

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC2996

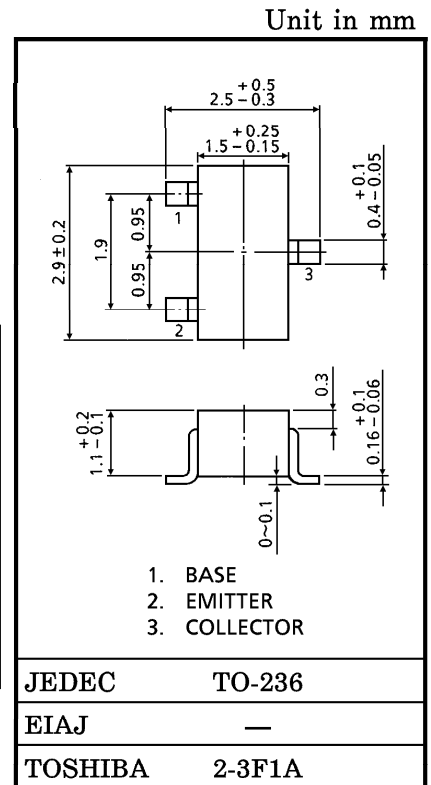
FM / AM, RF, MIX, LOCAL, IF

HIGH FREQUENCY AMPLIFIER APPLICATIONS

- High Stability Oscillation Voltage On FM Local Oscillator
- Recommend FM / AM RF, MIX, Local and IF

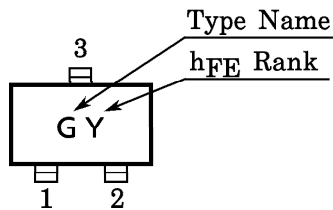
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V _{CBO}	40	V
Collector-Emitter Voltage	V _{CEO}	30	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	150	mW
Junction Temperature	T _j	125	°C
Storage Temperature Range	T _{stg}	-55~125	°C



Weight : 0.012g

Marking

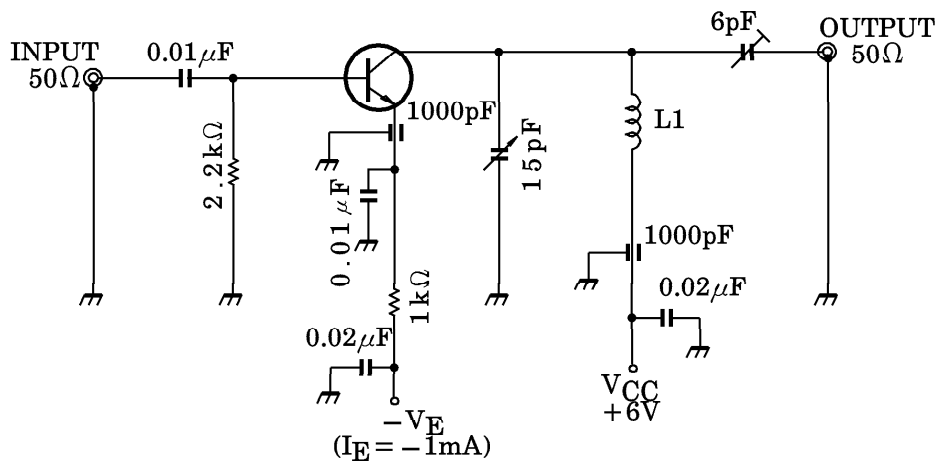


ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=40V, I_E=0$	—	—	0.1	μA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=4V, I_C=0$	—	—	0.5	μA
DC Current Gain	h_{FE} (Note)	$V_{CE}=6V, I_C=1mA$	40	—	240	
Reverse Transfer Capacitance	C_{re}	$V_{CB}=6V, f=1MHz$	—	0.9	1.3	pF
Transition Frequency	f_T	$V_{CE}=6V, I_C=-1mA$	150	350	—	MHz
Collector-Base Time Constant	$C_c \cdot r_{bb'}$	$V_{CE}=6V, I_E=-1mA,$ $f=30MHz$	—	15	30	ps
Noise Figure	NF	$V_{CE}=6V, I_E=-1mA$	—	4.0	—	dB
Power Gain	G_{pe}	$f=100MHz$ (Fig.1)	—	15	—	dB
Oscillation Output Voltage	V_{OSC}	$V_{CE}=6V, f=100MHz$ (Fig.2)	—	150	—	mV

