

Dual Hot-Carrier Diodes Schottky Barrier Diodes

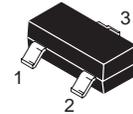
These devices are designed primarily for high-efficiency UHF and VHF detector applications. They are readily adaptable to many other fast switching RF and digital applications. They are supplied in an inexpensive plastic package for low-cost, high-volume consumer and industrial/commercial requirements.

- Extremely Low Minority Carrier Lifetime
- Very Low Capacitance
- Low Reverse Leakage

MMBD452LT1

Motorola Preferred Devices

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



**CASE 318-08, STYLE 11
SOT-23 (TO-236AB)**

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

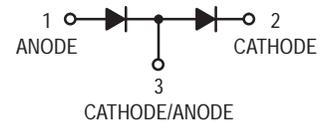
Rating	Symbol	Value	Unit
Reverse Voltage	V_R	30	Volts
Forward Power Dissipation @ $T_A = 25^\circ\text{C}$ Derate above 25°C	P_F	225 1.8	mW mW/ $^\circ\text{C}$
Operating Junction Temperature Range	T_J	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

DEVICE MARKING

MMBD452LT1 = 5N

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

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



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

TYPICAL ELECTRICAL CHARACTERISTICS

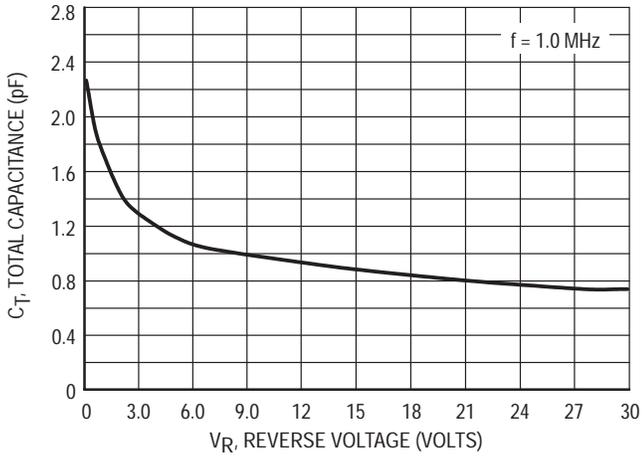


Figure 1. Total Capacitance

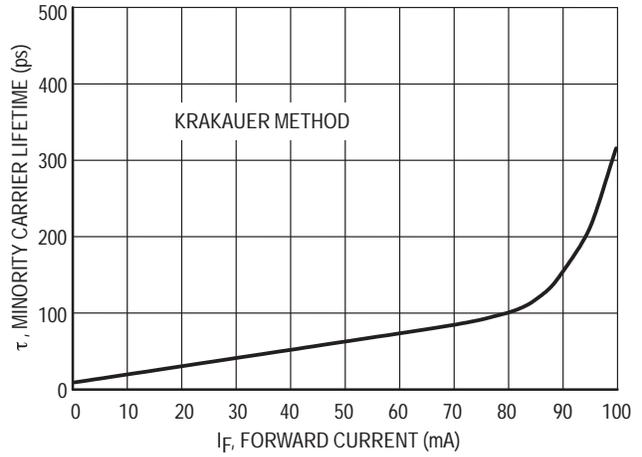


Figure 2. Minority Carrier Lifetime

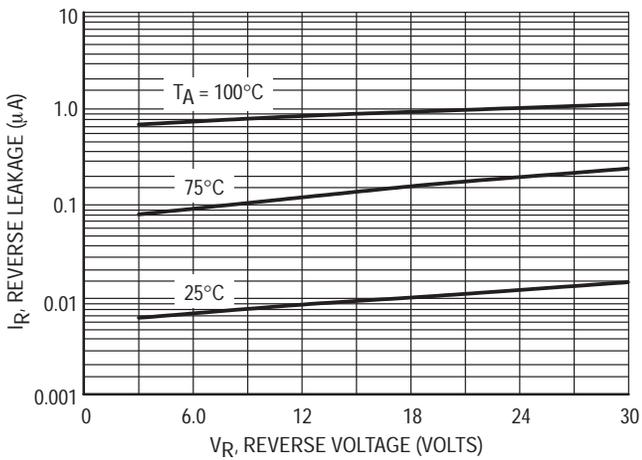


Figure 3. Reverse Leakage

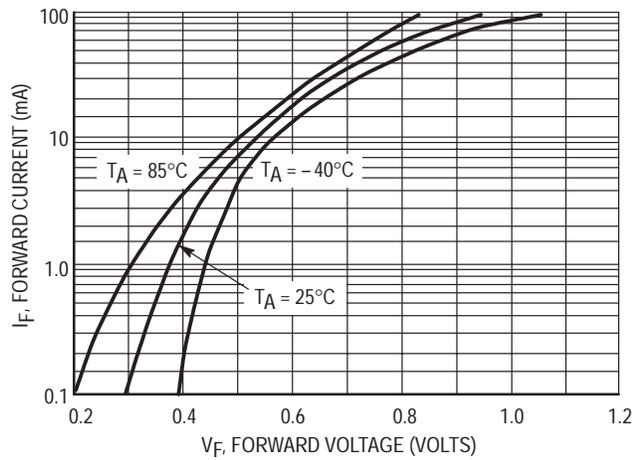


Figure 4. Forward Voltage

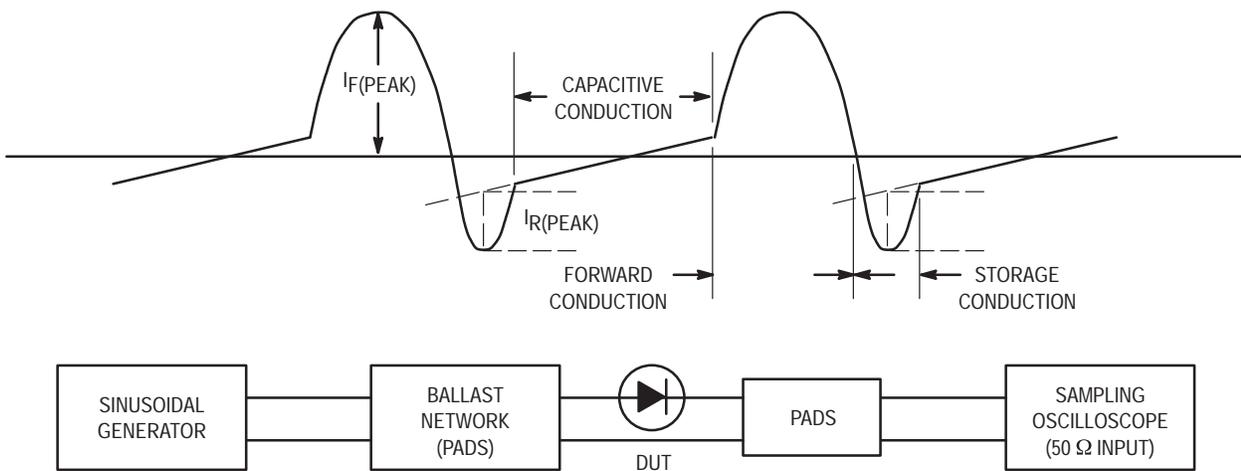


Figure 5. Krauer Method of Measuring Lifetime