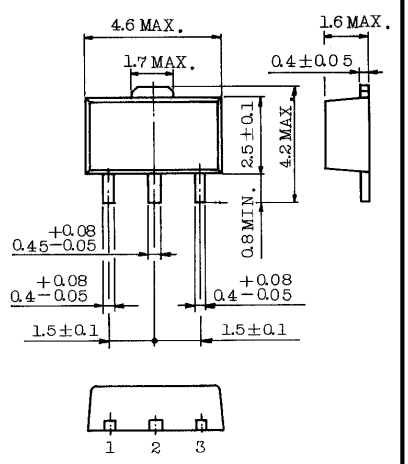
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC3268

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS.

Unit in mm

- NF = 1.7dB, $|S_{21e}|^2$ = 15.0dB (f = 500MHz)
- NF = 2dB, $|S_{21e}|^2$ = 9.5dB (f = 1000MHz)



1. BASE
2. COLLECTOR (HEAT SINK)
3. EMITTER

JEDEC	—
EIAJ	—
TOSHIBA	2-5K1A

Weight : 0.052g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	17	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	3	V
Base Current	I_B	30	mA
Collector Current	I_C	70	mA
Collector Power Dissipation	P_C	300	mW
Collector Power Dissipation	P_C※	800	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~150	°C

P_C※ : When mounted ceramic substrate of 250mm² × 0.8mmt

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	—	15.0	—	dB
	$\|S_{21e}\|^2$ (2)	V_{CE} = 10V, I_C = 20mA, f = 1GHz	—	9.5	—	dB
Noise Figure	NF (1)	V_{CE} = 10V, I_C = 5mA, f = 500MHz	—	1.7	—	dB
	NF (2)	V_{CE} = 10V, I_C = 5mA, f = 1GHz	—	2.0	—	dB

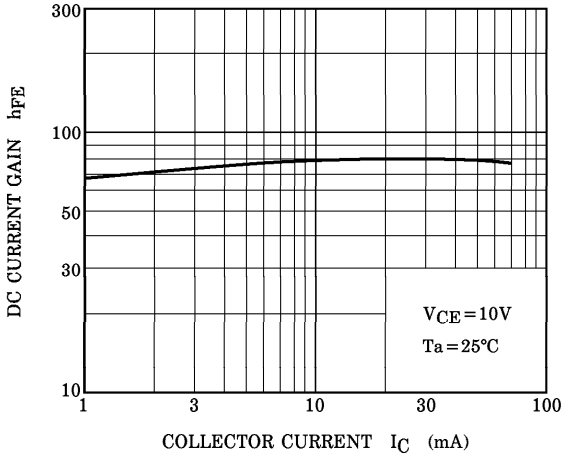
ELECTRICAL CHARACTERISTICS (Ta = 25°C)

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 = 20mA	25	—	—	—
Collector Output Capacitance	C_{ob}	V_{CB} = 10V, I_E = 0, f = 1MHz (Note)	—	1.05	—	pF
Reverse Transfer Capacitance	C_{re}		—	0.7	—	pF

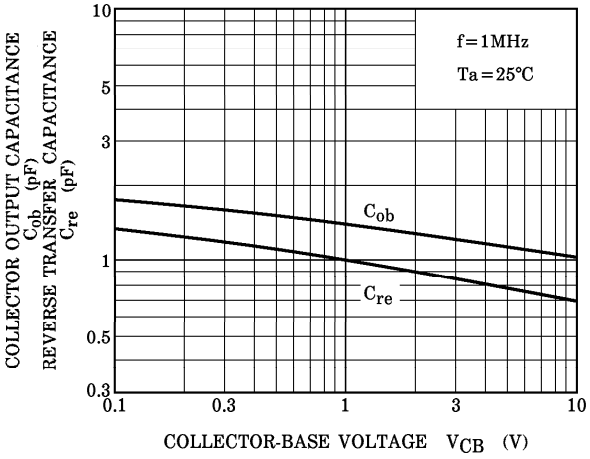
Note : C_{re} is measured by 3 terminal method with Capacitance Bridge.

