SANYO No.796C

2SC2840

NPN Epitaxial Planar Type Silicon Transistor

FOR HIGH FREQUENCY AMPLIFIER USE

Features

- . FBET series.
- . Compact package enabling compactness of sets.
- . High f_T and small c_{re} (f_T=600MHz typ, c_{re}=0.5pF typ).

Absolute Maximum Ratings at Ta=25°C

			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	150	mW
Junction Temperature	Tj	125	°C
Storage Temperature	T_{stg}	-40 to +125	°C

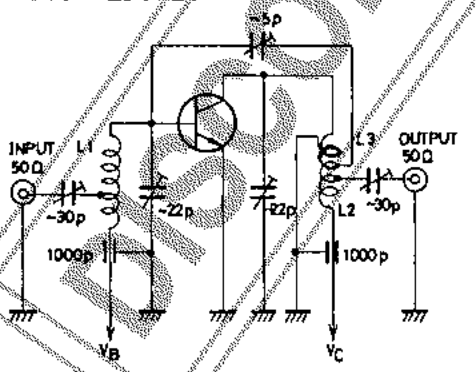
Electrical Characteristics at Ta=25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=10V,I_E=0			0.1	uA
Emitter Cutoff Current	I_{EBO}	V_{EB}=3V,I_C=0			0.1	uA
DC Current Gain	h_{FE}	V_{CE}=6V,I_C=1mA	40*		200*	
Gain-Bandwidth Product	f_T	V_{CE}=6V,I_C=4mA	360	600		MHz
Reverse Transfer Capacitance	c_{re}	V_{CB}=6V,f=1MHz		0.5	0.8	pF
C-B Time Constant	$r_{bb'}C_c$	V_{CB}=6V,I_C=1mA,f=31.9MHz			19	ps
Noise Figure	NF	V_{CE}=6V,I_C=1mA,f=100MHz		2.8		dB
Power Gain	PG	V_{CE}=6V,I_C=1mA,f=100MHz		27		dB

*:The 2SC2840 is classified by 1mA h_{FE} as follows :

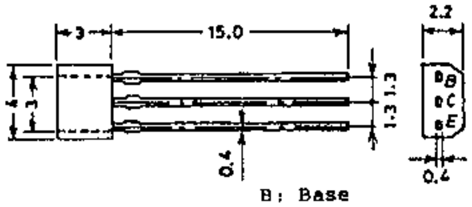
40 C 80	60 D 120	100 E 200

NF,PC Test Circuit



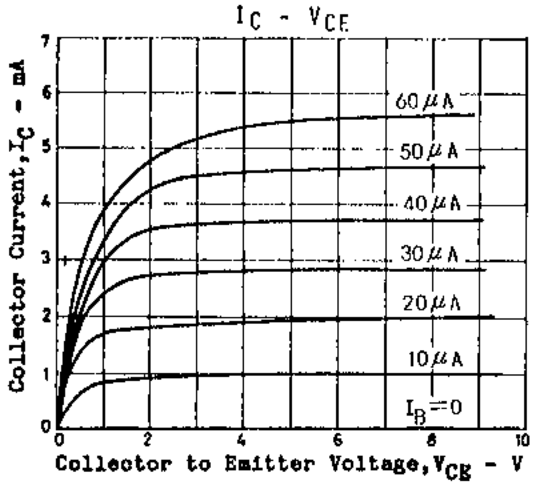
L1: 1mmφ plated wire, 10mmφ 5T, pitch 15mm, tap: 2T from base side.
L2: 1mmφ plated wire, 10mmφ 7T, pitch 10mm, tap: 2T from V_C side.
L3: 1mmφ enameled wire, 10mmφ 3T, pitch 10mm.

