

SANYO	No.1944B	2SC3771
		NPN Epitaxial Planar Silicon Transistor UHF, VHF Oscillator, Mixer, HF Amp Applications

Applications

- UHF/VHF frequency converters, local oscillators, HF amplifiers

Features

- High power gain: PG=10dB typ(f=0.9GHz).
PG=16dB typ(f=0.4GHz).
- Small noise figure: NF=3.5dB typ(f=0.9GHz).
- High cutoff frequency: $f_T=2.2\text{GHz}$ typ.

Absolute Maximum Ratings at Ta=25°C

			unit
Collector to Base Voltage	V _{CB0}	30	V
Collector to Emitter Voltage	V _{CEO}	20	V
Emitter to Base Voltage	V _{EBO}	3	V
Collector Current	I _C	30	mA
Base Current	I _B	10	mA
Collector Dissipation	P _C	250	mW
Junction Temperature	T _J	150	°C
Storage Temperature	T _{stg}	-55 to +150	°C

Electrical Characteristics at Ta=25°C

		min	typ	max	unit
Collector Cutoff Current	I _{CB0} V _{CB} =20V, I _E =0			1.0	µA
Emitter Cutoff Current	I _{EBO} V _{EB} =2V, I _C =0			10	µA
DC Current Gain	h _{FE} V _{CE} =10V, I _C =5mA	40*		200*	
Gain-Bandwidth Product	f _T V _{CE} =10V, I _C =5mA	1.4	2.2		GHz
Output Capacitance	c _{ob} V _{CB} =10V, f=1MHz	0.7	1.1		pF
Reverse Transfer Capacitance	c _{re} V _{CB} =10V, f=1MHz	0.5			pF
Power Gain	PG V _{CE} =10V, I _C =10mA, f=0.4GHz		16		dB
	V _{CE} =10V, I _C =10mA, f=0.9GHz		10		dB
Noise Figure	NF V _{CE} =10V, I _C =3mA, f=0.9GHz,	3.5			dB

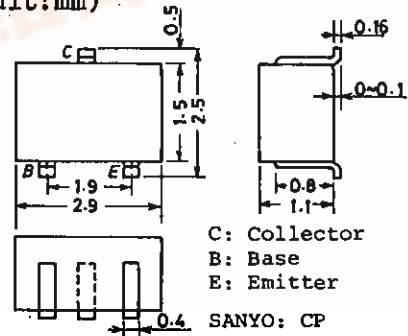
See specified Test Circuit.

*: The 2SC3771 is classified by 5mA h_{FE} as follows:

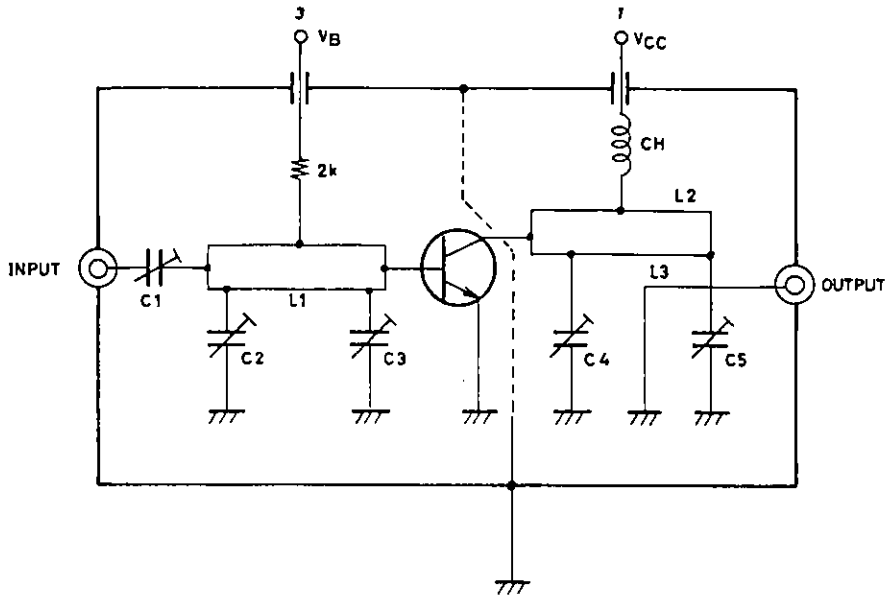
40	2	80	60	3	120	100	4	200
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(Note) Marking :KY
h_{FE} rank :2,3,4

Package Dimensions 2018A
(unit:mm)



PG, NF Test Circuit

Unit (Resistance : Ω)

