Ordering number:EN3062A

FC120

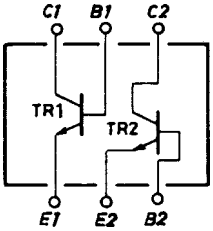
NPN Epitaxial Planar Silicon Composite Transistor

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.

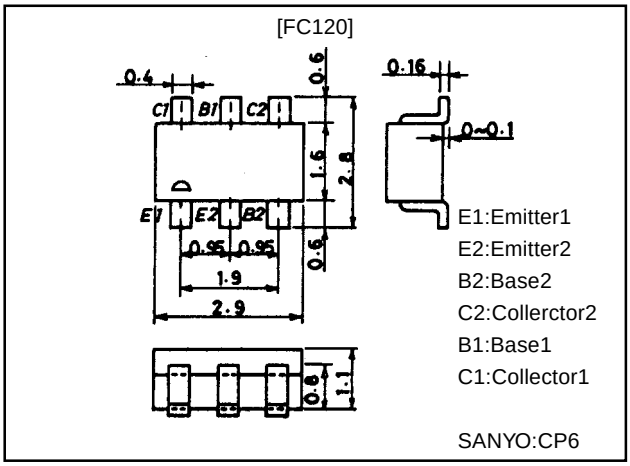
Electrical Connection



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

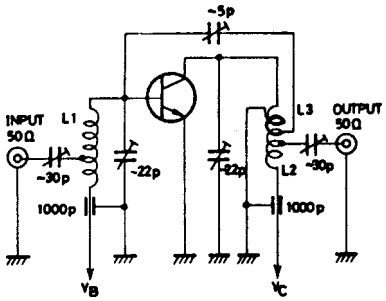
Electrical Characteristics at Ta = 25˚C

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



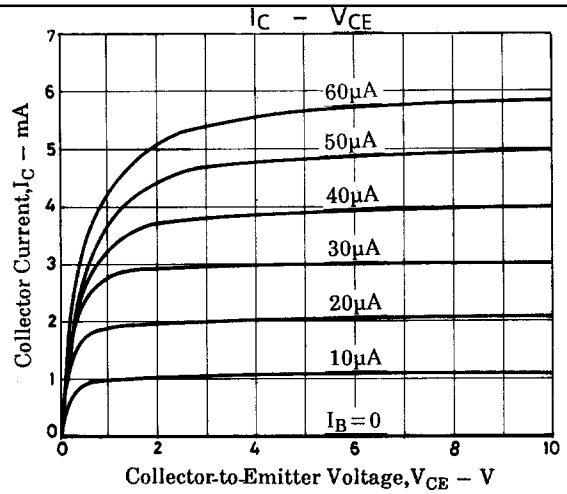
L_1:1mm$^{\phi}$ plated wire, 10mm$^{\phi}$ 5T, 15mm pitch,
tap : 2T from base side

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

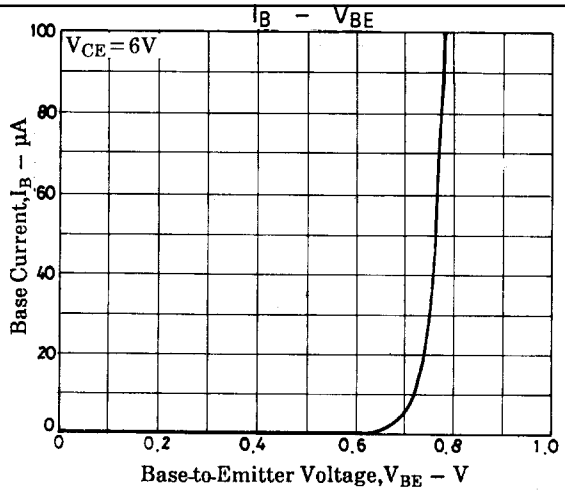
L_3:1mm$^{\phi}$ enamel wire, 10mm$^{\phi}$ 3T, 10mm pitch

Unit (Capacitance:F)

