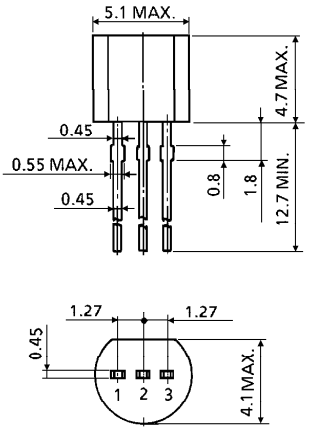
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC2498

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATION

Unit in mm



1. BASE
2. EMITTER
3. COLLECTOR

JEDEC	TO-92
EIAJ	SC-43
TOSHIBA	2-5F1E

Weight : 0.21g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	20	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Base Current	I_B	25	mA
Collector Power Dissipation	P_C	300	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

MICROWAVE CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f_T	V_{CE} = 10V, I_C = 10mA	—	3.5	—	GHz
Insertion Gain	$\|S_{21e}\|^2$ (1)	V_{CE} = 10V, I_C = 10mA, f = 500MHz	—	14.5	—	dB
	$\|S_{21e}\|^2$ (2)	V_{CE} = 10V, I_C = 10mA, f = 1GHz	—	9	—	
Noise Figure	NF (1)	V_{CE} = 10V, I_C = 5mA, f = 500MHz	—	2.5	—	dB
	NF (2)	V_{CE} = 10V, I_C = 5mA, f = 1GHz	—	4	—	

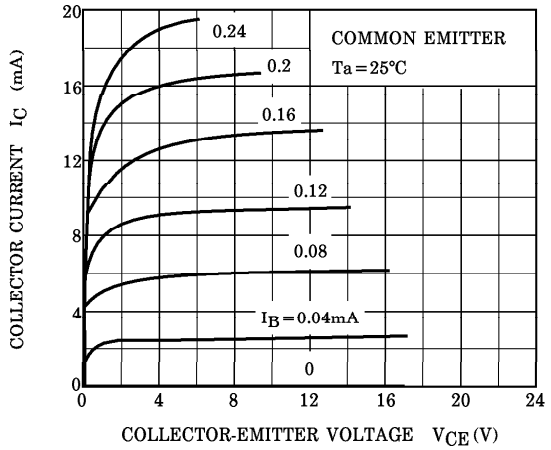
MICROWAVE CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	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 = 10mA	30	80	300	—
Collector Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz (Note)	—	1.15	—	pF
Reverse Transfer Capacitance	C_{re}		—	0.75	—	

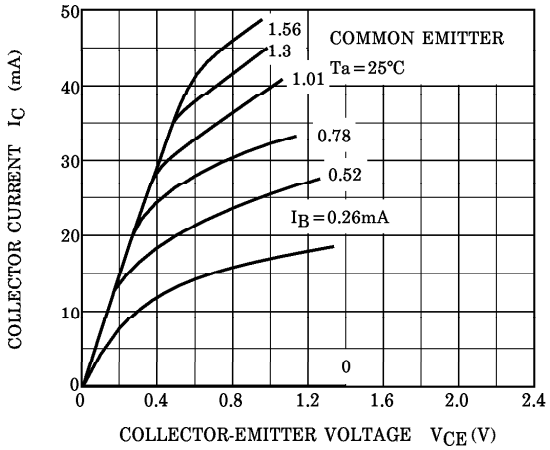
(Note) Cre is measured by 3 terminal method with Capacitance Bridge.

