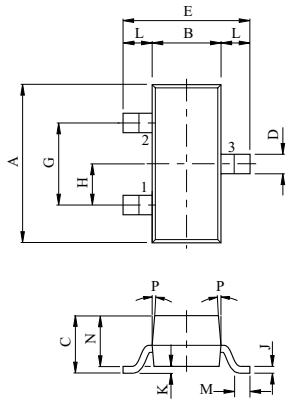
VHF/UHF WIDE BAND AMPLIFIER APPLICATION.

FEATURES

· Low Noise Figure, High Gain.

· NF=1.1dB, $|S_{21e}|^2$=11dB (f=1GHz).



DIM	MILLIMETERS
A	2.93±0.20
B	1.30+0.20/-0.15
C	1.30 MAX
D	0.45+0.15/-0.05
E	2.40+0.30/-0.20
G	1.90
H	0.95
J	0.13+0.10/-0.05
K	0.00 ~ 0.10
L	0.55
M	0.20 MIN
N	1.00+0.20/-0.10
P	7°

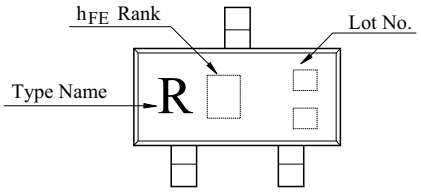
1. EMITTER
2. BASE
3. COLLECTOR

SOT-23

MAXIMUM RATING (Ta=25℃)

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	100	mA
Collector Power Dissipation	P_C	150	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55 ~ 150	℃

Marking



ELECTRICAL CHARACTERISTICS (Ta=25℃)

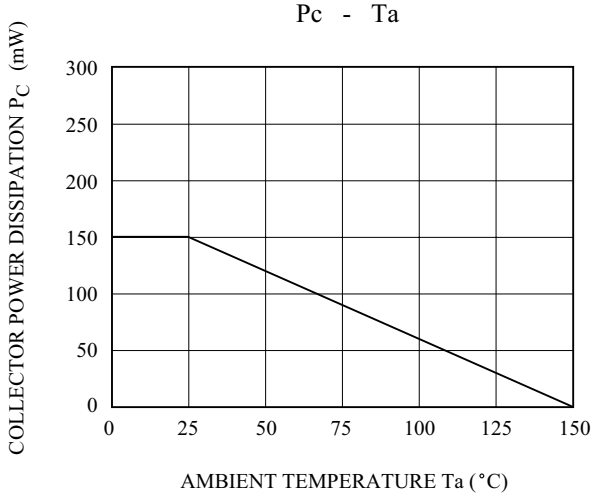
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	V_{CB}=10V, I_E=0	-	-	1	μA
Emitter Cut-off Current	I_{EBO}	V_{EB}=1V, I_C=0	-	-	1	μA
DC Current Gain	h_{FE} (Note1)	V_{CE}=10V, I_C=20mA	50	-	250	
Collector Output Capacitance	C_{ob}	V_{CB}=10V, I_E=0, f=1MHz (Note2)	-	-	1.0	pF
Reverse Transfer Capacitance	C_{re}		-	0.65	1.15	pF
Transition Frequency	f_T	V_{CE}=10V, I_C=20mA	5	7	-	GHz
Insertion Gain	$\|S_{21e}\|^2$	V_{CE}=10V, I_C=20mA, f=1GHz	7.5	11.5	-	dB
Noise Figure	NF	V_{CE}=10V, I_C=7mA, f=1GHz	-	1.1	2	dB

Note 1 : h_{FE} Classification A:50~100, B:80~160, C:125~250.

