



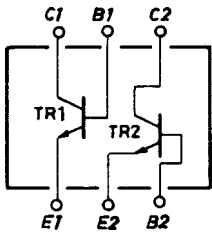
# FC120

## 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.

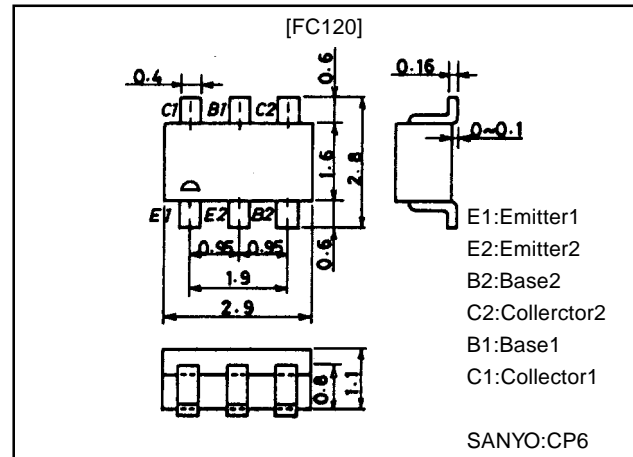
### Electrical Connection



### Package Dimensions

unit:mm

2068



### Specifications

#### Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		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	$T_J$		150	°C
Storage Temperature	$T_{stg}$		-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	$\mu A$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=3V, I_C=0$			0.1	$\mu A$
DC Current Gain	$h_{FE}$	$V_{CE}=6V, I_C=1mA$	80		200	
DC Current Gain Ratio	$h_{FE}(\text{small/large})$	$V_{CE}=6V, I_C=1mA$	0.8	0.98		
Base to Emitter Voltage Drop	$V_{BE}(\text{large-small})$	$V_{CE}=6V, I_C=1mA$		1.0	15	mV
Gain-Bandwidth Product	$f_T$	$V_{CE}=6V, I_C=4mA$	450	750		MHz
Reverse Transfer Capacitance	$C_{re}$	$V_{CE}=6V, f=1MHz$		0.6	0.9	pF
Base to Collector Time Constant	$\tau_{bb}C_c$	$V_{CE}=6V, I_C=1mA, f=31.9MHz$			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.

