Ordering number: EN3020

SANYO No.3020

2SC4399

NPN Epitaxial Planar Silicon Transistor

High-Frequency General-Purpose Amp Applications

Features

- High power gain : PG = 25dB typ (f = 100MHz)
- Very small-sized package permitting the 2SC4399-applied sets to be made small and slim

Absolute Maximum Ratings at Ta = 25°C

			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	150	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55 to +150	°C

Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
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}	$V_{CE}=6V, I_C=1mA$	60※		270※	
Gain-Bandwidth Product	f_T	$V_{CE}=6V, I_C=1mA$	200	320		MHz
Reverse Transfer Capacitance	c_{re}	$V_{CB}=6V, f=1MHz$		0.9	1.2	pF
Base to Collector Time Constant	$r_{bb}'C_c$	$V_{CE}=6V, I_C=1mA, f=31.9MHz$		12	20	ps
Power Gain	PG	$V_{CE}=6V, I_C=1mA, f=100MHz$		25		dB
Noise Figure	NF	$V_{CE}=6V, I_C=1mA, f=100MHz$		3.0		dB

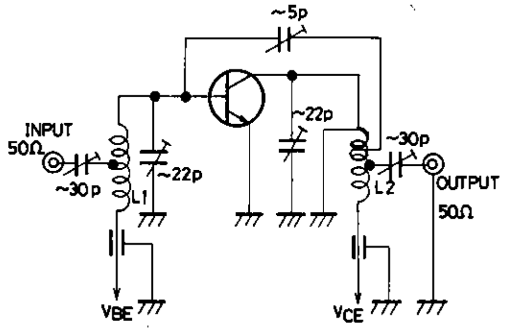
※ : The 2SC4399 is classified by 1mA h_{FE} as follows:

60	3	120	90	4	180	135	5	270

Marking : F

h_{FE} rank : 3,4,5

NF,PG Test Circuit

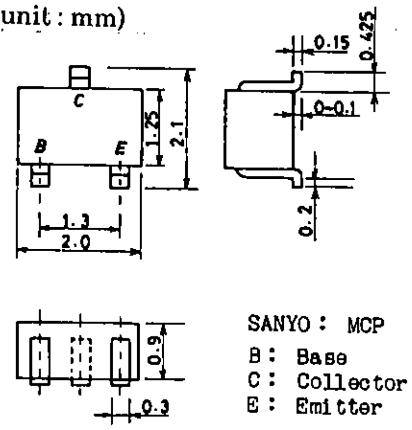


L1 : 1mm∅ plated wire 10mm∅ 4T, tap : 2T from V_{BE} side
L2 : 1mm∅ plated wire 10mm∅ 7T, tap : 1T from V_{CE} side
L3 : 1mm∅ enameled wire 10mm∅ 3T

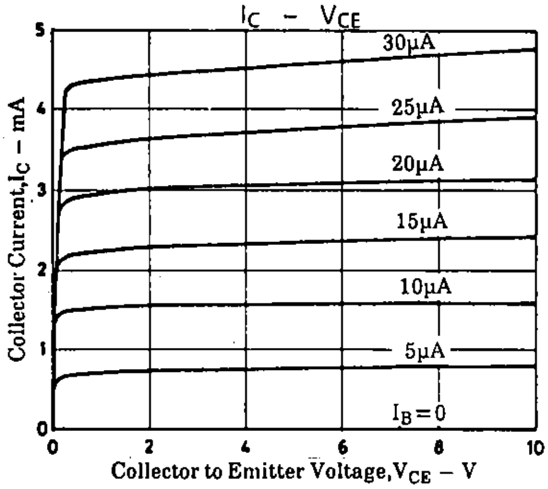
Unit (Capacitance : F)

Package Dimensions 2059A

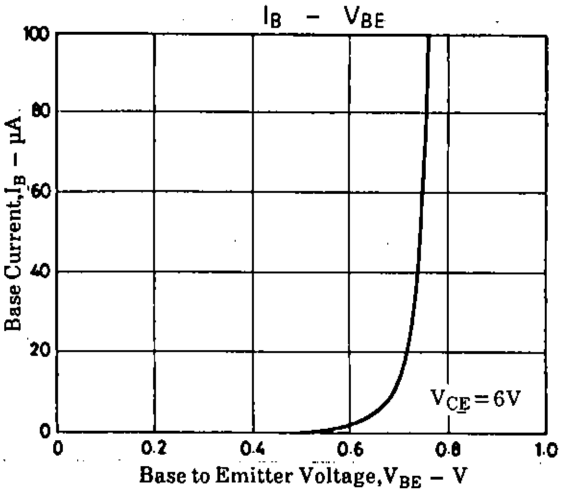
(unit : mm)



