

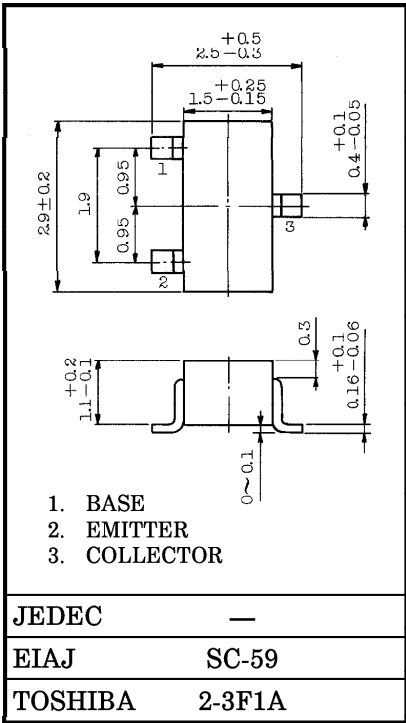
TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL PLANAR TYPE

2SC3606

VHF~UHF BAND LOW NOISE AMPLIFIER APPLICATIONS.

- Low Noise Figure, High Gain.
- $NF=1.1dB$, $|S_{21e}|^2=11dB$ ($f=1GHz$)

Unit in mm



MAXIMUM RATINGS ($T_a = 25^\circ C$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	12	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	80	mA
Base Current	I_B	40	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	125	$^\circ C$
Storage Temperature Range	T_{stg}	$-55 \sim 125$	$^\circ C$

MICROWAVE CHARACTERISTICS ($T_a = 25^\circ C$)

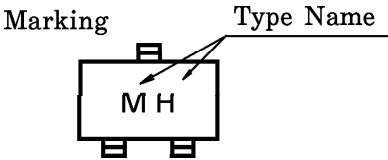
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Transition Frequency	f_T	$V_{CE}=10V, I_C=20mA$	5	7	—	GHz
Insertion Gain	$ S_{21e} ^2(1)$	$V_{CE}=10V, I_C=20mA, f=500MHz$	—	16.5	—	dB
	$ S_{21e} ^2(2)$	$V_{CE}=10V, I_C=20mA, f=1GHz$	7.5	11	—	
Noise Figure	NF (1)	$V_{CE}=10V, I_C=5mA, f=500MHz$	—	1	—	dB
	NF (2)	$V_{CE}=10V, I_C=5mA, f=1GHz$	—	1.1	2	

Weight : 0.012g

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ C$)

