

TOSHIBA TRANSISTOR SILICON NPN EPITAXIAL TYPE (PCT PROCESS)

2SC2996

FM / AM, RF, MIX, LOCAL, IF

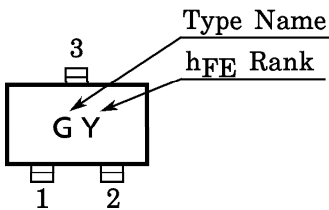
HIGH FREQUENCY AMPLIFIER APPLICATIONS

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

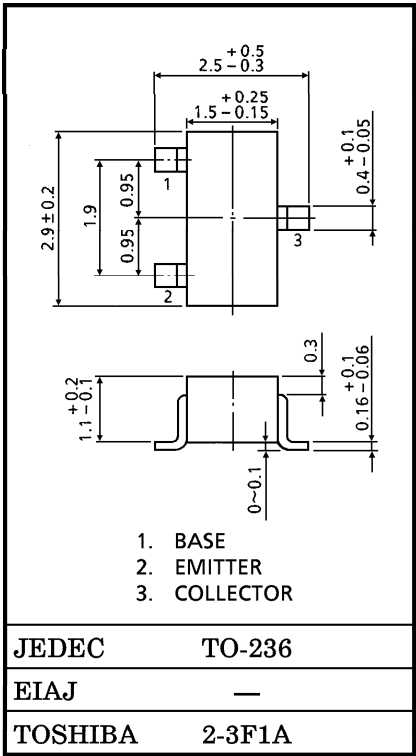
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	VCBO	40	V
Collector-Emitter Voltage	VCEO	30	V
Emitter-Base Voltage	VEBO	4	V
Collector Current	IC	50	mA
Emitter Current	IE	−50	mA
Collector Power Dissipation	PC	150	mW
Junction Temperature	Tj	125	°C
Storage Temperature Range	Tstg	−55~125	°C

Marking



Unit in mm

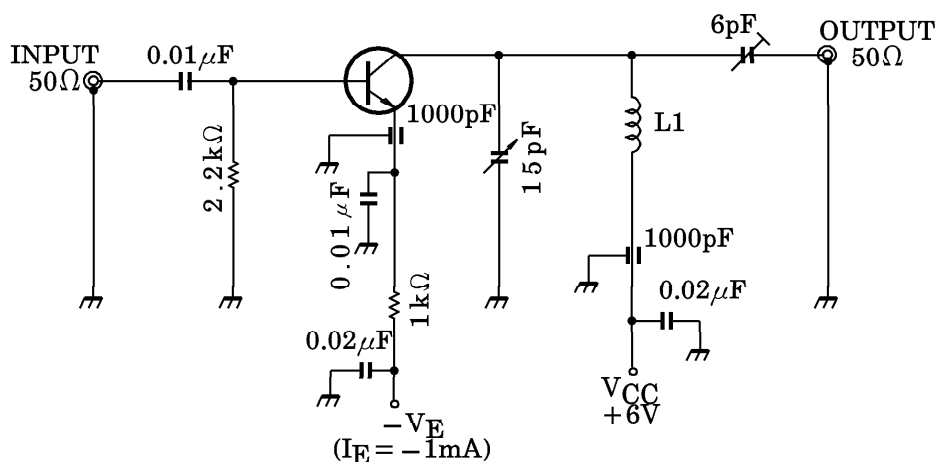


Weight : 0.012g

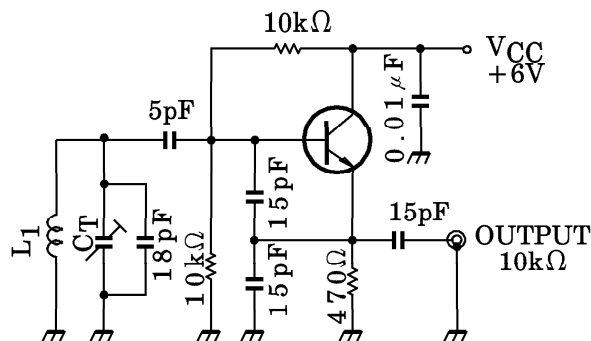
ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