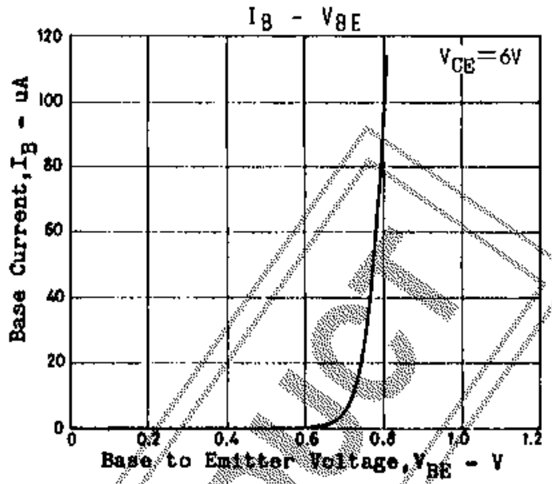
Case Outline 2033
(unit:mm)

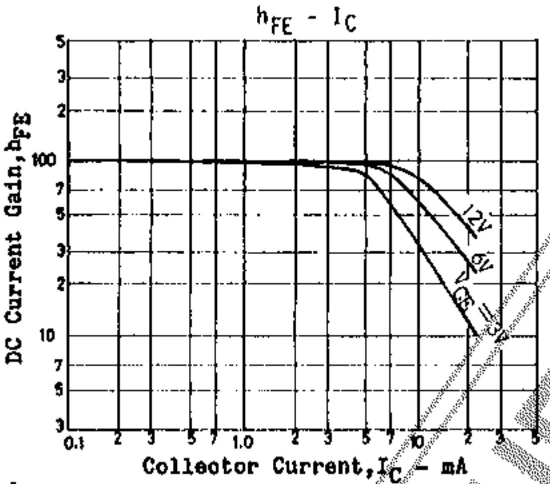


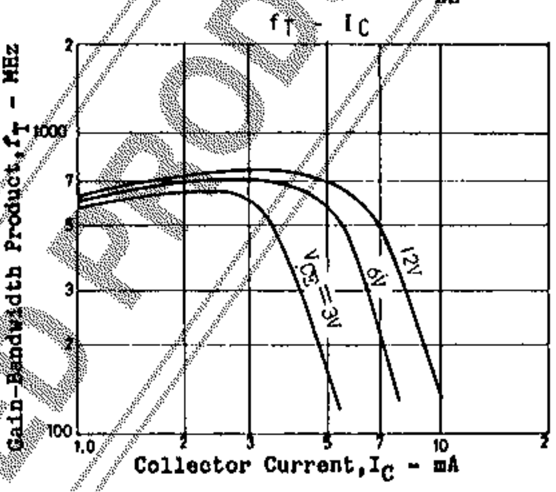
B: Base
C: Collector
E: Emitter

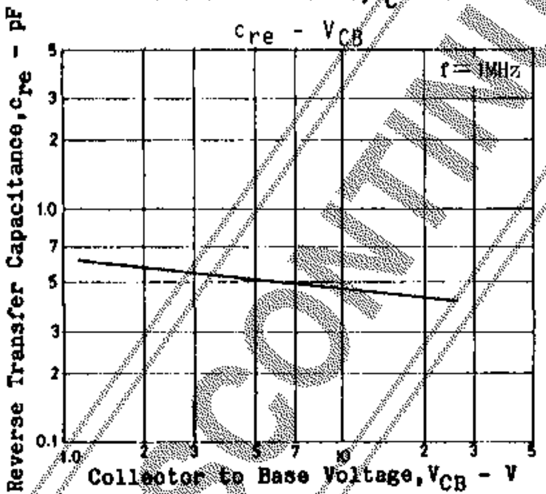
SANYO: SPA

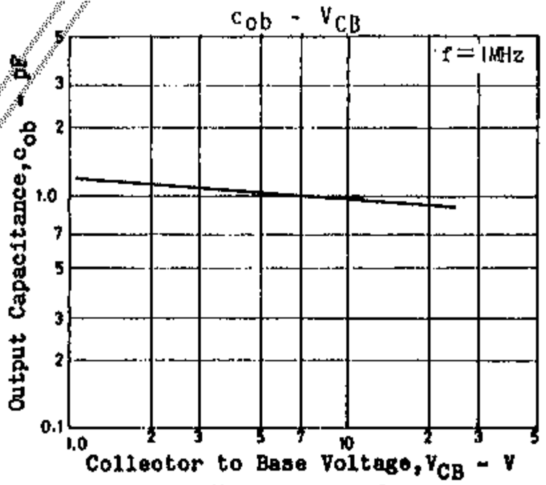

IC - VCE
Collector Current, IC - mA
0
1
2
3
4
5
6
7
60μA
50μA
40μA
30μA
20μA
10μA
IB=0
0
2
4
6
8
10
Collector to Emitter Voltage, VCE - V

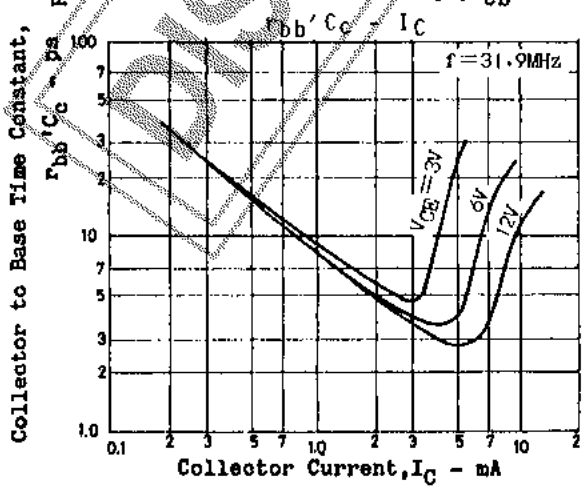

IB - VBE
VCE=6V
Base Current, IB - uA
0
20
40
60
80
100
120
0
0.2
0.4
0.6
0.8
1.0
1.2
Base to Emitter Voltage, VBE - V

