



MMBTH10L, MMBTH10-4L, SMMBTH10-4L, NSVMMBTH10L

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

Characteristic	Symbol	Min	Typ	Max	Unit
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OFF CHARACTERISTICS

Collector-Emitter Breakdown Voltage ($I_C = 1.0\text{ mA}$, $I_E = 0$)	$V_{(BR)CEO}$	25	–	–	Vdc
Collector-Base Breakdown Voltage ($I_C = 100\text{ }\mu\text{A}$, $I_E = 0$)	$V_{(BR)CBO}$	30	–	–	Vdc
Emitter-Base Breakdown Voltage ($I_E = 10\text{ }\mu\text{A}$, $I_C = 0$)	$V_{(BR)EBO}$	3.0	–	–	Vdc
Collector Cutoff Current ($V_{CB} = 25\text{ Vdc}$, $I_E = 0$)	I_{CBO}	–	–	100	nAdc
Emitter Cutoff Current ($V_{EB} = 2.0\text{ Vdc}$, $I_C = 0$)	I_{EBO}	–	–	100	nAdc

ON CHARACTERISTICS

DC Current Gain ($I_C = 4.0\text{ mA}$, $V_{CE} = 10\text{ Vdc}$) MMBTH10LT1G, NSVMMBTH10LT1G MMBTH10-4LT1G, SMMBTH10-4LT3G	h_{FE}	60 120	– –	– 240	–
Collector-Emitter Saturation Voltage ($I_C = 4.0\text{ mA}$, $I_E = 0.4\text{ mA}$)	$V_{CE(sat)}$	–	–	0.5	Vdc
Base-Emitter On Voltage ($I_C = 4.0\text{ mA}$, $V_{CE} = 10\text{ Vdc}$)	V_{BE}	–	–	0.95	Vdc

SMALL-SIGNAL CHARACTERISTICS

Current-Gain – Bandwidth Product ($I_C = 4.0\text{ mA}$, $V_{CE} = 10\text{ Vdc}$, $f = 100\text{ MHz}$) MMBTH10LT1G, NSVMMBTH10LT1G MMBTH10-4LT1G, SMMBTH10-4LT3G	f_T	650 800	– –	– –	MHz
Collector-Base Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{cb}	–	–	0.7	pF
Common-Base Feedback Capacitance ($V_{CB} = 10\text{ Vdc}$, $I_E = 0$, $f = 1.0\text{ MHz}$)	C_{rb}	–	–	0.65	pF

Collector Base Time Constant

TYPICAL CHARACTERISTICS

COMMON-BASE y PARAMETERS versus FREQUENCY

($V_{CB} = 10$ Vdc, $I_C = 4.0$ mA dc, $T_A = 25^\circ\text{C}$)