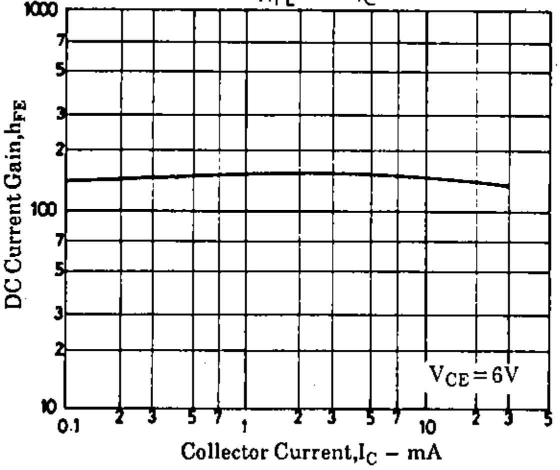
I_C – V_{CE}



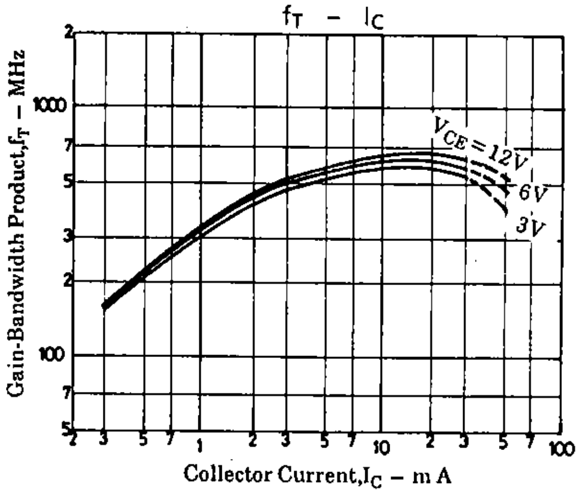
I_B – V_{BE}



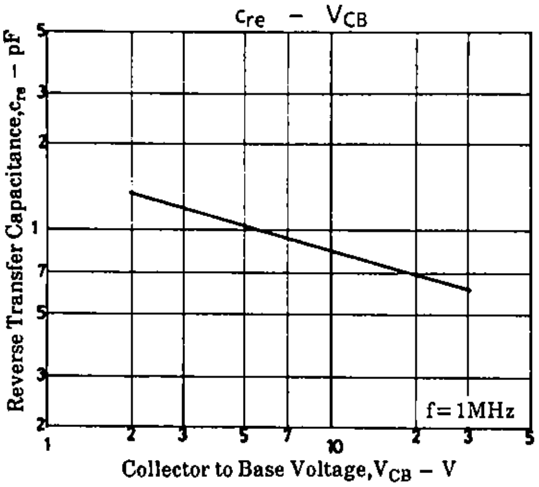
h_{FE} – I_C



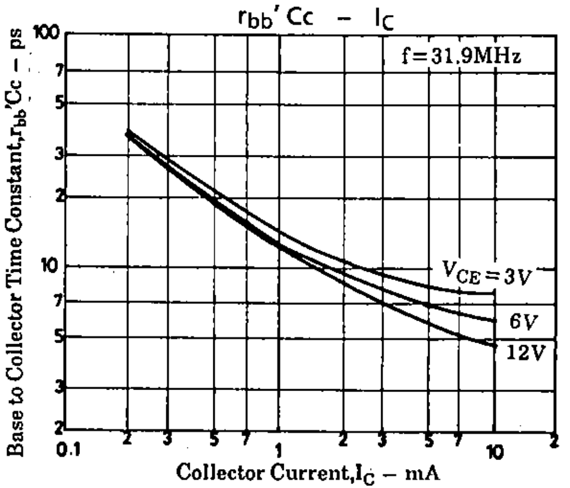
f_T – I_C



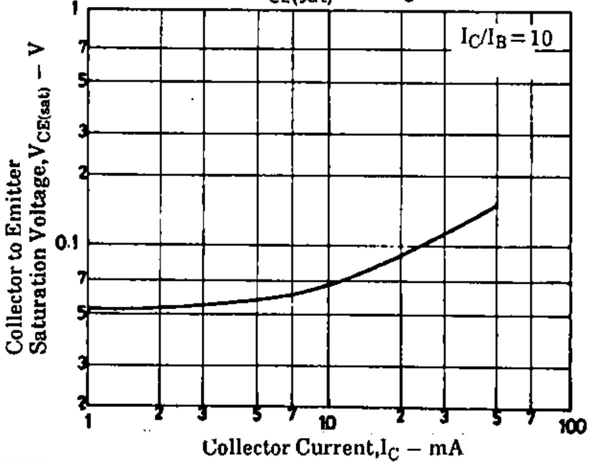
c_{re} – V_{CB}



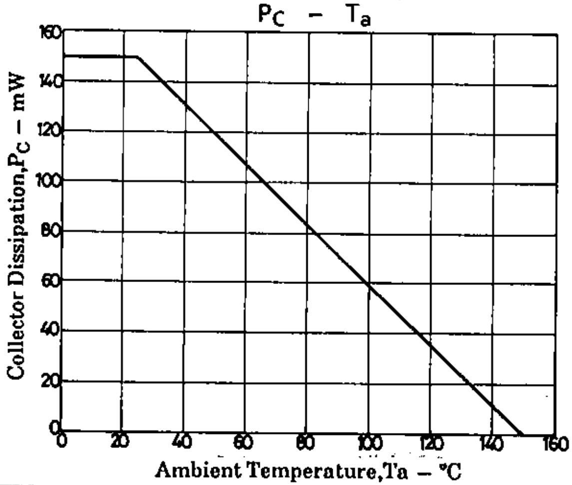