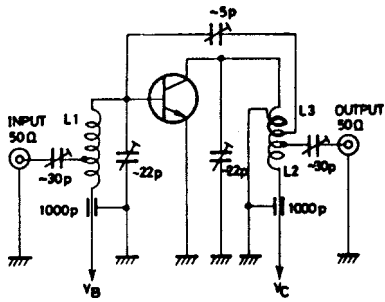
Marking:120

**SANYO Electric Co.,Ltd. Semiconductor Business Headquarters**

TOKYO OFFICE Tokyo Bldg., 1-10, 1 Chome, Ueno, Taito-ku, TOKYO, 110-8534 JAPAN

52098HA (KT)/6169MO/5169MO, TS No.3062-1/6

## NF, PG Test Circuit



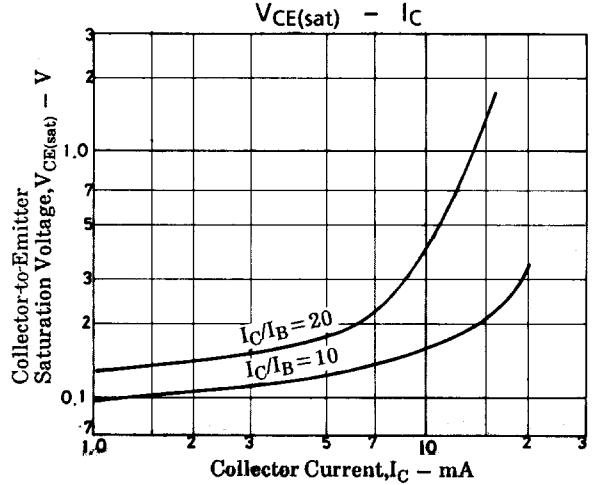
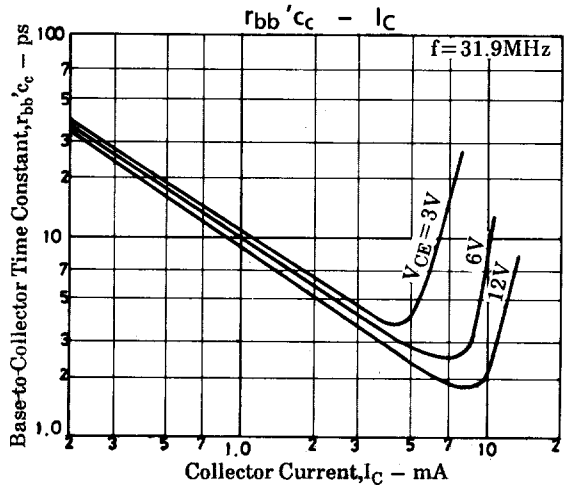
