

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC4393

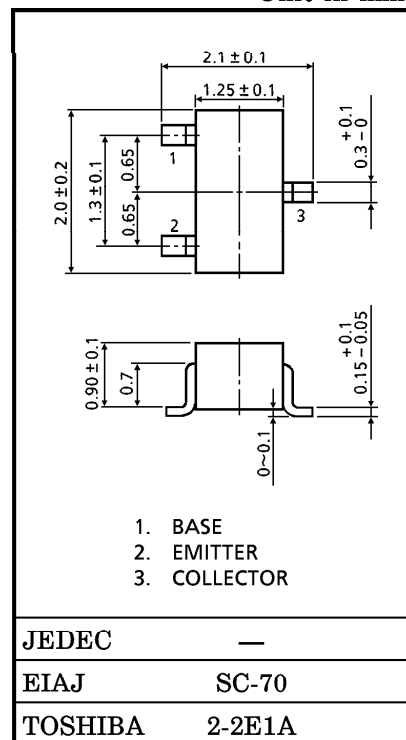
VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm

- Low Noise Figure.
- $NF = 1.5dB, |S_{21e}|^2 = 16dB (f = 500MHz)$
- $NF = 1.7dB, |S_{21e}|^2 = 10.5dB (f = 1000MHz)$

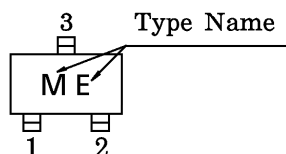
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CB0}	17	V
Collector-Emitter Voltage	V _{CEO}	12	V
Emitter-Base Voltage	V _{EBO}	3	V
Collector Current	I _C	70	mA
Base Current	I _B	30	mA
Collector Power Dissipation	P _C	100	mW
Junction Temperature	T _j	125	°C
Storage Temperature Range	T _{stg}	-55~125	°C



Weight : 0.006g

Marking



MICROWAVE CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f _T	V _{CE} = 10V, I _C = 20mA	—	5	—	GHz
Insertion Gain	S _{21e} ² (1)	V _{CE} = 10V, I _C = 20mA, f = 500MHz	—	16	—	dB
	S _{21e} ² (2)	V _{CE} = 10V, I _C = 20mA, f = 1GHz	—	10.5	—	
Noise Figure	NF (1)	V _{CE} = 10V, I _C = 5mA, f = 500MHz	—	1.5	—	dB
	NF (2)	V _{CE} = 10V, I _C = 5mA, f = 1GHz	—	1.7	—	