$r_{bb}'Cc$ – I_C



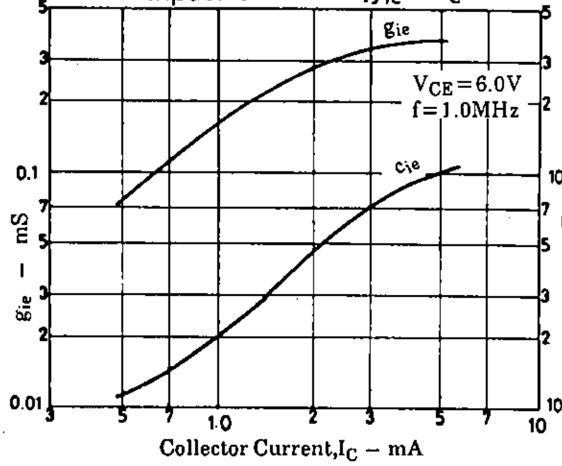
$V_{CE(sat)}$ – I_C



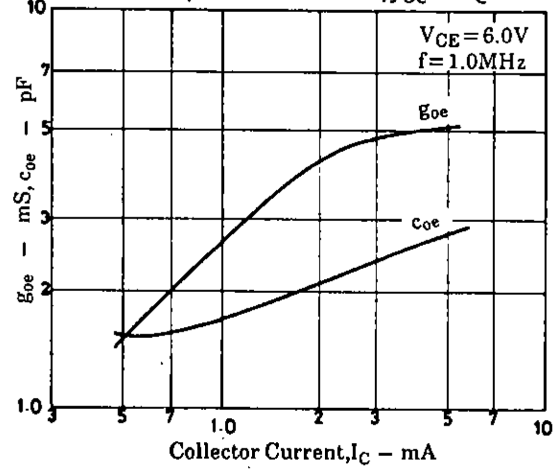
P_C – T_a



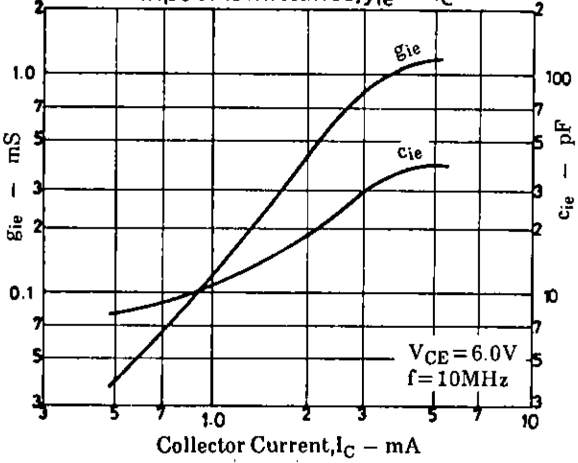
Input Admittance,y_{ie} – I_C



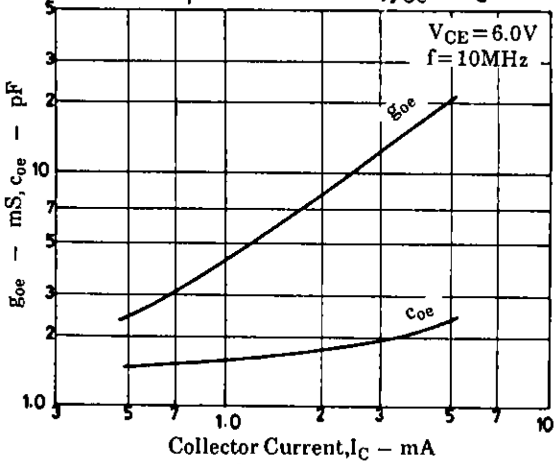
Output Admittance,y_{oe} – I_C