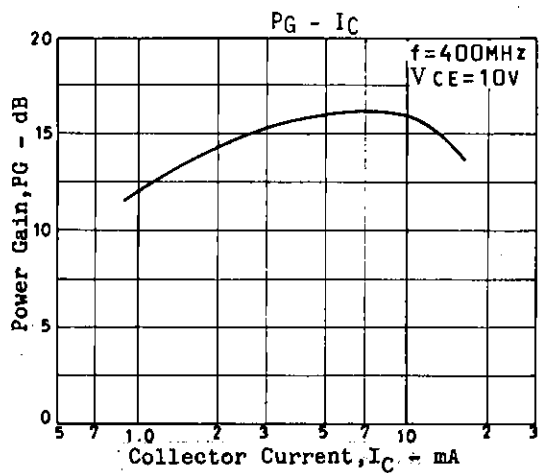
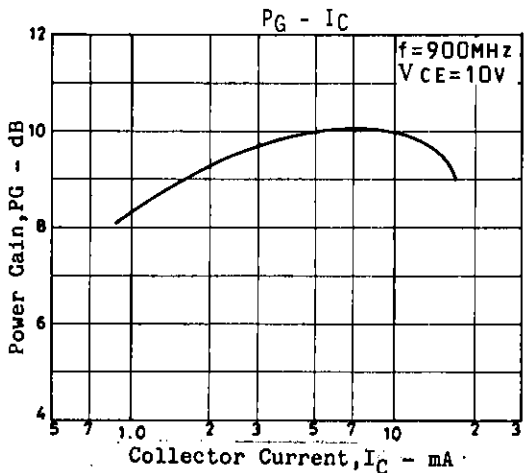
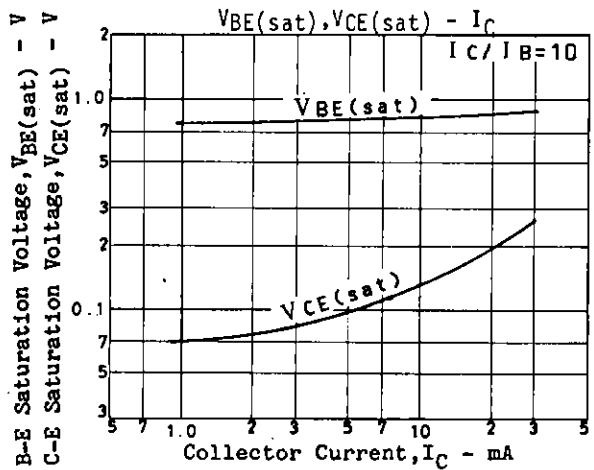
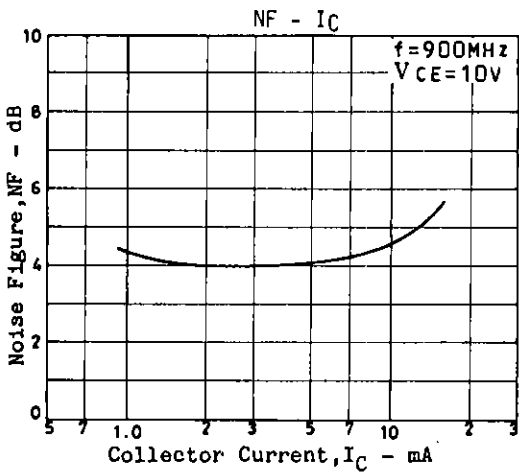
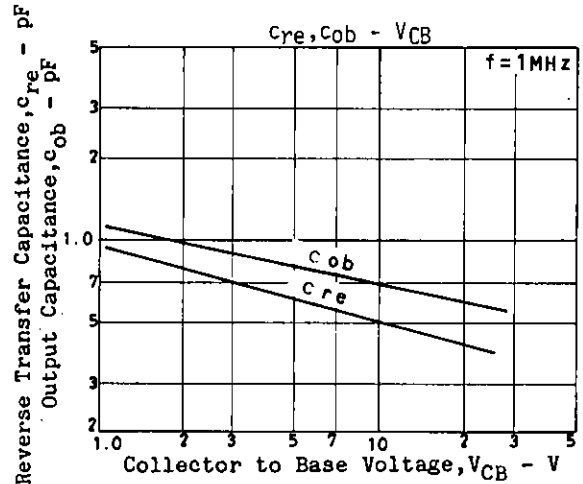
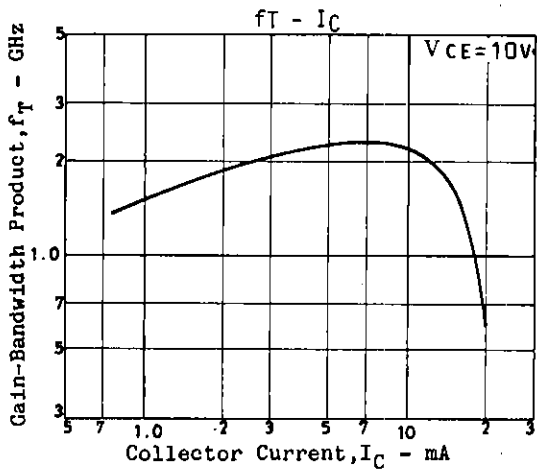
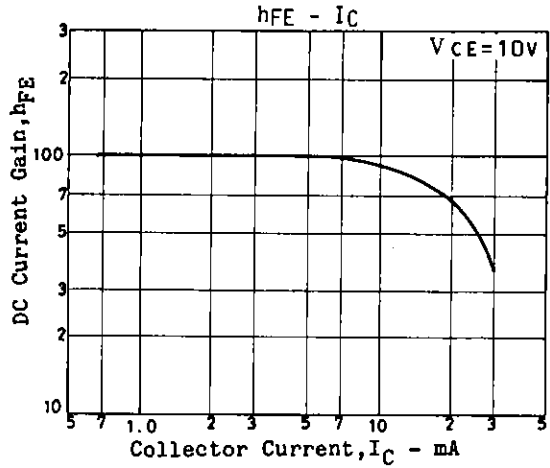
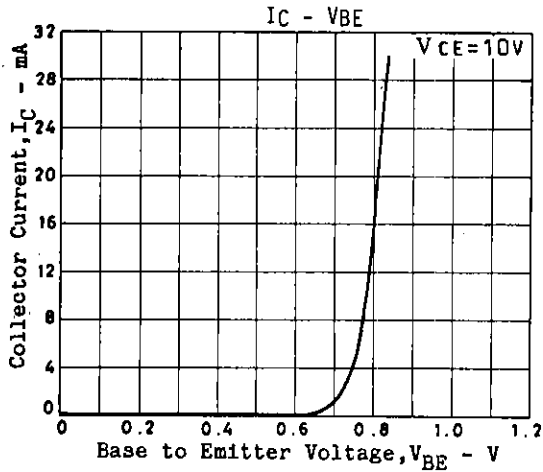
900MHz	
C1	~ 5 pF
C2	~ 10 pF
C3	~ 10 pF
C4	~ 10 pF
C5	~ 10 pF
L1	$W \doteq 1.5$ mm, $l \doteq 25$ mm strip line
L2	$W \doteq 4$ mm, $l \doteq 25$ mm strip line
L3	0.5ϕ , $l \doteq 40$ mm
CH	2t+bead core

