Ordering number:EN3062A

FC120

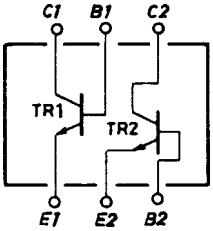
NPN Epitaxial Planar Silicon Composite Transistor

High-Frequency General-Purpose Amp, Differential Amp Applications

Features

- Composite type with 2 transistors contained in the CP package currently in use, improving the mounting efficiency greatly.
- The FC120 is formed with two chips, being equivalent to the 2SC3142, placed in one package.
- Excellent in thermal equilibrium and pair capability.

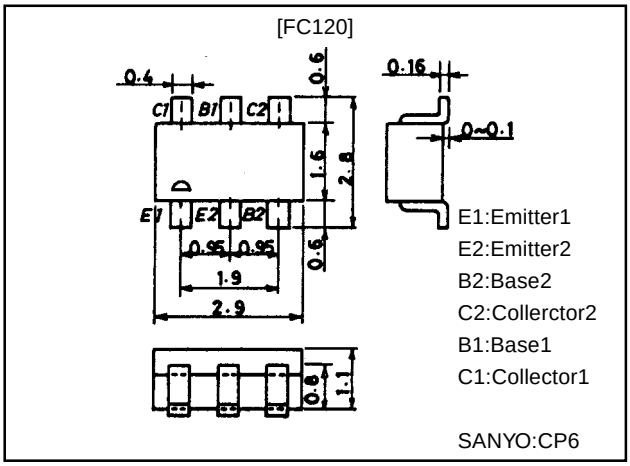
Electrical Connection



Package Dimensions

unit:mm

2068



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		25	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		3	V
Collector Current	I_C		30	mA
Collector Dissipation	P_C	1 unit	200	mW
Total Power Dissipation	P_T		300	mW
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to+150	˚C

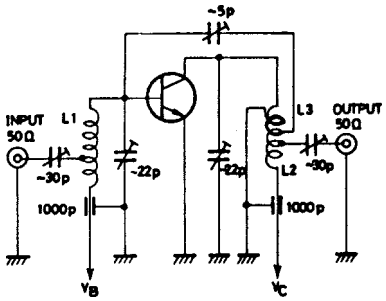
Electrical Characteristics at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=10V, I_E=0			0.1	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=3V, I_C=0			0.1	μA
DC Current Gain	h_{FE}	V_{CE}=6V, I_C=1mA	80		200	
DC Current Gain Ratio	h_{FE}(small/large)	V_{CE}=6V, I_C=1mA	0.8	0.98		
Base to Emitter Voltage Drop	V_{BE}(large-small)	V_{CE}=6V, I_C=1mA		1.0	15	mV
Gain-Bandwidth Product	f_T	V_{CE}=6V, I_C=4mA	450	750		MHz
Reverse Transfer Capacitance	Cre	V_{CE}=6V, f=1MHz		0.6	0.9	pF
Base to Collector Time Constant	$r_{bb}'c_c$	V_{CE}=6V, I_C=1mA, f=31.9MHz			19	ps
Noise Figure	NF	V_{CE}=6V, I_C=1mA, f=100MHz		2.2		dB
Power Gain	PG	V_{CE}=6V, I_C=1mA, f=100MHz		28		dB

Note: The specifications shown above are for each individual transistor.

Marking:120

NF, PG Test Circuit



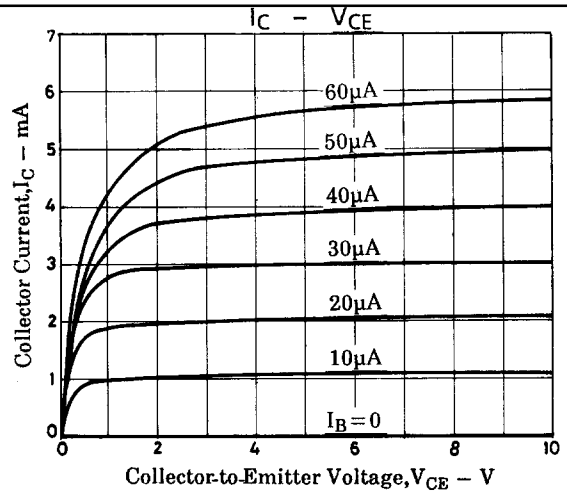
L_1:1mm$^{\phi}$ plated wire, 10mm$^{\phi}$ 5T, 15mm pitch,
tap : 2T from base side

