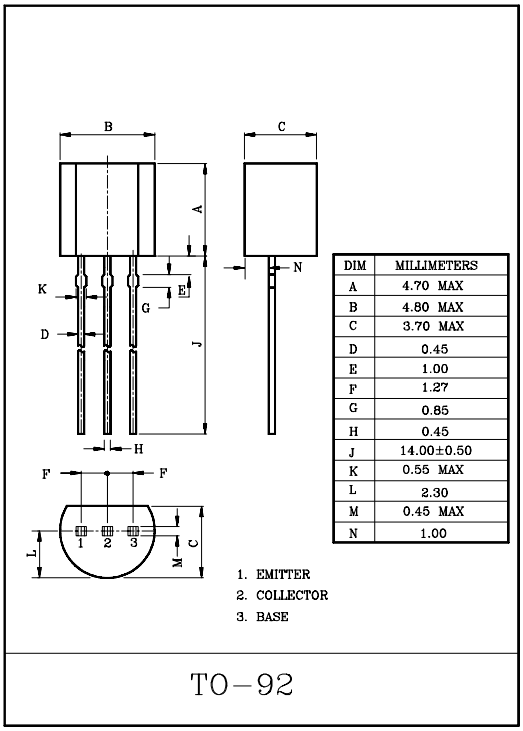
HIGH FREQUENCY APPLICATION.
VHF BAND AMPLIFIER APPLICATION.

FEATURES

- High Gain : G_{pe}=33dB(Typ.) (f=45MHz).
- Good Linearity of h_{FE}.



DIM	MILLIMETERS
A	4.70 MAX
B	4.80 MAX
C	3.70 MAX
D	0.45
E	1.00
F	1.27
G	0.85
H	0.45
J	14.00±0.50
K	0.55 MAX
L	2.30
M	0.45 MAX
N	1.00

TO-92

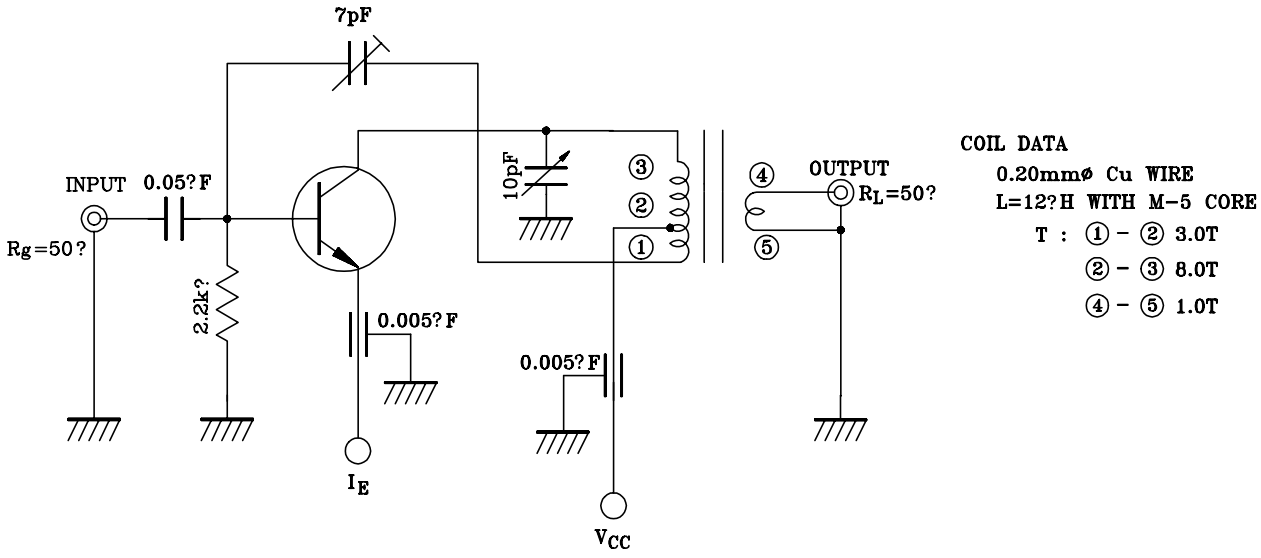
MAXIMUM RATINGS (Ta=25℃)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	30	V
Collector-Emitter Voltage	V_{CEO}	25	V
Emitter-Base Voltage	V_{EBO}	4	V
Collector Current	I_C	50	mA
Emitter Current	I_E	-50	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55~150	℃