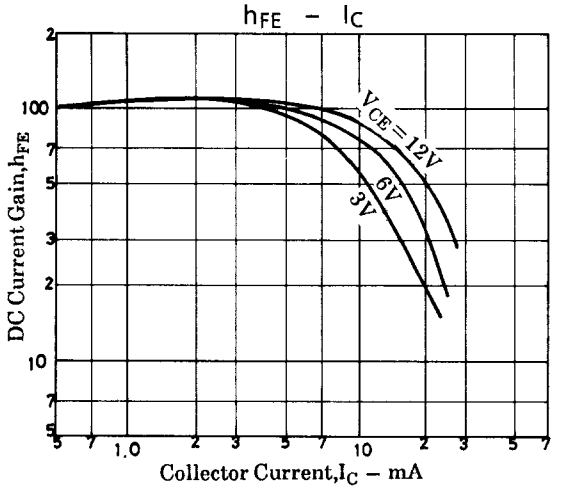
I_C – V_{CE}



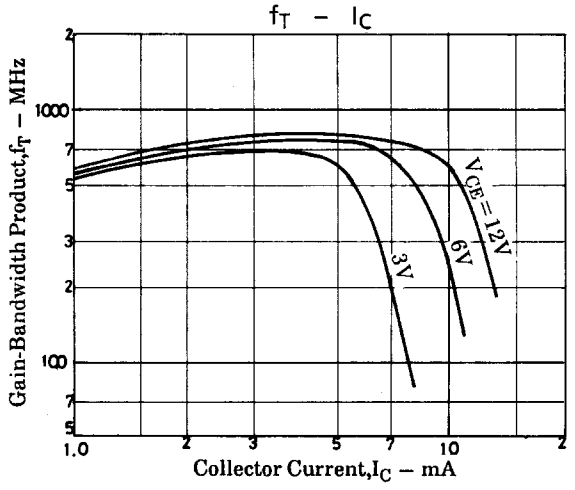
I_B – V_{BE}



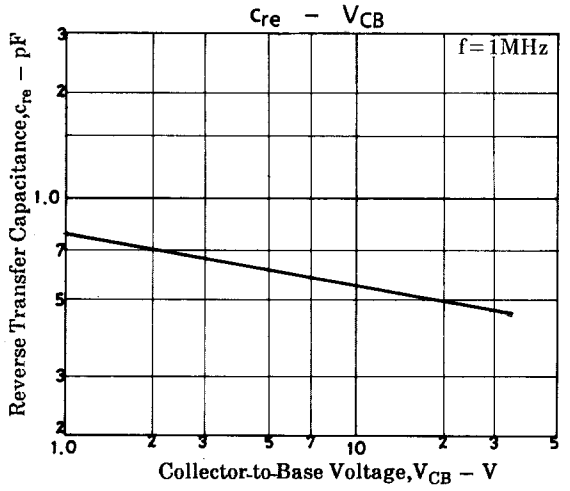
h_{FE} – I_C



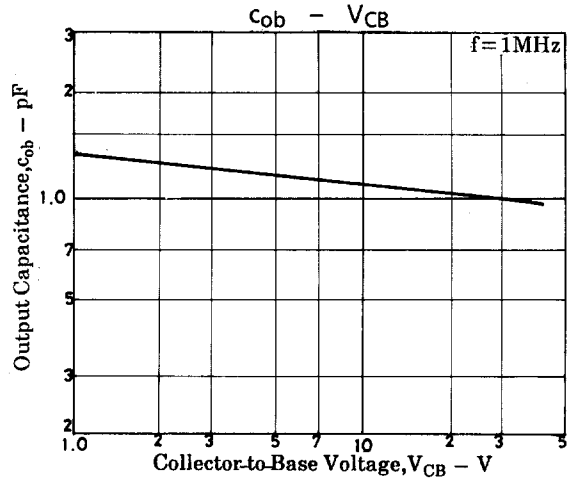
f_T – I_C



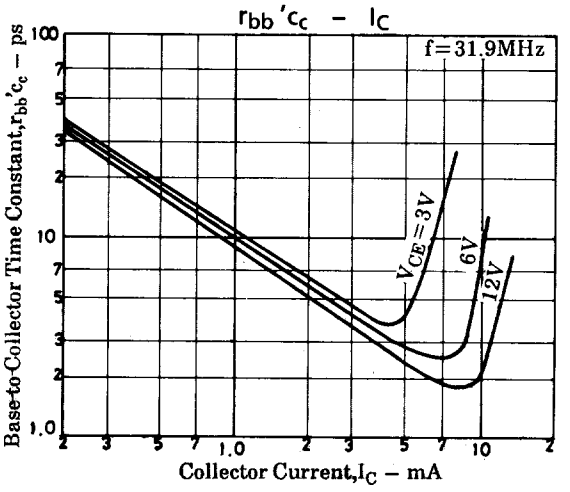
C_{re} – V_{CB}