L_2:1mm$^{\phi}$ plated wire, 10mm$^{\phi}$ 7T, 10mm pitch,
tap : 2T from V_C side

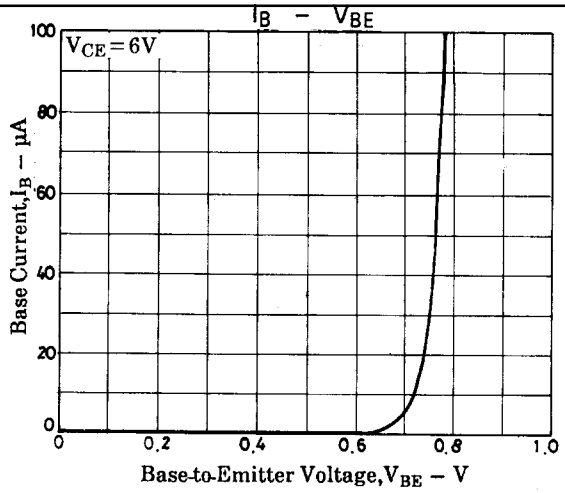
L_3:1mm$^{\phi}$ enamel wire, 10mm$^{\phi}$ 3T, 10mm pitch

Unit (Capacitance:F)

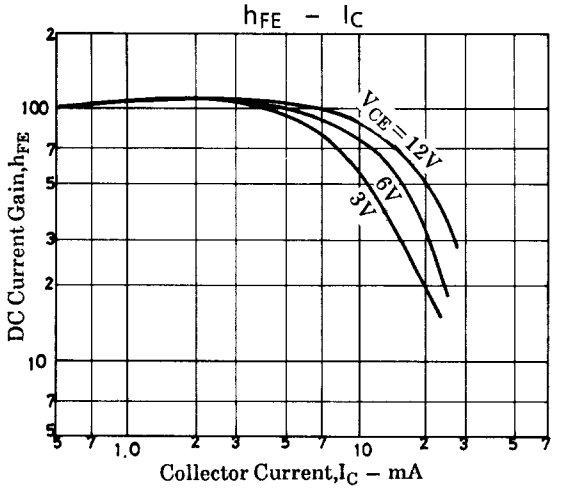
I_C – V_{CE}



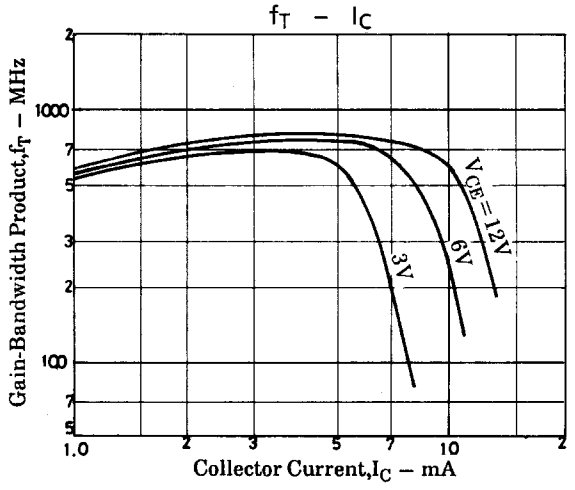
I_B – V_{BE}



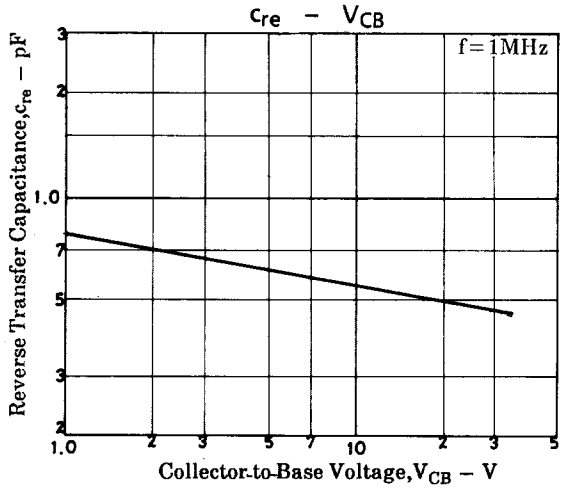