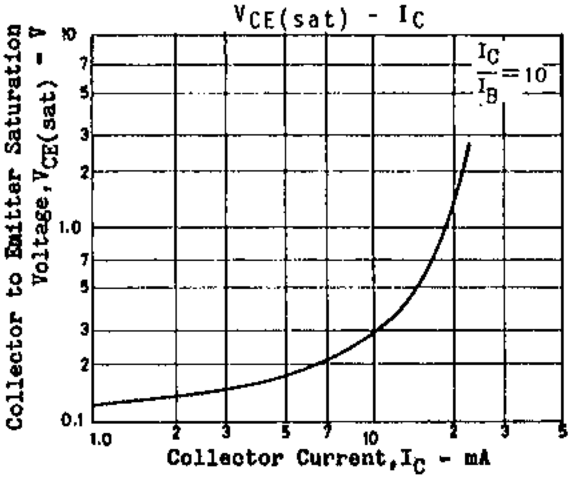

hFE - IC
DC Current Gain, hFE
3
5
7
10
2
3
5
7
100
2
3
5
12V
6V
VCE=3V
0.1
2
3
5
7
1.0
2
3
5
7
10
2
3
5
Collector Current, IC - mA


fT - IC
Gain-Bandwidth Product, fT - MHz
100
2
3
5
7
1000
2
12V
6V
VCE=3V
1.0
2
3
5
7
10
2
Collector Current, IC - mA

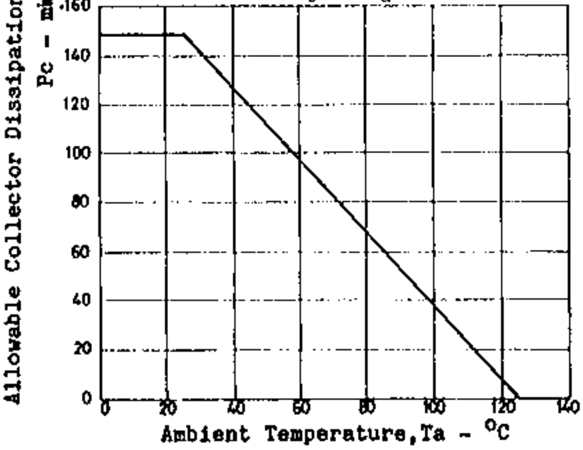

cre - VCB
f=1MHz
Reverse Transfer Capacitance, cre - pF
0.1
2
3
5
7
1.0
2
3
5
1.0
2
3
5
7
10
2
3
5
Collector to Base Voltage, VCB - V


cob - VCB
f=1MHz
Output Capacitance, cob - pF
0.1
2
3
5
7
1.0
2
3
5
1.0
2
3
5
7
10
2
3
5
Collector to Base Voltage, VCB - V

