Ordering number:EN3061A

FC119

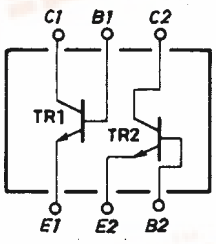
NPN Epitaxial Planar Silicon Transistor

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 FC119 is formed with two chips, being equivalent to the 2SC2814, placed in one package.
- Excellent in thermal equilibrium and pair capability.

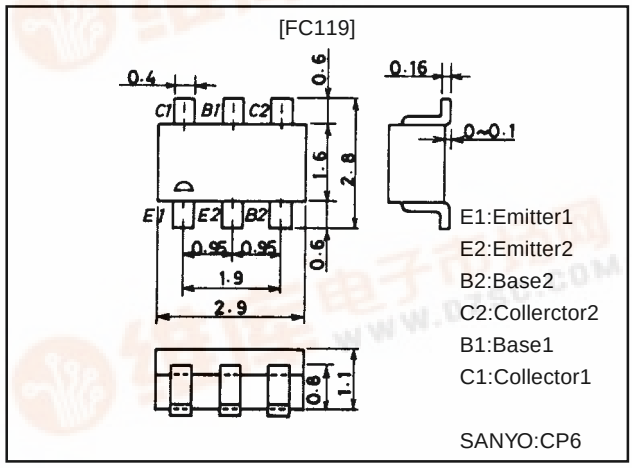
Electrical Connection



Package Dimensions

unit:mm

2068



Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		30	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		5	V
Collector Current	I_C		30	mA
Collector Dissipation	P_C	1 unit	200	mW
Total Dissipation	P_T		300	mW
Junction Temperature	Tj		150	˚C
Storage Temperature	Tstg		–55 to+150	˚C

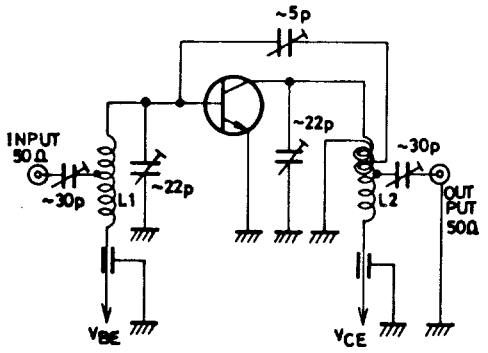
Electrical Characteristics at Ta = 25˚C

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}=4V, 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=1mA	200	320		MHz
Reverse Transfer Capacitance	Cre	V_{CE}=6V, f=1MHz		0.95	1.2	pF
Base to Collector Time Constant	$r_{bb}'c_c$	V_{CE}=6V, I_C=1mA, f=31.9MHz			20	ps
Noise Figure	NF	V_{CE}=6V, I_C=1mA, f=100MHz		3.0		dB
Power Gain	PG	V_{CE}=6V, I_C=1mA, f=100MHz		25		dB

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

Marking:119

NF, PG Test Circuit

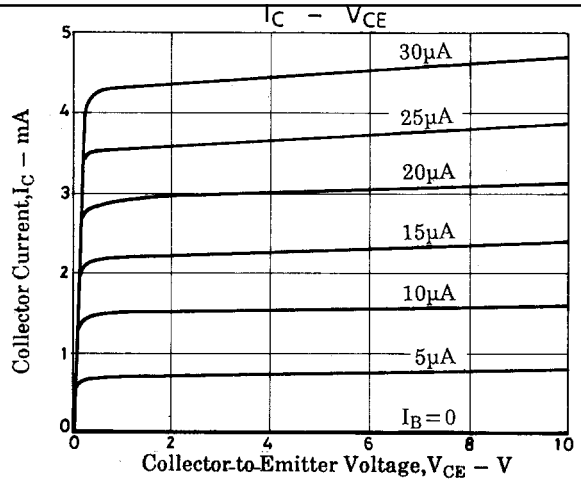


L_1:1mm$^{\phi}$ plated wire, 10mm$^{\phi}$ 4T, tap : 2T from V_{BE} side
L_2:1mm$^{\phi}$ plated wire, 10mm$^{\phi}$ 7T, tap : 2T from V_{CE} side
L_3:1mm$^{\phi}$ enamel wire, 10mm$^{\phi}$ 3T

