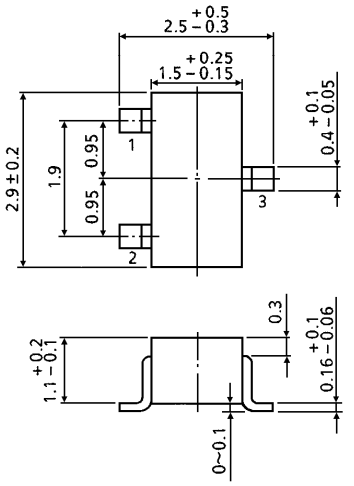
TOSHIBA TRANSISTOR SILICON PNP EPITAXIAL PLANAR TYPE

2SA1245

HIGH FREQUENCY AMPLIFIER AND SWITCHING APPLICATIONS

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS

Unit in mm



1. BASE
2. EMITTER
3. COLLECTOR

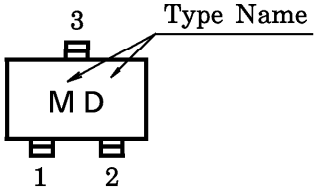
S-MINI	
JEDEC	—
JEITA	SC-59
TOSHIBA	2-3F1A

Weight : 0.012g

MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	−15	V
Collector-Emitter Voltage	V_{CEO}	−8	V
Emitter-Base Voltage	V_{EBO}	−2	V
Collector Current	I_C	−30	mA
Base Current	I_B	−15	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

MARKING



MICROWAVE CHARACTERISTICS (Ta = 25°C)

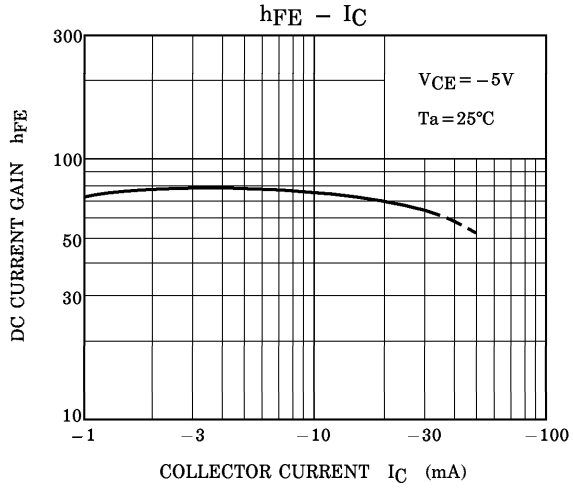
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f_T	V_{CE} = −5V, I_C = −10mA	—	4	—	GHz
Insertion Gain	$\|S_{21e}\|^2$ (1)	V_{CE} = −5V, I_C = −10mA, f = 500MHz	—	14	—	dB
	$\|S_{21e}\|^2$ (2)	V_{CE} = −5V, I_C = −10mA, f = 1GHz	—	9.5	—	dB
Noise Figure	NF (1)	V_{CE} = −5V, I_C = −3mA, f = 500MHz	—	2.5	—	dB
	NF (2)	V_{CE} = −5V, I_C = −3mA, f = 1GHz	—	3.0	—	dB

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

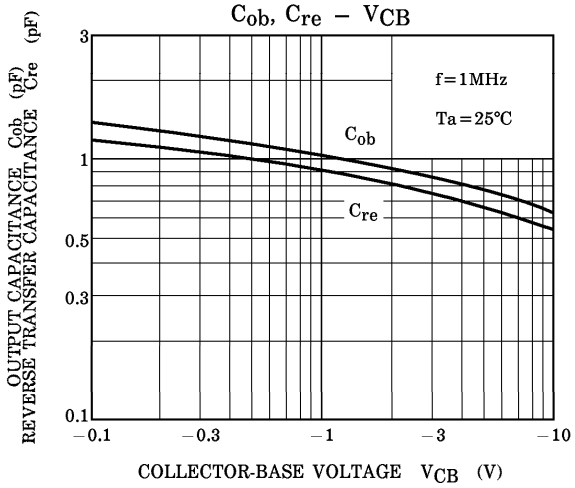
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB} = −5V, I_E = 0	—	—	−0.1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB} = −1V, I_C = 0	—	—	−0.1	μA
DC Current Gain	h_{FE}	V_{CE} = −5V, I_C = −10mA	20	—	—	—
Output Capacitance	C_{ob}	V_{CB} = −5V, I_E = 0, f = 1MHz (Note)	—	0.75	—	pF
Reserve Transfer Capacitance	C_{re}		—	0.60	—	pF

