

TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

2SC4244

UHF TV Tuner RF Amplifier Applications

- Low noise figure: NF = 4dB (typ.)
- High power gain: Gpb = 17dB (typ.)
- Excellent forward AGC characteristics

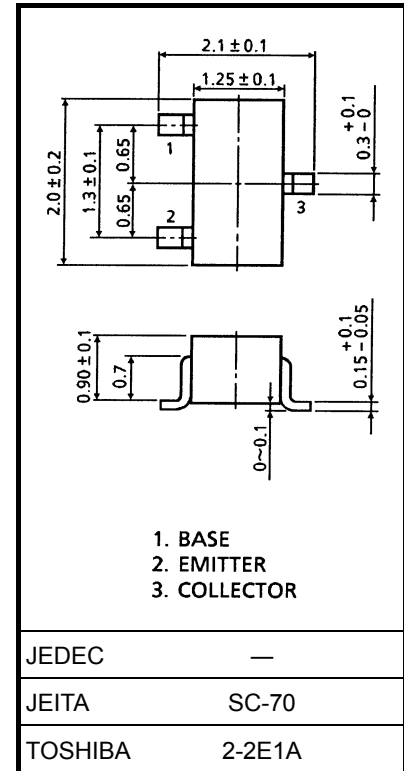
Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V _{CB0}	25	V
Collector-emitter voltage	V _{CEO}	20	V
Emitter-base voltage	V _{EBO}	2	V
Base current	I _B	4	mA
Collector current	I _C	20	mA
Collector power dissipation	P _C	100	mW
Junction temperature	T _j	125	°C
Storage temperature range	T _{stg}	-55~125	°C

Note: Using continuously under heavy loads (e.g. the application of high temperature/current/voltage and the significant change in temperature, etc.) may cause this product to decrease in the reliability significantly even if the operating conditions (i.e. operating temperature/current/voltage, etc.) are within the absolute maximum ratings.

Please design the appropriate reliability upon reviewing the Toshiba Semiconductor Reliability Handbook ("Handling Precautions"/"Derating Concept and Methods") and individual reliability data (i.e. reliability test report and estimated failure rate, etc).

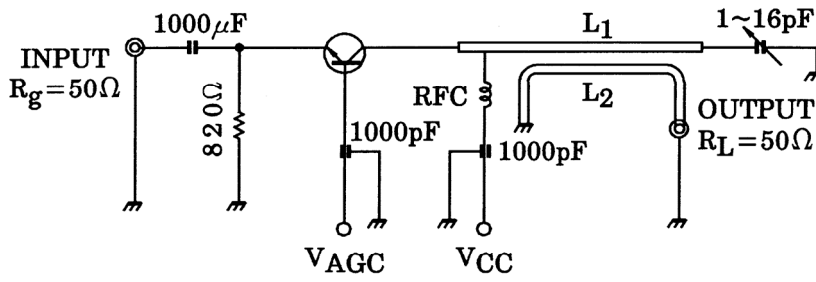
Unit: mm



Weight: 0.006 g (typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I _{CBO}	V _{CB} = 10 V, I _E = 0	—	—	0.1	μA
Emitter cut-off current	I _{EBO}	V _{EB} = 2 V, I _C = 0	—	—	1	μA
Collector-emitter breakdown voltage	V _{(BR)CEO}	I _C = 1 mA, I _B = 0	20	—	—	V
DC current gain	h _{FE}	V _{CE} = 3 V, I _C = 1 mA	40	100	—	
Transition frequency	f _T	V _{CE} = 3 V, I _C = 1 mA	500	850	—	MHz
Reverse transfer capacitance	C _{rb}	V _{CE} = 2 V, I _B = 0, f = 1 MHz	—	0.4	0.55	pF
Power gain	G _{pe}	V _{CC} = 4.5 V, V _{AGC} = 2.0 V	12	17	—	dB
Noise figure	NF	f = 800 MHz (Figure 1)	—	4	6	dB
AGC voltage	V _{AGC}	V _{CC} = 4.5 V, G.R. = -20dB, f = 800 MHz (Note)	2.5	3.2	4.0	V

