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

Characteristic		Symbol	Min	Typ	Max	Unit
OFF CHARACTERISTICS						
Collector−Emitter Breakdown Voltage (I_C = 1.0 mAdc, I_B = 0)		$V_{(BR)CEO}$	25	−	−	Vdc
Collector−Base Breakdown Voltage (I_C = 100 μAdc, I_E = 0)		$V_{(BR)CBO}$	30	−	−	Vdc
Emitter−Base Breakdown Voltage (I_E = 10 μAdc, I_C = 0)		$V_{(BR)EBO}$	3.0	−	−	Vdc
Collector Cutoff Current (V_{CB} = 25 Vdc, I_E = 0)		I_{CBO}	−	−	100	nAdc
Emitter Cutoff Current (V_{EB} = 2.0 Vdc, I_C = 0)		I_{EBO}	−	−	100	nAdc
ON CHARACTERISTICS						
DC Current Gain (I_C = 4.0 mAdc, V_{CE} = 10 Vdc)	MMBTH10LT1 MMBTH10−4LT1	h_{FE}	 60 120	 − −	 − 240	−
Collector−Emitter Saturation Voltage (I_C = 4.0 mAdc, I_B = 0.4 mAdc)		$V_{CE(sat)}$	−	−	0.5	Vdc
Base−Emitter On Voltage (I_C = 4.0 mAdc, V_{CE} = 10 Vdc)		V_{BE}	−	−	0.95	Vdc
SMALL−SIGNAL CHARACTERISTICS						
Current−Gain − Bandwidth Product (I_C = 4.0 mAdc, V_{CE} = 10 Vdc, f = 100 MHz)	MMBTH10LT1 MMBTH10−4LT1	f_T	 650 800	 − −	 − −	MHz
Collector−Base Capacitance (V_{CB}= 10 Vdc, I_E = 0, f = 1.0 MHz)		C_{cb}	−	−	0.7	pF
Common−Base Feedback Capacitance (V_{CB}= 10 Vdc, I_E = 0, f = 1.0 MHz)		C_{rb}	−	−	0.65	pF
Collector Base Time Constant (I_C= 4.0 mAdc, V_{CB} = 10 Vdc, f = 31.8 MHz)		$rb'C_c$	−	−	9.0	ps

TYPICAL CHARACTERISTICS

COMMON−BASE y PARAMETERS versus FREQUENCY
(V_{CB} = 10 Vdc, I_C = 4.0 mAdc, T_A = 25°C)