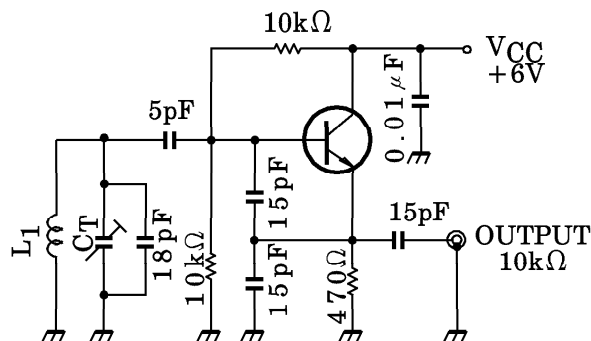
(Note) h_{FE} Classification R : 40~80, O : 70~140, Y : 120~240

Fig.1 NF, G_{pe} TEST CIRCUIT



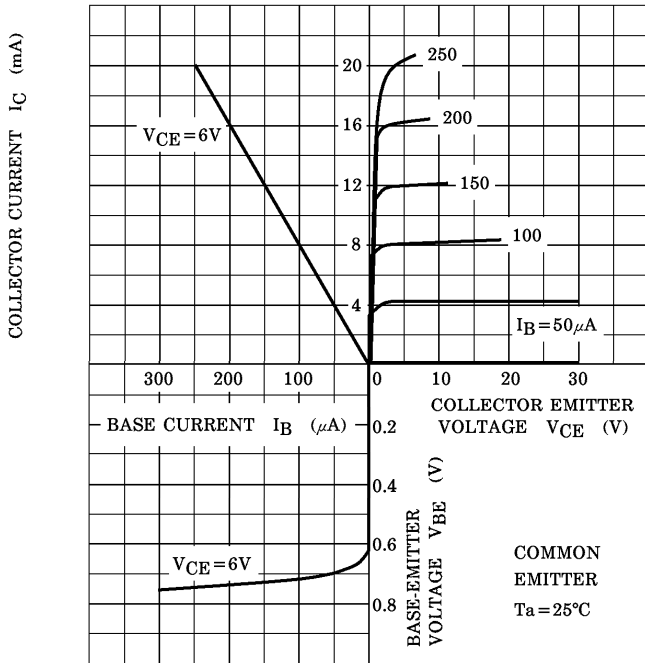
L_1 : 0.8mmφ SILVER PLATED COPPER WIRE, 4T, 10ID, 8 LENGTH