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

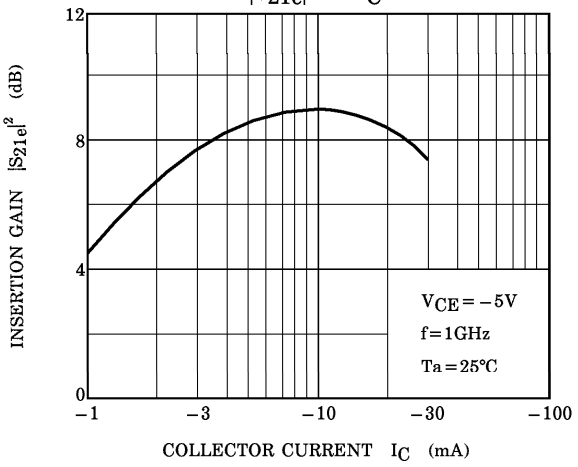
h_{FE} – I_C



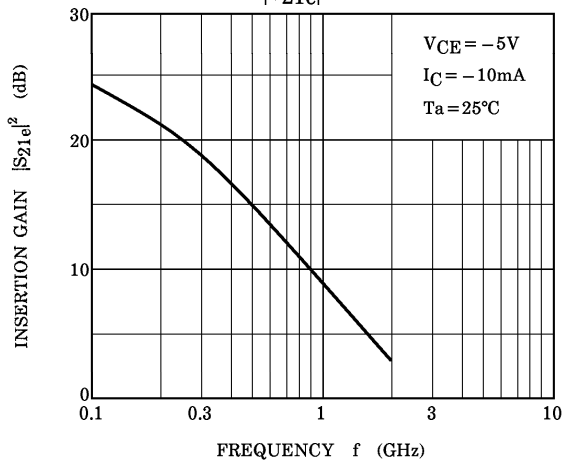
C_{ob}, C_{re} – V_{CB}



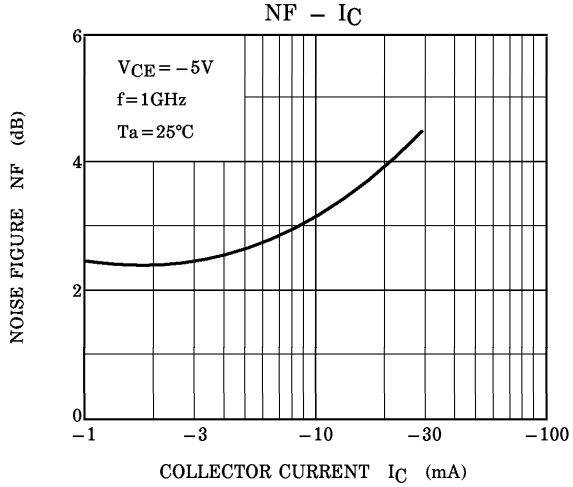
$|S_{21e}|^2$ – I_C



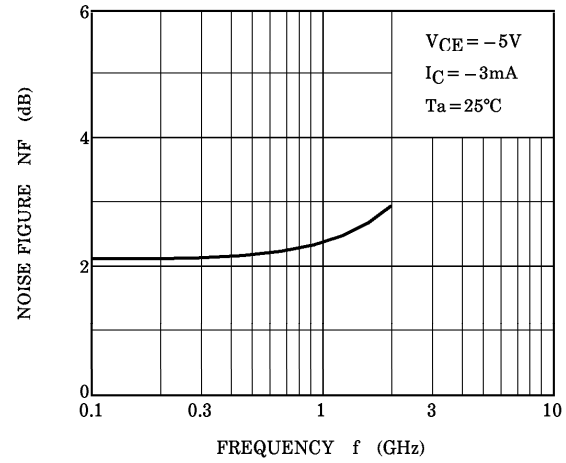
$|S_{21e}|^2$ – f



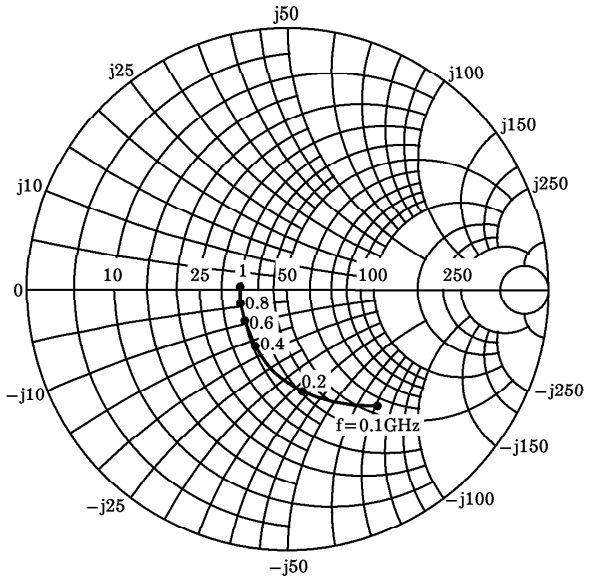
NF – I_C



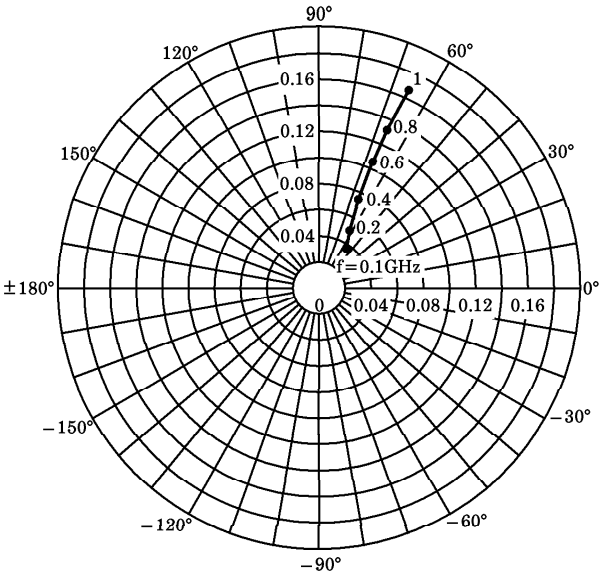
