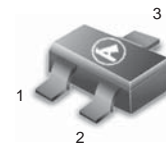


# Schottky Barrier Diodes

Schottky barrier diodes are designed primarily for high-efficiency UHF and VHF detector applications. Readily available to many other fast switching RF and digital applications. They are housed in the SOT-323/SC-70 package which is designed for low-power surface mount applications.

- Extremely Low Minority Carrier Lifetime
- Very Low Capacitance
- Low Reverse Leakage
- Available in 8 mm Tape and Reel

**MMBD110T1**  
**MMBD330T1**  
**MMBD770T1**



CASE 419-02, STYLE 2  
 SOT-323 / SC - 70

### DEVICE MARKING

MMBD110T1 = 4M    MMBD330T1 = 4T    MMBD770T1 = 5H

### MAXIMUM RATINGS

Rating	Symbol	Value	Unit
Reverse Voltage	MMBD110T1 MMBD330T1 MMBD770T1	$V_R$ 7.0 30 70	Vdc
Forward Power Dissipation $T_A = 25^\circ\text{C}$	$P_F$	120	mW
Junction Temperature	$T_J$	-55 to +125	$^\circ\text{C}$
Storage Temperature Range	$T_{stg}$	-55 to +150 $^\circ\text{C}$	

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ( $I_R = 10 \mu\text{A}$ )	$V_{(BR)R}$				Volts
	MMBD110T1	7.0	10	—	
	MMBD330T1	30	—	—	
	MMBD770T1	70	—	—	
Diode Capacitance ( $V_R = 0$ , $f = 1.0 \text{ MHz}$ , Note 1)	$C_T$				pF
	MMBD110T1	—	0.88	1.0	
	MMBD330T1	—	0.9	1.5	
	MMBD770T1	—	0.5	1.0	
Reverse Leakage ( $V_R = 3.0 \text{ V}$ )	$I_R$				nAdc
	MMBD110T1	—	20	250	
	MMBD330T1	—	13	200	
	MMBD770T1	—	9.0	200	
Noise Figure ( $f = 1.0 \text{ GHz}$ , Note 2)	NF				dB
	MMBD110T1	—	6.0	—	
Forward Voltage ( $I_F = 10 \text{ mA}$ )	$V_F$				Vdc
	MMBD110T1	—	0.5	0.6	
	MMBD330T1	—	0.38	0.45	
	MMBD770T1	—	0.52	0.6	
	MMBD770T1	—	0.42	0.5	
	MMBD770T1	—	0.7	1.0	