Fig.2 V_{OSC} TEST CIRCUIT

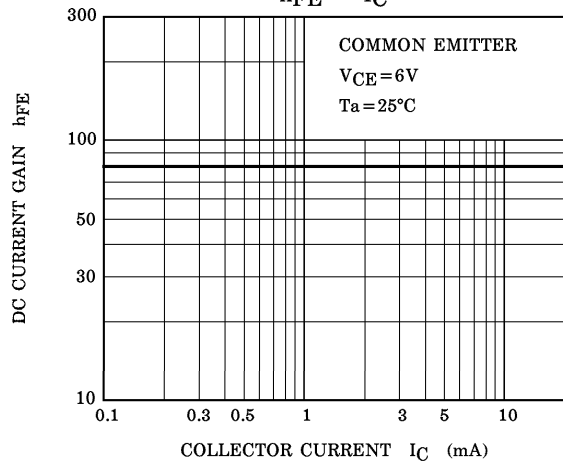


L_1 : 0.8mmφ SILVER PLATED COPPER WIRE, 4T, 10ID, 8 LENGTH

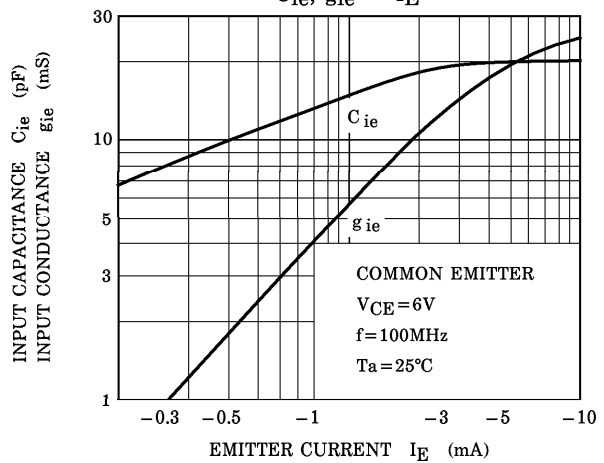
STATIC CHARACTERISTICS



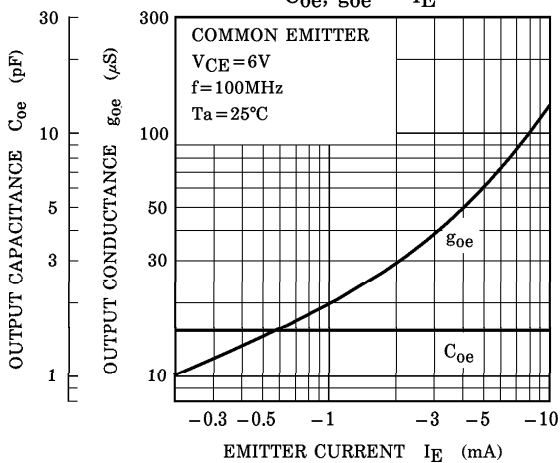
$h_{FE} - I_C$



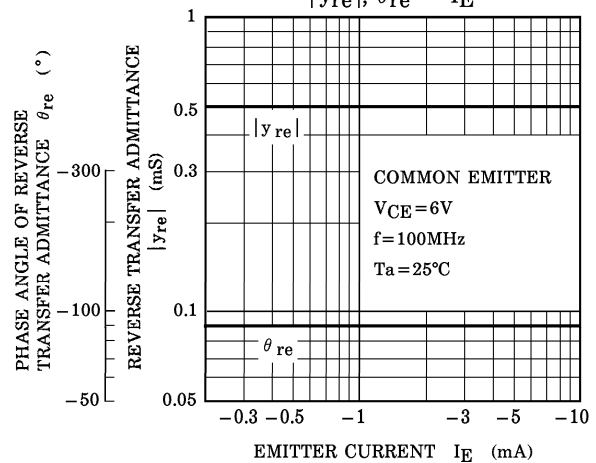