h_{FE} – I_C



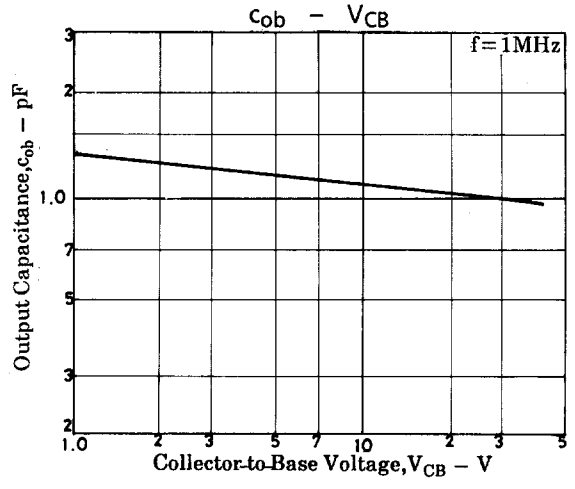
f_T – I_C



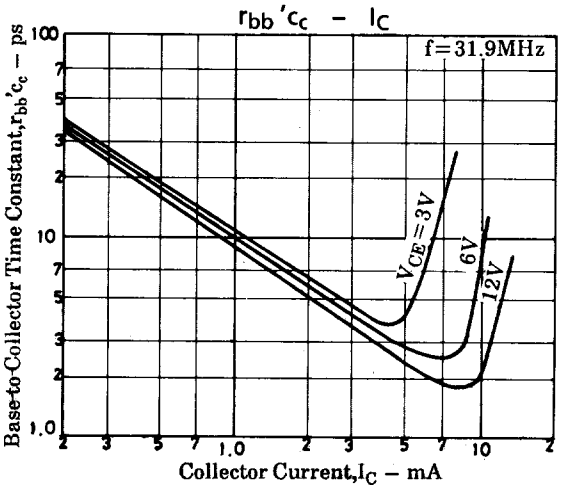
C_{re} – V_{CB}



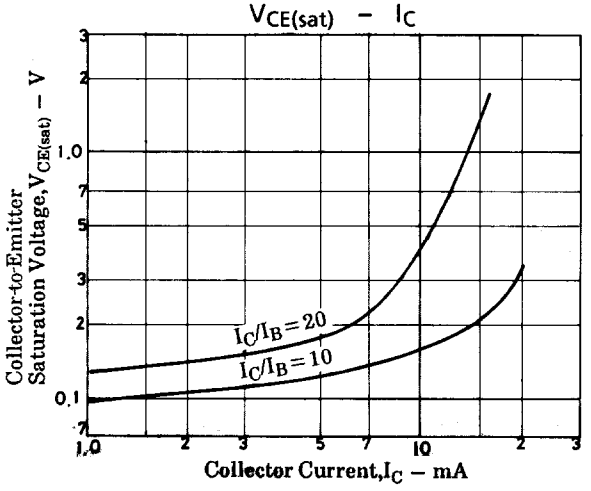
C_{ob} – V_{CB}



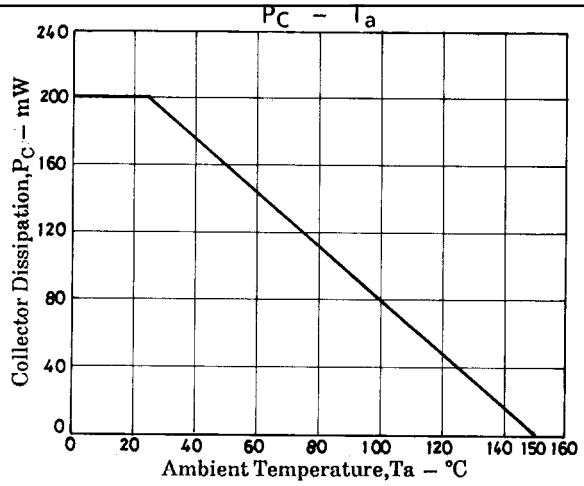
$r_{bb}'C_c$ – I_C



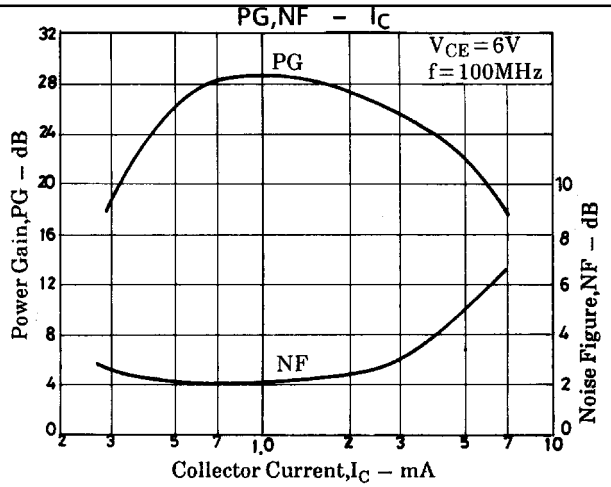
$V_{CE(sat)}$ – I_C



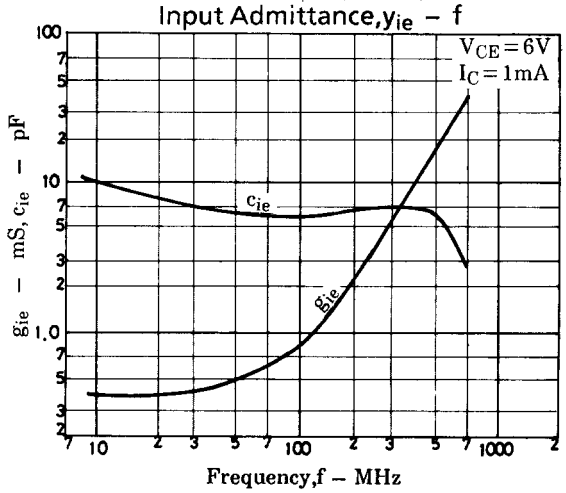