MMBD110T1 MMBD330T1 MMBD770T1

TYPICAL CHARACTERISTICS  
MMBD110T1

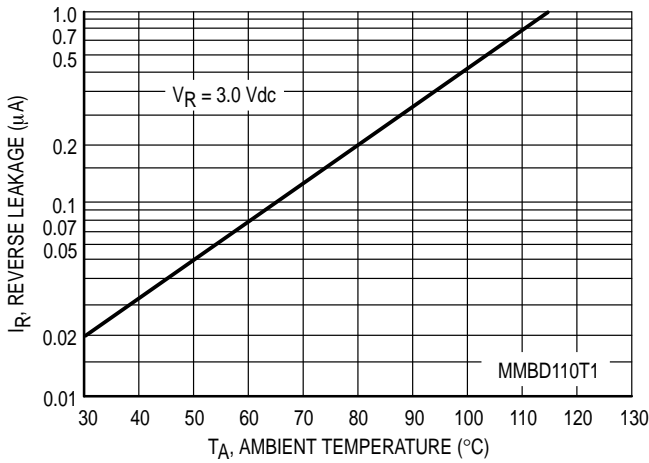


Figure 1. Reverse Leakage

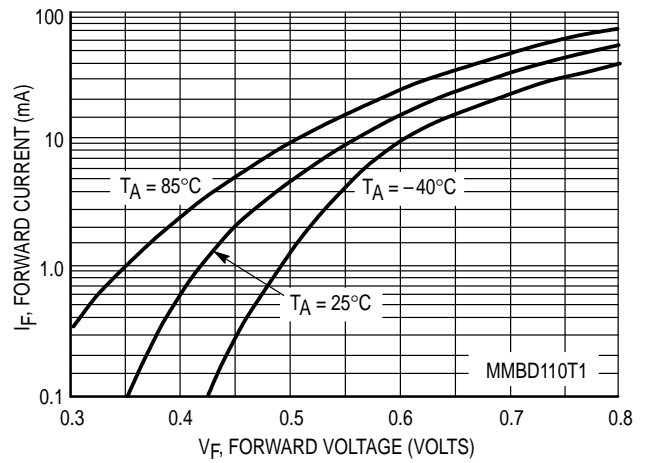


Figure 2. Forward Voltage

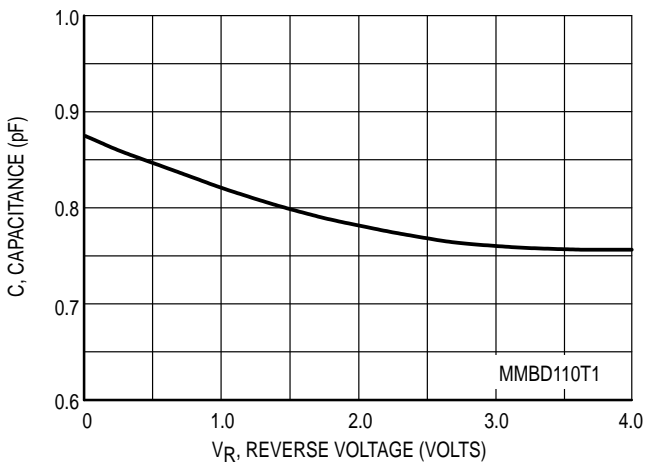


Figure 3. Capacitance

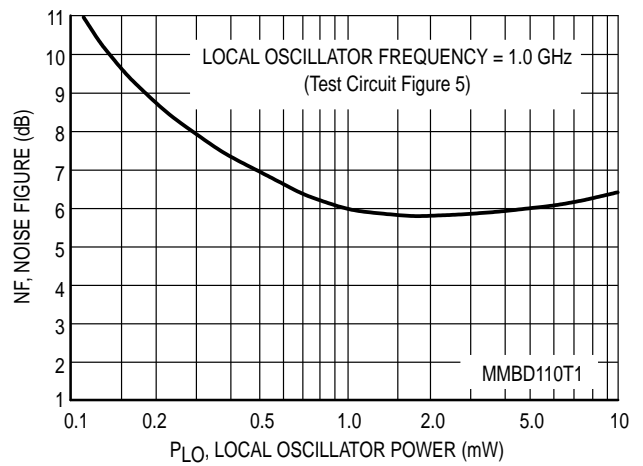


Figure 4. Noise Figure

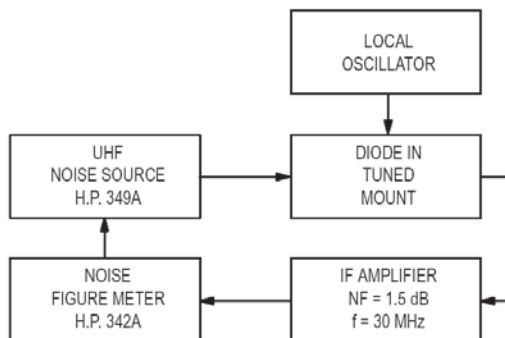


Figure 5. Noise Figure Test Circuit

NOTES ON TESTING AND SPECIFICATIONS

- Note 1 —  $C_c$  and  $C_T$  are measured using a capacitance bridge (Boonton Electronics Model 75A or equivalent).
- Note 2 — Noise figure measured with diode under test in tuned diode mount using UHF noise source and local oscillator (LO) frequency of 1.0 GHz. The LO power is adjusted for 1.0 mW.  $I_f$  amplifier NF = 1.5 dB,  $f = 30$  MHz, see Figure 5