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

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

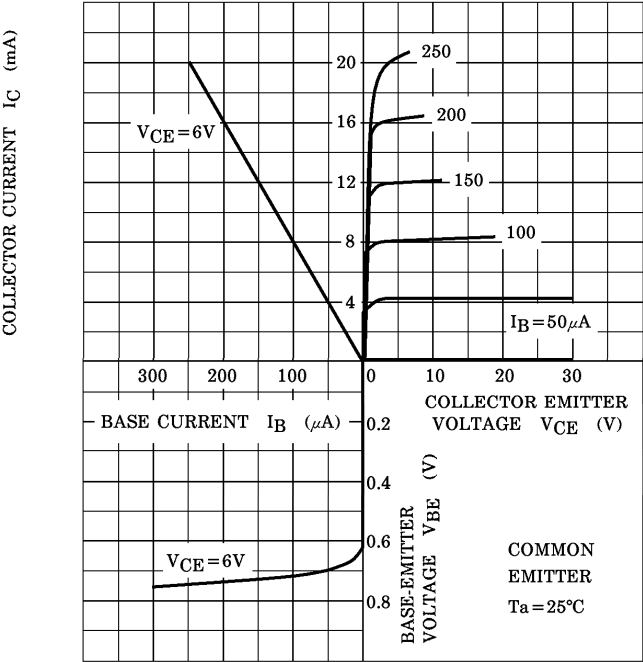
Fig.1 NF, G_{pe} TEST CIRCUIT

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

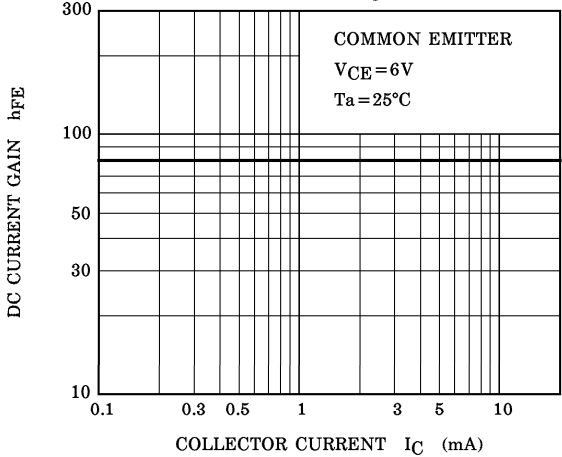