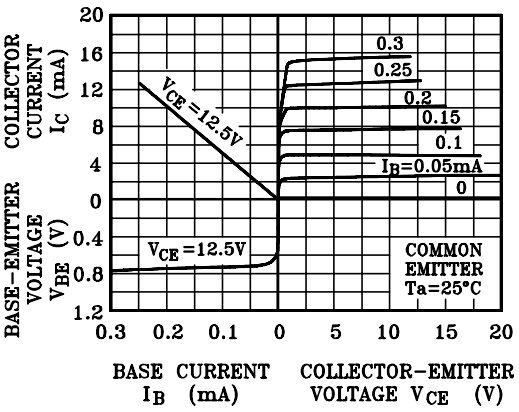
ELECTRICAL CHARACTERISTICS (Ta=25℃)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current		I_{CBO}	V_{CB}=30V, I_E=0	-	-	0.1	μA
Emitter Cut-off Current		I_{EBO}	V_{EB}=3V, I_C=0	-	-	0.1	
Collector-Emitter Breakdown Voltage		$V_{(BR)CEO}$	I_C=10mA, I_B=0	25	-	-	V
DC Current Gain		h_{FE}	V_{CE}=12.5V, I_C=12.5mA	20	-	200	
Saturation Voltage	Collector-Emitter	$V_{CE(sat)}$	I_C=15mA, I_B=1.5mA	-	-	0.2	V
	Base-Emitter	$V_{BE(sat)}$		-	-	1.5	
Collector Output Capacitance		C_{ob}	V_{CB}=10V, I_E=0, f=1MHz	0.8	-	2.0	pF
Collector-Base Time Constant		C_c·rbb′	V_{CB}=10V, I_E=-1mA, f=30MHz	-	-	25	pS
Transition Frequency		f_T	V_{CE}=12.5V, I_C=12.5mA	300	-	-	MHz
Power Gain (Fig.1)		G_{pe}	V_{CC}=12.5V, I_E=12.5mA f=45MHz	28	-	36	dB

