Schottky Barrier Diodes

MMBD110T1
MMBD330T1
MMBD770T1

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

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	V_R	7.0	Vdc
	MMBD330T1		30	
	MMBD770T1		70	
Forward Power Dissipation T_A = 25°C		P_F	120	mW
Junction Temperature		T_J	–55 to +125	°C
Storage Temperature Range		T_{stg}	–55 to +150 °C	

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

Characteristic		Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage		$V_{(BR)R}$				Volts
(I_R = 10 μA)	MMBD110T1		7.0	10	—	
	MMBD330T1		30	—	—	
	MMBD770T1		70	—	—	
Diode Capacitance		C_T				pF
(V_R = 0, f = 1.0 MHZ, Note 1)	MMBD110T1		—	0.88	1.0	
(V_R = 15 Volts, f = 1.0 MHZ)	MMBD330T1		—	0.9	1.5	
(V_R = 20 Volts, f = 1.0 MHZ)	MMBD770T1		—	0.5	1.0	
Reverse Leakage		I_R				nAdc
(V_R = 3.0 V)	MMBD110T1		—	20	250	
(V_R = 25 V)	MMBD330T1		—	13	200	
(V_R = 35 V)	MMBD770T1		—	9.0	200	
Noise Figure		NF				dB
(f = 1.0 GHz, Note 2)	MMBD110T1		—	6.0	—	
Forward Voltage		V_F				Vdc
(I_F = 10 mA)	MMBD110T1		—	0.5	0.6	
(I_F= 1.0 mAdc)	MMBD330T1		—	0.38	0.45	
(I_F = 10 mA)			—	0.52	0.6	
(I_F = 1.0 mAdc)	MMBD770T1		—	0.42	0.5	
(I_F = 10 mA)			—	0.7	1.0	