$C_{ie}, g_{ie} - I_E$

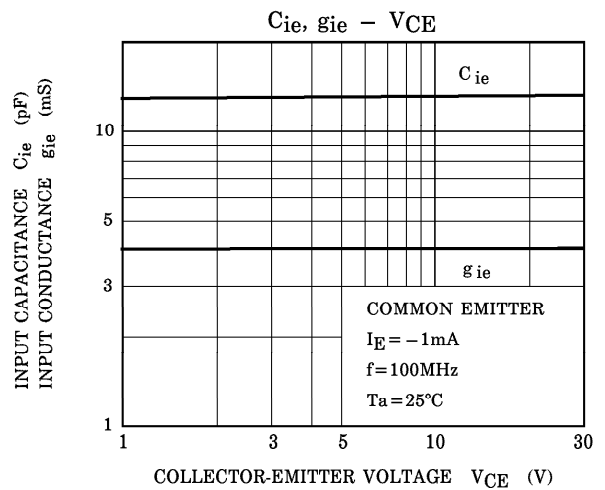
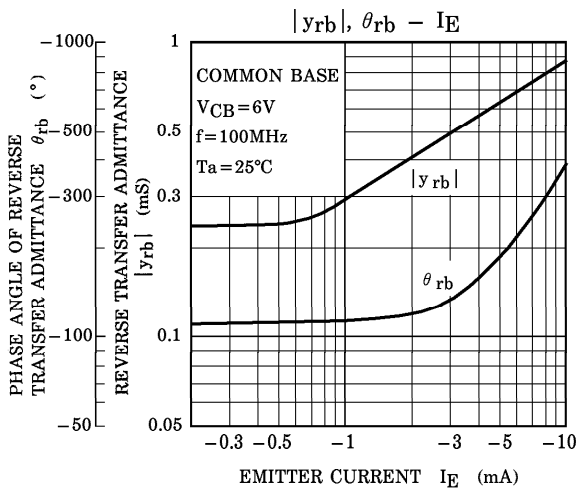
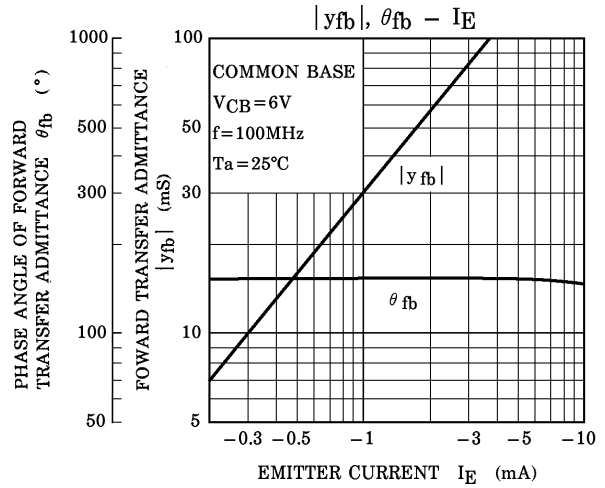
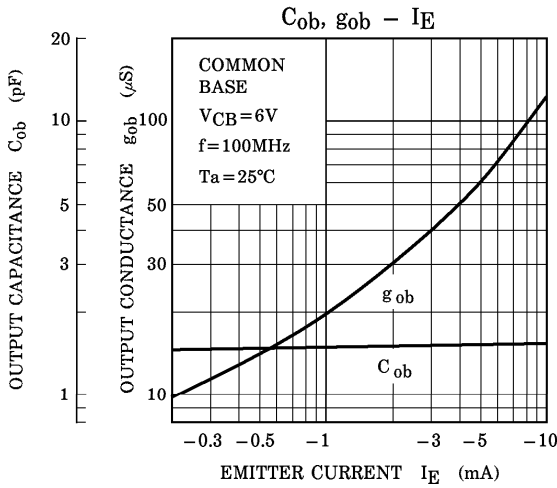
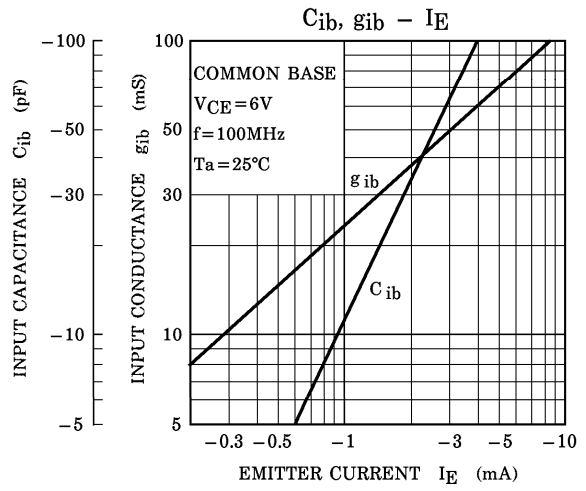
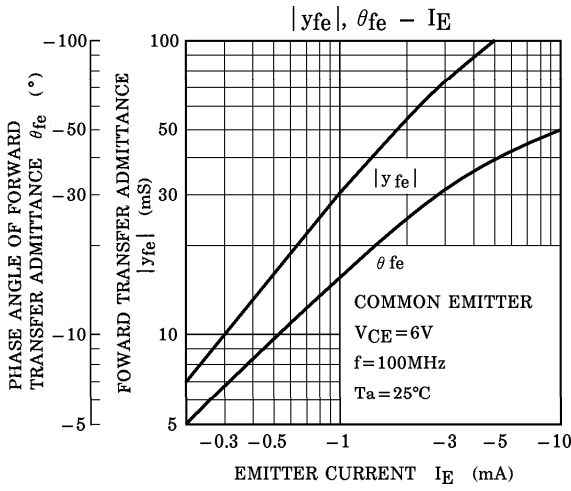