Fig.2 V_{OSC} TEST CIRCUIT

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

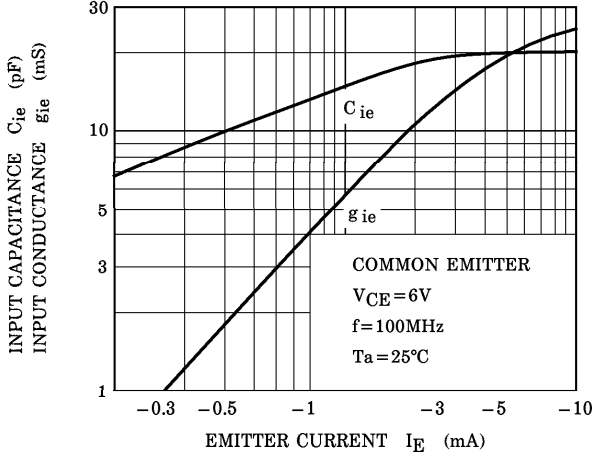
STATIC CHARACTERISTICS



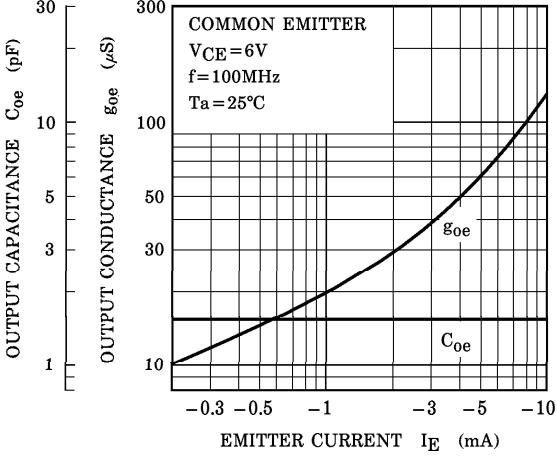
$h_{FE} - I_C$



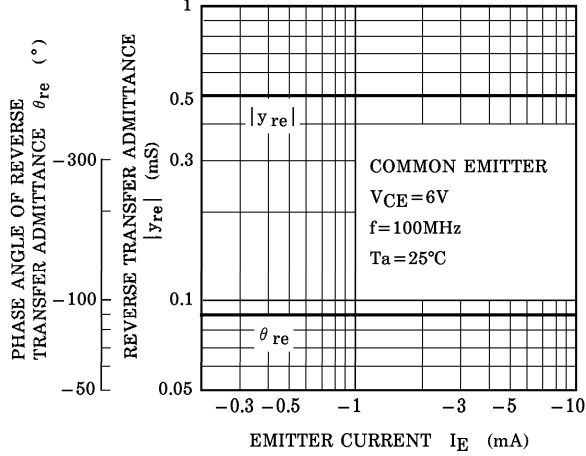