NF – f



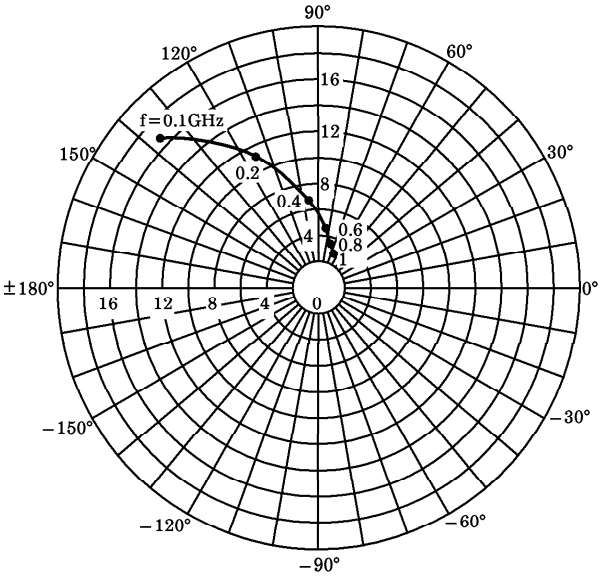
S_{11e}
$V_{CE} = -5V$
$I_C = -10mA$
Ta = 25°C
(UNIT : Ω)



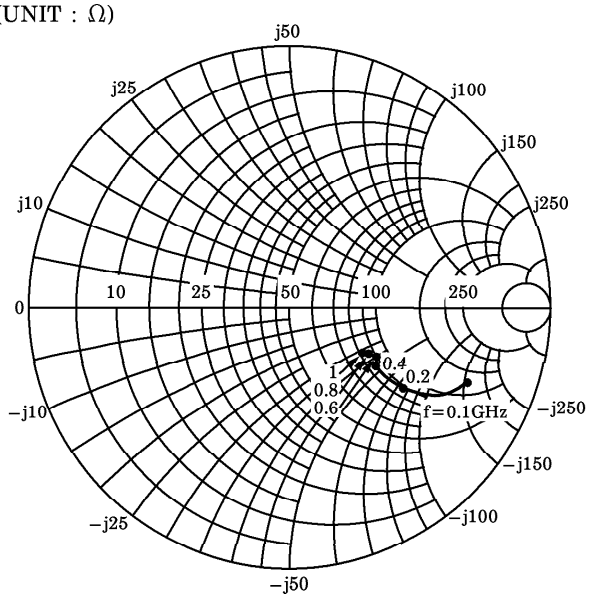
S_{12e}
$V_{CE} = -5V$
$I_C = -10mA$
Ta = 25°C



S_{21e}
$V_{CE} = -5V$
$I_C = -10mA$
Ta = 25°C



S_{22e}
$V_{CE} = -5V$
$I_C = -10mA$
Ta = 25°C
(UNIT : Ω)



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