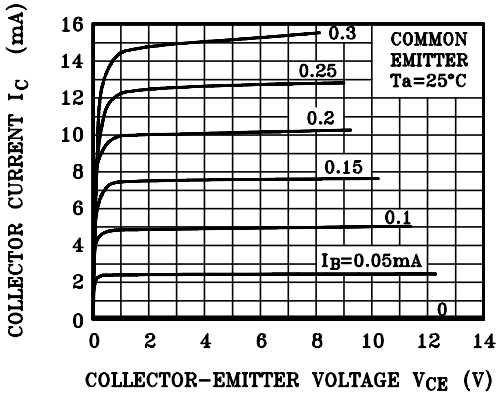
Fig. 1 45MHz Gpe TEST CIRCUIT



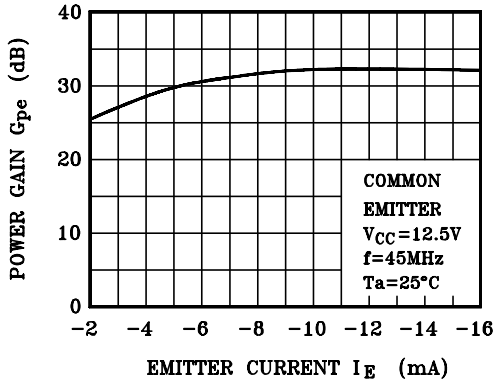
STATIC CHARACTERISTICS



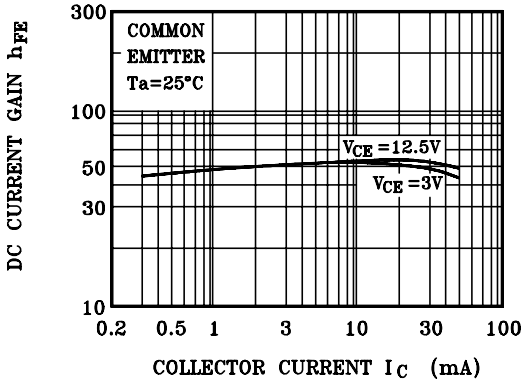
I_C - V_{CE}



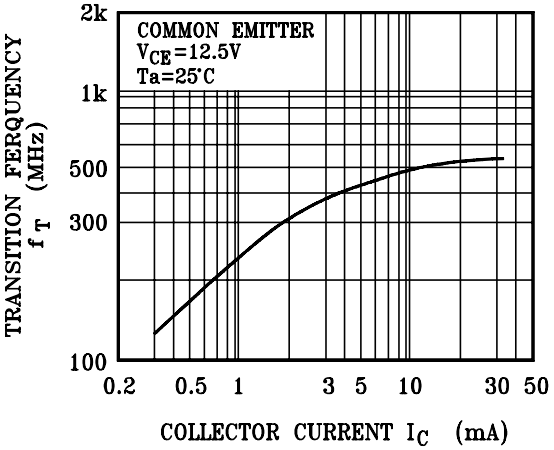
G_{pe} - I_E (See Fig 1)