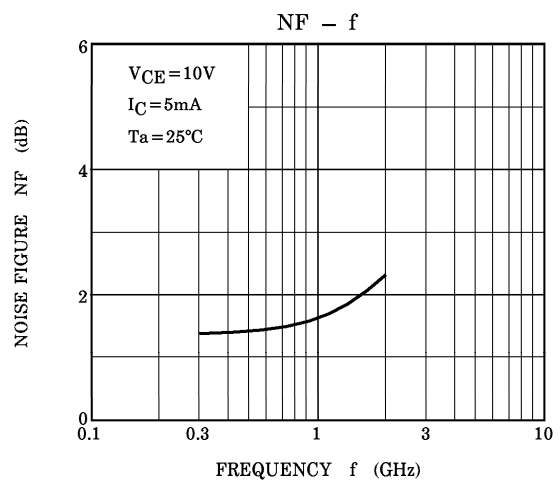
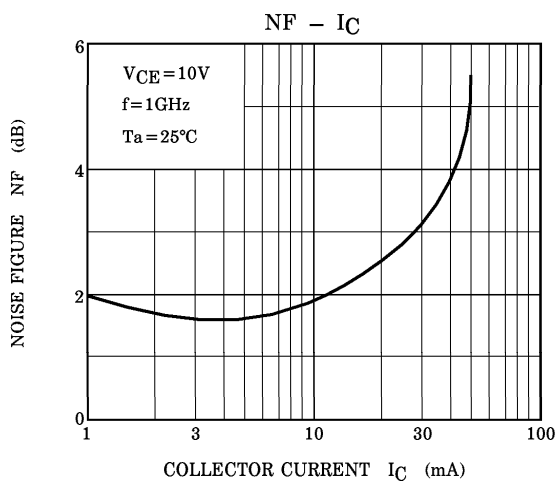
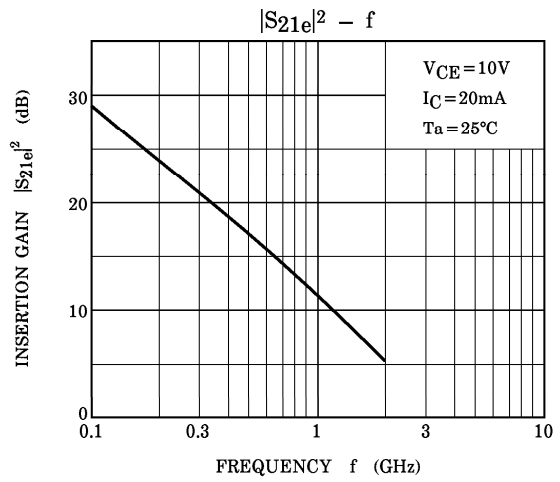
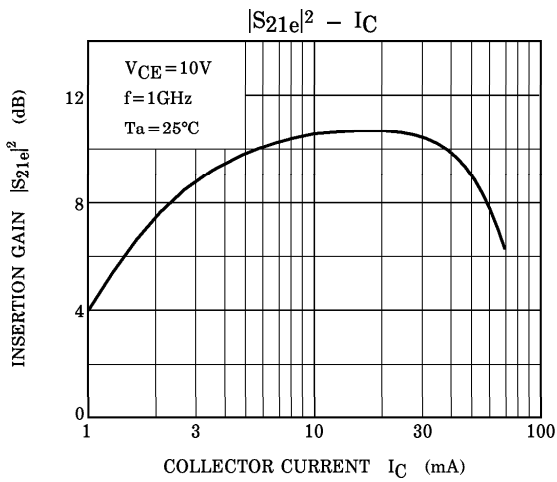
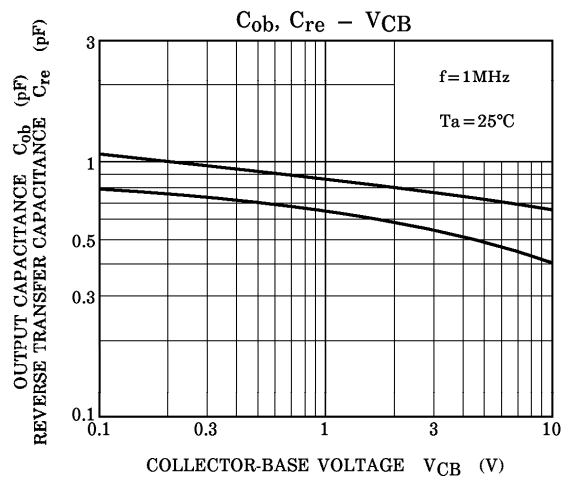
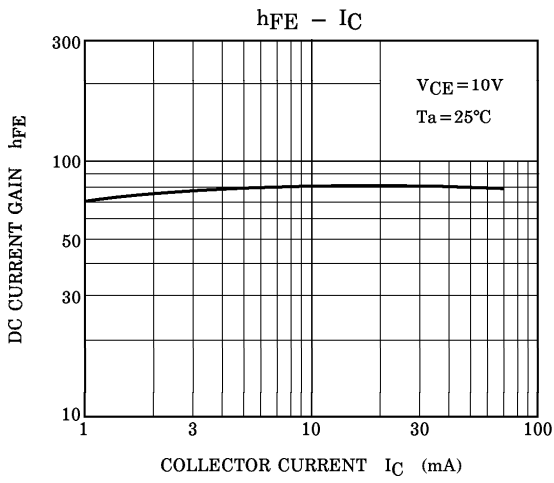
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I _{CB0}	V _{CB} = 10V, I _E = 0	—	—	1	μA
Emitter Cut-off Current	I _{EBO}	V _{EB} = 1V, I _C = 0	—	—	1	μA
DC Current Gain	h _{FE}	V _{CE} = 10V, I _C = 20mA	25	—	—	—
Output Capacitance	C _{ob}	V _{CB} = 10V, I _E = 0, f = 1MHz	—	0.85	—	pF
Reverse Transfer Capacitance	C _{re}	(Note)	—	0.57	—	pF