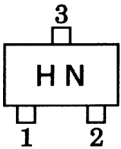


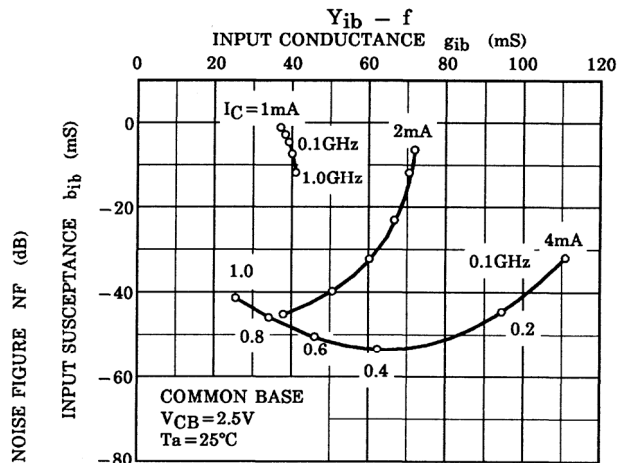
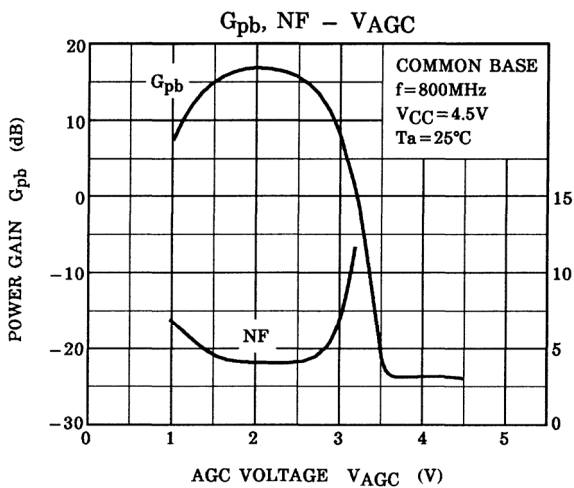
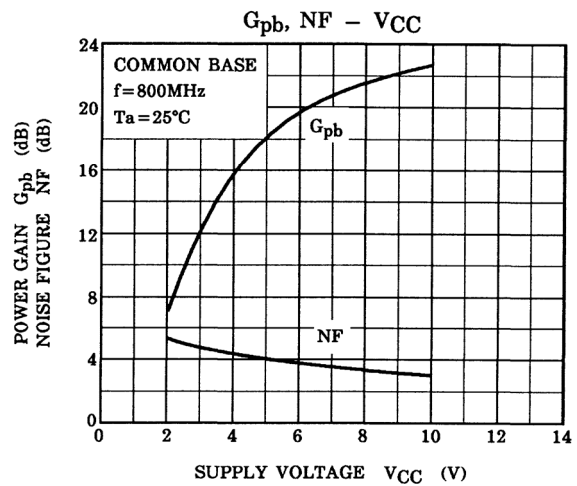
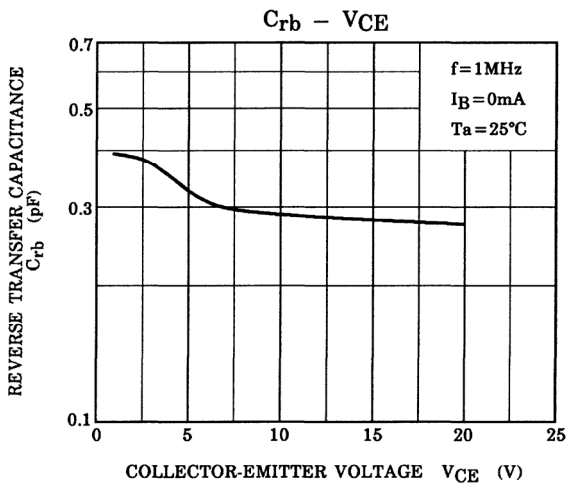
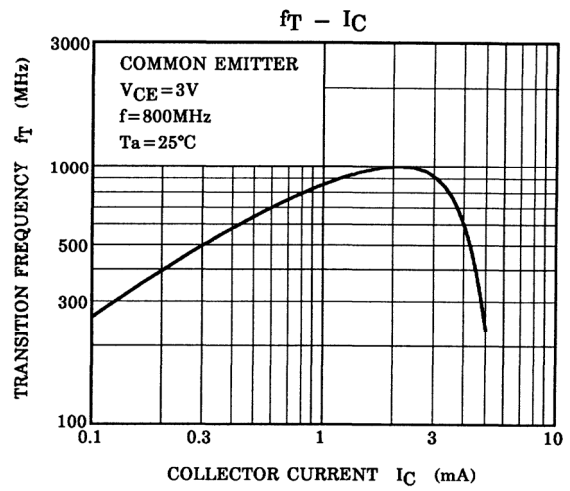
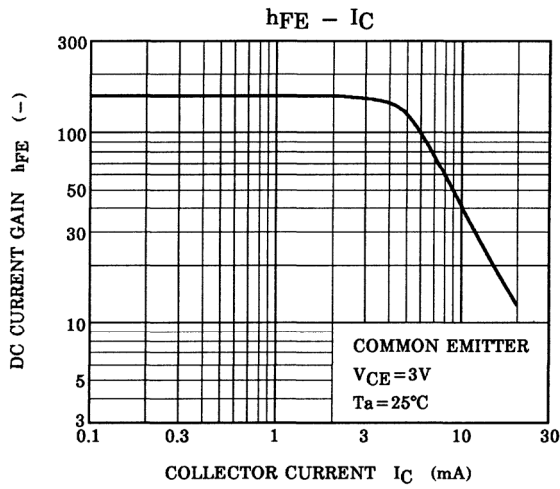
L₁, L₂: φ1.0 mm silver plated copper wire