TYPICAL CHARACTERISTICS
MMBD110T1

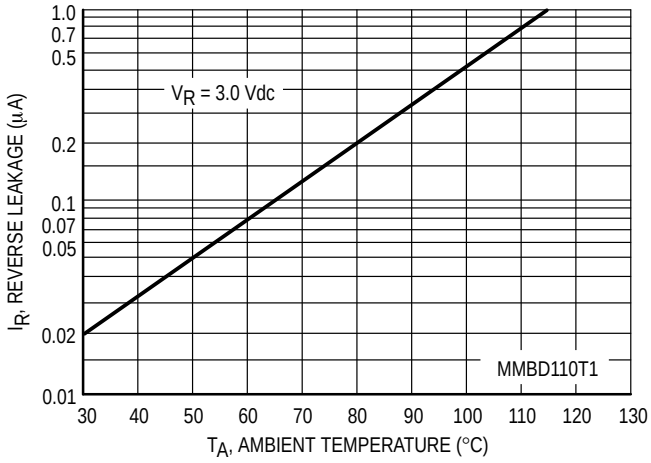

Figure 1. Reverse Leakage

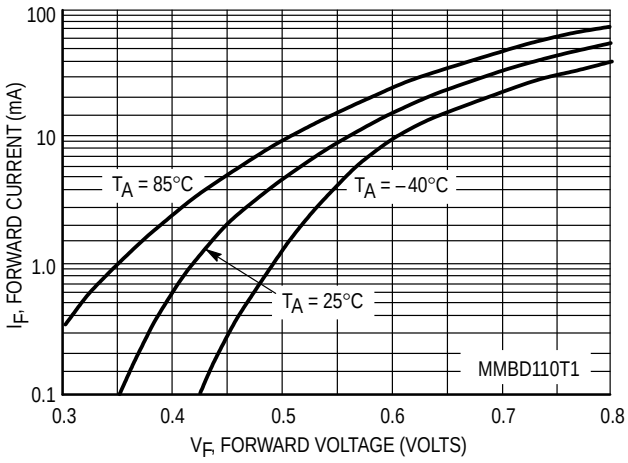

Figure 2. Forward Voltage

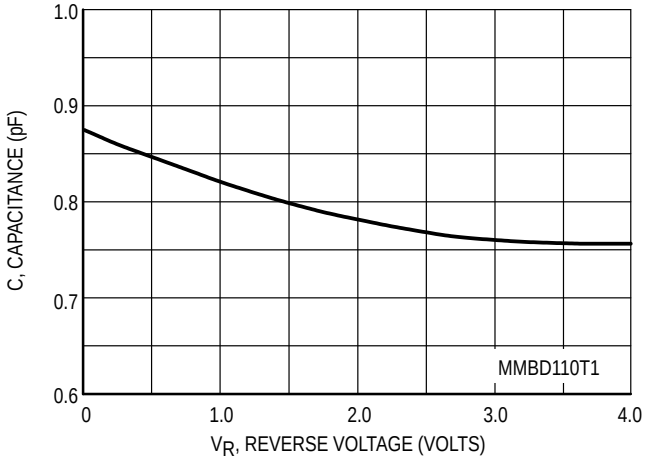

Figure 3. Capacitance

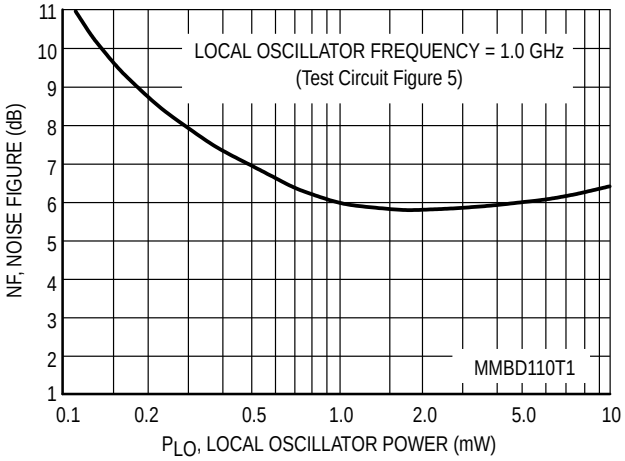

Figure 4. Noise Figure

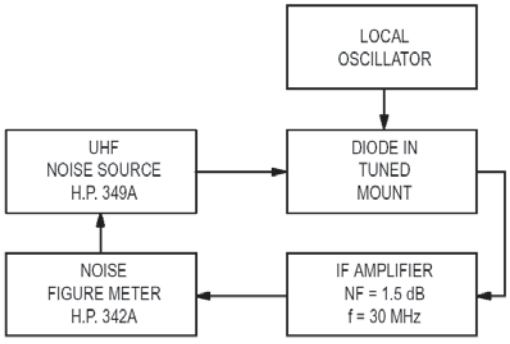

Figure 5. Noise Figure Test Circui

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

TYPICAL CHARACTERISTICS
MMBD330T1

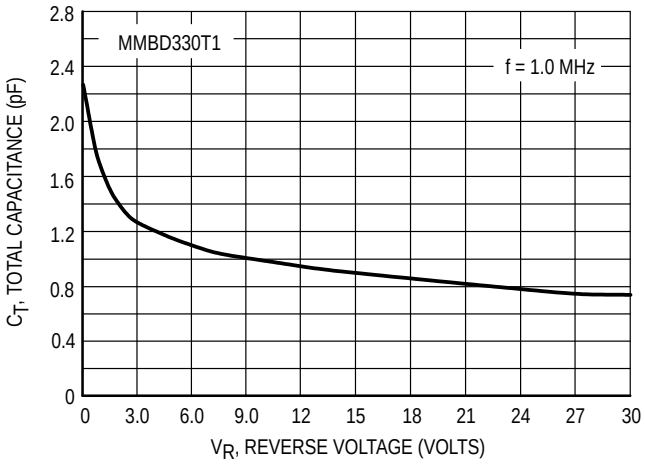

Figure 6. Total Capacitance