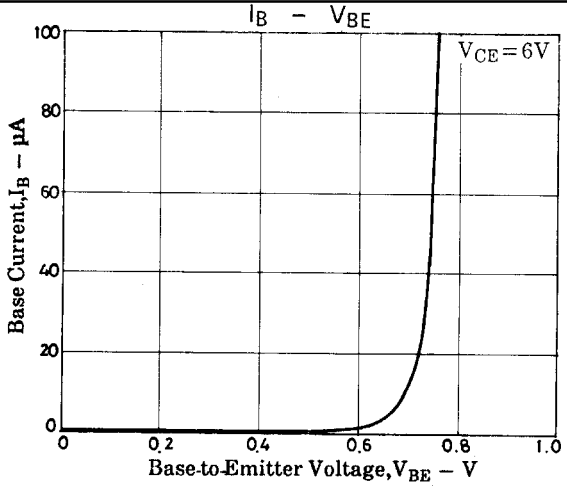
Unit (Capacitance:F)

FC119

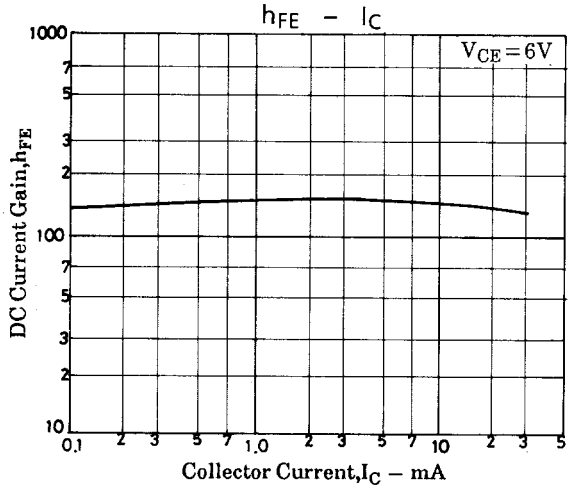
I_C – V_{CE}



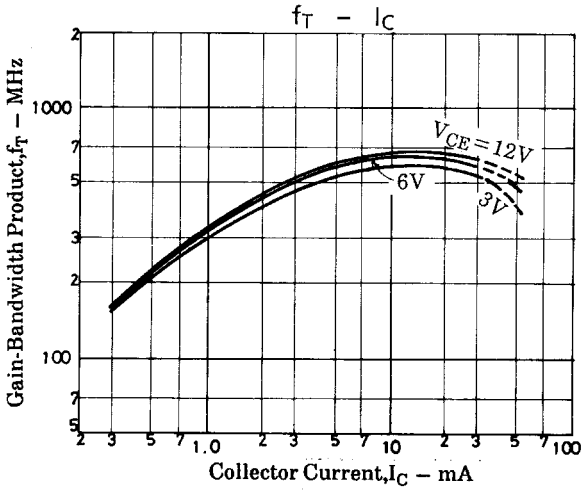
I_B – V_{BE}



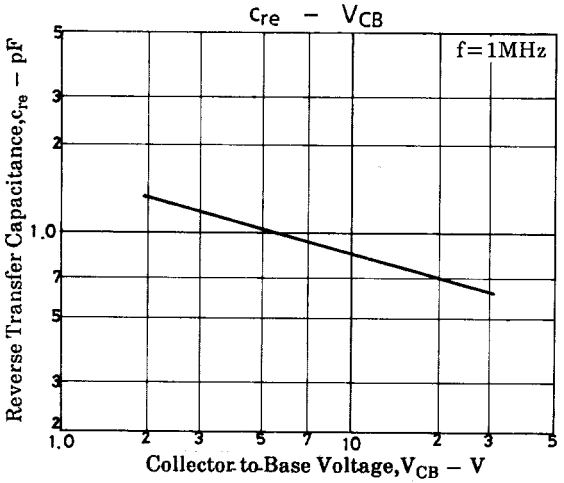
h_{FE} – I_C



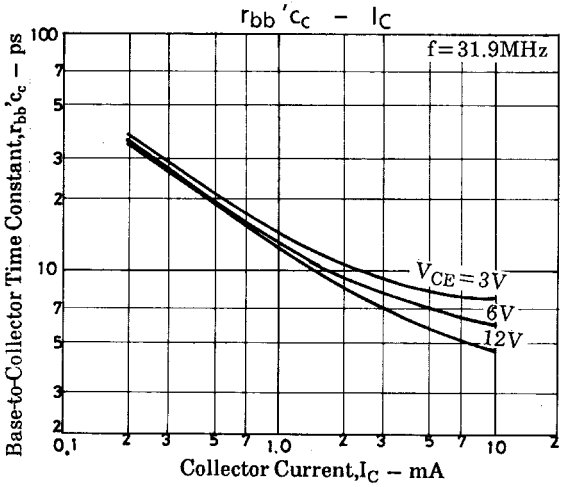
f_T – I_C



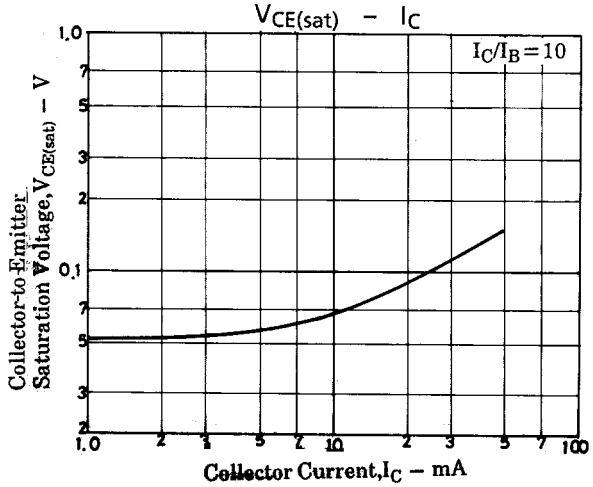