P_C – T_a



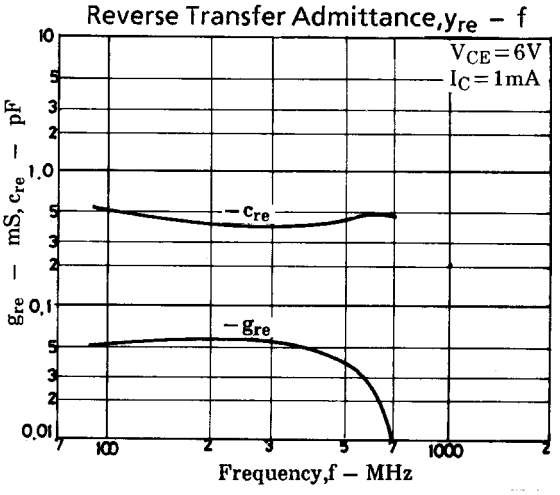
PG, NF – I_C



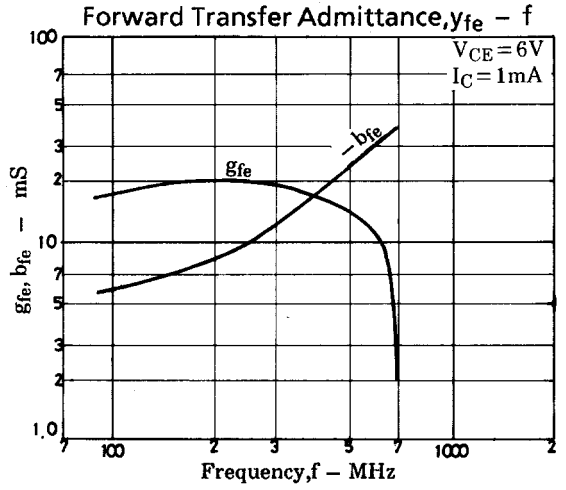
Input Admittance, y_{ie} – f



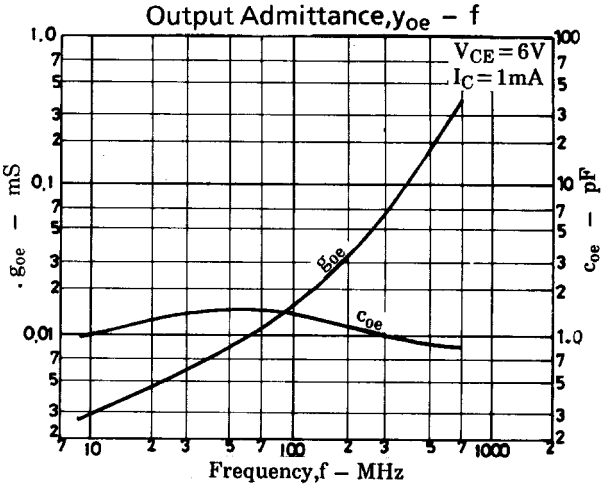
Reverse Transfer Admittance, y_{re} – f



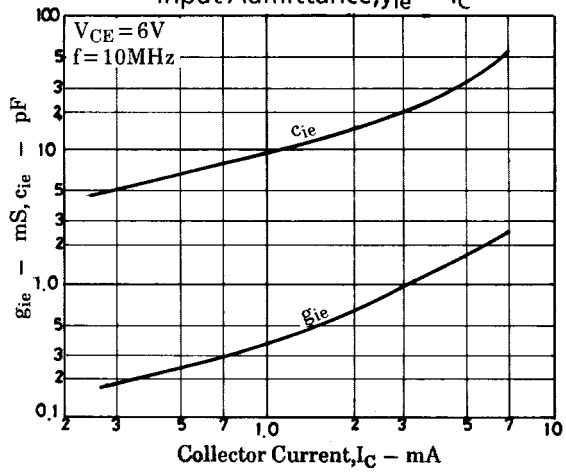
Forward Transfer Admittance, y_{fe} – f



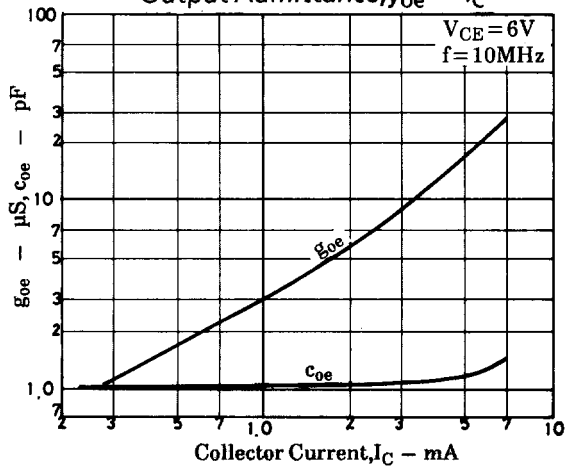