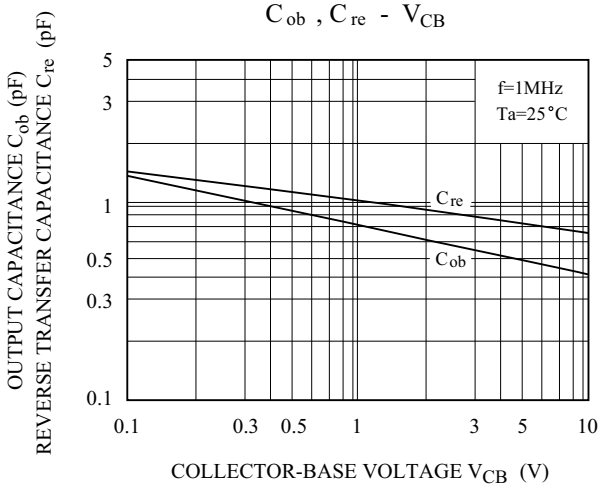
Note 2 : C_{re} is measured by 3 terminal method with capacitance bridge.

TYPICAL CHARACTERISTICS (Ta=25°C)

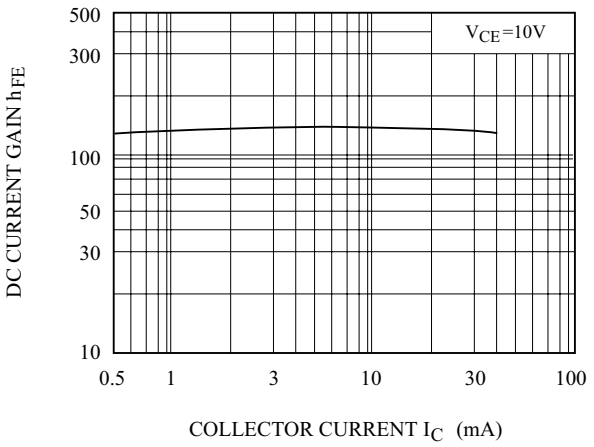
Pc - Ta



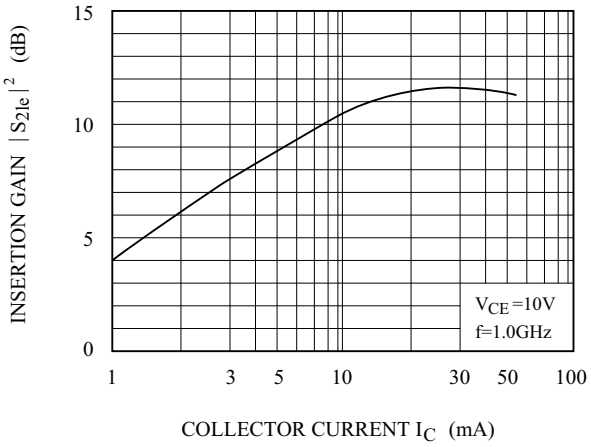
C_{ob} , C_{re} - V_{CB}



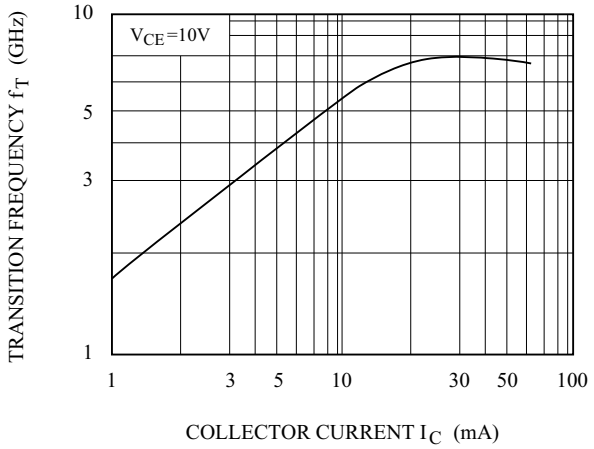