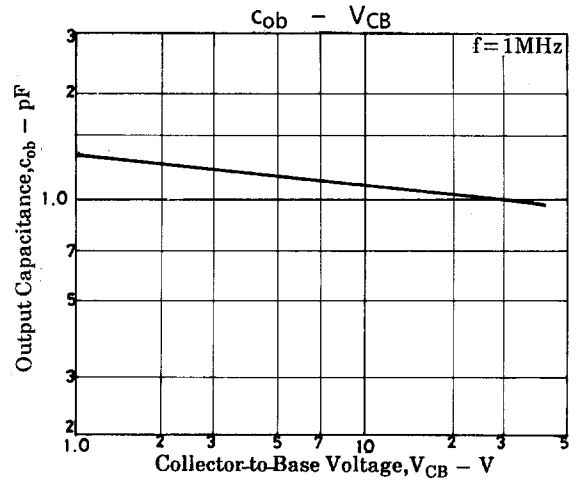
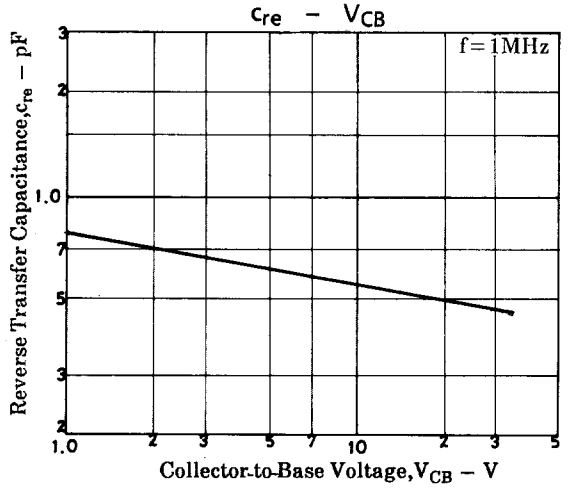
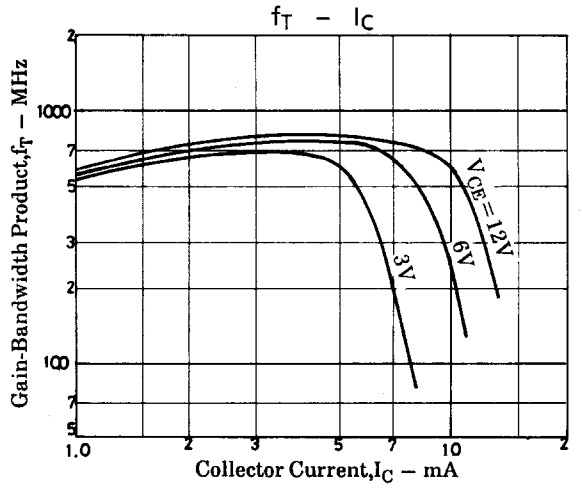
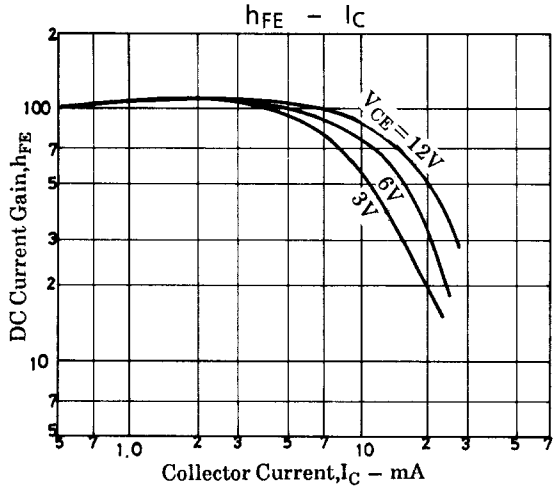
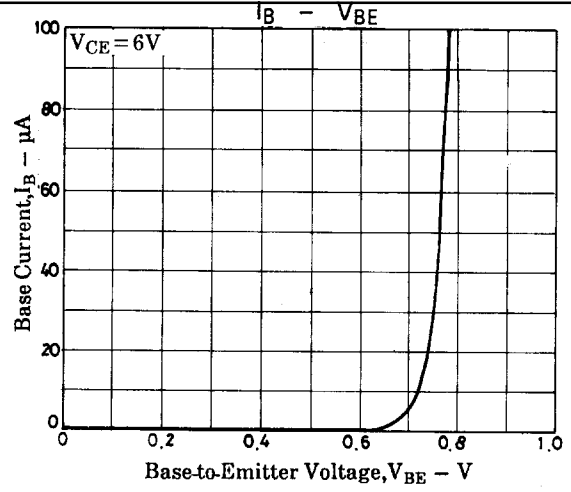
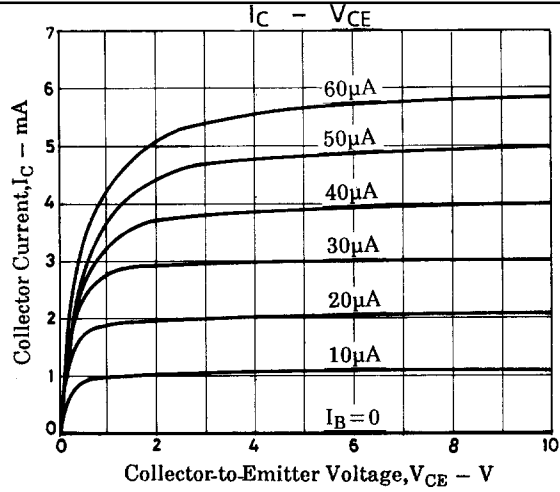
$L_1$ : 1mm $\emptyset$  plated wire, 10mm $\emptyset$  5T, 15mm pitch,  
tap : 2T from base side