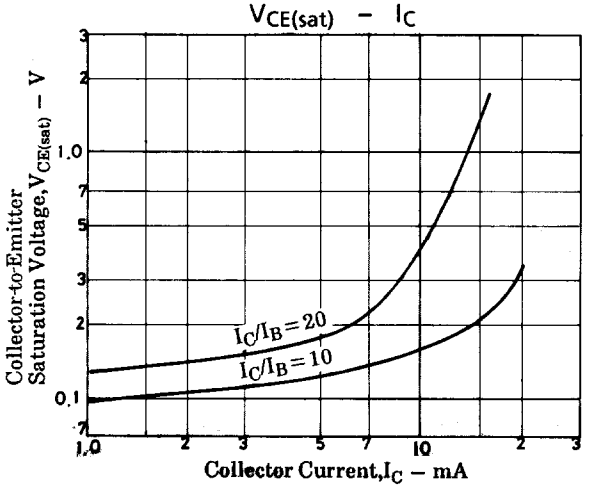
C_{ob} – V_{CB}



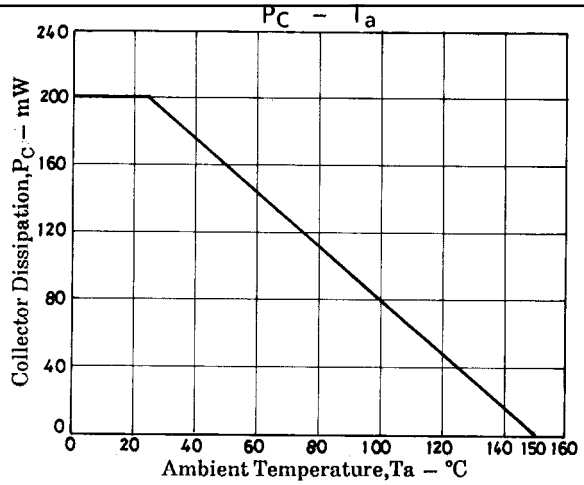
$r_{bb}'C_c$ – I_C



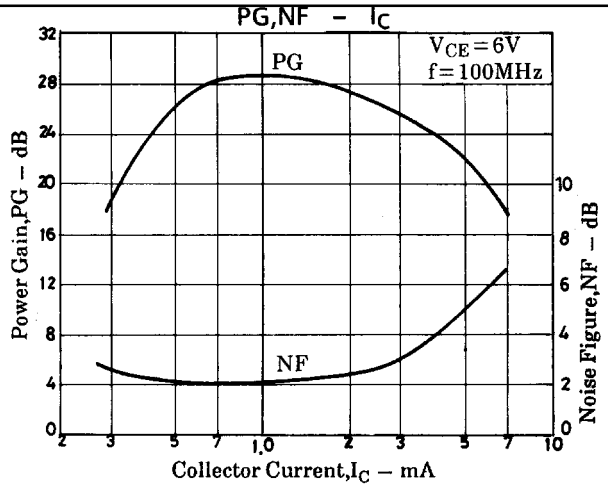
$V_{CE(sat)}$ – I_C



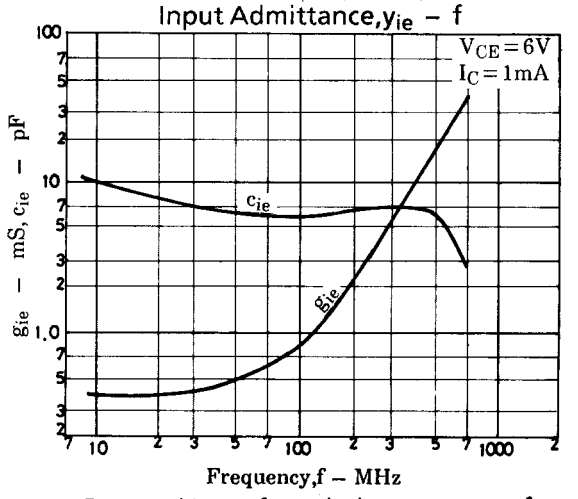
P_C – T_a



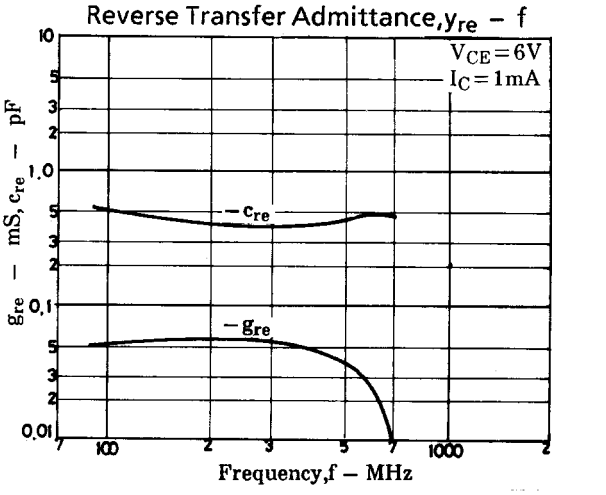
PG,NF – I_C