h_{FE} - I_C



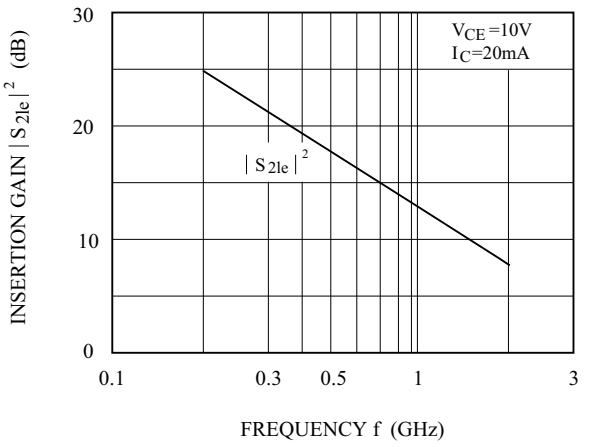
$|S_{21e}|^2$ - I_C



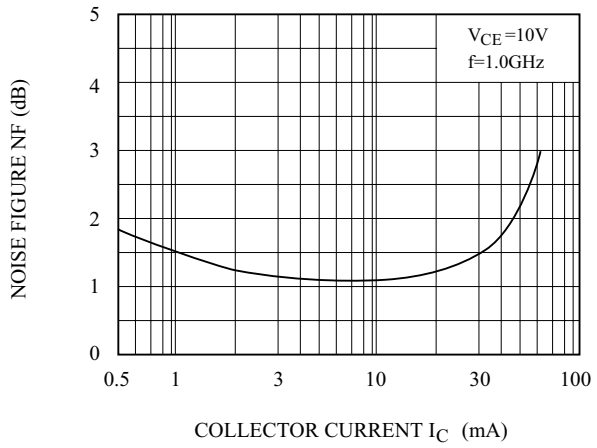
f_T - I_C



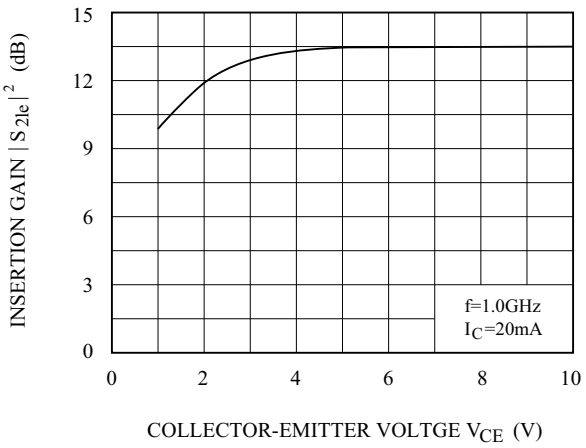
$|S_{21e}|^2$ - f



NF - I_C



$|S_{21e}|^2$ - V_{CE}



S-PARAMETER

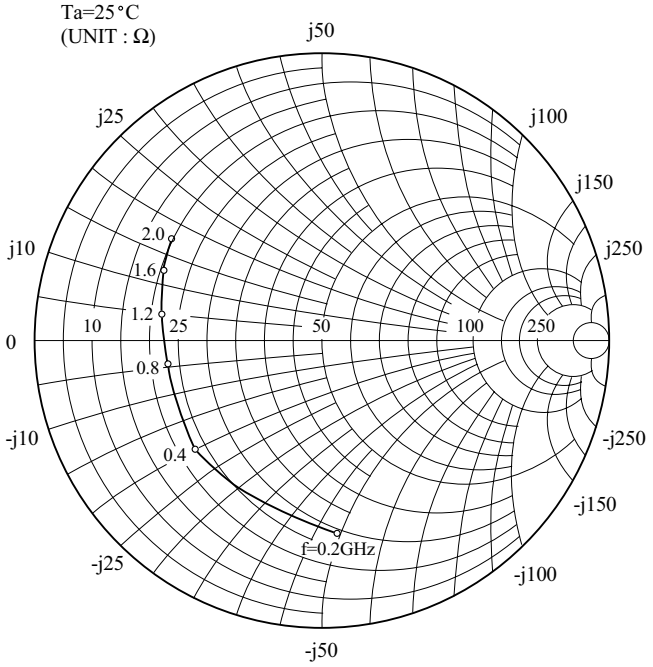
(V_{CE}=10V, I_C=5mA, Z_O=50Ω)