y_{ib} , INPUT ADMITTANCE

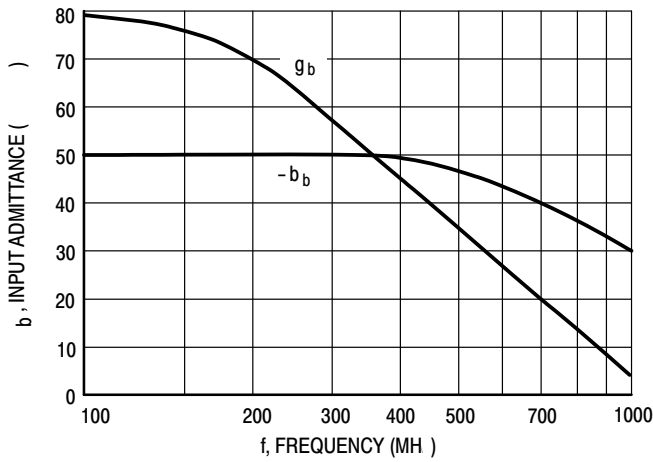


Figure 1. Rectangular Form

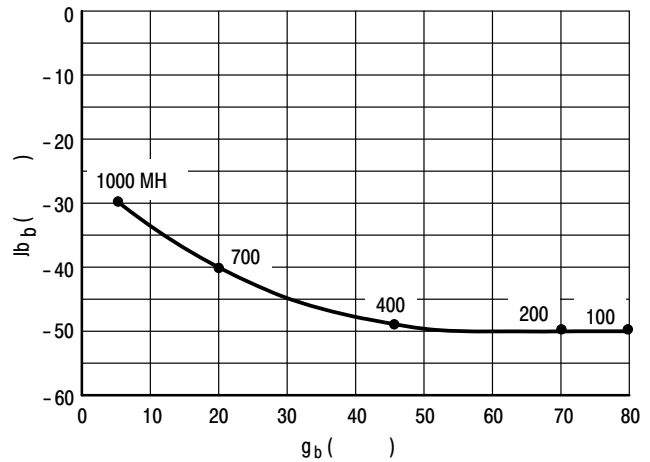


Figure 2. Polar Form

y_{fb} , FORWARD TRANSFER ADMITTANCE

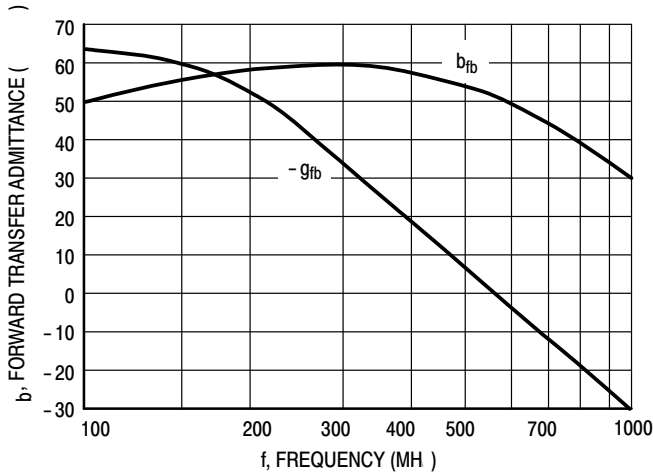


Figure 3. Rectangular Form

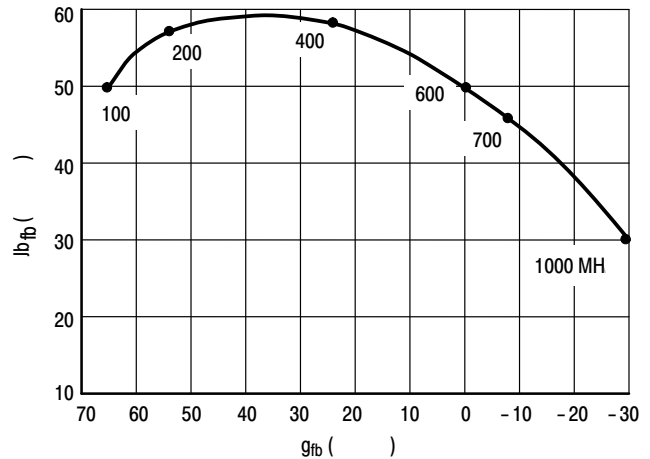


Figure 4. Polar Form

TYPICAL CHARACTERISTICS

f, FREQUENCY (MH)