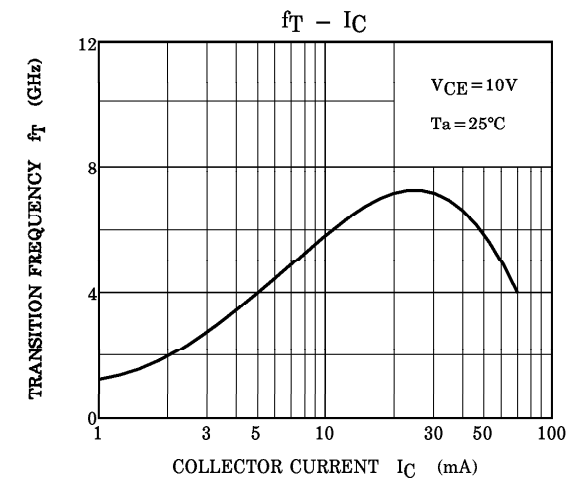
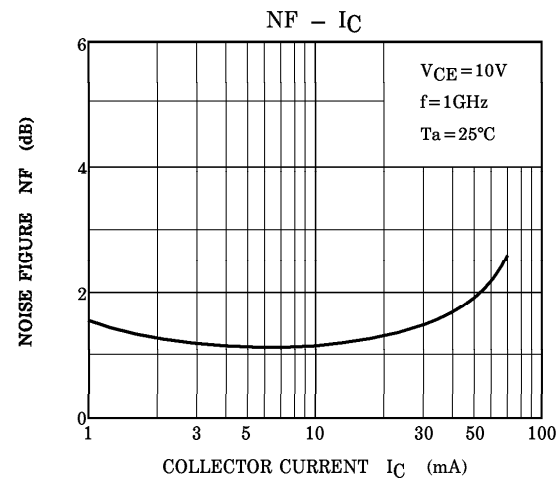
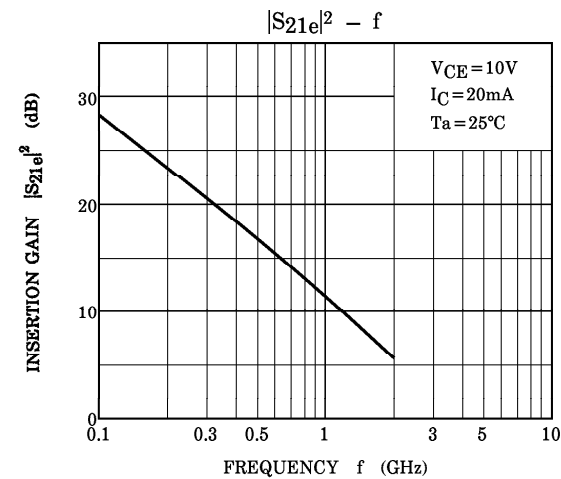
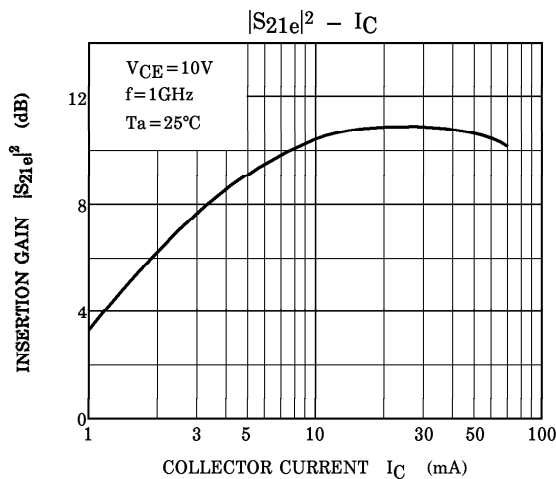
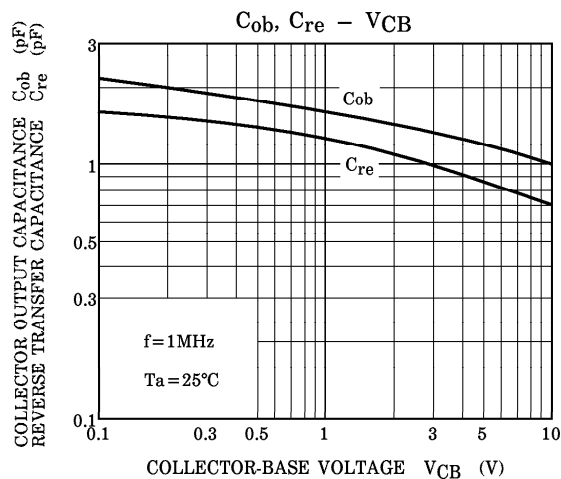
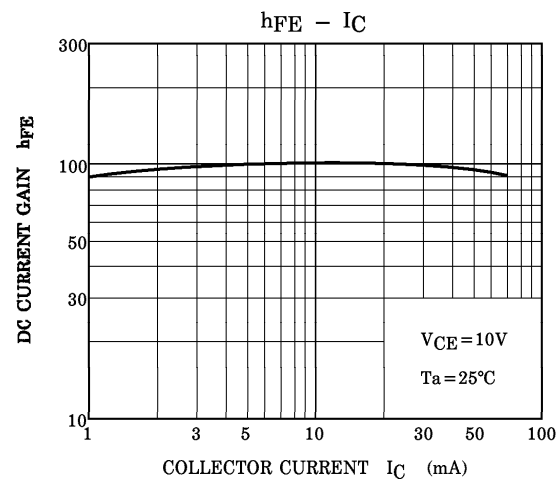
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=10V, I_E=0$	—	—	1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=1V, I_C=0$	—	—	1	μA
DC Current Gain	h_{FE}	$V_{CE}=10V, I_C=20mA$	30	—	250	pF
Output Capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$ (Note)	—	1.0	—	pF
Reverse Transfer Capacitance	C_{re}		—	0.7	1.15	