$L_2$ : 1mm $\emptyset$  plated wire, 10mm $\emptyset$  7T, 10mm pitch,  
tap : 2T from  $V_C$  side

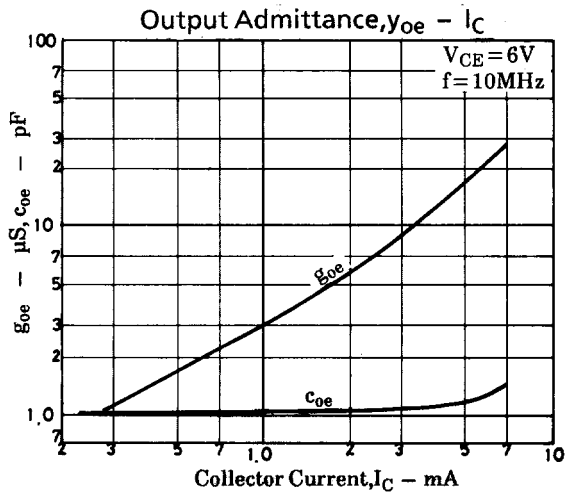
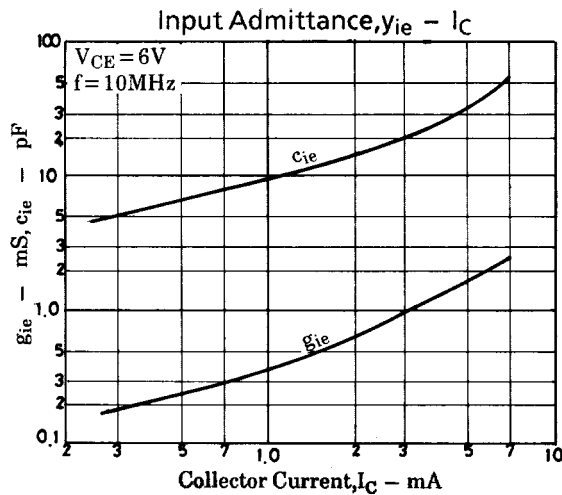
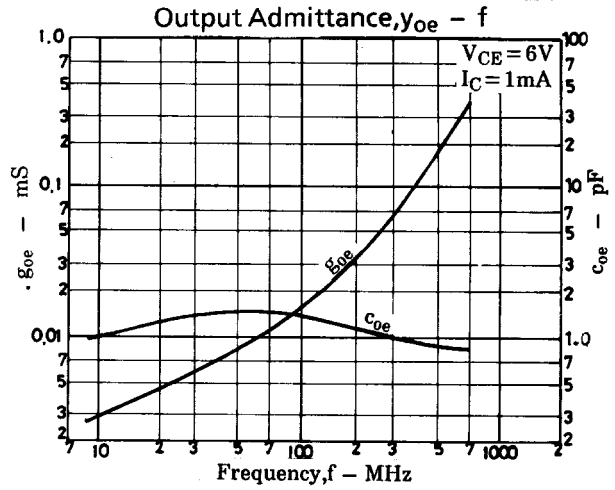
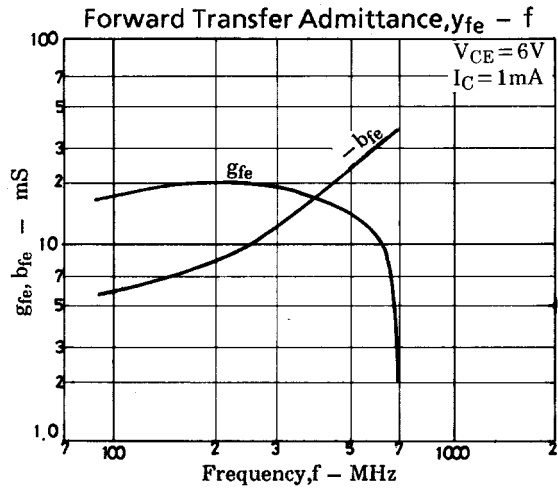