Figure 5. Rectangular Form

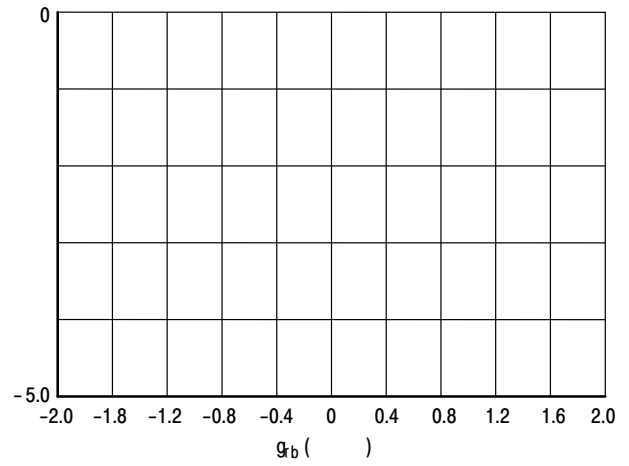
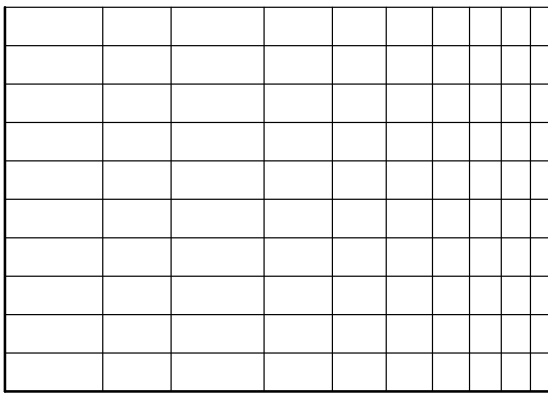


Figure 6. Polar Form



f, FREQUENCY (MH)

Figure 7. Rectangular Form

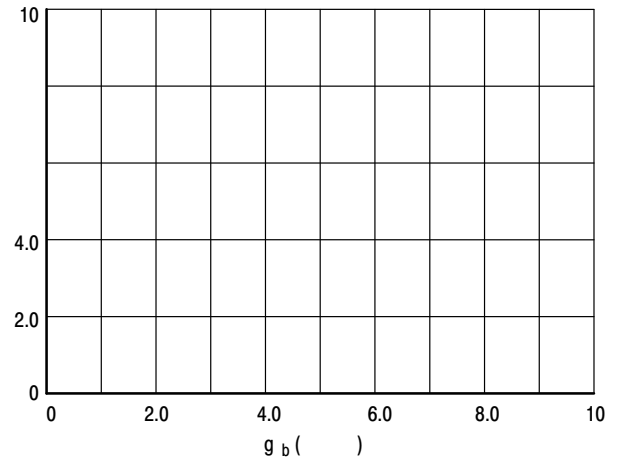
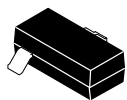


Figure 8. Polar Form



SCALE 4:1

SOT 23 (TO 236) 2.90x1.30x1.00 1.90P
CASE 318
ISSUE AU

DATE 14 AUG 2024

SOT 23 (TO 236) 2.90x1.30x1.00 1.90P
CASE 318
ISSUE AU

DATE 14 AUG 2024

	STYLE 6: PIN 1. BASE 2. EMITTER 3. COLLECTOR	STYLE 7: PIN 1. EMITTER 2. BASE 3. COLLECTOR	STYLE 8: PIN 1. ANODE 2. NO CONNECTION 3. CATHODE		
STYLE 9: PIN 1. ANODE 2. ANODE 3. CATHODE	STYLE 10: PIN 1. DRAIN 2. SOURCE 3. GATE	STYLE 11: PIN 1. ANODE 2. CATHODE 3. CATHODE-ANODE	STYLE 12: PIN 1. CATHODE 2. CATHODE 3. ANODE	STYLE 13: PIN 1. SOURCE 2. DRAIN 3. GATE	STYLE 14: PIN 1. CATHODE 2. GATE 3. ANODE
STYLE 15: PIN 1. GATE 2. CATHODE 3. ANODE	STYLE 16: PIN 1. ANODE 2. CATHODE 3. CATHODE	STYLE 17: PIN 1. NO CONNECTION 2. ANODE 3. CATHODE	STYLE 18: PIN 1. NO CONNECTION 2. CATHODE 3. ANODE	STYLE 19: PIN 1. CATHODE 2. ANODE 3. CATHODE-ANODE	
	STYLE 22: PIN 1. RETURN 2. OUTPUT 3. INPUT	STYLE 23: PIN 1. ANODE 2. ANODE 3. CATHODE 3.			

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