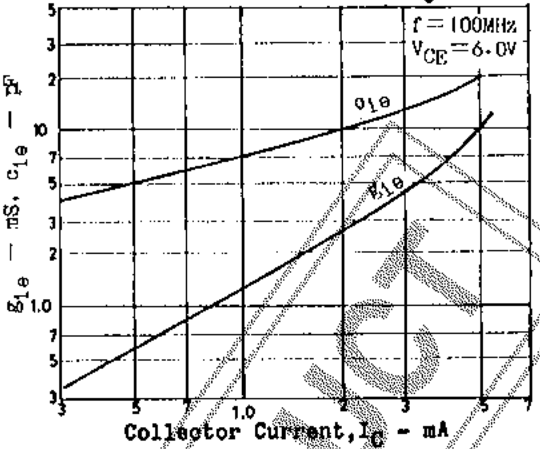

rbb'Cc - IC
f=31.9MHz
Collector to Base Time Constant, rbb'Cc - ps
1.0
2
3
5
7
10
2
3
5
7
100
VCE=3V
6V
12V
0.1
2
3
5
7
1.0
2
3
5
7
10
2
Collector Current, IC - mA


VCE(sat) - IC
IC/IB=10
Collector to Emitter Saturation Voltage, VCE(sat) - V
0.1
2
3
5
7
1.0
2
3
5
7
10
1.0
2
3
5
7
10
2
3
5
Collector Current, IC - mA