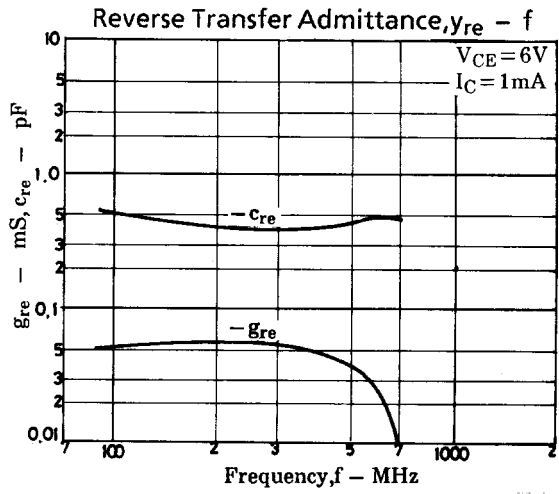
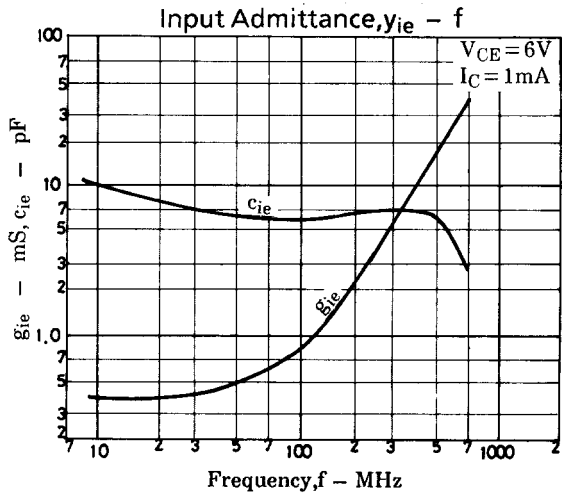
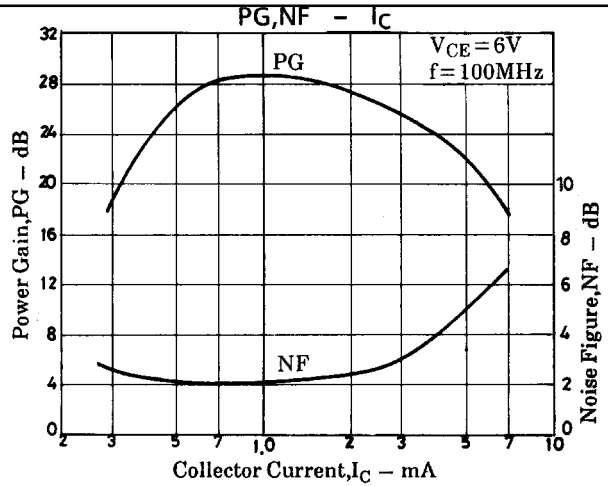
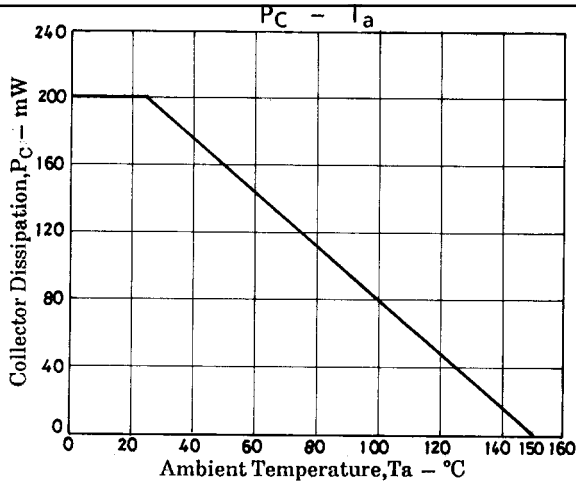
$L_3$ : 1mm $\emptyset$  enamel wire, 10mm $\emptyset$  3T, 10mm pitch