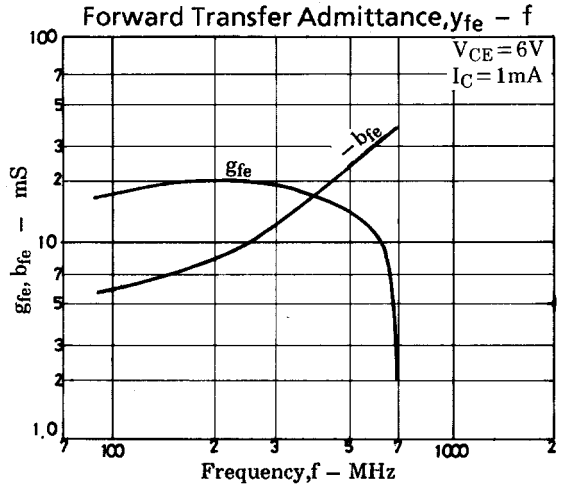
Input Admittance,y_{ie} – f



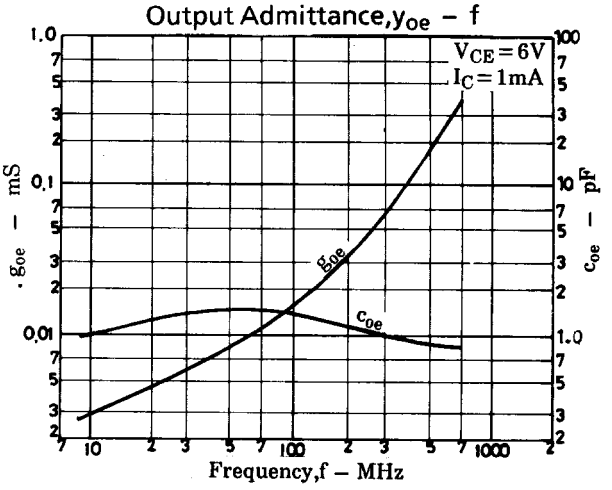
Reverse Transfer Admittance,y_{re} – f



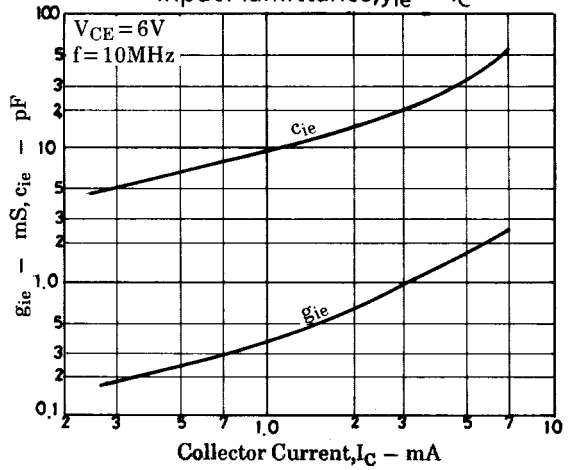
Forward Transfer Admittance,y_{fe} – f



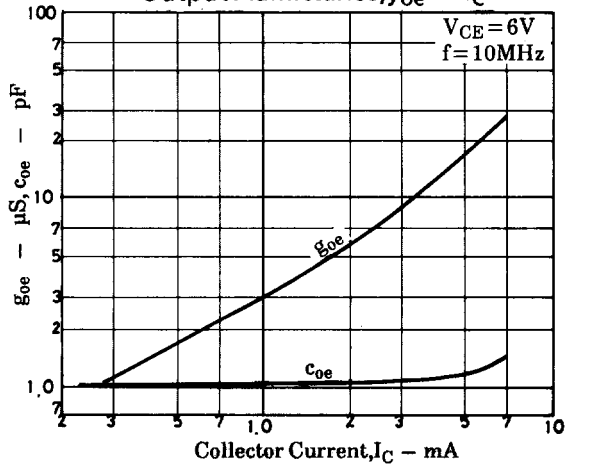
