

TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

# 2SC5254

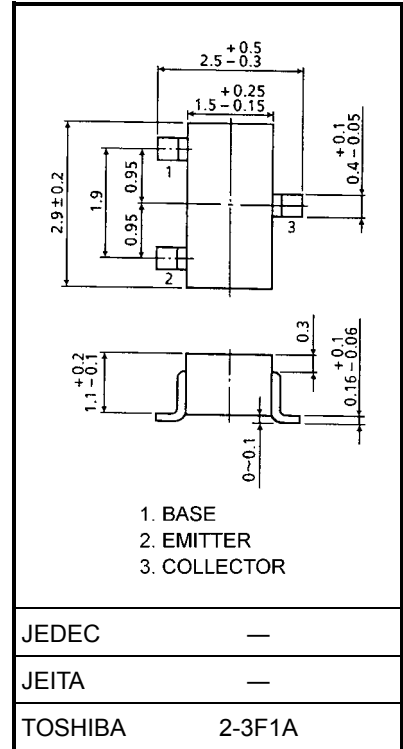
## VHF~UHF Band Low Noise Amplifier Applications

- Low noise figure: NF = 1.5dB (f = 2 GHz)
- High gain: Gain = 8.5dB (f = 2 GHz)

### Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V <sub>CBO</sub>	15	V
Collector-emitter voltage	V <sub>CEO</sub>	7	V
Emitter-base voltage	V <sub>EBO</sub>	1.5	V
Collector current	I <sub>C</sub>	40	mA
Base current	I <sub>B</sub>	20	mA
Collector power dissipation	P <sub>C</sub>	150	mW
Junction temperature	T <sub>j</sub>	125	°C
Storage temperature range	T <sub>stg</sub>	-55~125	°C

Unit: mm



### Microwave Characteristics (Ta = 25°C)

Weight: 0.012 g (typ.)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Transition frequency	f <sub>T</sub>	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 20 mA	9	12	—	GHz
Insertion gain	S <sub>21e</sub>   <sup>2</sup> (1)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 20 mA, f = 1 GHz	11.5	14.5	—	dB
	S <sub>21e</sub>   <sup>2</sup> (2)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 20 mA, f = 2 GHz	5.5	8.5	—	
Noise figure	NF (1)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 5 mA, f = 1 GHz	—	1.1	—	dB
	NF (2)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 5 mA, f = 2 GHz	—	1.5	3	

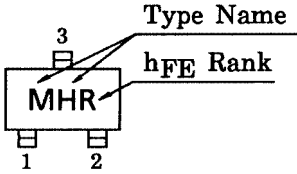
### Electrical Characteristics (Ta = 25°C)