C_{re} – V_{CB}



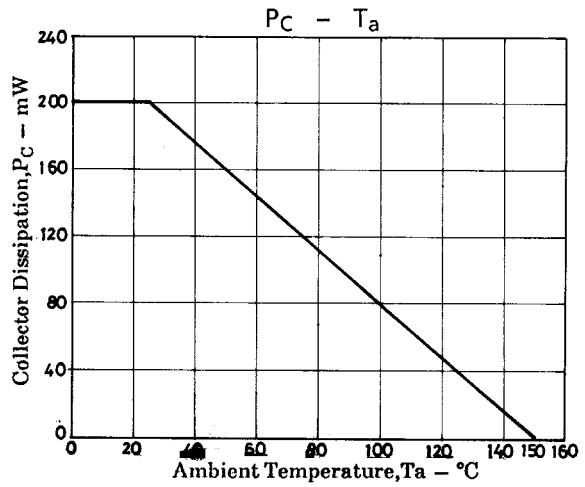
$r_{bb}'C_c$ – I_C



$V_{CE(sat)}$ – I_C



P_C – T_a



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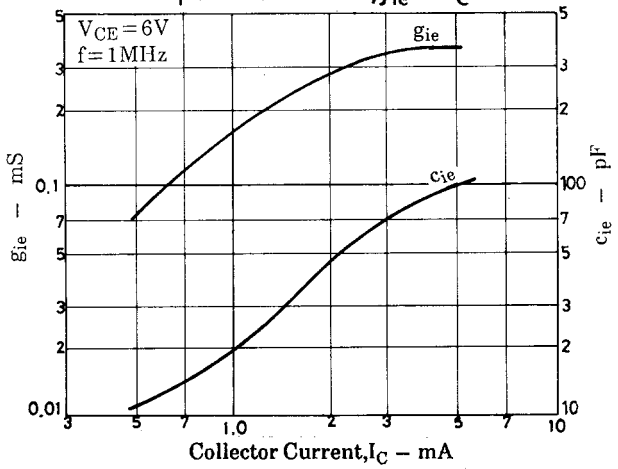
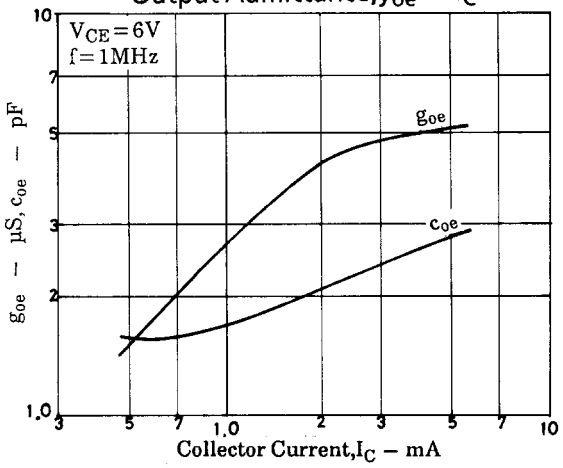
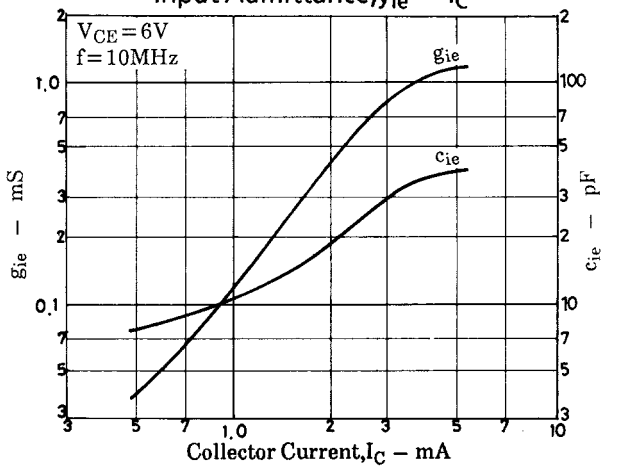
Input Admittance, y_{ie} – I_C