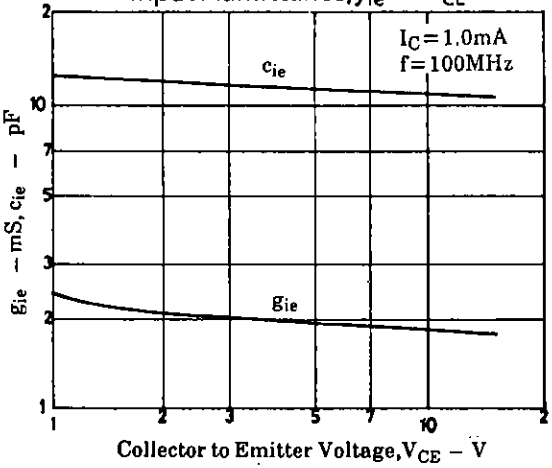
Input Admittance,y_{ie} – I_C



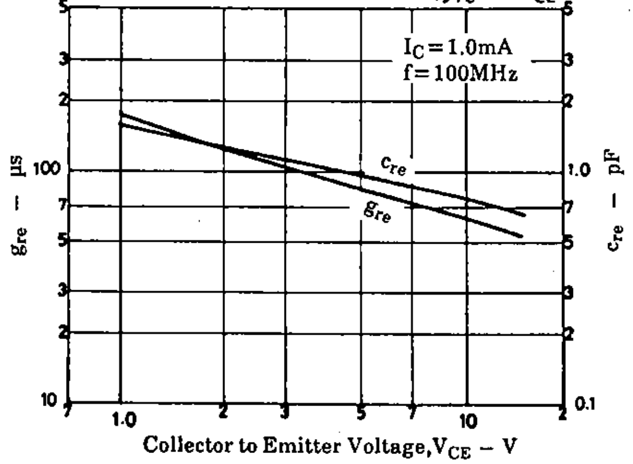
Output Admittance,y_{oe} – I_C



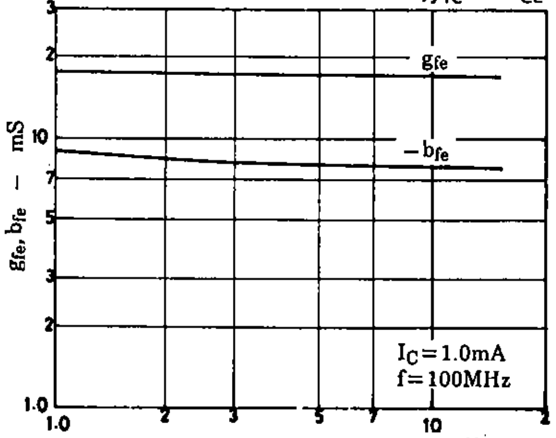
Input Admittance,y_{ie} – V_{CE}



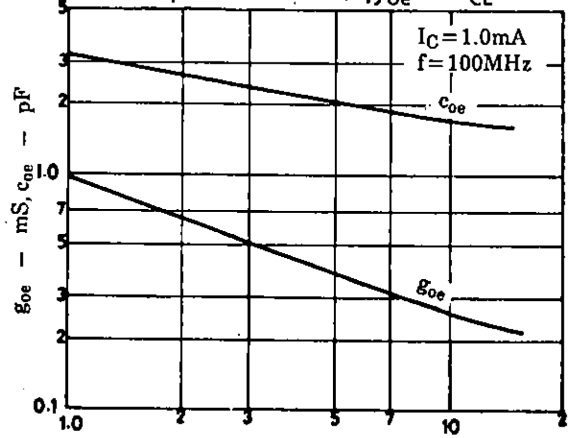
Reverse Transfer Admittance,y_{re} – V_{CE}