Output Admittance,y_{oe} – f



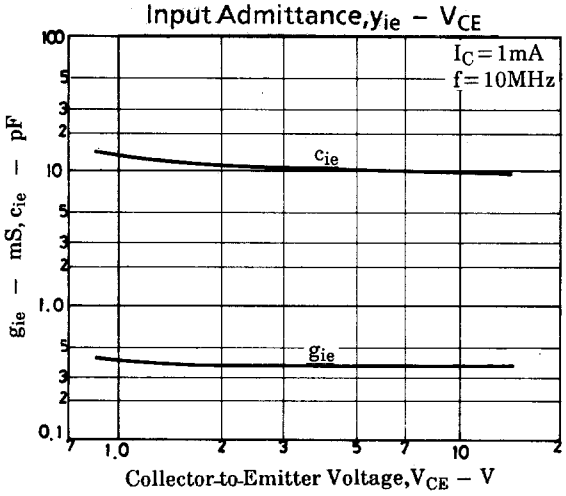
Input Admittance,y_{ie} – I_C



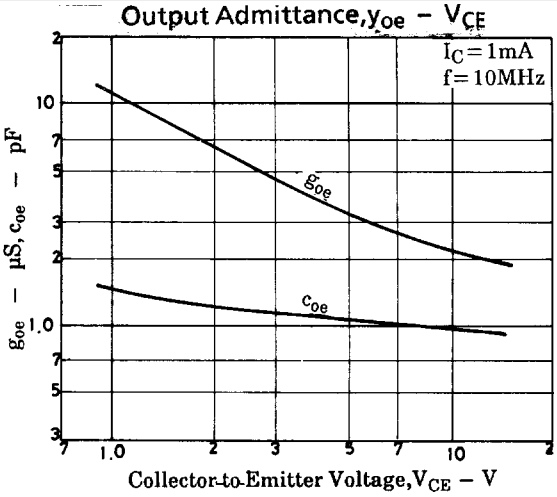
Output Admittance,y_{oe} – I_C



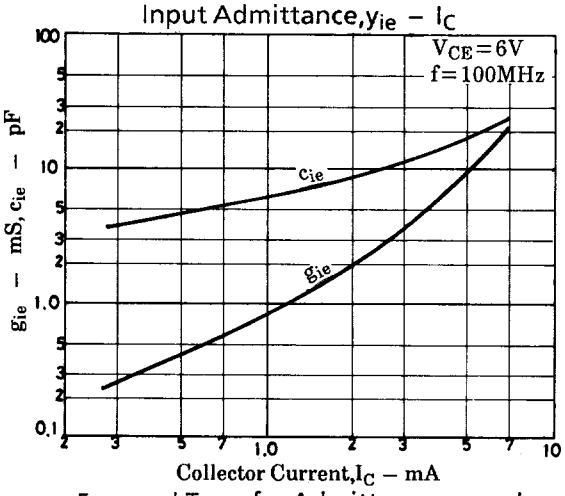
Input Admittance, y_{ie} – V_{CE}



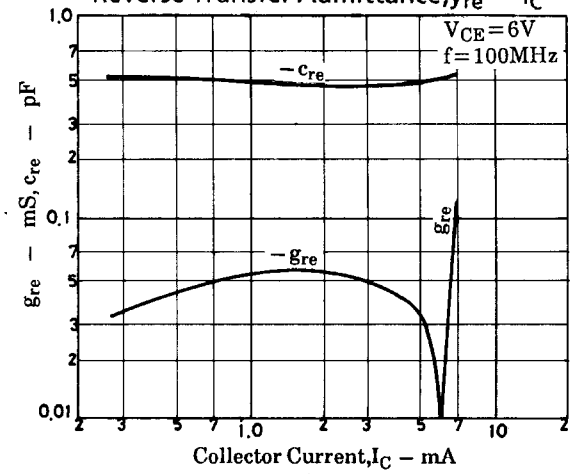