MMBD110T1 MMBD330T1 MMBD770T1

TYPICAL CHARACTERISTICS  
MMBD330T1

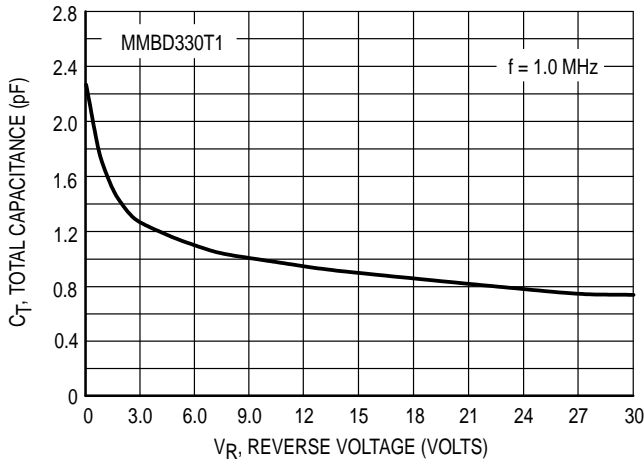


Figure 6. Total Capacitance

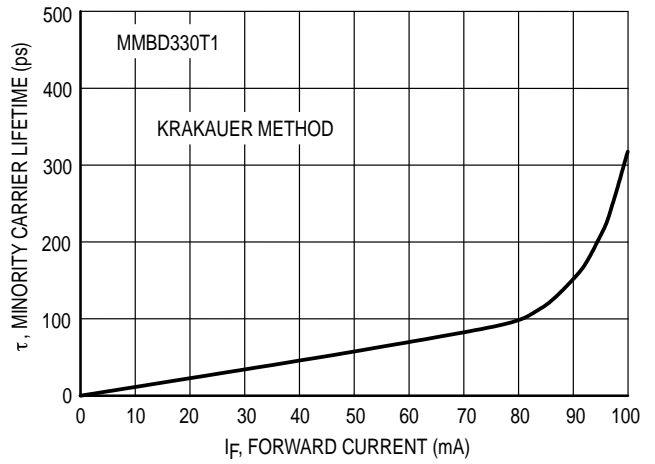


Figure 7. Minority Carrier Lifetime

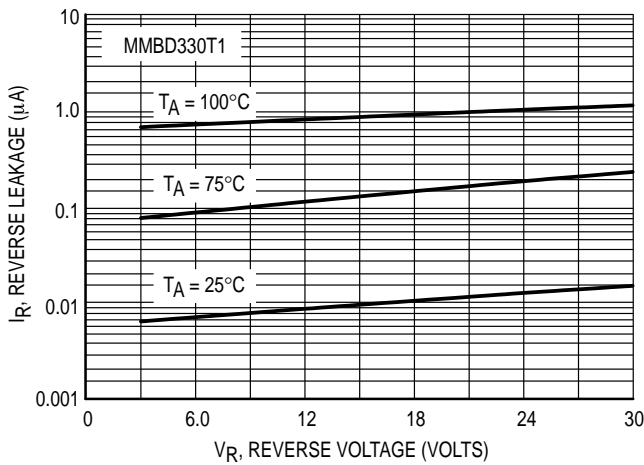


Figure 8. Reverse Leakage

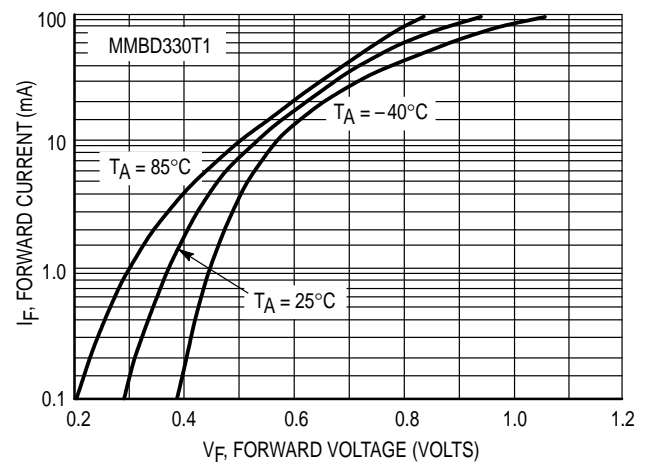


Figure 9. Forward Voltage

