TOSHIBA Transistor Silicon NPN Epitaxial Planar Type

2SC3429

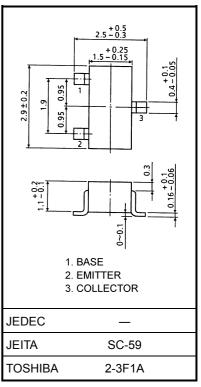
VHF~UHF Band Low Noise Amplifier Applications

Unit: mm

- Low noise figure
- NF = 1.5dB, $|S_{21e}|^2 = 16$ dB (f = 500 MHz)
- NF = 1.7dB, $|S_{21e}|^2 = 10.5dB$ (f = 1 GHz)

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Collector-base voltage	V_{CBO}	17	V
Collector-emitter voltage	V _{CEO}	12	V
Emitter-base voltage	V _{EBO}	3	V
Collector current	Ic	70	mA
Base current	Ι _Β	30	mA
Collector power dissipation	PC	150	mW
Junction temperature	Tj	125	°C
Storage temperature range	T _{stg}	−55~125	°C



Weight: 0.012 g (typ.)

Microwave Characteristics (Ta = 25°C)

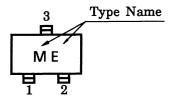
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Transition frequency	f _T	V _{CE} = 10 V, I _C = 20 mA	_	5	_	GHz
Insertion gain	S _{21e} ² (1)	$V_{CE} = 10 \text{ V}, I_{C} = 20 \text{ mA}, f = 500 \text{ MHz}$		16	_	- dB
	S _{21e} ² (2)	V _{CE} = 10 V, I _C = 20 mA, f = 1 GHz	_	10.5	_	
Noise figure	NF (1)	$V_{CE} = 10 \text{ V}, I_{C} = 5 \text{ mA}, f = 500 \text{ MHz}$	_	1.5	_	- dB
	NF (2)	$V_{CE} = 10 \text{ V}, I_{C} = 5 \text{ mA}, f = 1 \text{ GHz}$		1.7	_	

Electrical Characteristics (Ta = 25°C)

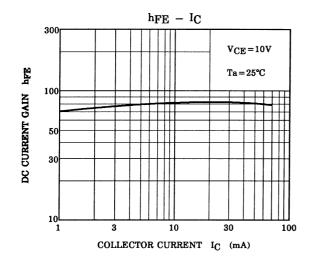
Characteristics	Symbol	Test Condition	Min	Тур.	Max	Unit
Collector cut-off current	I _{CBO}	$V_{CB} = 10 \text{ V}, I_{E} = 0$	_	_	1	μΑ
Emitter cut-off current	I _{EBO}	V _{EB} = 1 V, I _C = 0	_	_	1	μА
DC current gain	h _{FE}	V _{CE} = 10 V, I _C = 20 mA	25	_	_	
Collector output capacitance	C _{ob}	V _{CB} = 10 V, I _E = 0, f = 1 MHz (Note)	_	0.85	_	pF
Reverse transfer capacitance	C _{re}		_	0.57	_	pF

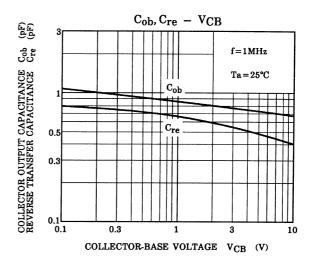
Note: C_{re} is measured by 3 terminal method with capacitance bridge.

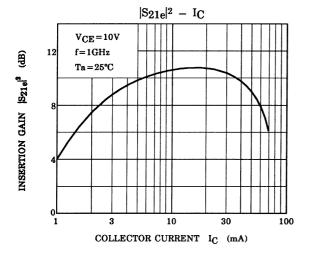
Marking

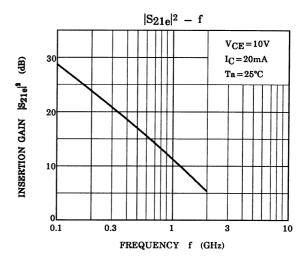


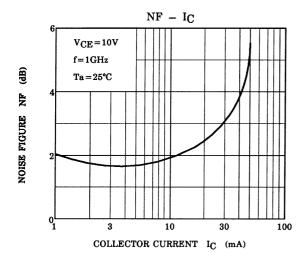
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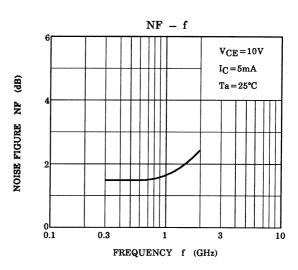








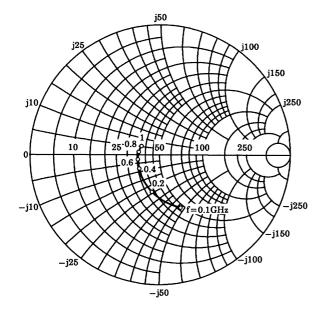


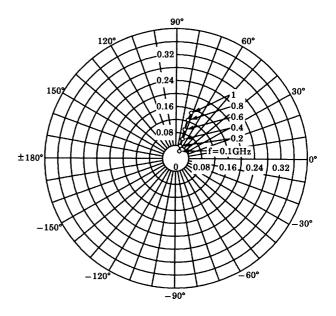


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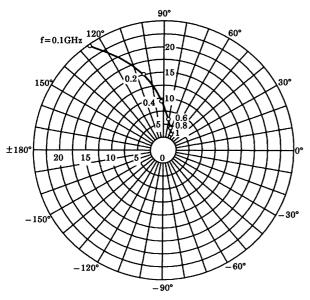
 $\begin{array}{l} S_{11e} \\ V_{CE} = 10V \\ I_{C} = 20mA \\ Ta = 25^{\circ}C \\ (UNIT:\Omega) \end{array}$







 $\begin{array}{l} S_{21e} \\ V_{CE} \!=\! 10V \\ I_{C} \!=\! 20mA \\ Ta \!=\! 25^{\circ}\! C \end{array}$



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