Output Admittance, y_{oe} – V_{CE}



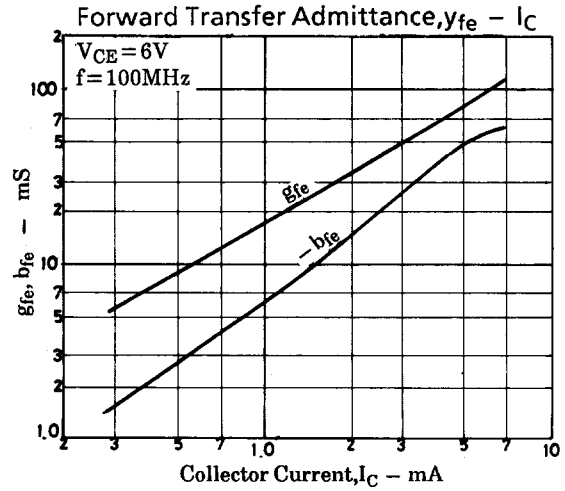
Input Admittance, y_{ie} – I_C



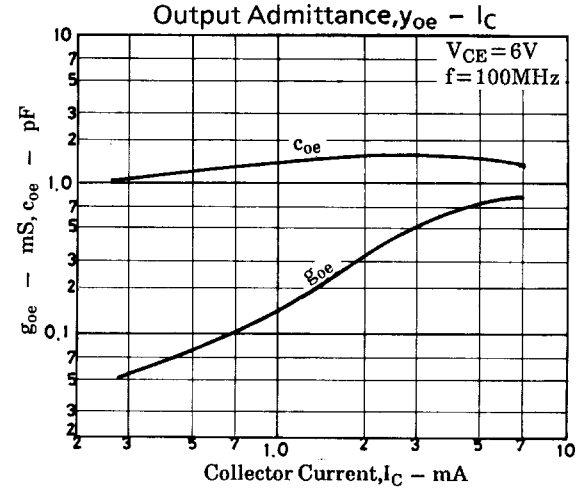
Reverse Transfer Admittance, y_{re} – I_C



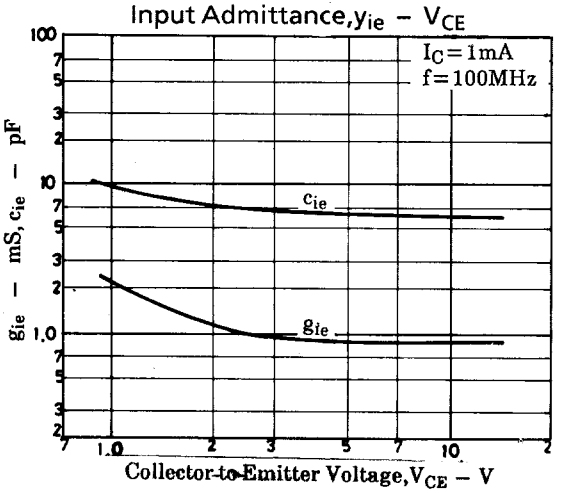
Forward Transfer Admittance, y_{fe} – I_C