Marking : ME

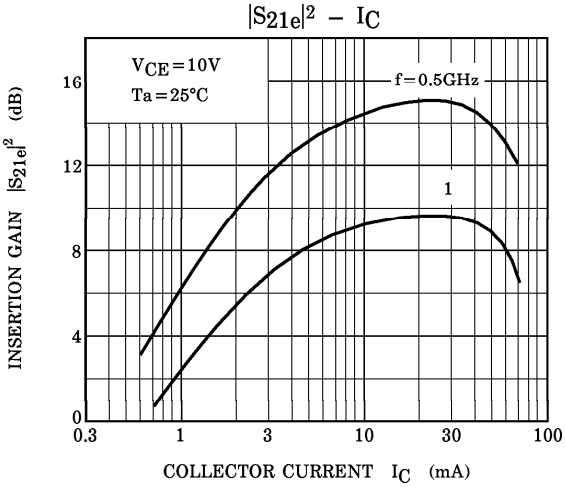
h_{FE} – I_C



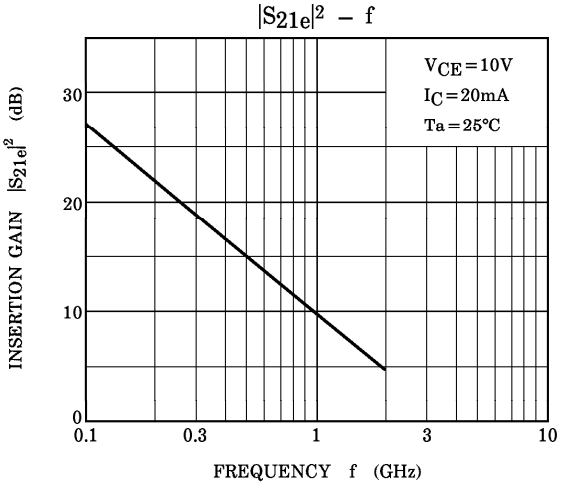
C_{ob}, C_{re} – V_{CB}



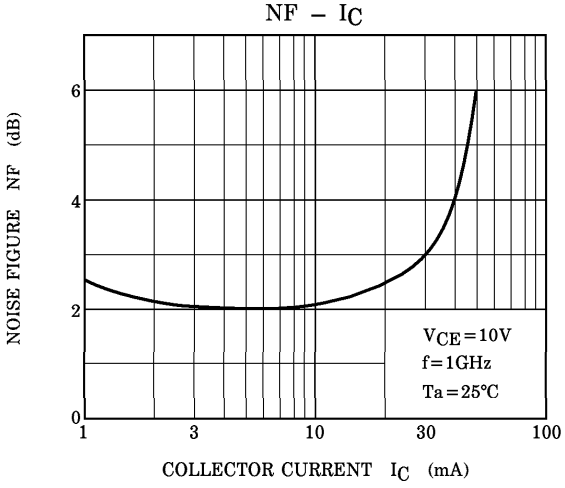
$|S_{21e}|^2$ – I_C



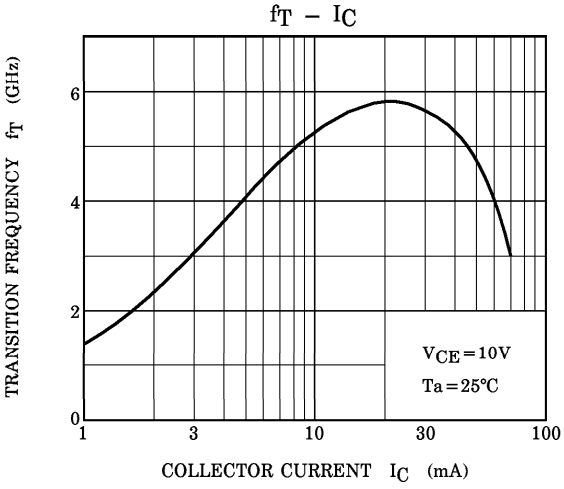
$|S_{21e}|^2$ – f



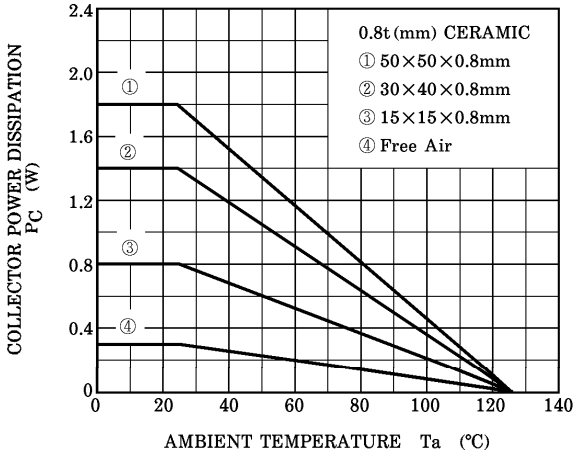
NF – I_C



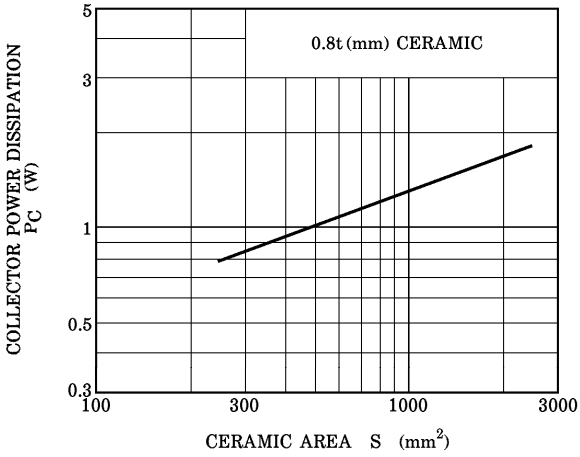
f_T – I_C



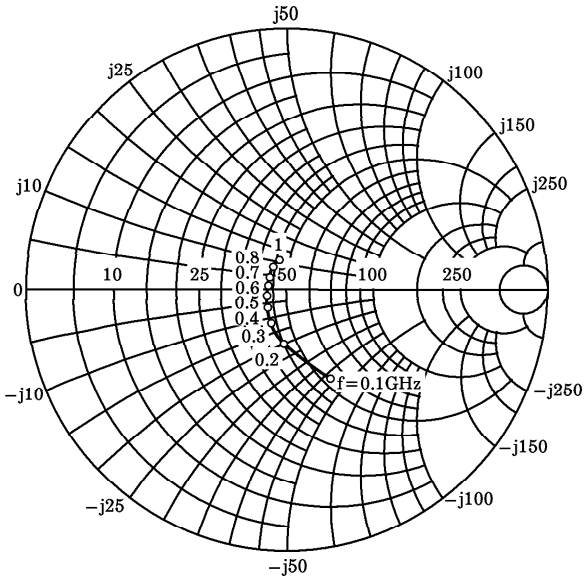
P_C – Ta


0.8t (mm) CERAMIC
① 50×50×0.8mm
② 30×40×0.8mm
③ 15×15×0.8mm
④ Free Air
COLLECTOR POWER DISSIPATION P_C (W)
AMBIENT TEMPERATURE Ta (°C)
2.4
2.0