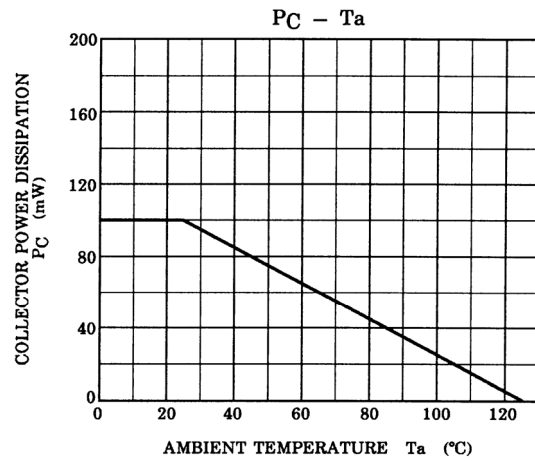
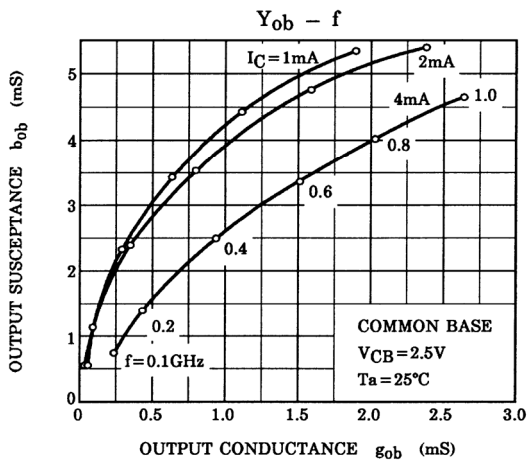
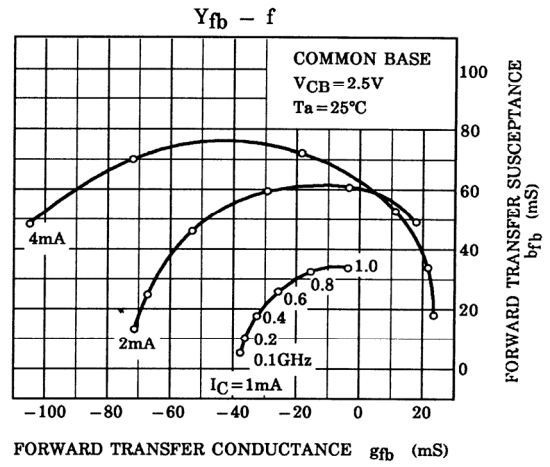
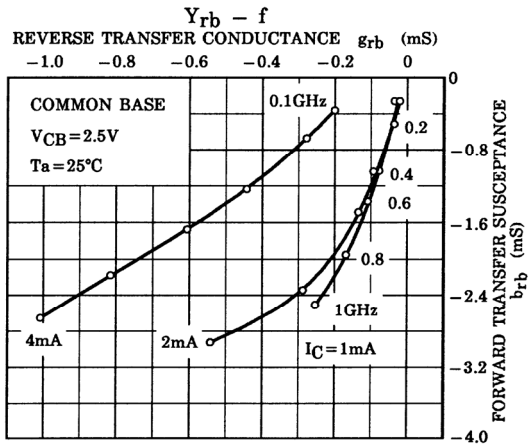
Note: V_{AGC} measured by the test circuit shown in Figure 1, when the power gain is reduced to 20dB compared with G_{pb} shown above table.

Figure 1 800 MHz G_{pe}, NF Test Circuit

Marking







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20070701-EN GENERAL

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