$C_{ie}, g_{ie} - I_E$

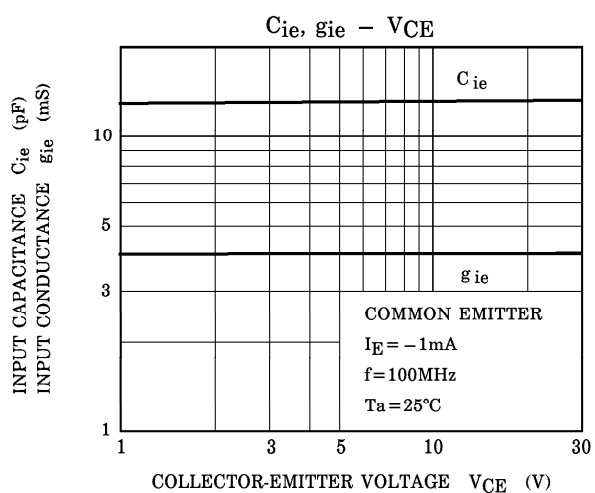
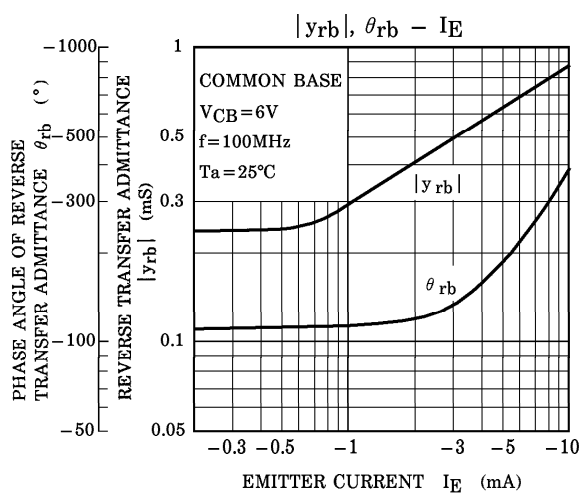
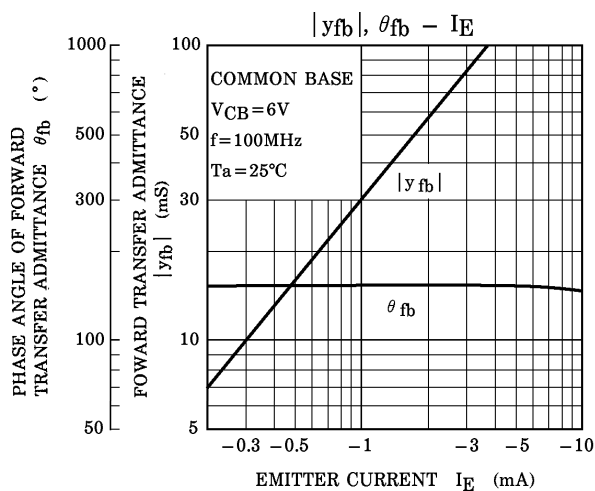
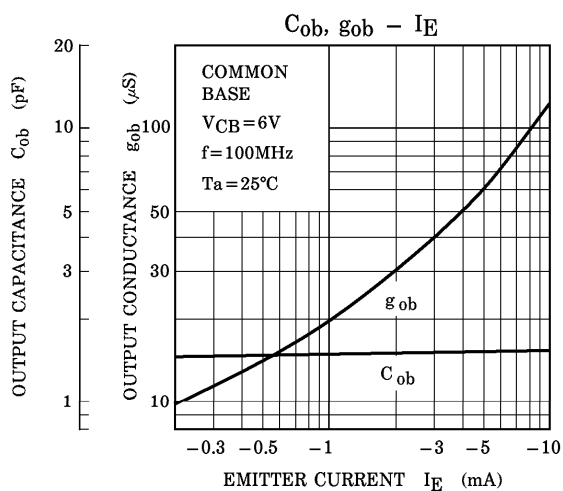
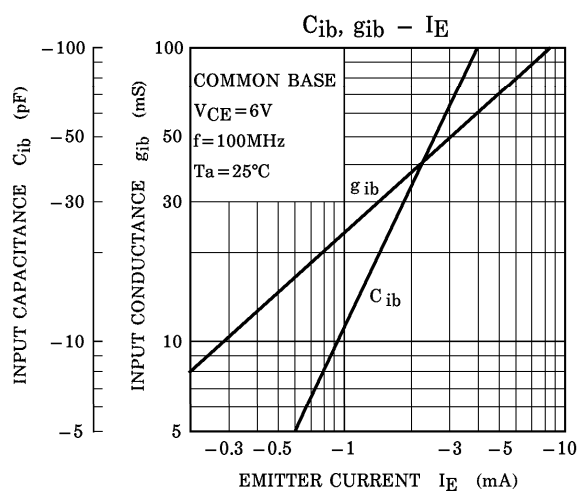
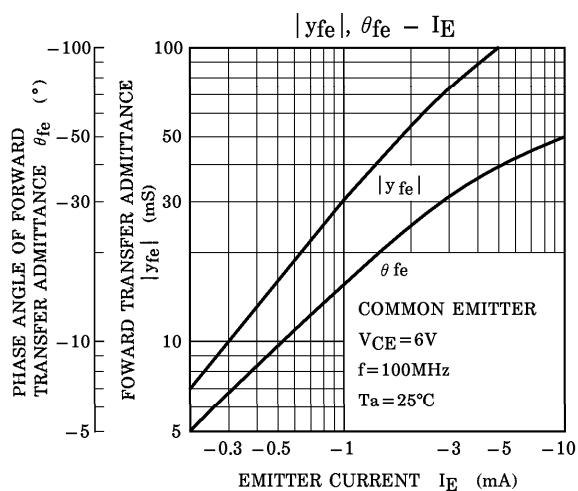