y_{ib}, INPUT ADMITTANCE

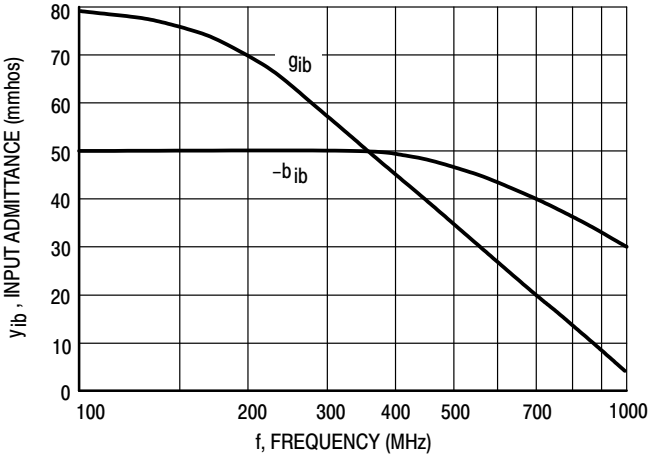


Figure 1. Rectangular Form

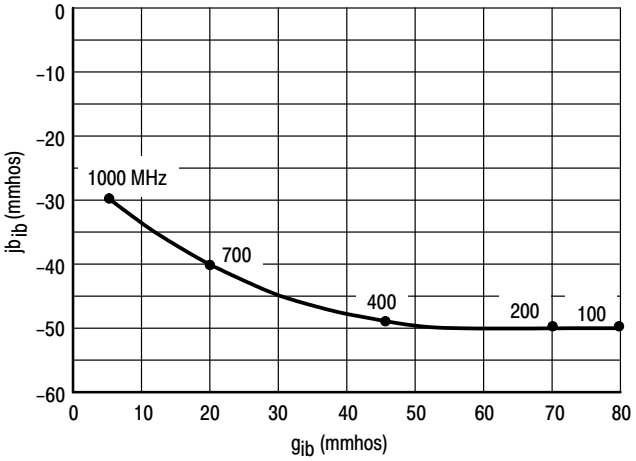


Figure 2. Polar Form

y_{fb}, FORWARD TRANSFER ADMITTANCE

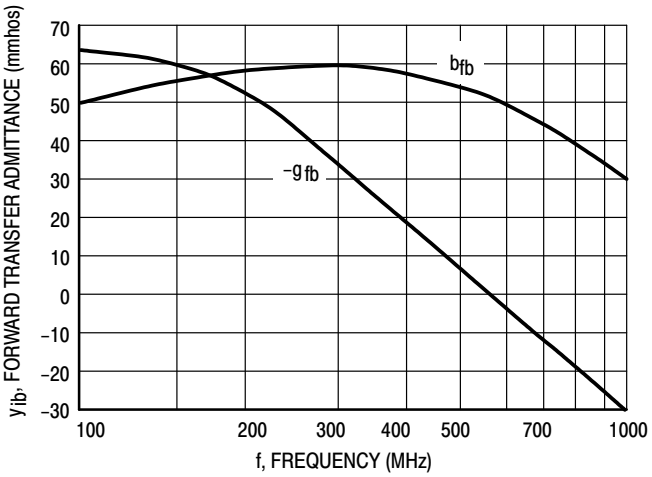


Figure 3. Rectangular Form

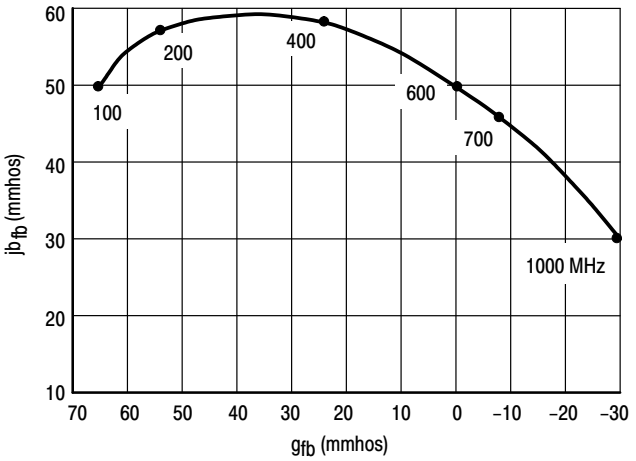


Figure 4. Polar Form

TYPICAL CHARACTERISTICS

COMMON−BASE y PARAMETERS versus FREQUENCY

(V_{CB} = 10 Vdc, I_C = 4.0 mAdc, T_A = 25°C)