f (MHz)	$\|S_{11}\|$	$\angle S_{11}$	$\|S_{21}\|$	$\angle S_{21}$	$\|S_{12}\|$	$\angle S_{12}$	$\|S_{22}\|$	$\angle S_{22}$
200	0.651	-69.3	10.616	129.3	0.051	59.2	0.735	-28.1
400	0.467	-113.3	6.856	104.4	0.071	54.4	0.550	-34.1
600	0.391	-139.3	4.852	90.9	0.086	56.0	0.468	-33.9
800	0.360	-159.2	3.802	81.2	0.101	59.1	0.426	-33.6
1000	0.360	-176.9	3.098	72.9	0.118	61.0	0.397	-35.7
1200	0.361	172.7	2.646	67.3	0.137	63.5	0.373	-38.3
1400	0.381	160.3	2.298	59.3	0.157	63.3	0.360	-43.0
1600	0.398	152.2	2.071	55.2	0.180	64.1	0.337	-45.9
1800	0.423	143.3	1.836	49.0	0.203	63.7	0.320	-52.3
2000	0.445	137.6	1.689	46.2	0.220	64.7	0.302	-52.2

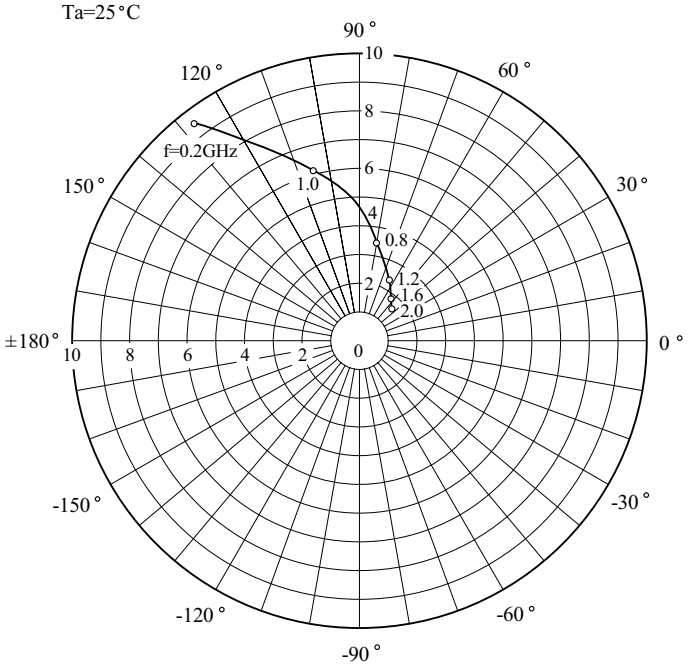
(V_{CE}=10V, I_C=20mA, Z_O=50Ω)

f (MHz)	$\|S_{11}\|$	$\angle S_{11}$	$\|S_{21}\|$	$\angle S_{21}$	$\|S_{12}\|$	$\angle S_{12}$	$\|S_{22}\|$	$\angle S_{22}$
200	0.339	-107.0	16.516	108.7	0.035	66.1	0.459	-36.6
400	0.258	-147.3	8.928	92.1	0.060	71.0	0.343	-32.9
600	0.243	-167.7	6.022	83.0	0.085	71.9	0.305	-29.9
800	0.242	177.0	4.633	76.2	0.109	72.2	0.284	-29.4
1000	0.260	164.5	3.744	69.9	0.136	70.4	0.266	-31.7
1200	0.269	157.6	3.193	65.7	0.160	69.9	0.246	-35.0
1400	0.294	148.7	2.750	58.8	0.187	66.7	0.233	-40.4
1600	0.314	143.1	2.479	55.5	0.212	65.2	0.208	-43.6
1800	0.343	136.5	2.185	50.1	0.238	62.4	0.190	-50.5
2000	0.367	131.4	2.016	47.8	0.254	61.6	0.173	-48.3