Output Admittance, y_{oe} – f



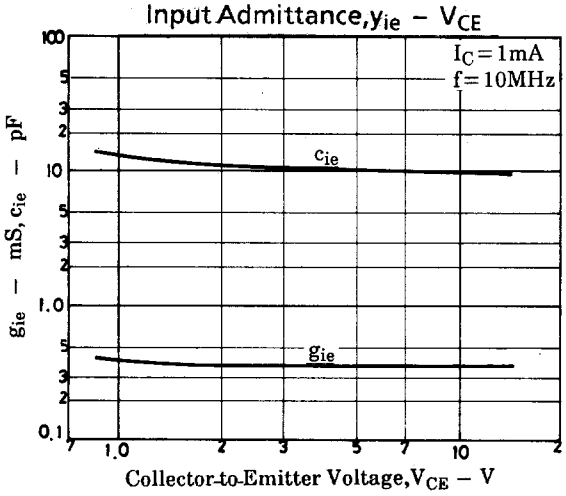
Input Admittance, y_{ie} – I_C



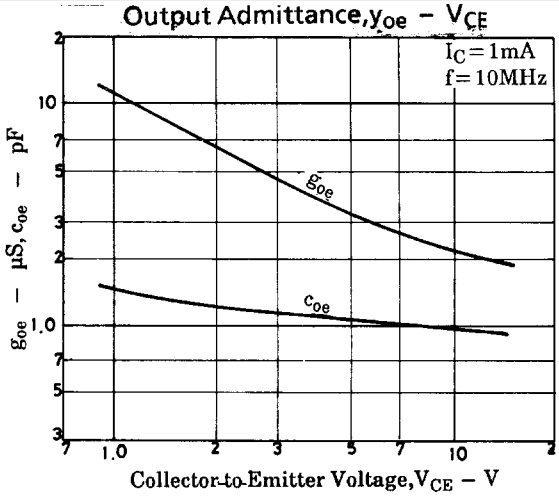
Output Admittance, y_{oe} – I_C



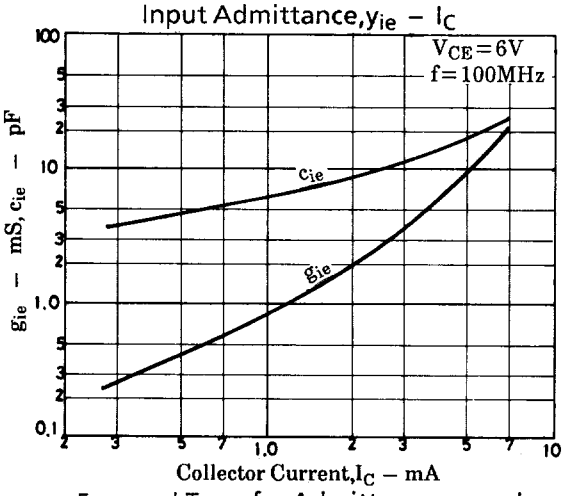
Input Admittance, y_{ie} – V_{CE}



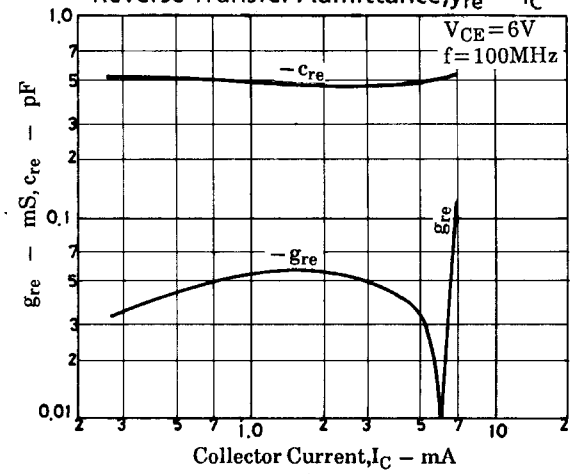
Output Admittance, y_{oe} – V_{CE}