961001EAA2

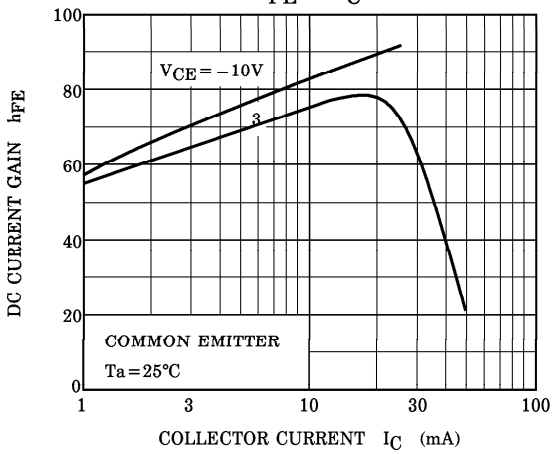
I_C – V_{CE}



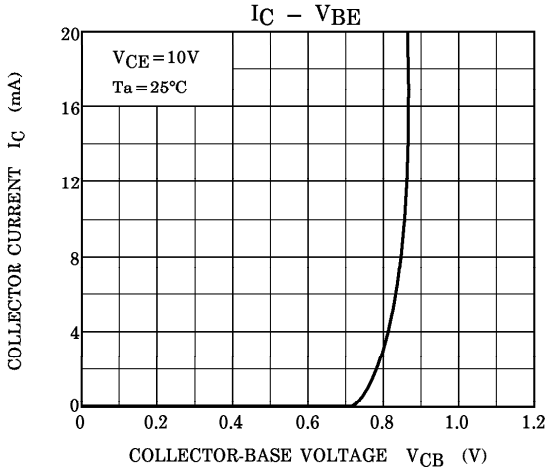
I_C – V_{CE}



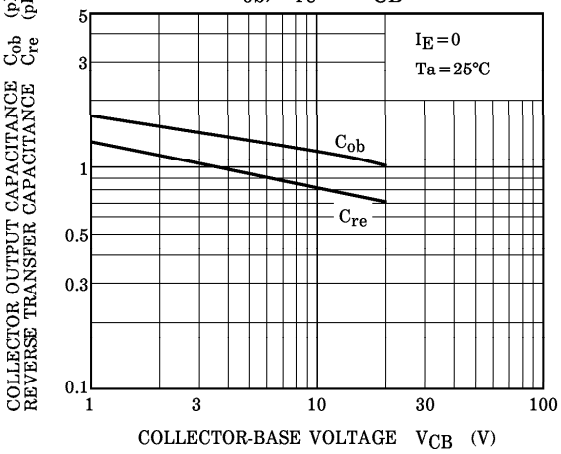
h_{FE} – I_C



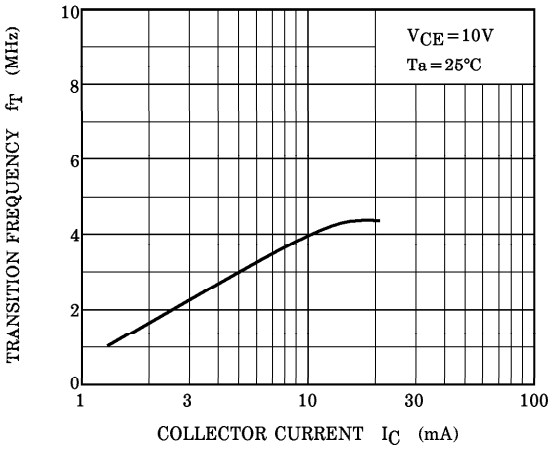
I_C – V_{BE}



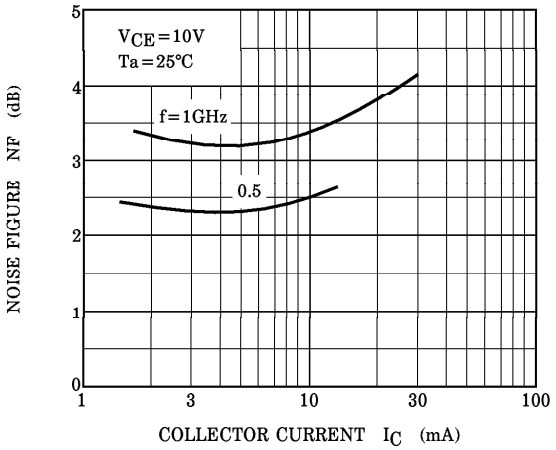