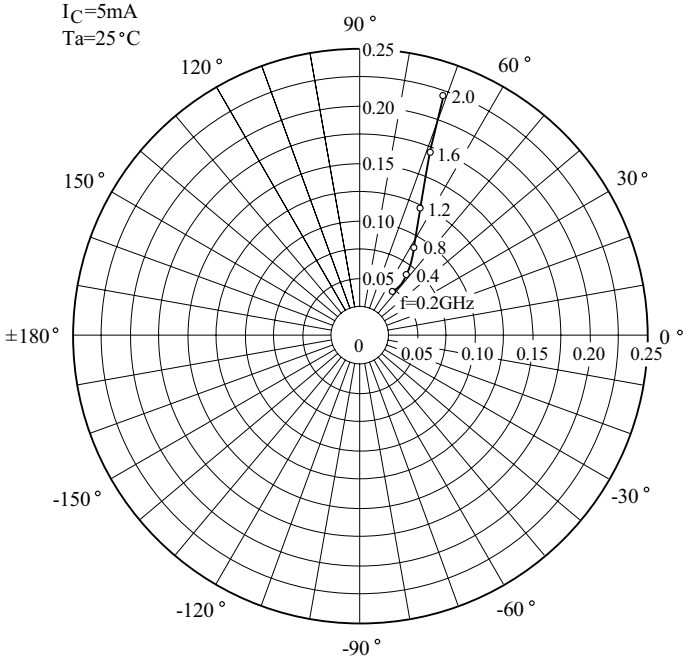
S_{11e}
V_{CE}=10V
I_C=5mA
Ta=25°C
(UNIT : Ω)