MMBD110T1 MMBD330T1 MMBD770T1

TYPICAL CHARACTERISTICS  
MMBD770T1

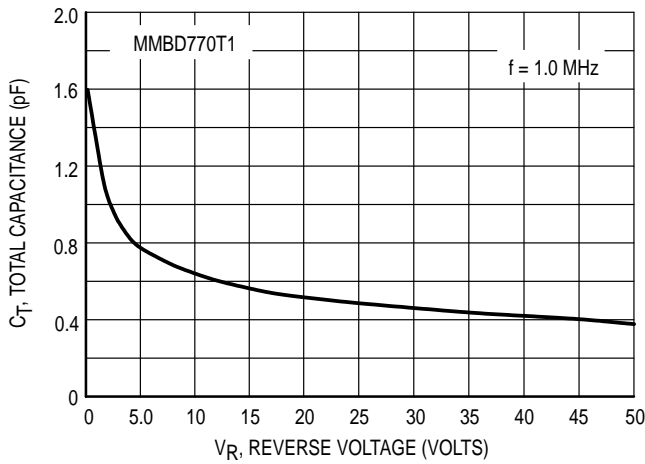


Figure 10. Total Capacitance

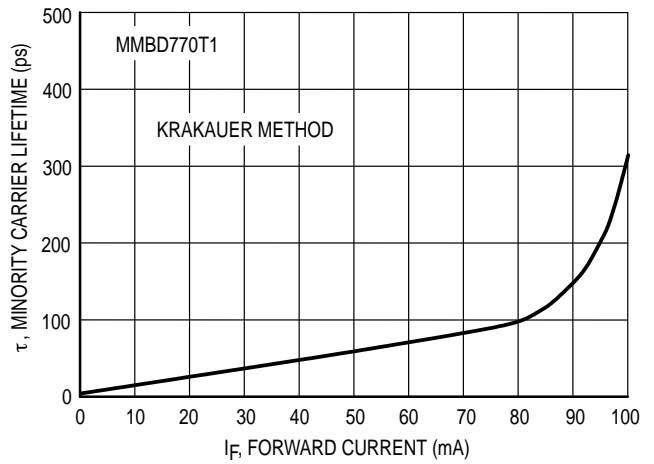


Figure 11. Minority Carrier Lifetime

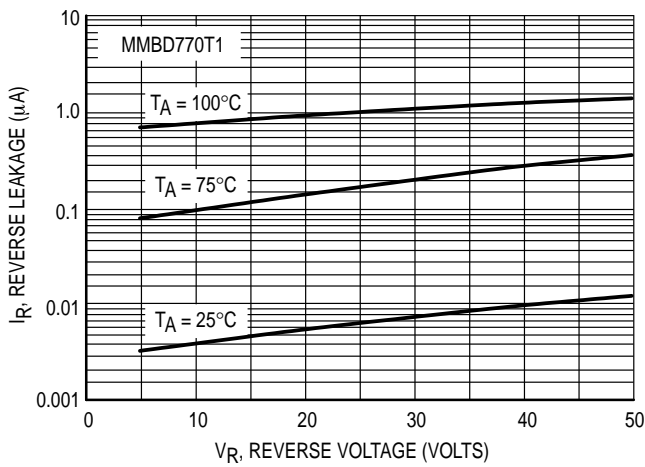


Figure 12. Reverse Leakage

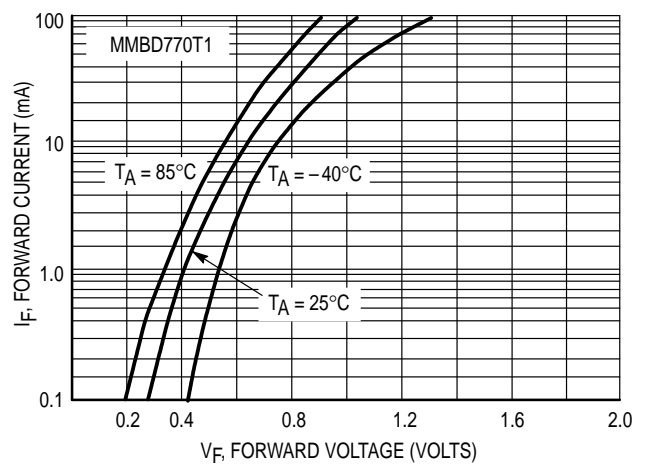


Figure 13. Forward Voltage