C_{ob}, C_{re} – V_{CB}



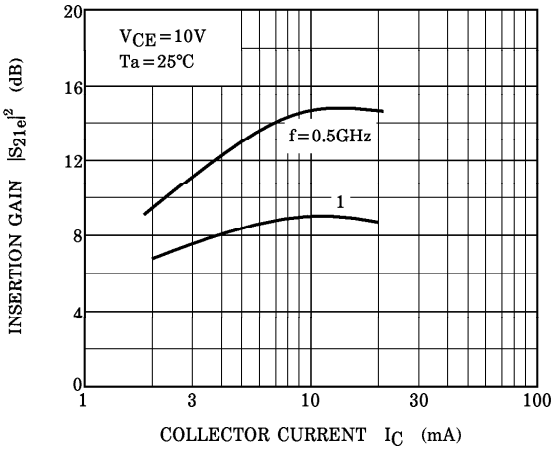
f_T – I_C



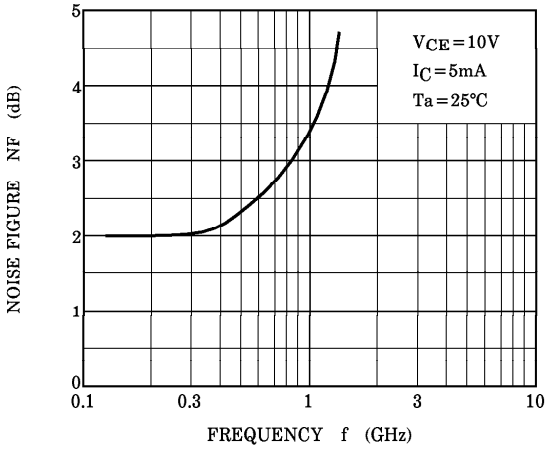
NF – I_C



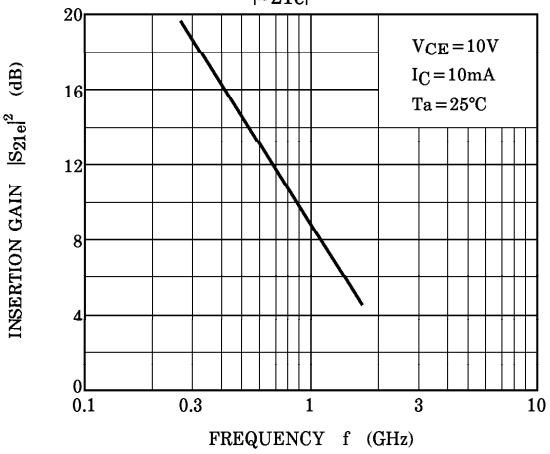
$|S_{21e}|^2$ – I_C



NF – f

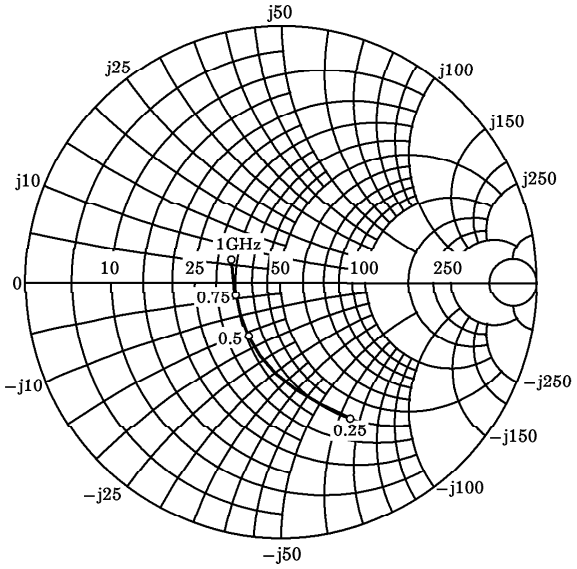


$|S_{21e}|^2$ – f