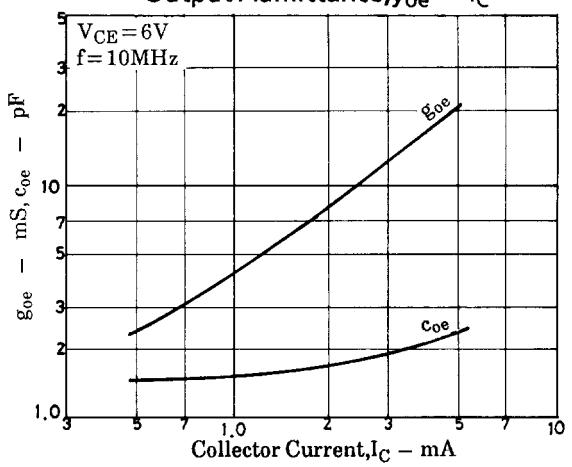
Output Admittance, y_{oe} – I_C



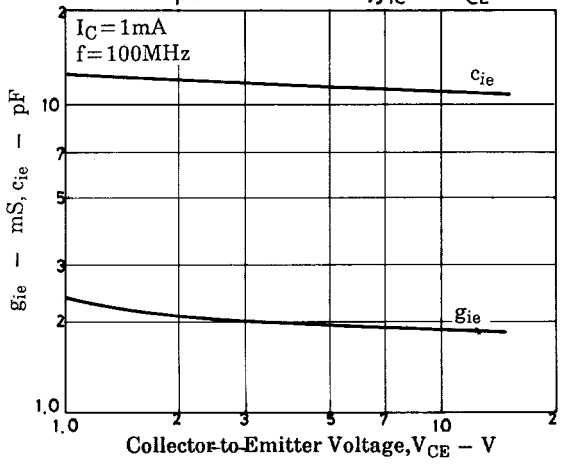
Input Admittance, y_{ie} – I_C



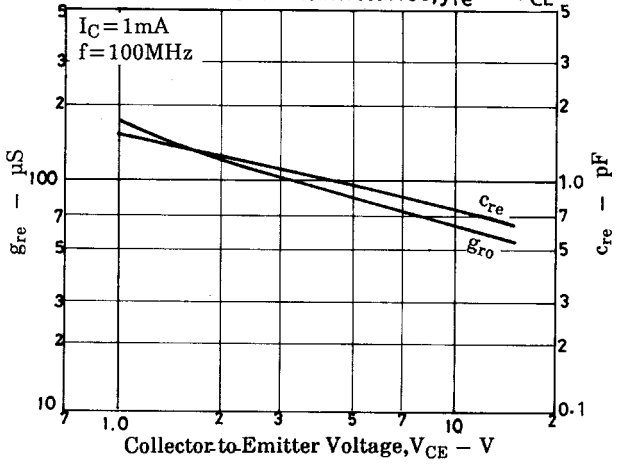
Output Admittance, y_{oe} – I_C



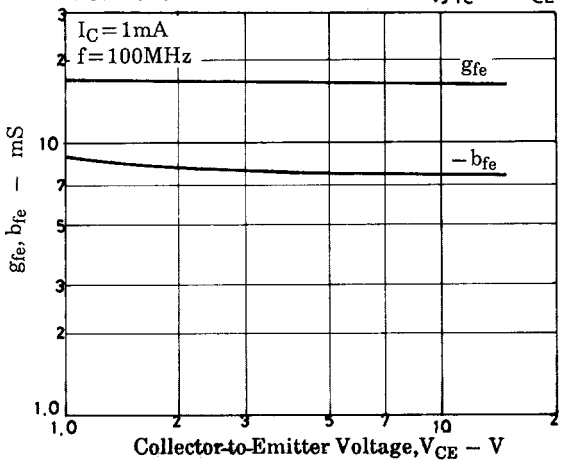
Input Admittance, y_{ie} – V_{CE}



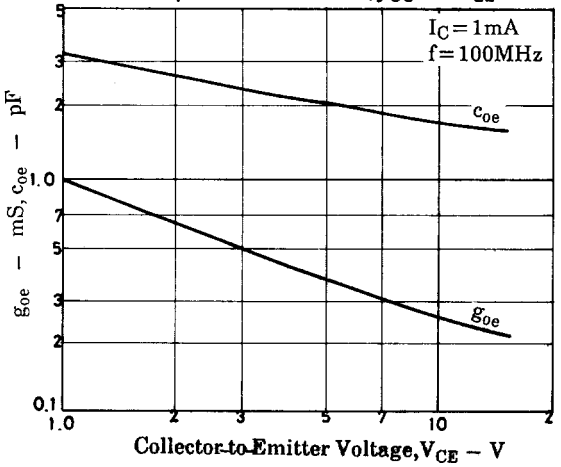
Reverse Transfer Admittance, y_{re} – V_{CE}