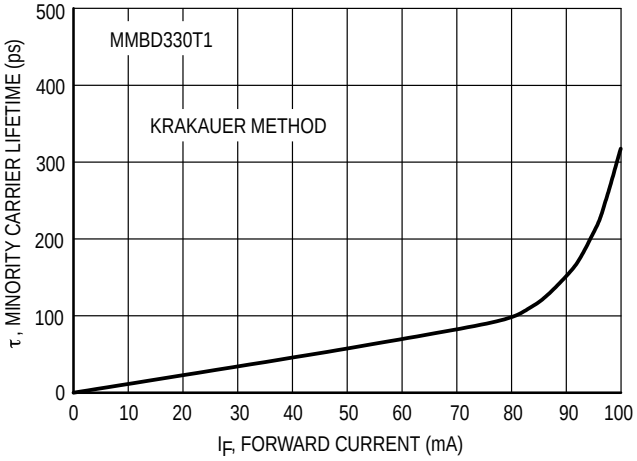

Figure 7. Minority Carrier Lifetime

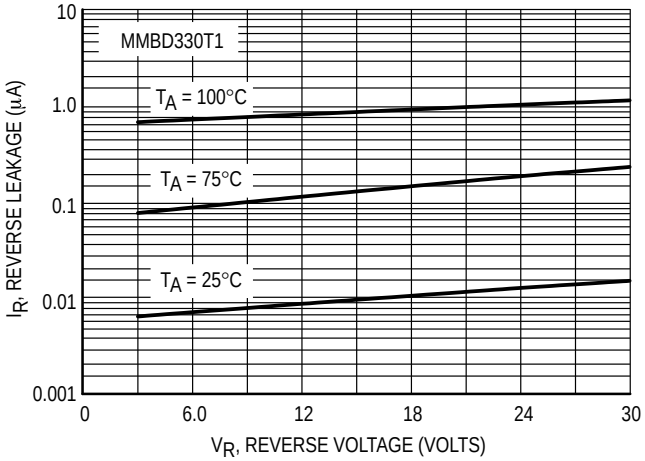

Figure 8. Reverse Leakage

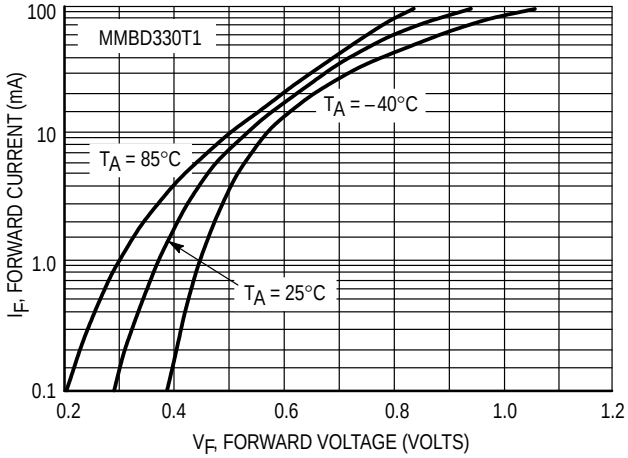

Figure 9. Forward Voltage

TYPICAL CHARACTERISTICS
MMBD770T1

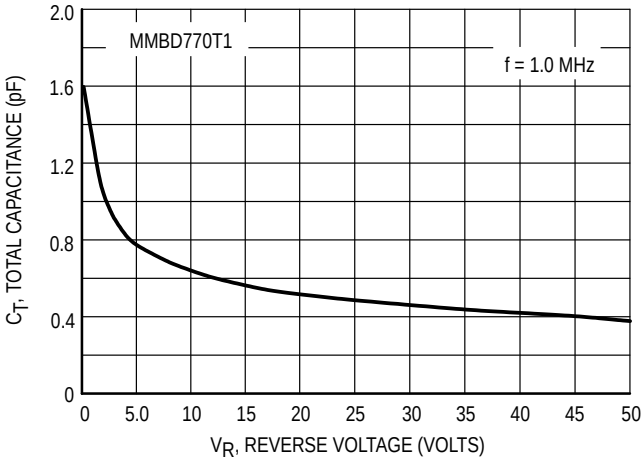

Figure 10. Total Capacitance

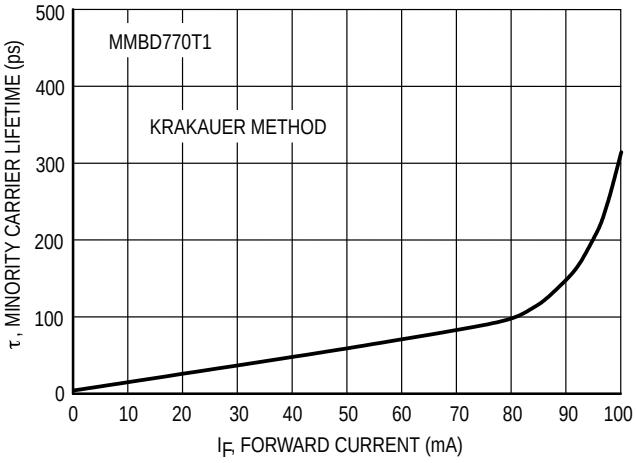

Figure 11. Minority Carrier Lifetime

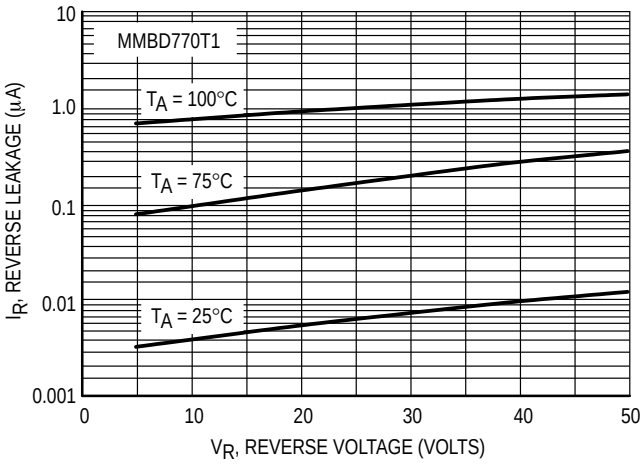

Figure 12. Reverse Leakage

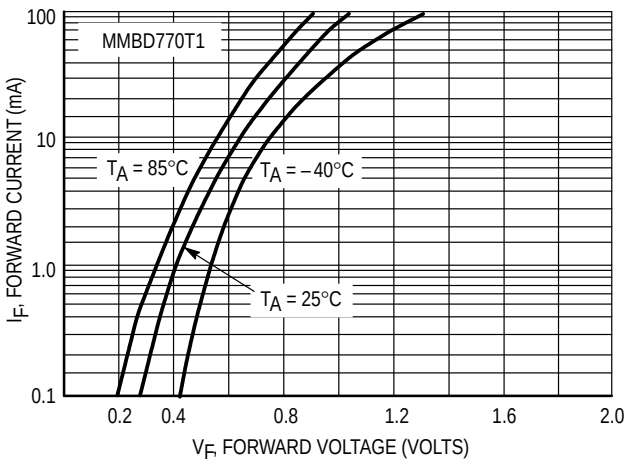

Figure 13. Forward Voltage