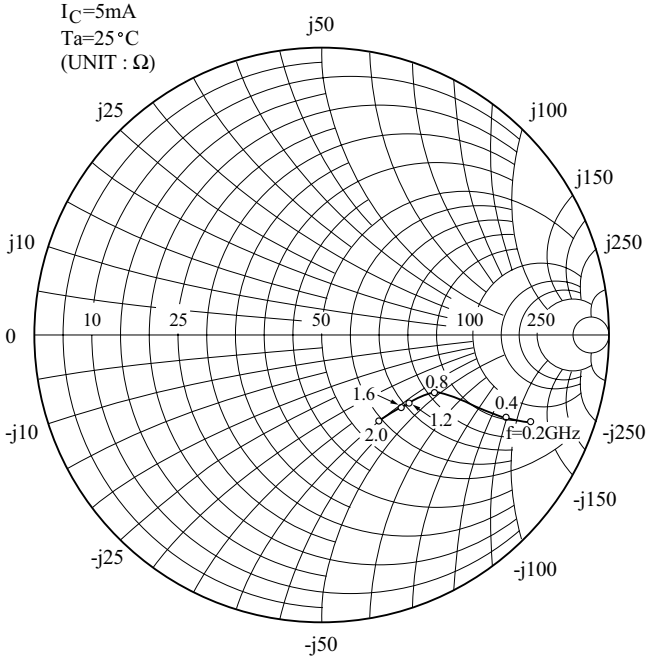
S_{12e}
V_{CE}=10V
I_C=5mA
Ta=25°C



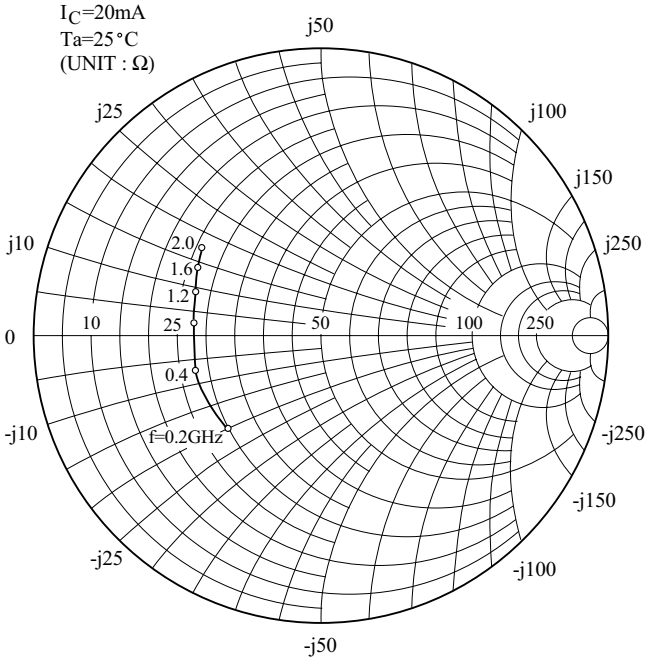
S_{21e}
V_{CE}=10V
I_C=5mA
Ta=25°C



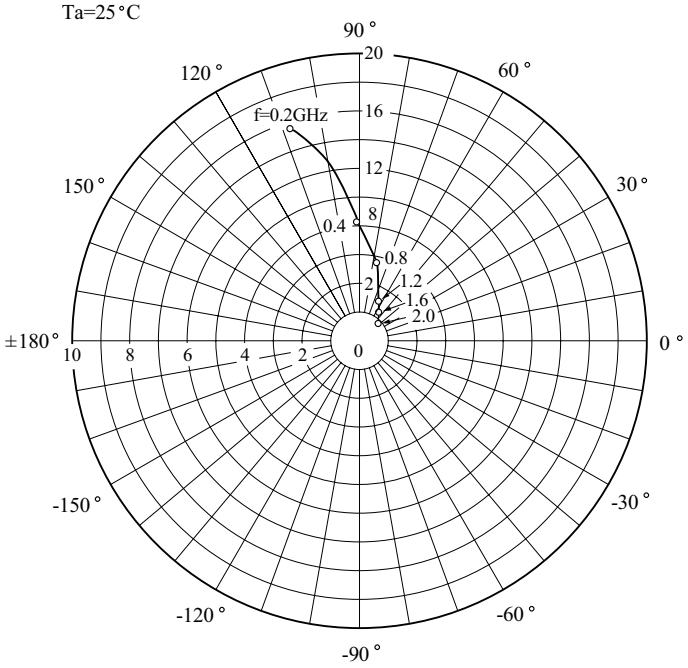
S_{22e}
V_{CE}=10V
I_C=5mA
Ta=25°C
(UNIT : Ω)



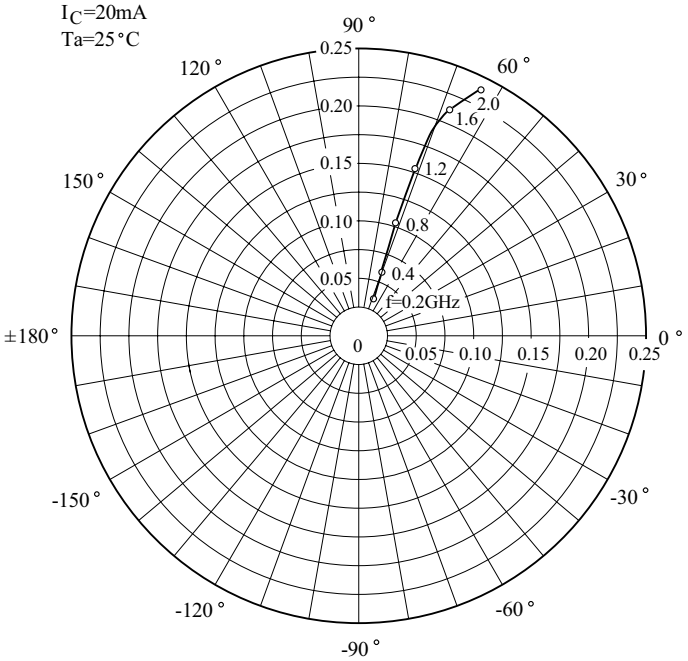
S_{11e}
V_{CE}=10V
I_C=20mA
Ta=25°C
(UNIT : Ω)



S_{12e}
V_{CE}=10V
I_C=20mA
Ta=25°C



S_{21e}
V_{CE}=10V
I_C=20mA
Ta=25°C



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