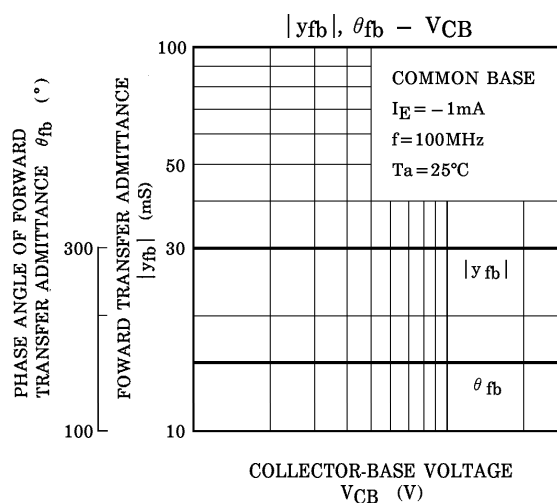
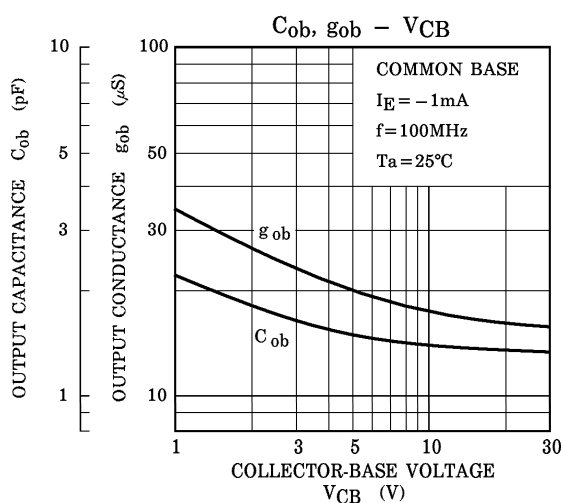
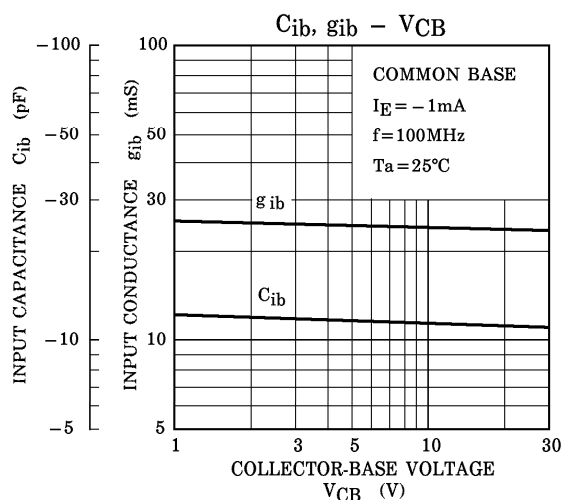
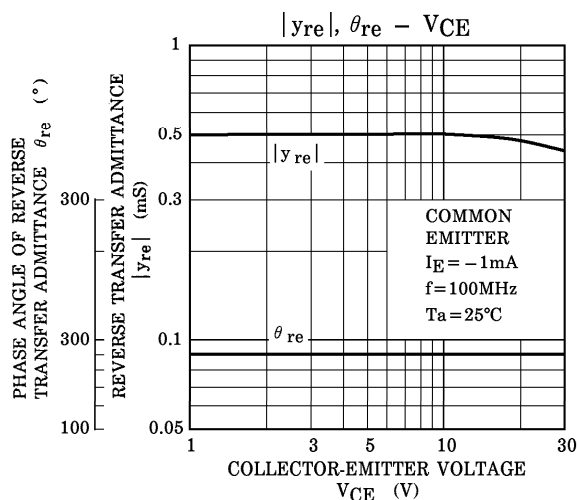
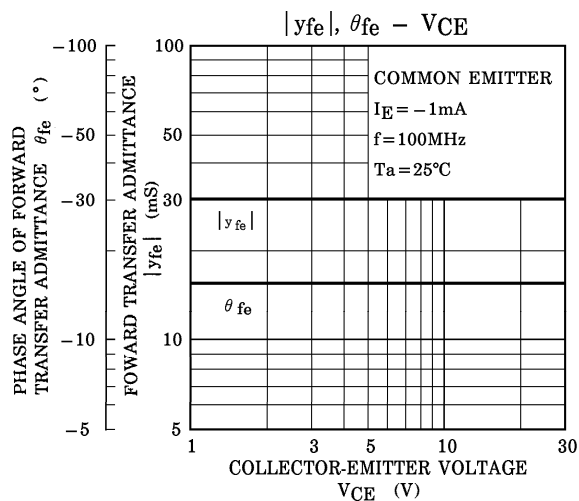
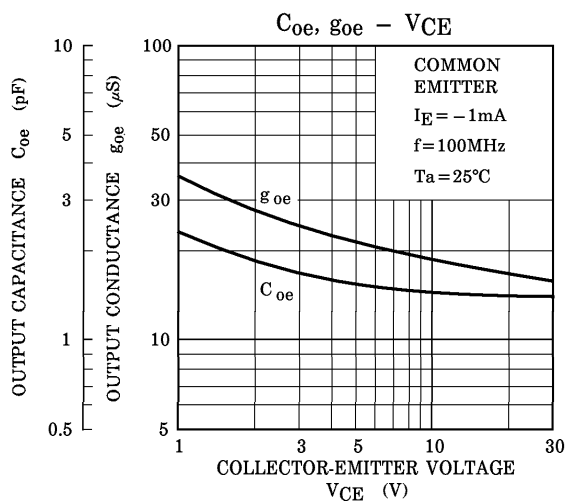
$C_{oe}, g_{oe} - I_E$

