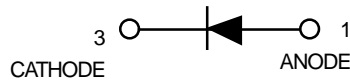


Schottky Barrier Diodes

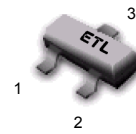
Designed primarily for UHF mixer applications but suitable also for use in detector and ultra-fast switching circuits. Supplied in an inexpensive plastic package for low-cost, high-volume consumer requirements. Also available in Surface Mount package.

- Low Noise Figure—6.0dB Typ@1.0GHz
- Very Low Capacitance—Less Than 1.0pF@zero Volts
- High Forward Conductance—0.5volts(typ)@ $I_F=10\text{mA}$



MMBD101LT1

SILICON SCHOTTKY BARRIER DIODES



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

MAXIMUM RATINGS

		MBD101	MMBD101LT1	
Rating	symbol	value	value	unit
Reverse Voltage	V_R	7.0		Volts
Forward Power Dissipation	P_F			
@ $T_A=25^\circ\text{C}$		280	225	mW
Derate above 25°C		2.2	1.8	mW/ $^\circ\text{C}$
Junction Temperature	T_J		+150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}		-55 to +150	$^\circ\text{C}$

DEVICE MARKING

MMBD101LT1=4M

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

Characteristic	Symbol	Min	Typ	Max	Unit
Reverse Breakdown Voltage ($I_R=10\mu\text{A dc}$)	$V_{(BR)R}$	7.0	10	—	Volts
Diode Capacitance ($V_R=0, f=1.0\text{MHz, Note1}$)	C_T	—	0.88	1.0	pF
Forward Voltage(1) ($I_F=10\text{mA dc}$)	V_F	—	0.5	0.6	Volts
Reverse Leakage ($V_R=3.0\text{V dc}$)	I_R	—	0.02	0.25	$\mu\text{A dc}$

NOTE: MMBD101LT1 is also available in bulk packaging. Use MMBD101L as the device title to order this device in bulk.

TYPICAL CHARACTERISTICS

($T_A = 25^\circ\text{C}$ unless noted)

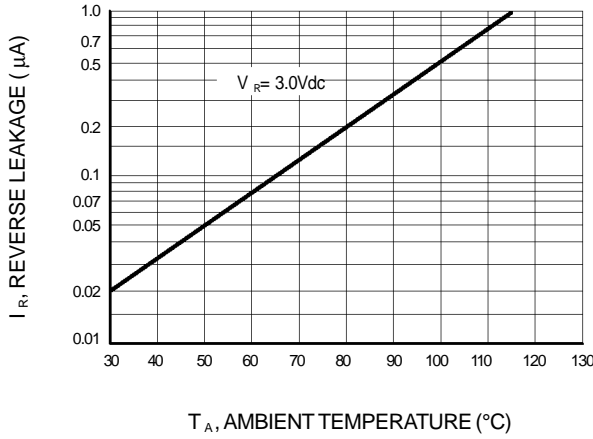


Figure 1. Reverse Leakage

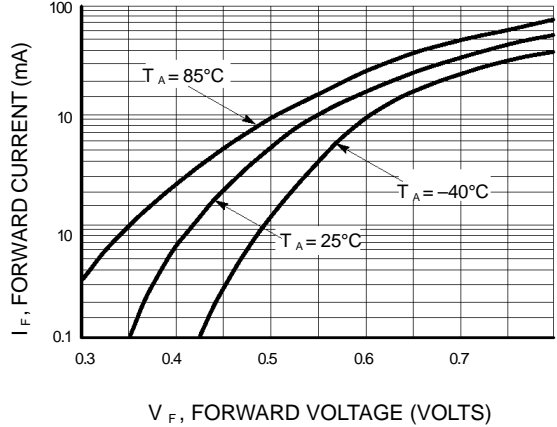


Figure 2. Forward Voltage

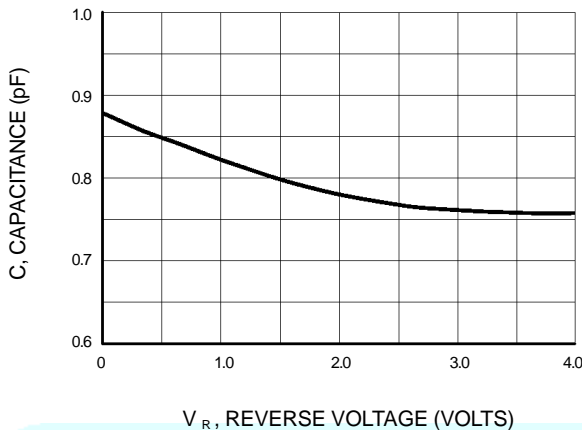


Figure 3. Capacitance

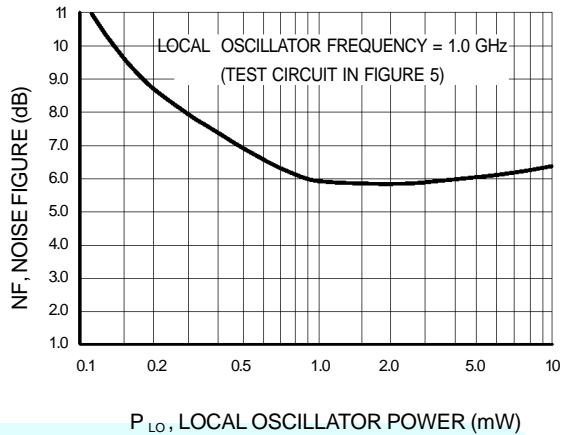


Figure 4. Noise Figure

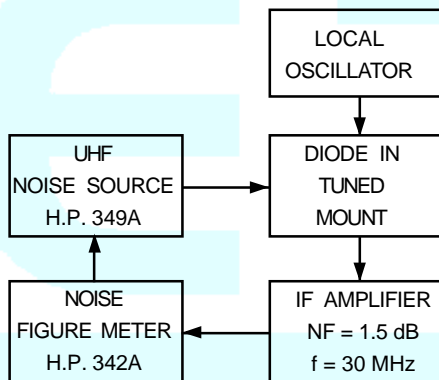


Figure 5. Noise Figure Test Circuit

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. IF amplifier NF = 1.5 dB, $f = 30$ MHz, see Figure 5.
- Note 3 — L_S is measured on a package having a short instead of a die, using an impedance bridge (Boonton Radio Model 250A RX Meter).