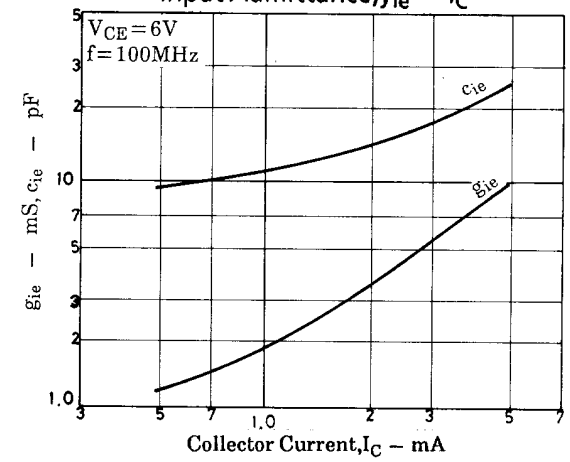
Forward Transfer Admittance, y_{fe} – V_{CE}



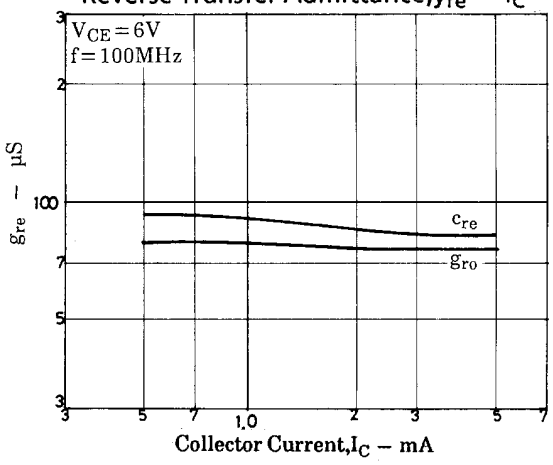
Output Admittance, y_{oe} – V_{CE}



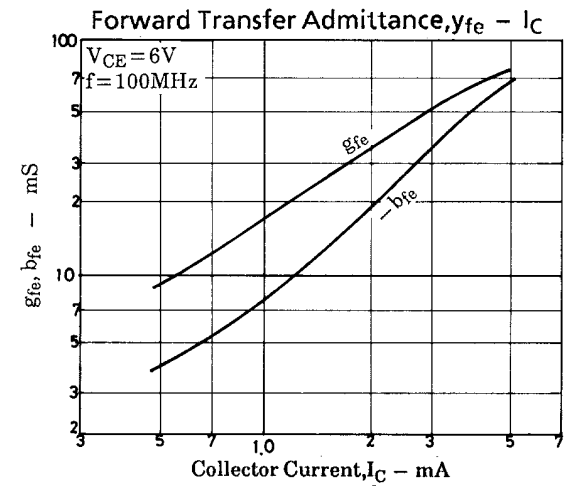
Input Admittance, y_{ie} – I_C



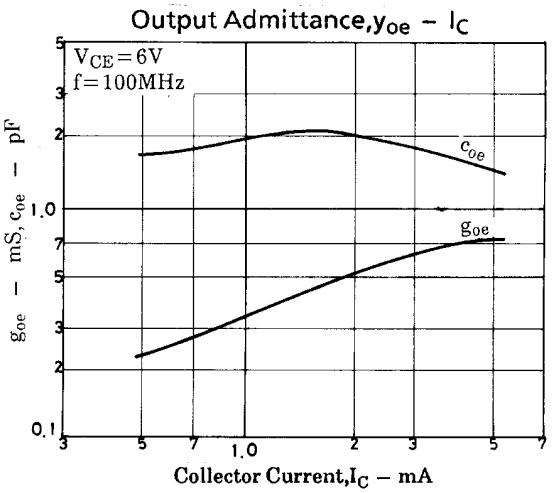
Reverse Transfer Admittance, y_{re} – I_C



Forward Transfer Admittance, y_{fe} – I_C



Output Admittance, y_{oe} – I_C



PG, NF – I_C