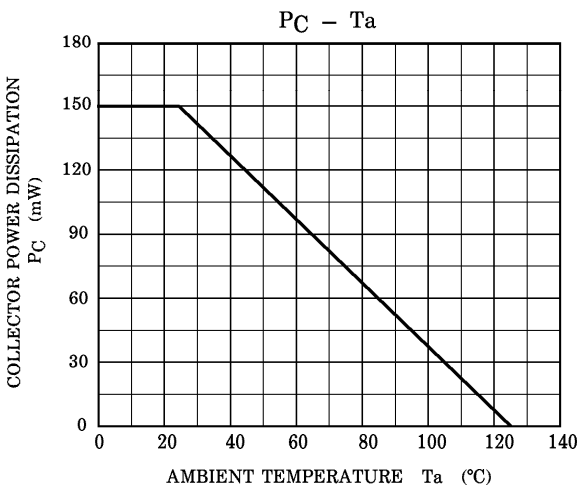
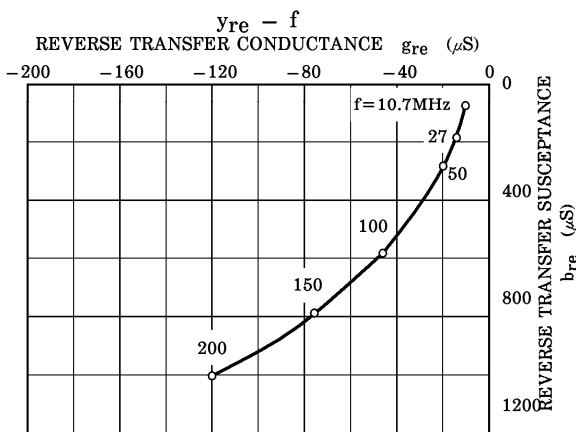
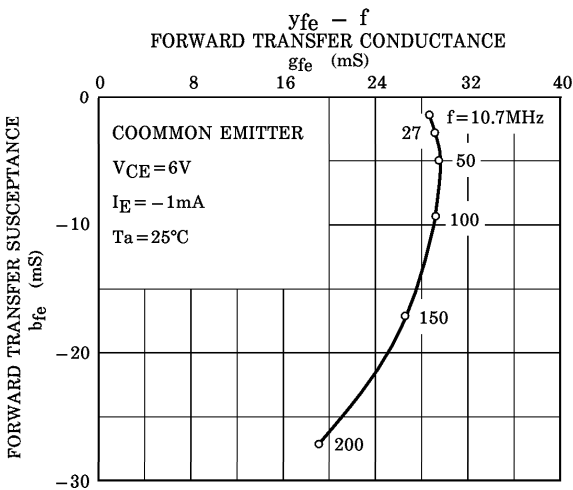
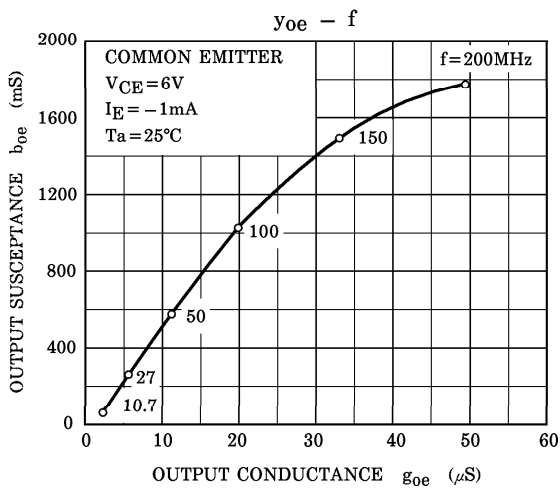
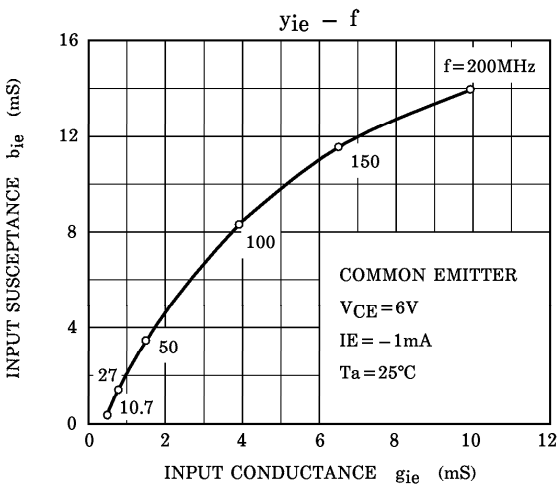
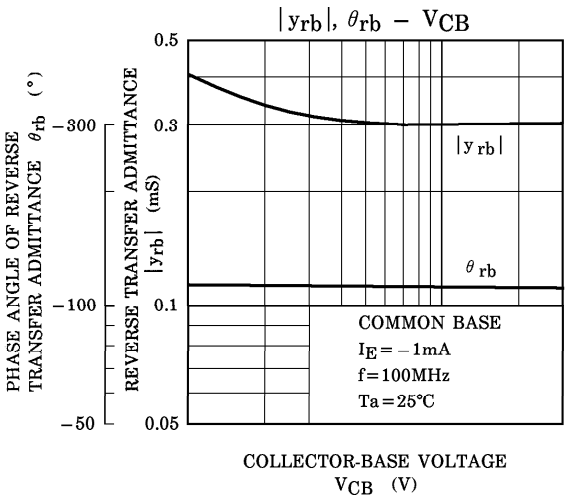


$|y_{re}|, \theta_{re} - I_E$









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