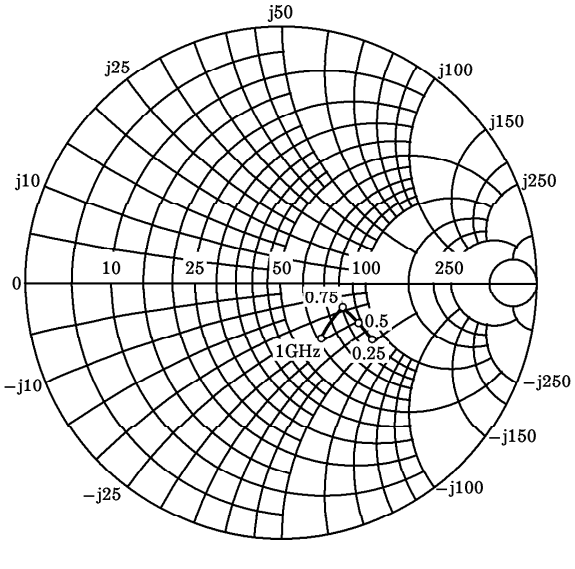


COMMON EMITTER SMALL SIGNAL S-PARAMETERS OF 2SC2498.

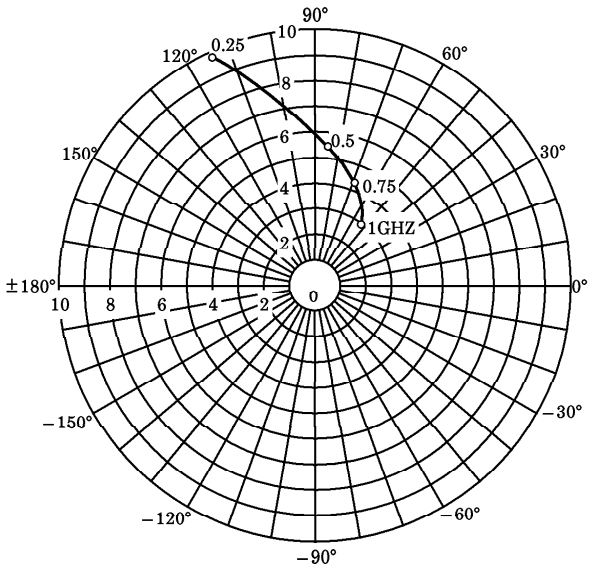
V_{CE} = 10V, I_C = 10mA



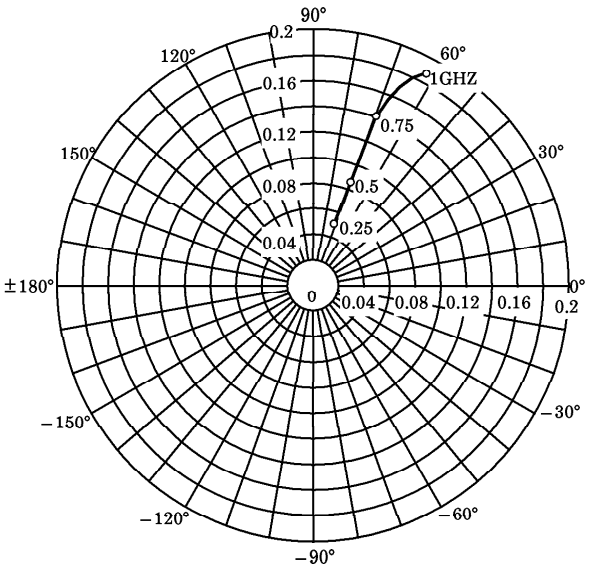
S_{11e} (UNIT : Ω)



S_{22e} (UNIT : Ω)



S_{21e}



S_{12e}