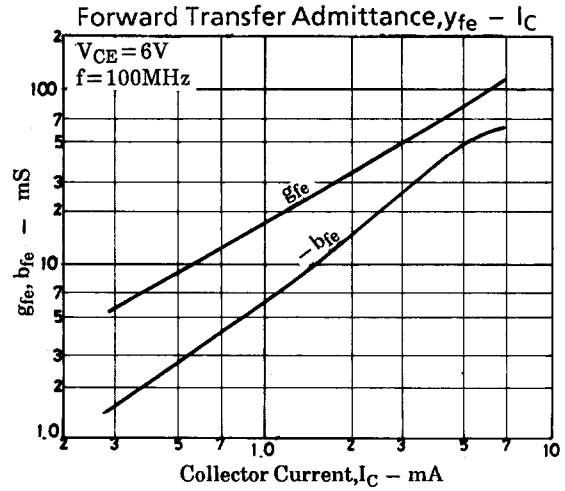
Input Admittance, y_{ie} – I_C



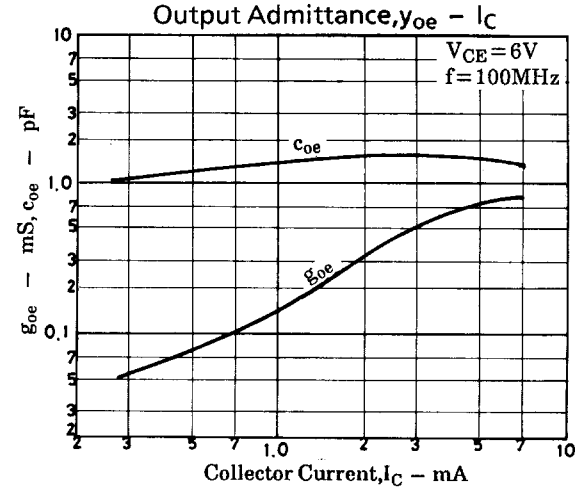
Reverse Transfer Admittance, y_{re} – I_C



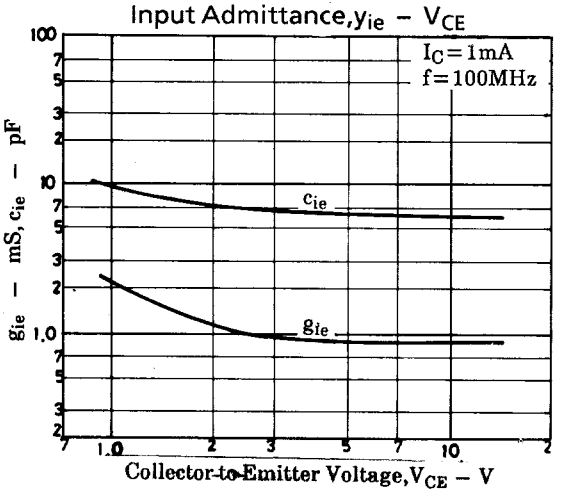
Forward Transfer Admittance, y_{fe} – I_C



Output Admittance, y_{oe} – I_C



Input Admittance, y_{ie} – V_{CE}



Reverse Transfer Admittance, y_{re} – V_{CE}