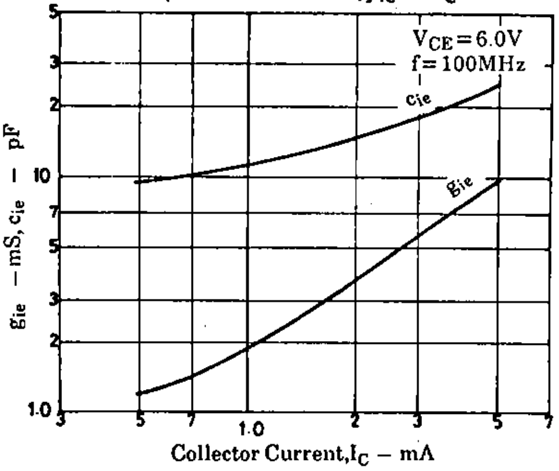
Forward Transfer Admittance,y_{fe} – V_{CE}



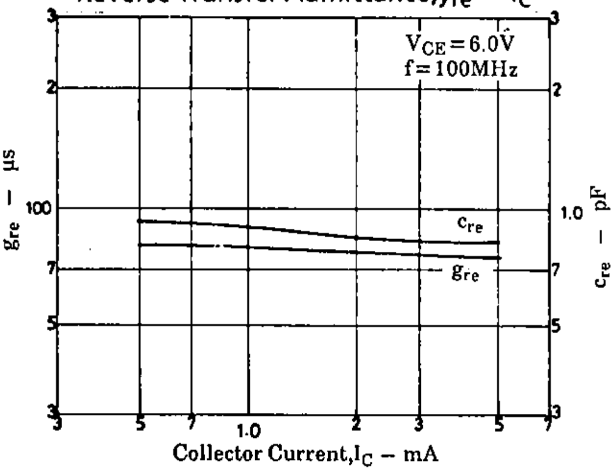
Output Admittance,y_{oe} – V_{CE}



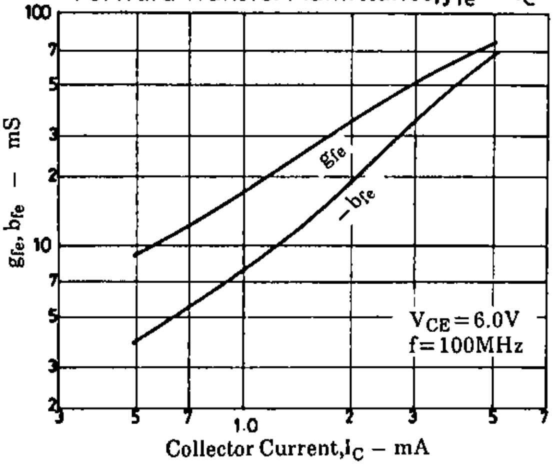
Input Admittance, y_{ie} – I_C



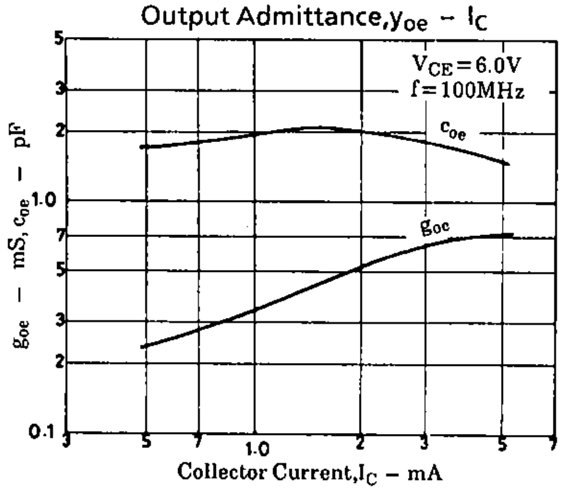
Reverse Transfer Admittance, y_{re} – I_C



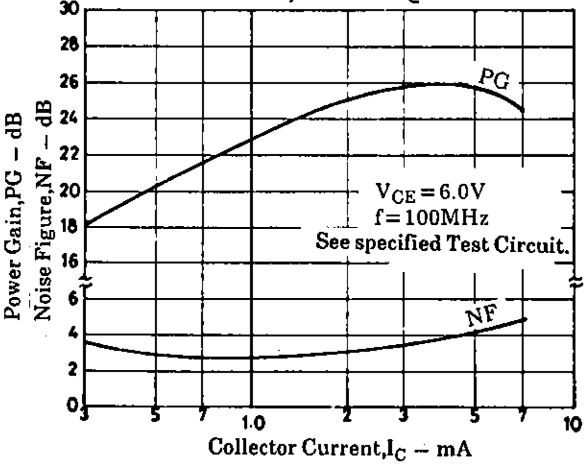
Forward Transfer Admittance, y_{fe} – I_C



Output Admittance, y_{oe} – I_C



PG, NF – I_C



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