1.6
1.2
0.8
0.4
0
0 20 40 60 80 100 120 140

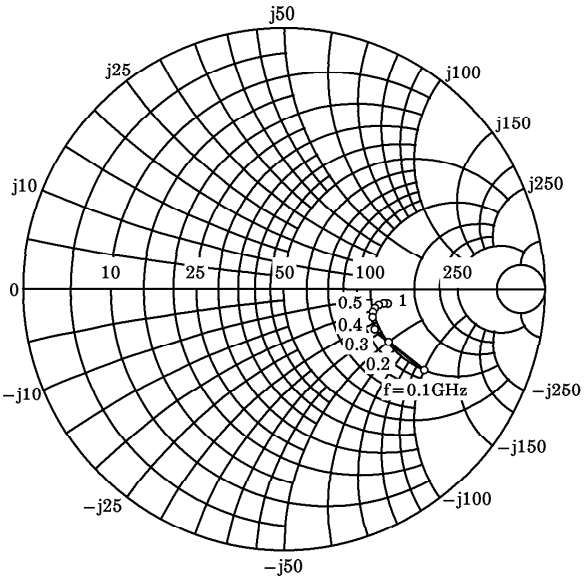
P_C – S


0.8t (mm) CERAMIC
COLLECTOR POWER DISSIPATION P_C (W)
CERAMIC AREA S (mm^2)
5
3
1
0.5
0.3
100 300 1000 3000

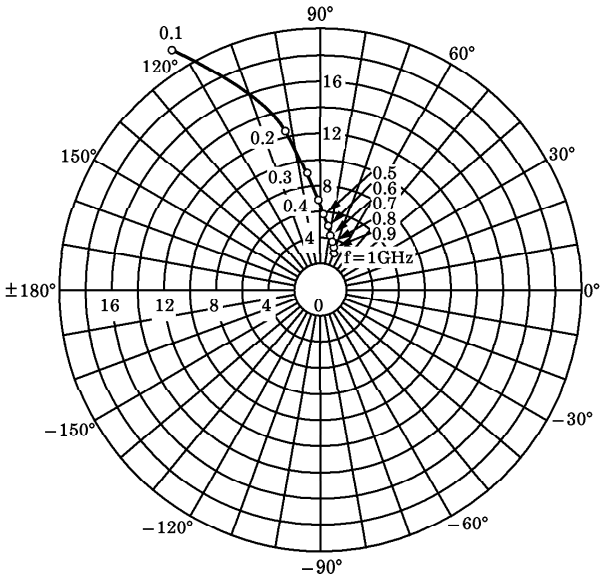
S_{11e}
V_{CE} = 10V
I_C = 20mA
Ta = 25°C
(UNIT : Ω)



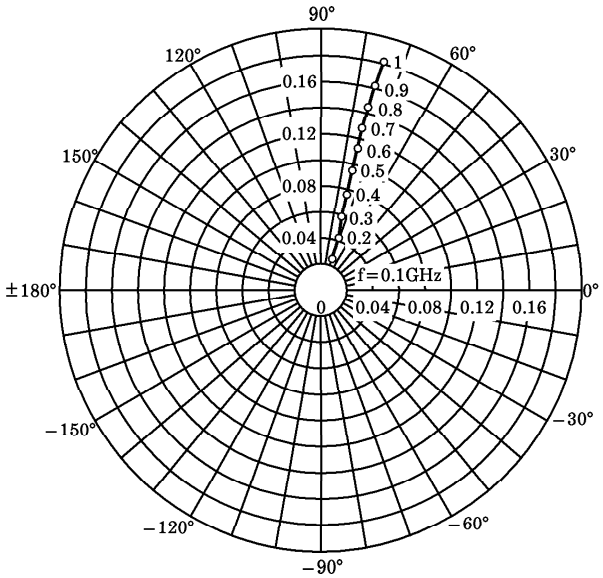
S_{22e}
V_{CE} = 10V
I_C = 20mA
Ta = 25°C
(UNIT : Ω)



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



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



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