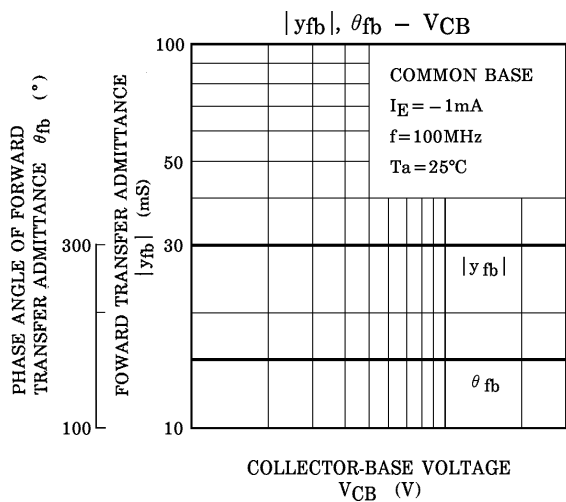
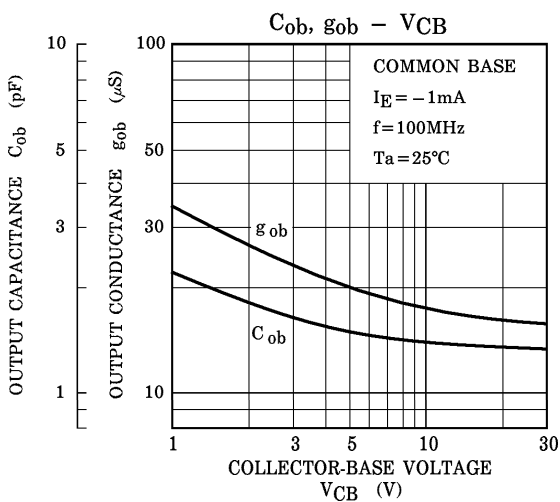
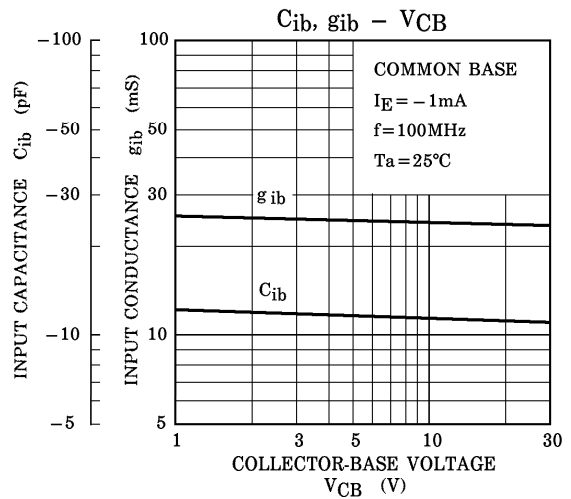