Unit (Capacitance:F)

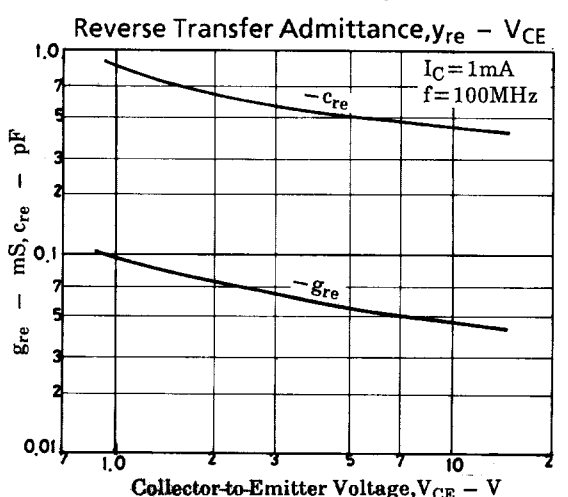
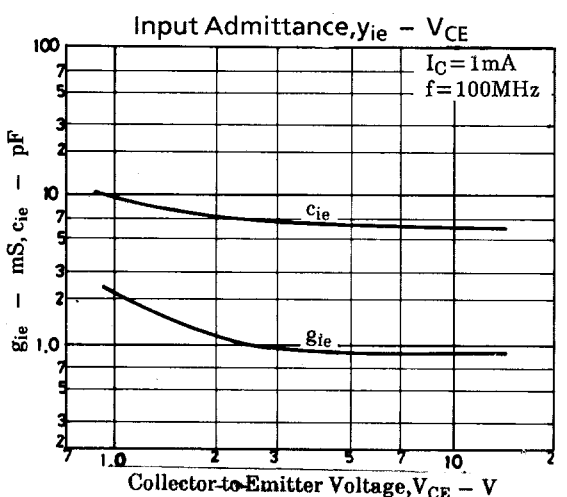
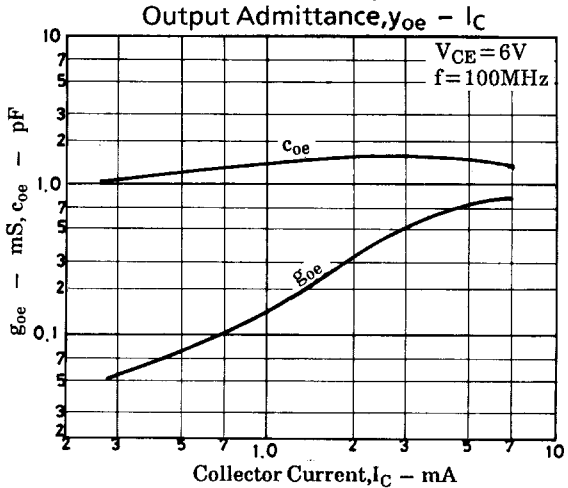
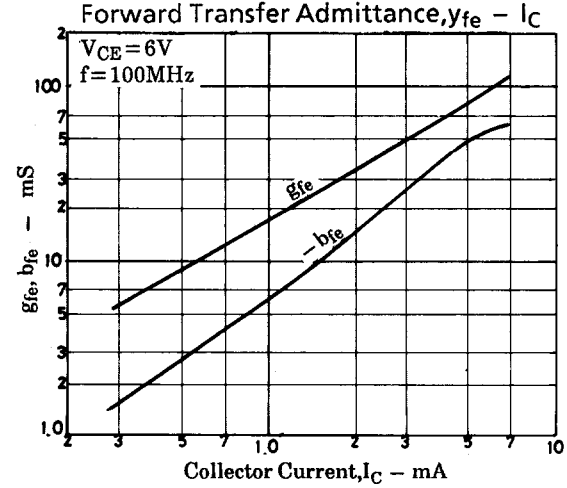
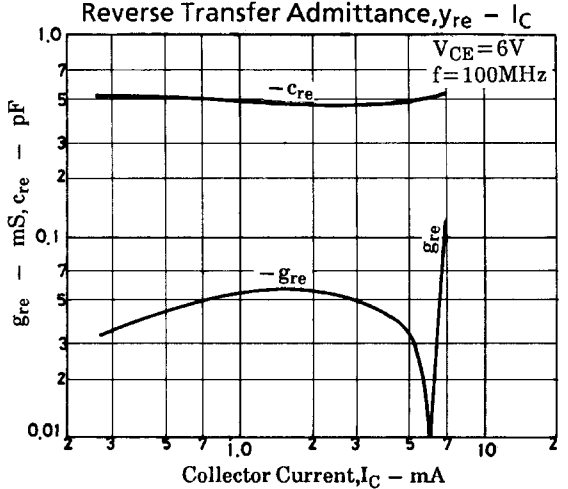
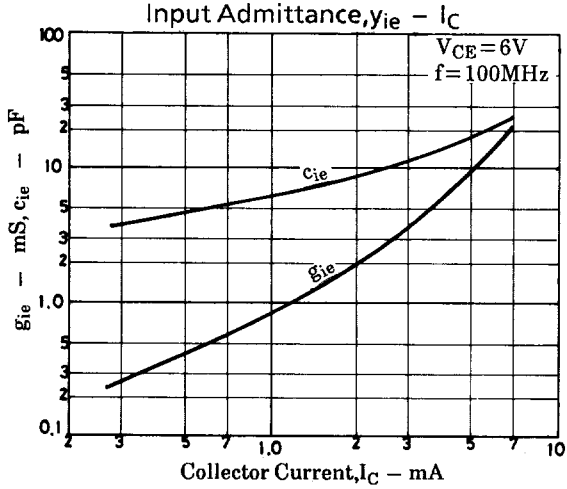