y_{rb}, REVERSE TRANSFER ADMITTANCE

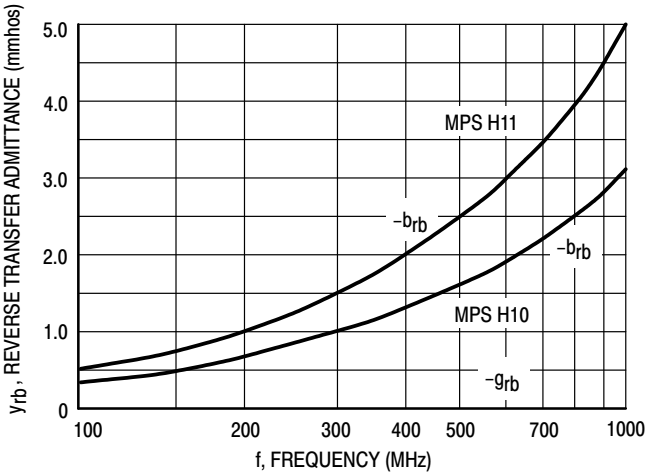


Figure 5. Rectangular Form

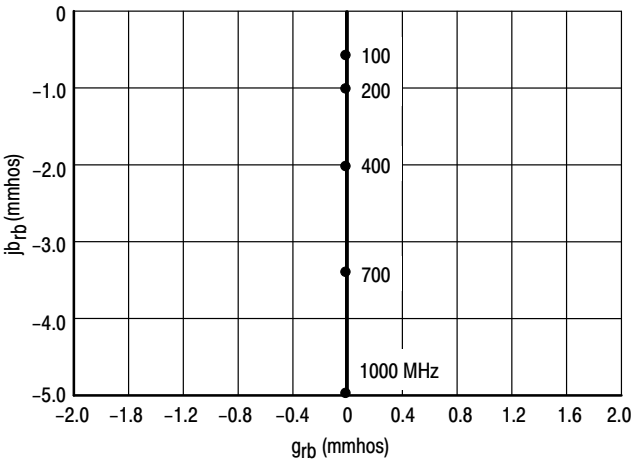


Figure 6. Polar Form

y_{ob}, OUTPUT ADMITTANCE

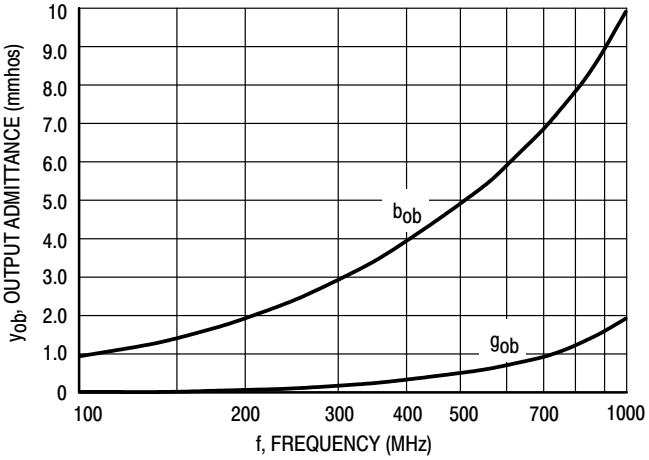


Figure 7. Rectangular Form

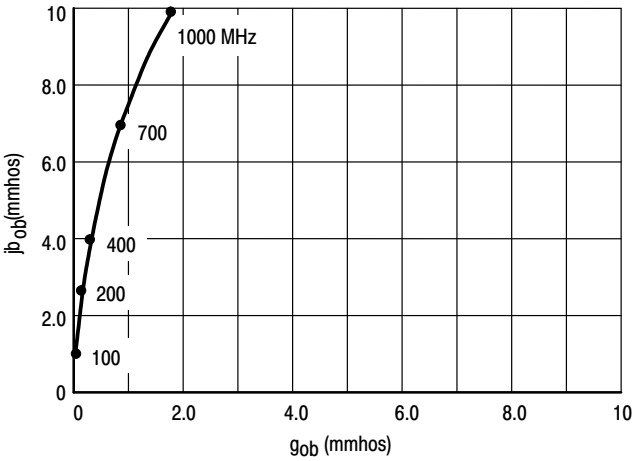
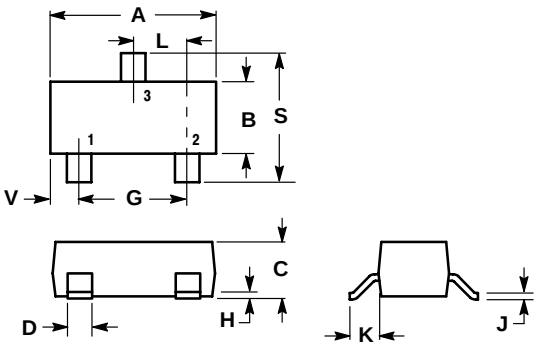


Figure 8. Polar Form

PACKAGE DIMENSIONS

SOT−23
(TO−236AB)
CASE 318−08
ISSUE AH



NOTES:
1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.
3. MAXIMUM LEAD THICKNESS INCLUDES LEAD FINISH THICKNESS. MINIMUM LEAD THICKNESS IS THE MINIMUM THICKNESS OF BASE MATERIAL.
4. 318−03 AND −07 OBSOLETE, NEW STANDARD 318−08.

	INCHES		MILLIMETERS	
DIM	MIN	MAX	MIN	MAX
A	0.1102	0.1197	2.80	3.04
B	0.0472	0.0551	1.20	1.40
C	0.0350	0.0440	0.89	1.11
D	0.0150	0.0200	0.37	0.50
G	0.0701	0.0807	1.78	2.04
H	0.0005	0.0040	0.013	0.100
J	0.0034	0.0070	0.085	0.177
K	0.0140	0.0285	0.35	0.69
L	0.0350	0.0401	0.89	1.02
S	0.0830	0.1039	2.10	2.64
V	0.0177	0.0236	0.45	0.60

STYLE 6:
PIN 1. BASE
2. EMITTER
3. COLLECTOR

SOLDERING FOOTPRINT*

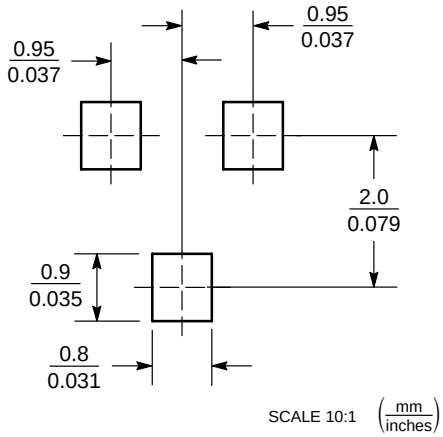


Figure 9. SOT−23

*For additional information on our Pb−Free strategy and soldering details, please download the ON Semiconductor Soldering and Mounting Techniques Reference Manual, SOLDERRM/D.

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