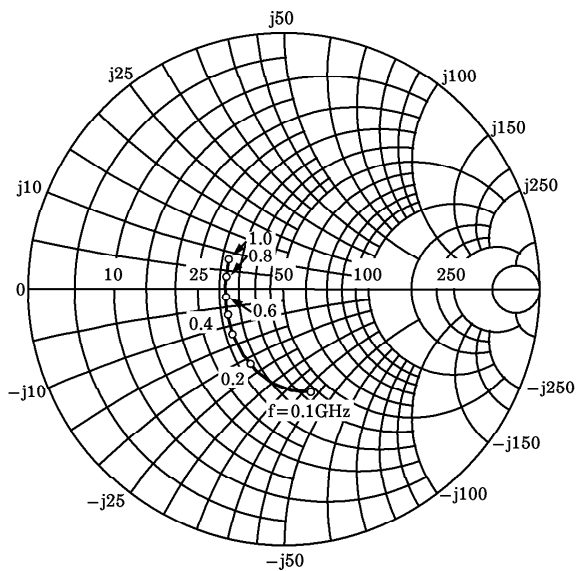
(Note) C_{re} is measured by 3 terminal method with Capacitance Bridge.

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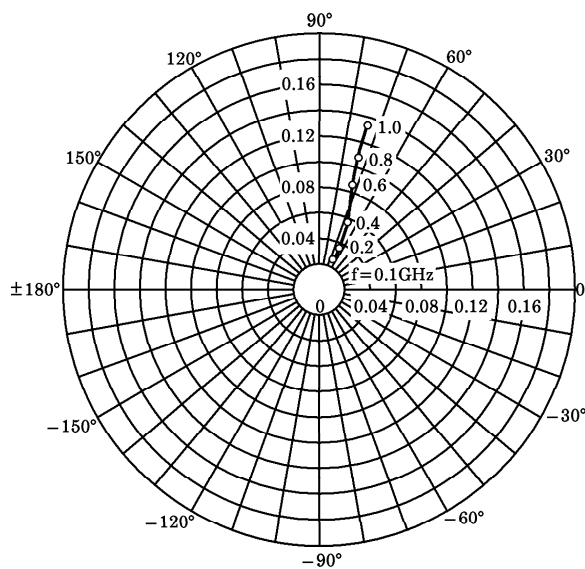
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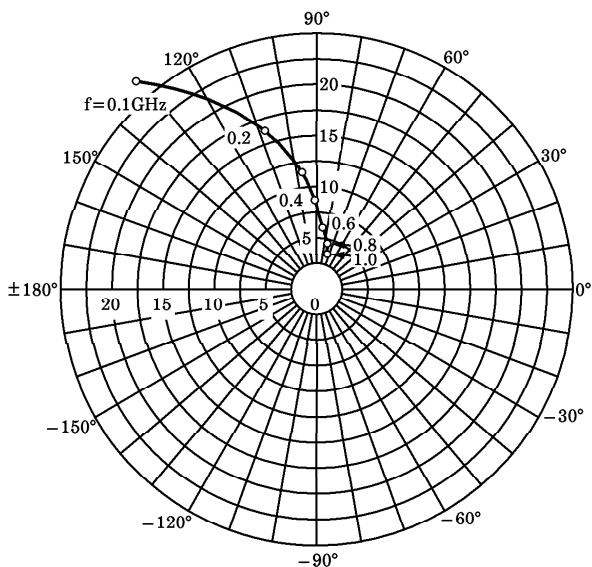
S_{11e}
 V_{CE} = 10V
 I_C = 20mA
 T_a = 25°C
 (UNIT : Ω)



S_{12e}
 V_{CE} = 10V
 I_C = 20mA
 T_a = 25°C



S_{21e}
 V_{CE} = 10V
 I_C = 20mA
 T_a = 25°C



S_{22e}
 V_{CE} = 10V
 I_C = 20mA
 T_a = 25°C
 (UNIT : Ω)