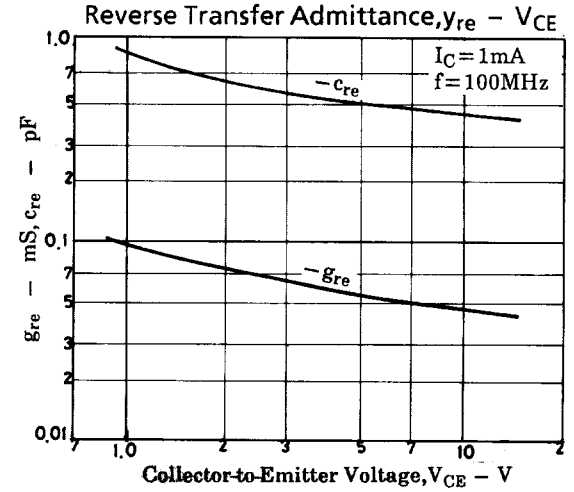
Output Admittance, y_{oe} – I_C

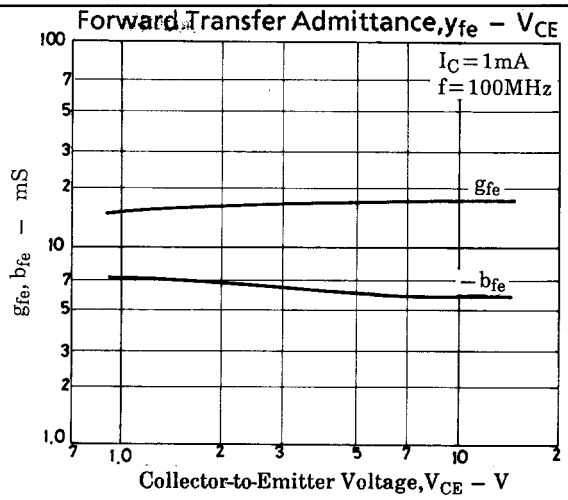


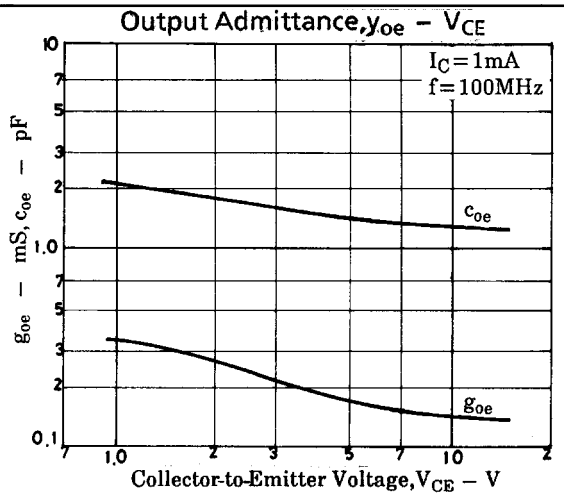
Input Admittance, y_{ie} – V_{CE}



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







■ No products described or contained herein are intended for use in surgical implants, life-support systems, aerospace equipment, nuclear power control systems, vehicles, disaster/crime-prevention equipment and the like, the failure of which may directly or indirectly cause injury, death or property loss.

■ Anyone purchasing any products described or contained herein for an above-mentioned use shall:
① Accept full responsibility and indemnify and defend SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors and all their officers and employees, jointly and severally, against any and all claims and litigation and all damages, cost and expenses associated with such use:
② Not impose any responsibilty for any fault or negligence which may be cited in any such claim or litigation on SANYO ELECTRIC CO., LTD., its affiliates, subsidiaries and distributors or any of their officers and employees jointly or severally.

■ Information (including circuit diagrams and circuit parameters) herein is for example only; it is not guaranteed for volume production. SANYO believes information herein is accurate and reliable, but no guarantees are made or implied regarding its use or any infringements of intellectual property rights or other rights of third parties.

This catalog provides information as of May, 1998. Specifications and information herein are subject to change without notice.