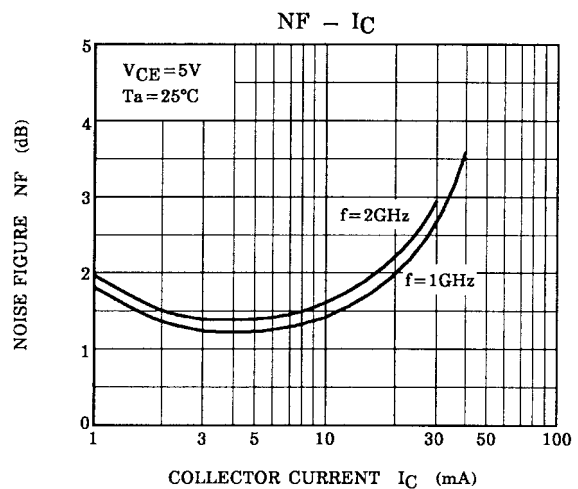
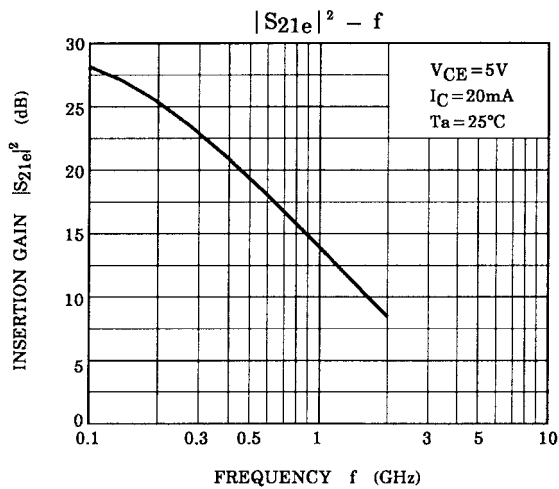
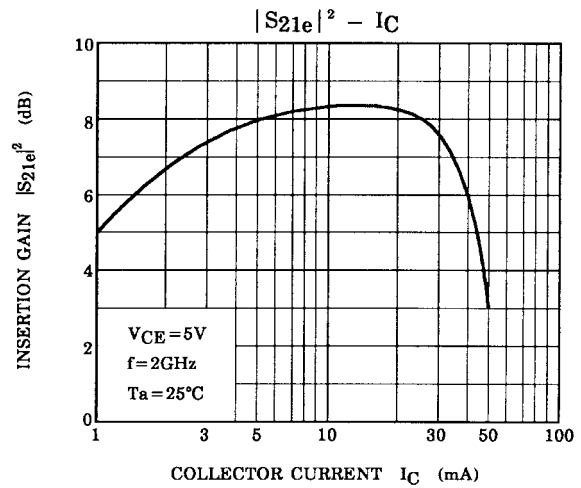
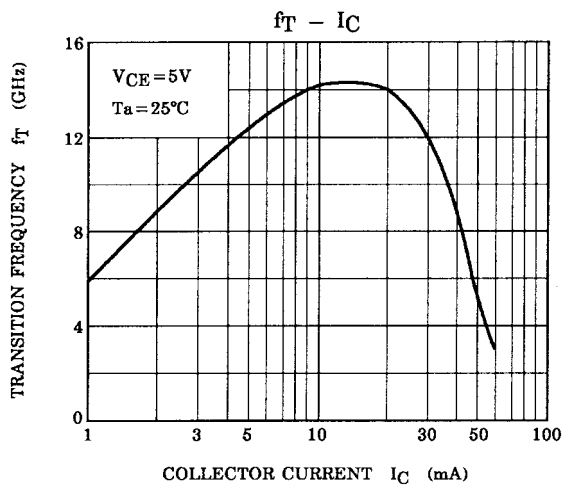
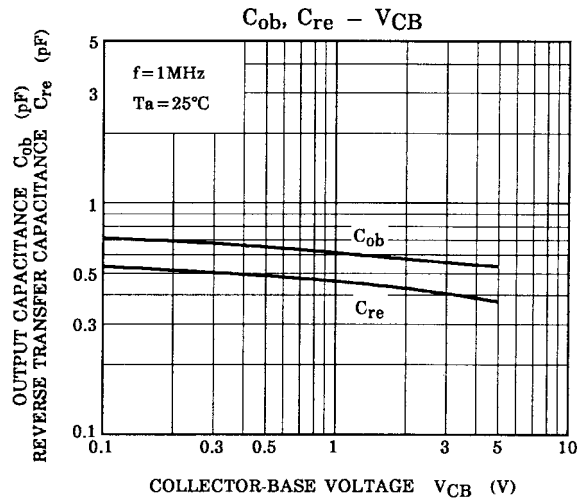
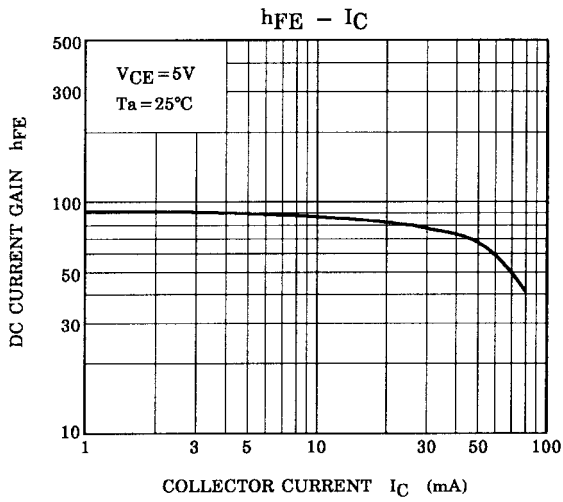
Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Collector cut-off current	I <sub>CBO</sub>	V <sub>CB</sub> = 10 V, I <sub>E</sub> = 0	—	—	1	μA
Emitter cut-off current	I <sub>EBO</sub>	V <sub>EB</sub> = 1 V, I <sub>C</sub> = 0	—	—	1	μA
DC current gain	h <sub>FE</sub> (Note 1)	V <sub>CE</sub> = 5 V, I <sub>C</sub> = 20 mA	50	—	160	
Output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 5 V, I <sub>E</sub> = 0, f = 1 MHz (Note 2)	—	0.5	—	pF
Reverse transfer capacitance	C <sub>re</sub>		—	0.4	0.8	pF

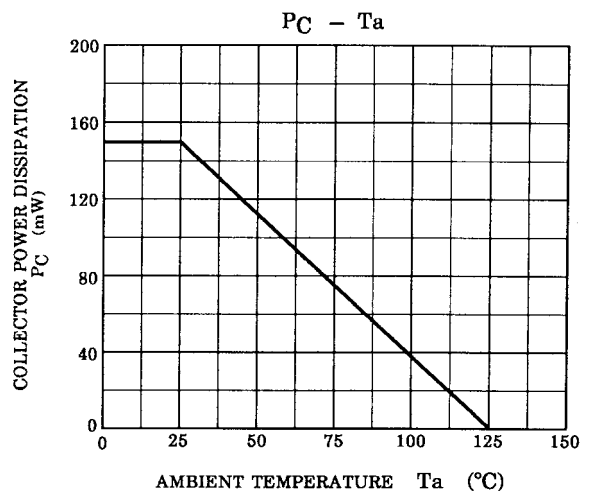
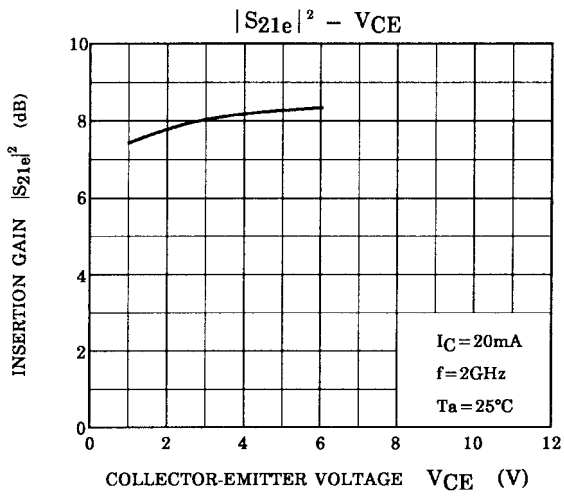
Note 1: h<sub>FE</sub> classification R: 50~100, O: 80~160

Note 2: C<sub>re</sub> is measured by 3 terminal method with capacitance bridge.

**Marking**







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