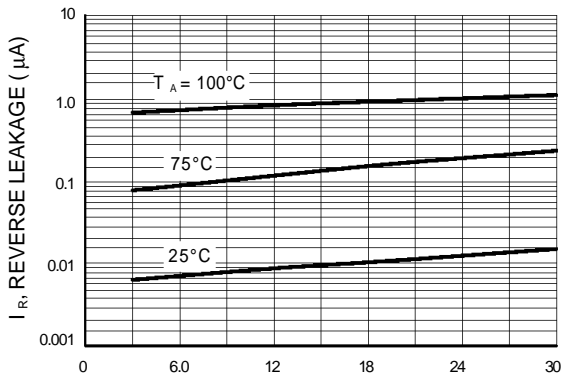


Figure 3. Reverse Leakage

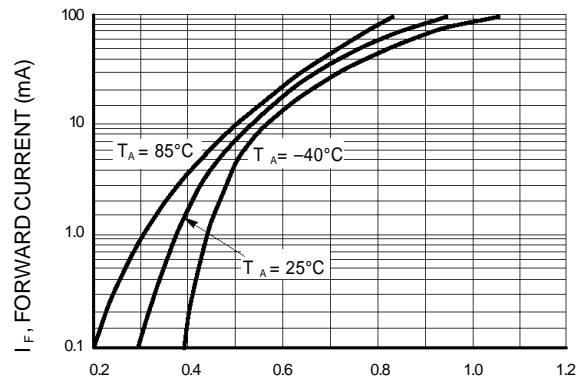


Figure 4. Forward Voltage

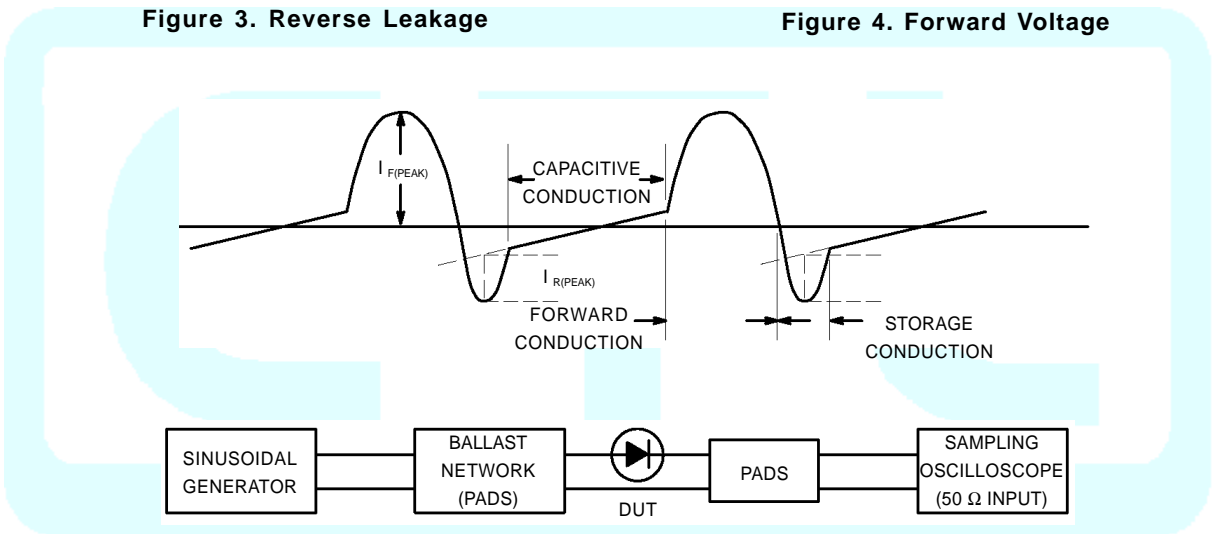


Figure 5. Krakauer Method of Measuring Lifetime