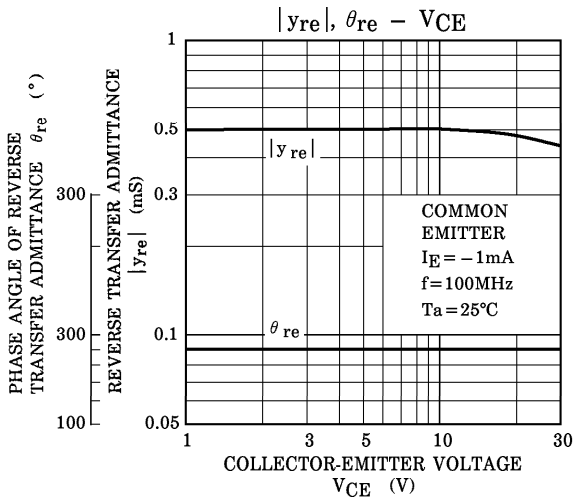
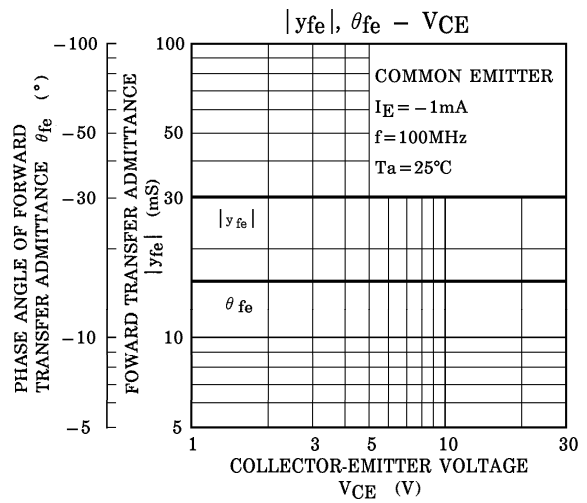
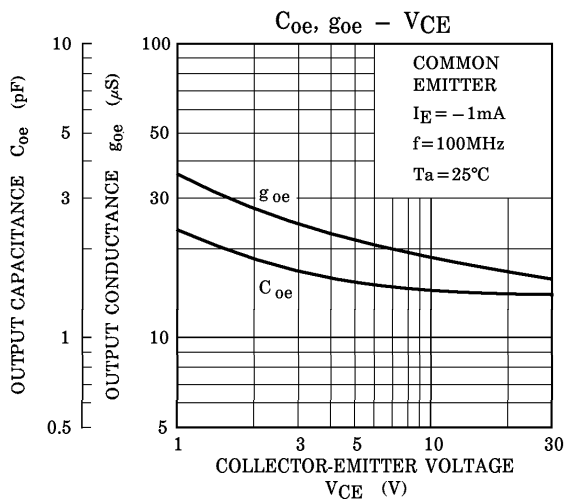
$C_{oe}, g_{oe} - I_E$