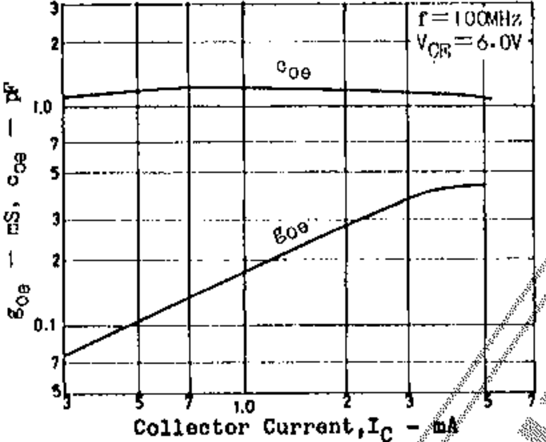
P_C - T_a



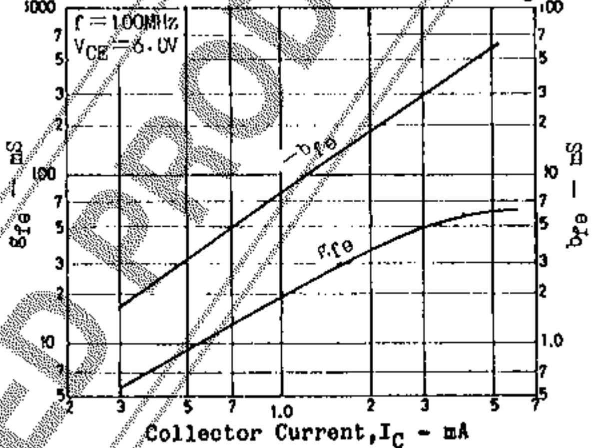
Input Admittance yie - I_C



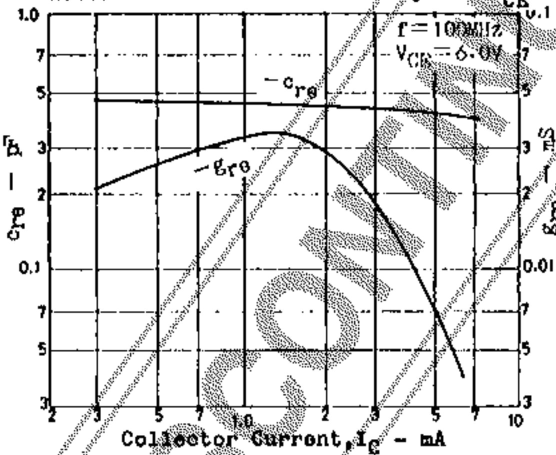
Output Admittance yoe - I_C



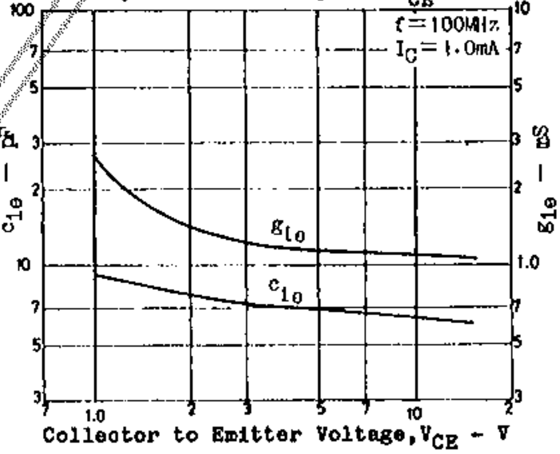
Forwrad Transfer Admittance yfe - I_C



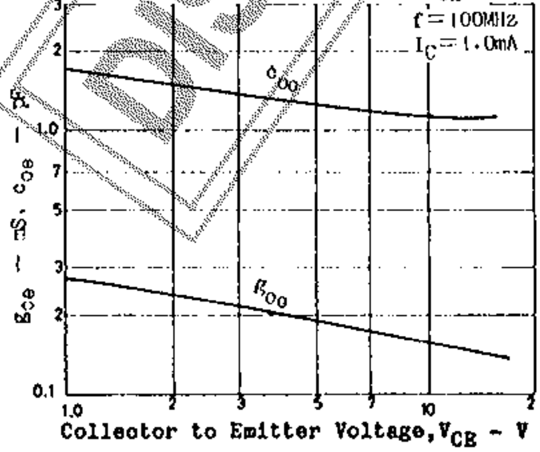
Reverse Transfer Admittance yre - V_{CE}