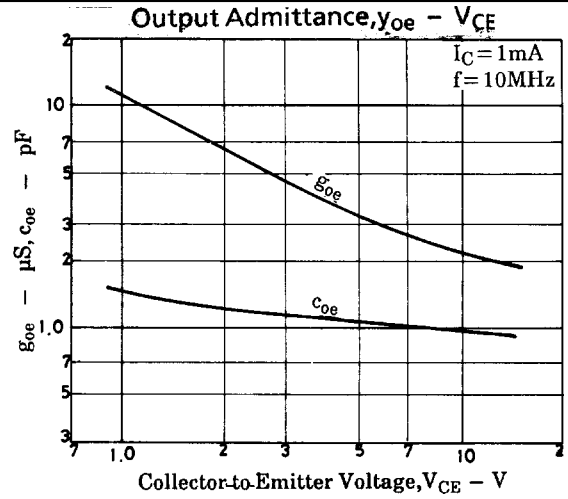
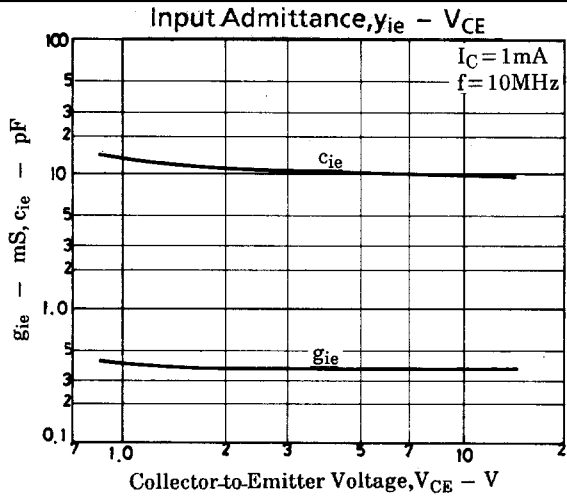
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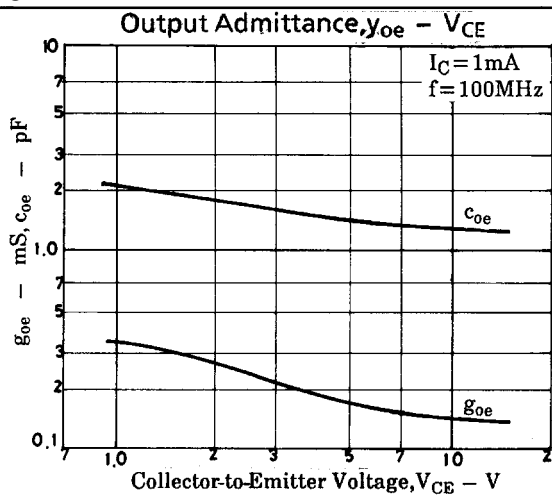
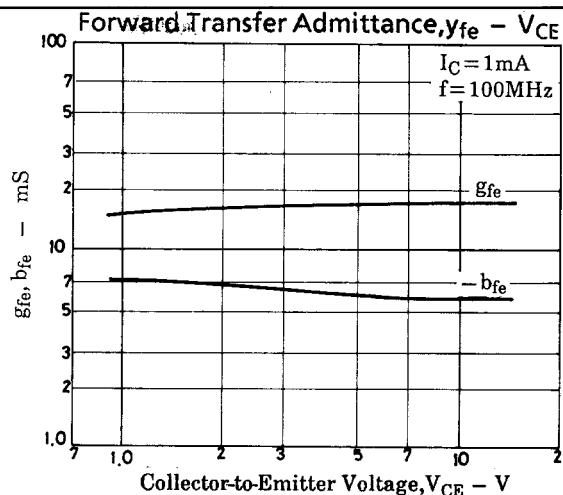
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