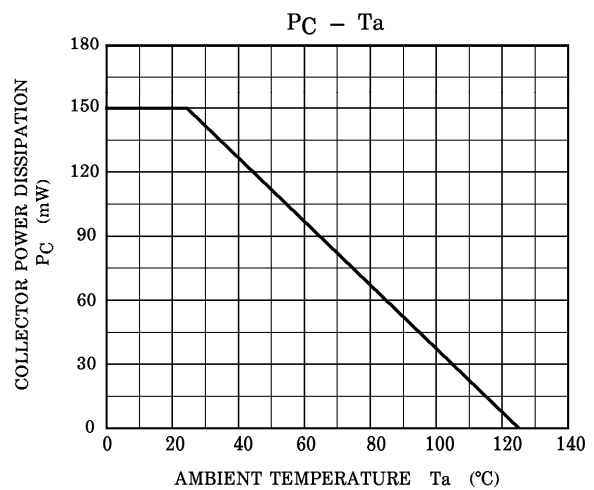
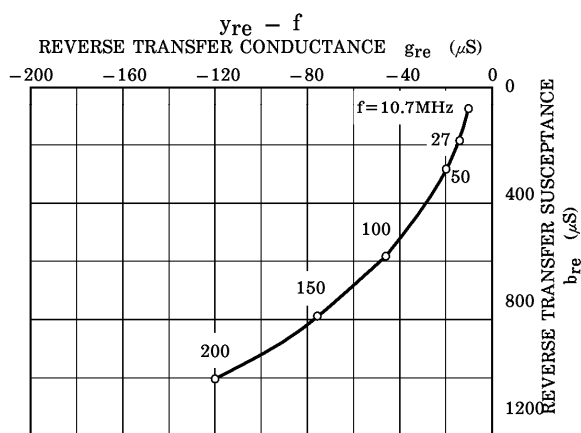
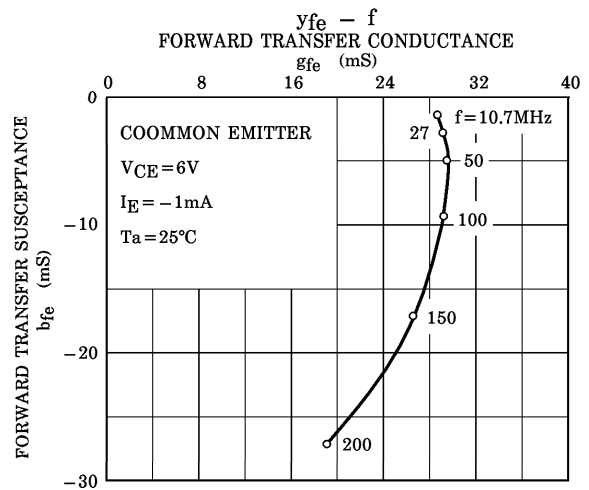
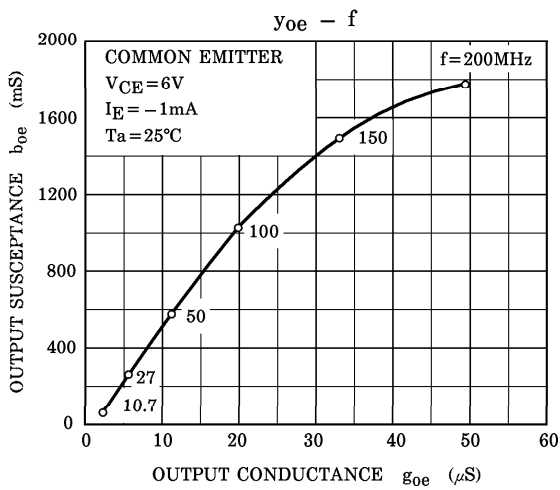
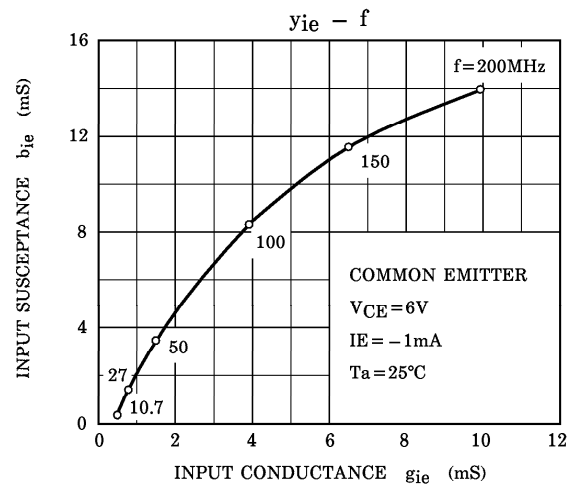
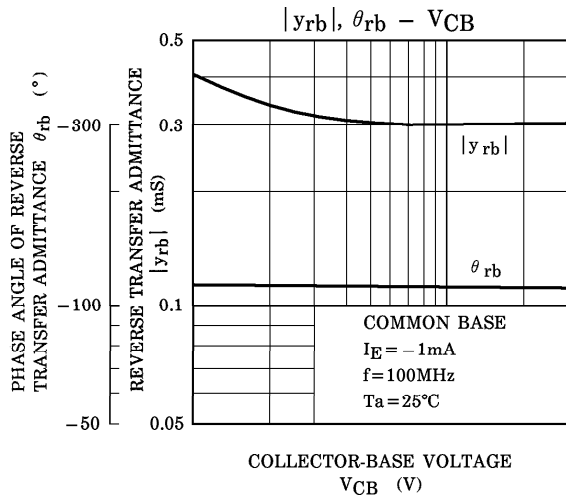


$|y_{re}|, \theta_{re} - I_E$









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