TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

2SC4915

High Frequency Amplifier Applications FM, RF, MIX, If Amplifier Applications

- Small reverse transfer capacitance: $C_{re} = 0.55 \text{ pF (typ.)}$
- Low noise figure: NF = 2.3dB (typ.)

Absolute Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	40	V
Collector-emitter voltage	V _{CEO}	30	V
Emitter-base voltage	V _{EBO}	4	V
Collector current	IC	20	mA
Base current	ΙΒ	4	mA
Collector power dissipation	PC	100	mW
Junction temperature	Tj	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).

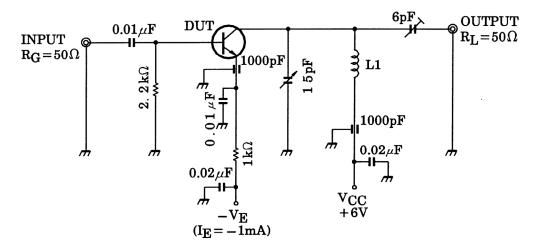
1. BASE 2. EMITTER 3. COLLECTOR JEDEC — JEITA — TOSHIBA 2-2H1A

Weight: 2.4 mg (typ.)

Electrical Characteristics (Ta = 25°C)

Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I _{CBO}	V _{CB} = 40 V, I _E = 0 A	_	_	0.1	μА
Emitter cut-off current	I _{EBO}	V _{EB} = 4 V, I _C = 0 A	_	_	0.5	μА
DC current gain	h _{FE} (Note)	V _{CE} = 6 V, I _C = 1 mA	40	_	200	
Reverse transfer capacitance	C _{re}	V _{CB} = 6 V, f = 1 MHz	_	0.55	_	pF
Transition frequency	f _T	V _{CE} = 6 V, I _C = 1 mA	260	550	_	MHz
Collector-base time constant	C _c ·rbb'	$V_{CE} = 6 \text{ V}, I_{E} = -1 \text{ mA}, f = 30 \text{ MHz}$	_	_	20	ps
Noise figure	NF	V _{CC} = 6 V, I _E = -1 mA,	_	2.3	5.0	dB
Power gain	Gpe	f = 100 MHz, Figure 1	17	23	_	dB

Note: hFE classification R: 40~80, O: 70~140, Y: 100~200

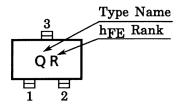


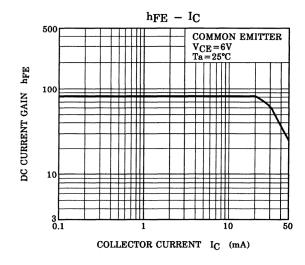
L1: 0.8 mm ϕ silver plated copper wire, 4 T, 10 mm ID, 8 mm length

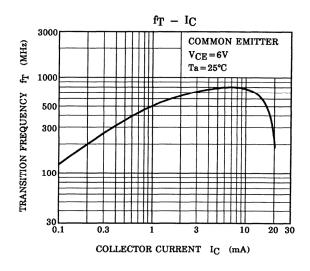
Figure 1 NF, Gpe Test Circuit

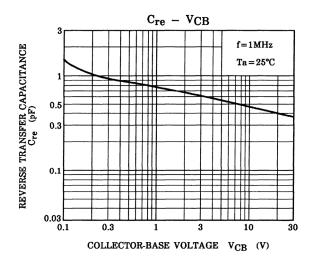
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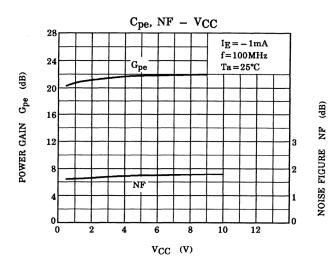
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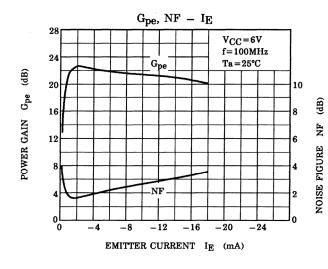


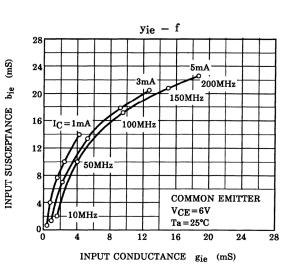








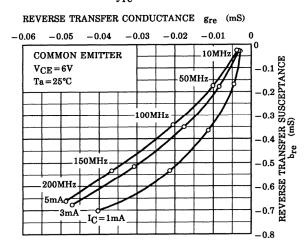




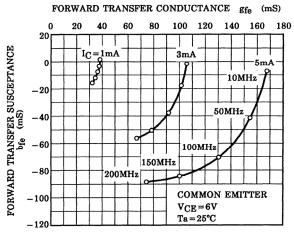
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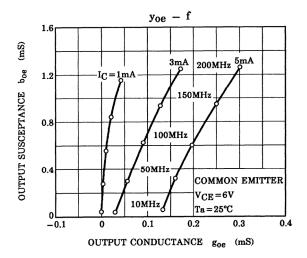
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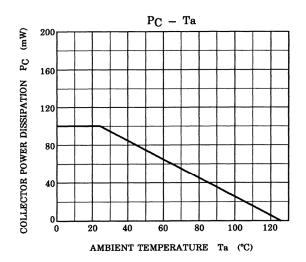
 $y_{re} - f$



 $y_{fe} - f$







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20070701-EN GENERAL

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