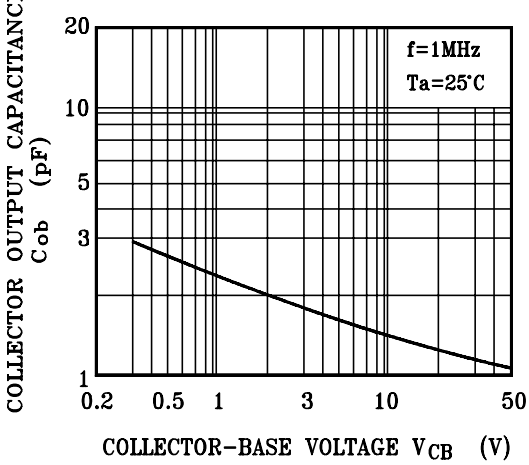
h_{FE} - I_C



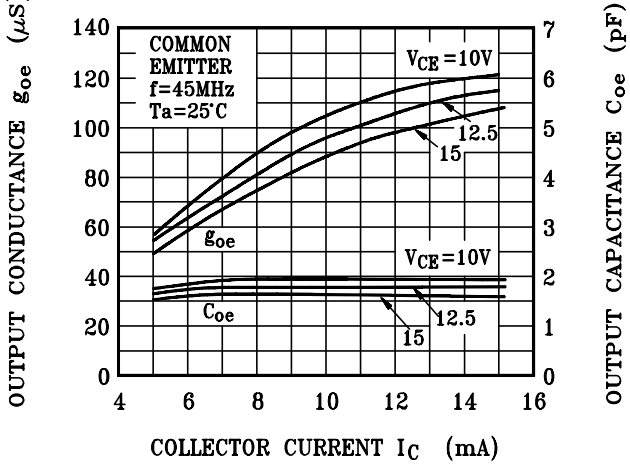
f_T – I_C



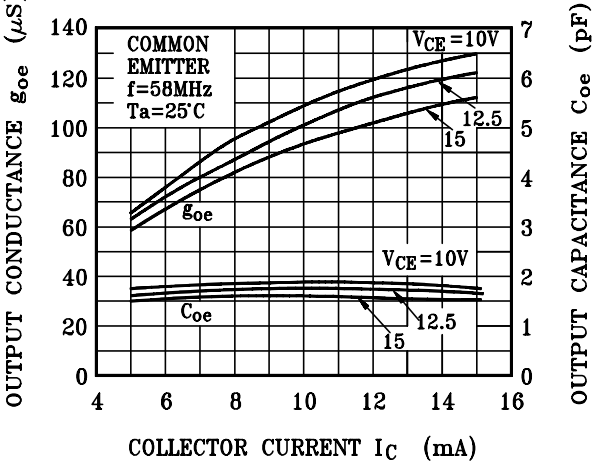
C_{ob} – V_{CB}



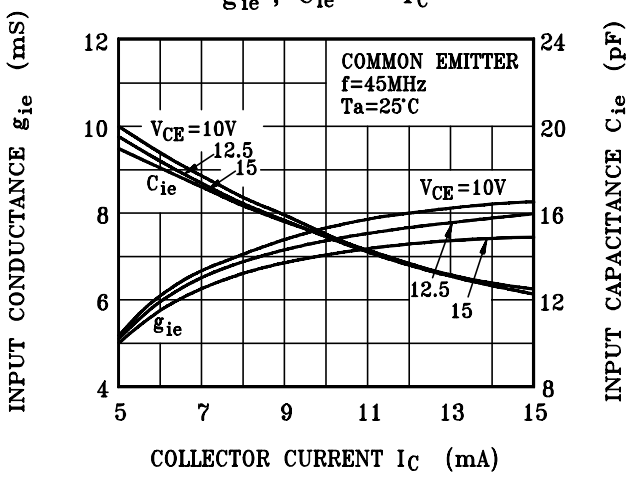
g_{oe} , C_{oe} – I_C



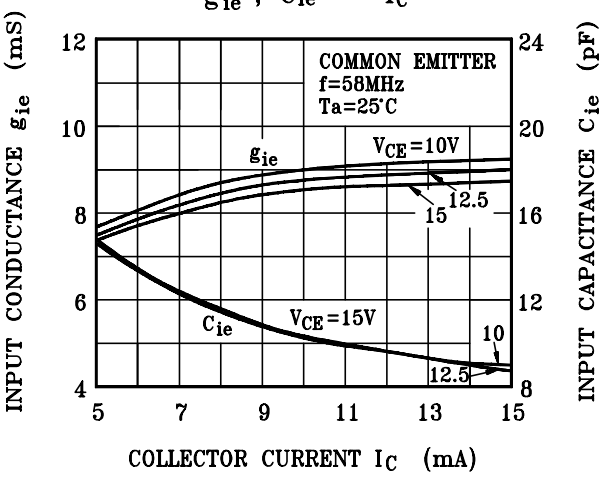
g_{oe} , C_{oe} – I_C

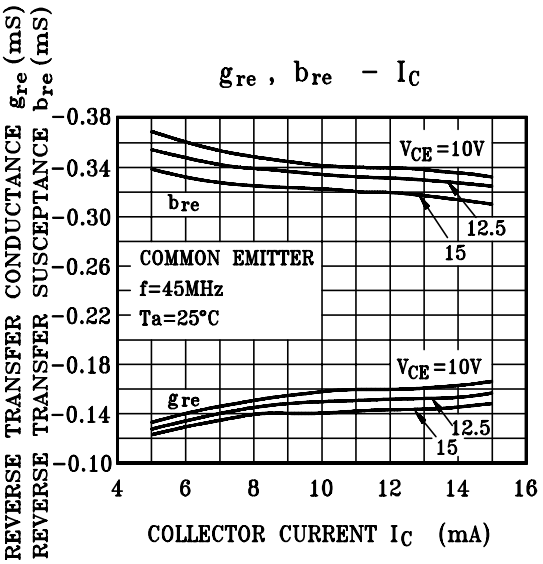


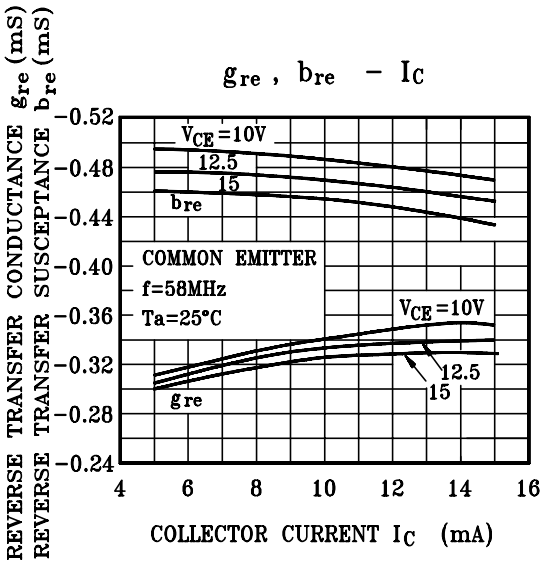
g_{ie} , C_{ie} – I_C

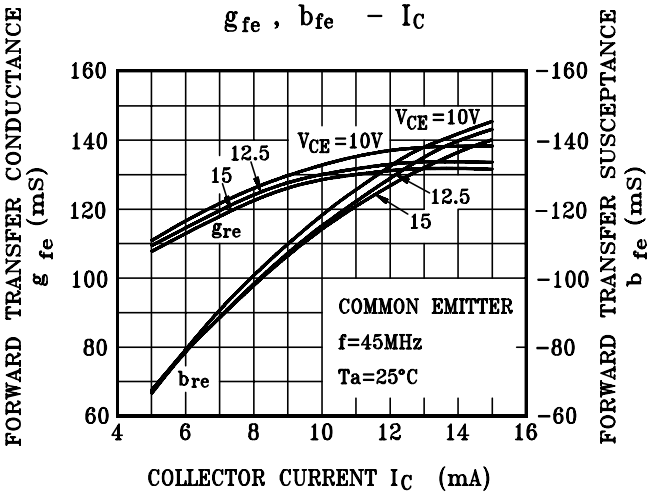


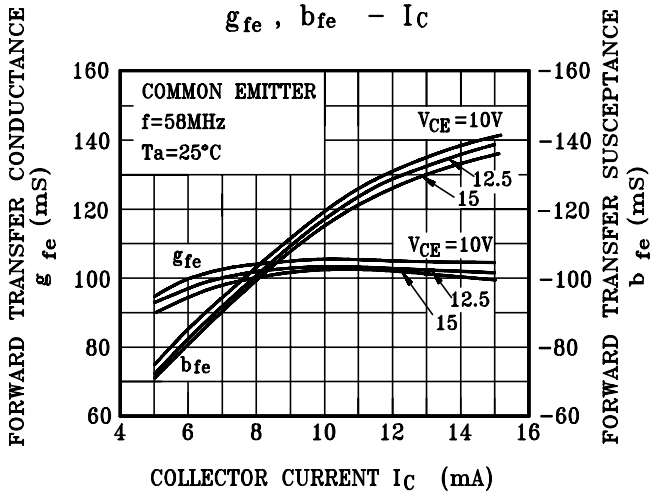
g_{ie} , C_{ie} – I_C




g_{re} , b_{re} – I_C
REVERSE TRANSFER CONDUCTANCE g_{re} (mS)
REVERSE TRANSFER SUSCEPTANCE b_{re} (mS)
-0.38
-0.34
-0.30
-0.26
-0.22
-0.18
-0.14
-0.10
V_{CE}=10V
bre
12.5
15
COMMON EMITTER
f=45MHz
Ta=25°C
V_{CE}=10V
gre
12.5
15
4
6
8
10
12
14
16
COLLECTOR CURRENT I_C (mA)


g_{re} , b_{re} – I_C