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



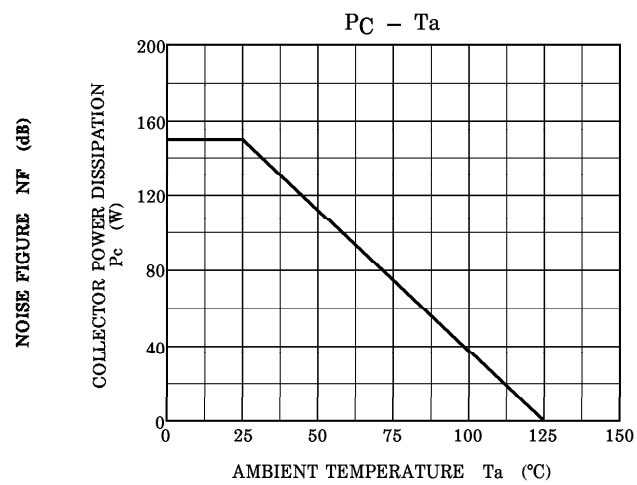
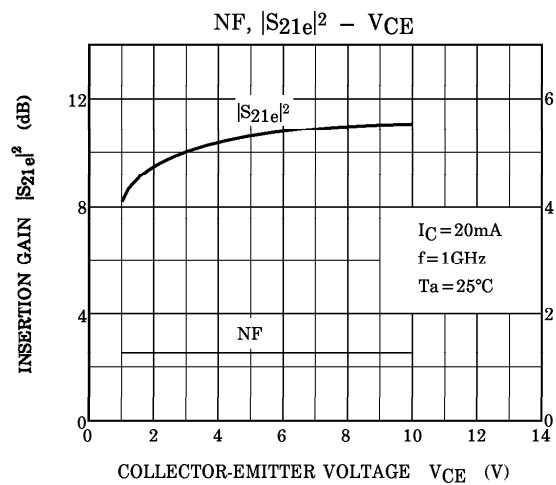
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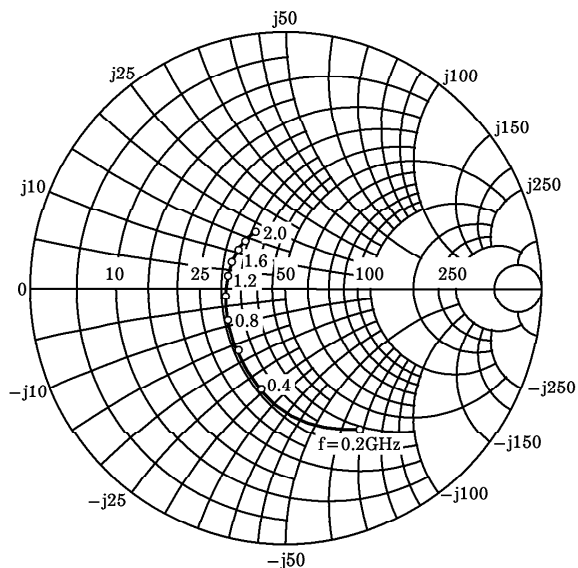


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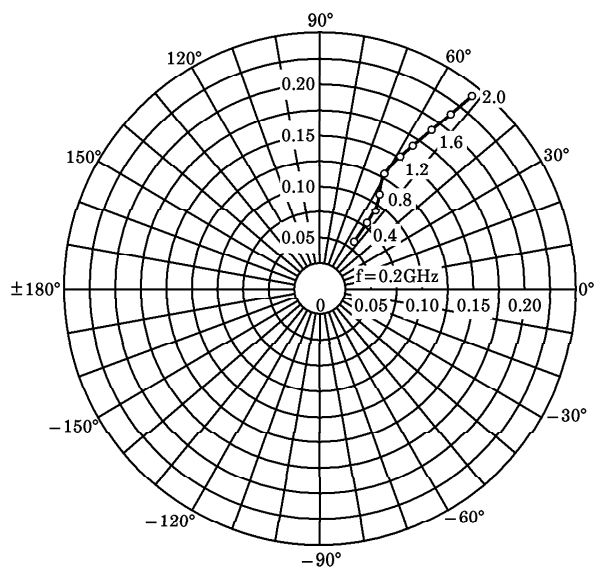
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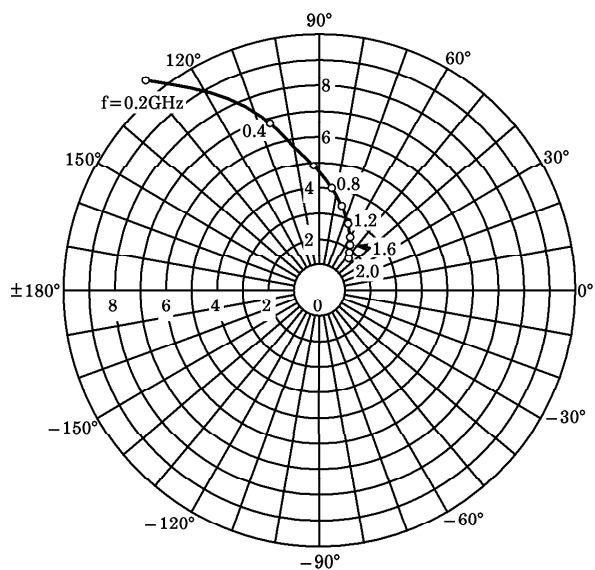
S_{11e}
 $V_{CE} = 10V$
 $I_C = 5mA$
 $T_a = 25^\circ C$
 (Unit : Ω)