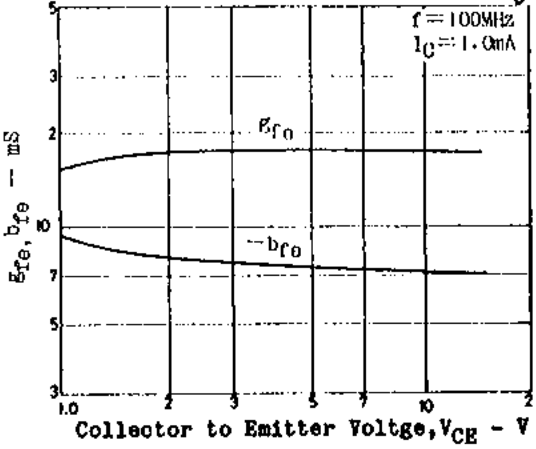
Input Admittance yie - V_{CE}



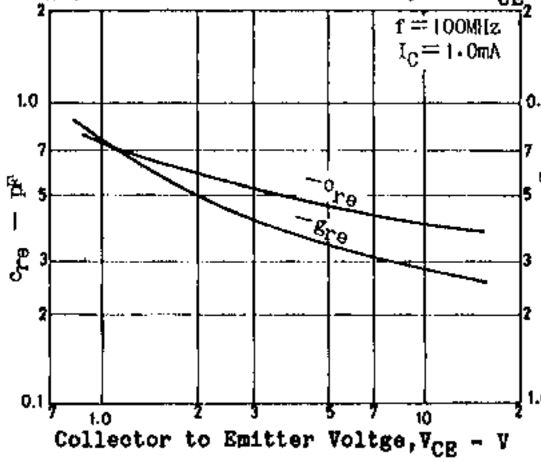
Output Admittance yoe - V_{CE}



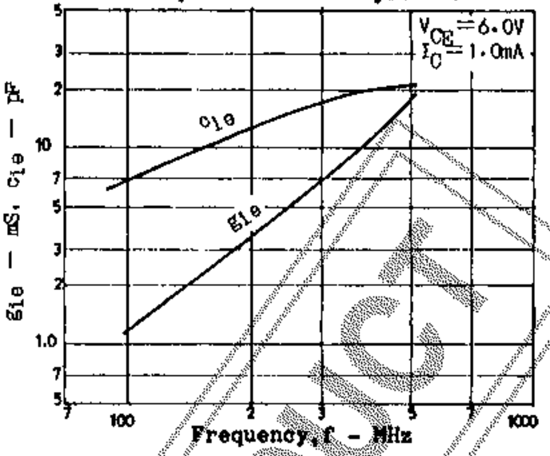
Forward Transfer Admittance yfe - I_C



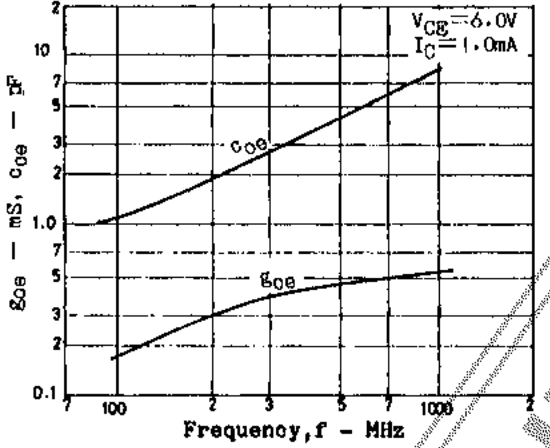
Reverse Transfer Admittance yre - V_{CE}



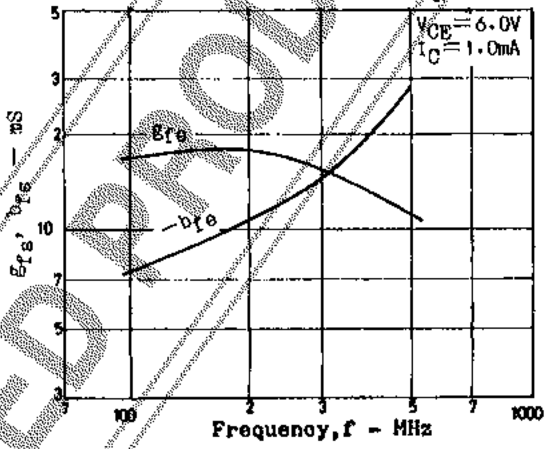
Input Admittance yie - f



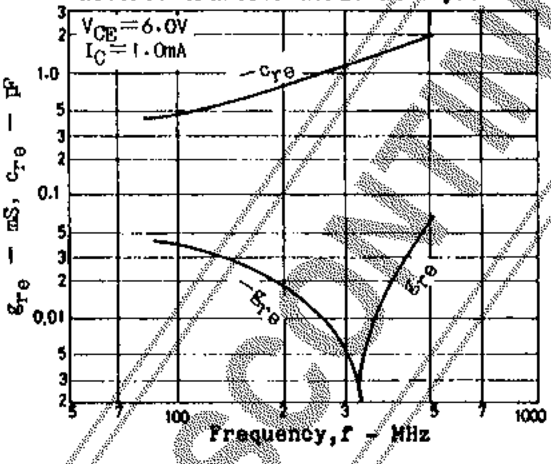
Ouput Admittance yoe - f



Forward Transfer Admittance yfs - f



Reverse Transfer Admittance yre - f



PG, NF - I_C