REVERSE TRANSFER CONDUCTANCE g_{re} (mS)
REVERSE TRANSFER SUSCEPTANCE b_{re} (mS)
-0.52
-0.48
-0.44
-0.40
-0.36
-0.32
-0.28
-0.24
V_{CE}=10V
12.5
15
bre
COMMON EMITTER
f=58MHz
Ta=25°C
V_{CE}=10V
gre
12.5
15
4
6
8
10
12
14
16
COLLECTOR CURRENT I_C (mA)


g_{fe} , b_{fe} – I_C
FORWARD TRANSFER CONDUCTANCE g_{fe} (mS)
FORWARD TRANSFER SUSCEPTANCE b_{fe} (mS)
160
140
120
100
80
60
-160
-140
-120
-100
-80
-60
V_{CE}=10V
12.5
15
V_{CE}=10V
12.5
15
gre
bre
COMMON EMITTER
f=45MHz
Ta=25°C
4
6
8
10
12
14
16
COLLECTOR CURRENT I_C (mA)


g_{fe} , b_{fe} – I_C
FORWARD TRANSFER CONDUCTANCE g_{fe} (mS)
FORWARD TRANSFER SUSCEPTANCE b_{fe} (mS)
160
140
120
100
80
60
-160
-140
-120
-100
-80
-60
COMMON EMITTER
f=58MHz
Ta=25°C
V_{CE}=10V
12.5
15
V_{CE}=10V
12.5
15
gfe
bfe
4
6
8
10
12
14
16
COLLECTOR CURRENT I_C (mA)