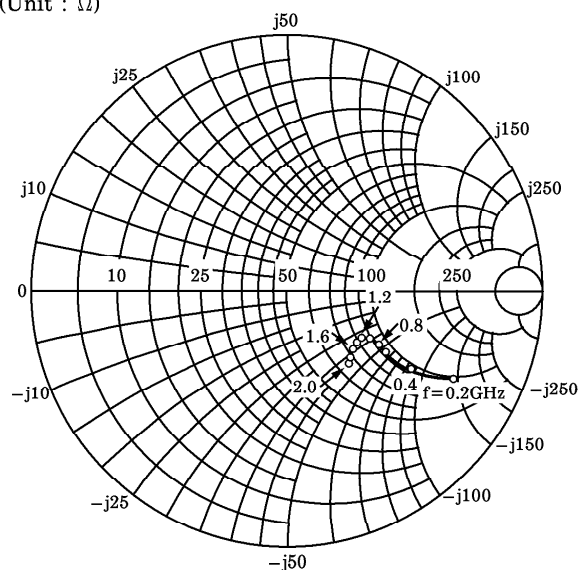
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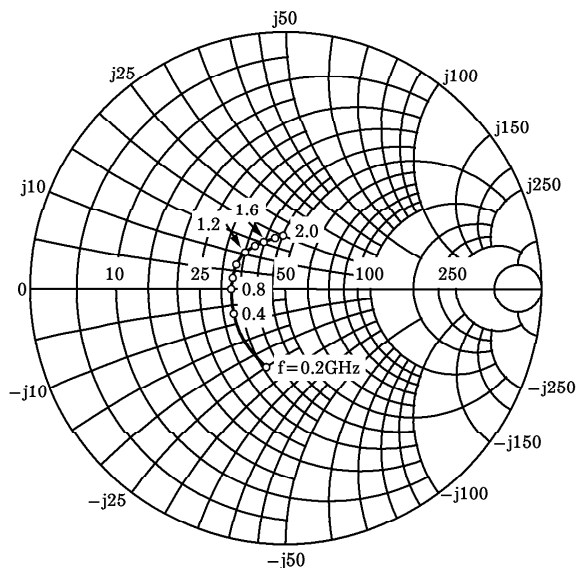
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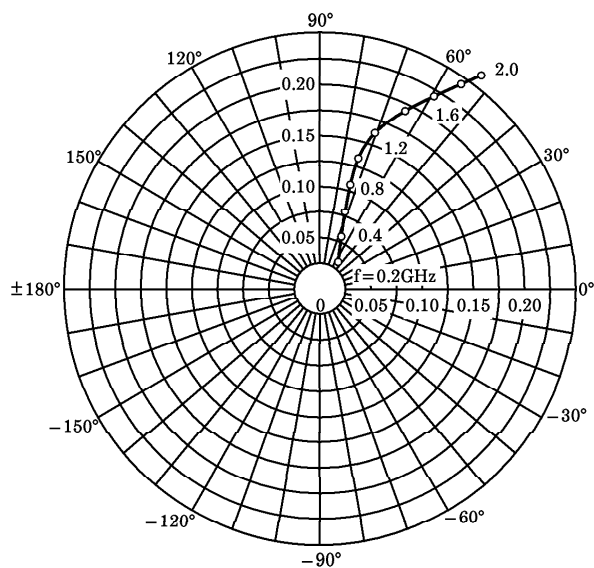
S_{22e}
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 (Unit : Ω)



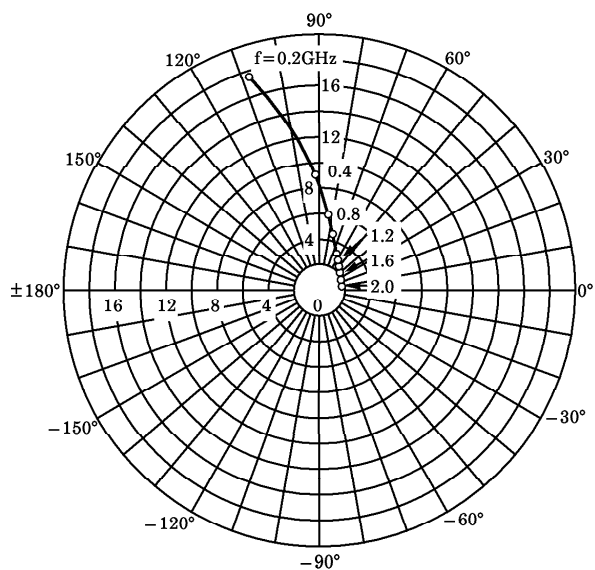
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S_{21e}
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 $I_C = 20mA$
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