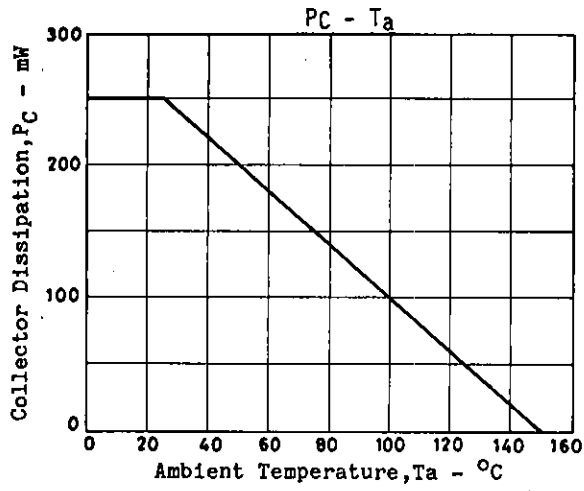
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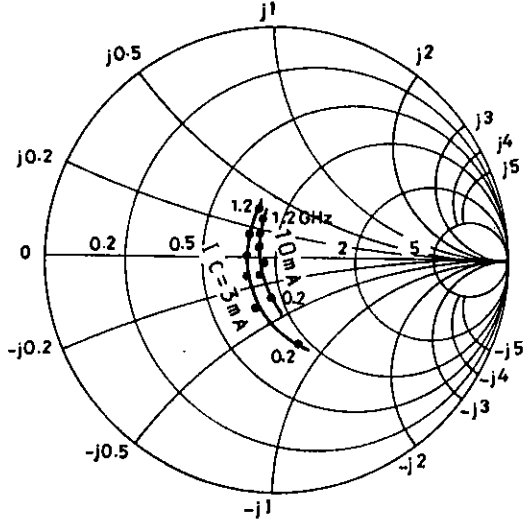
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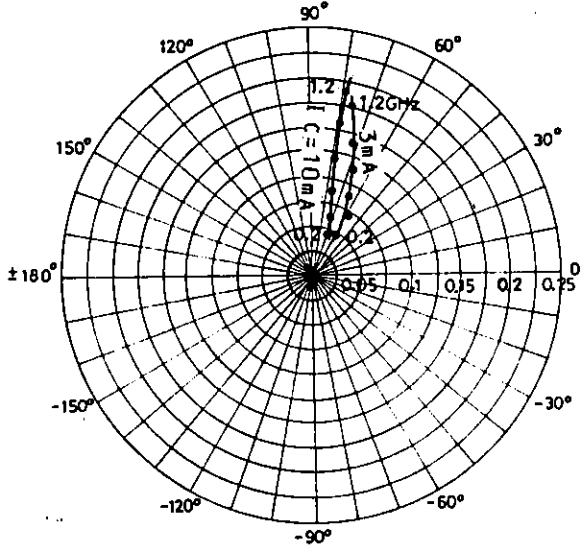
S11e : VCE=10V

f=200MHz step



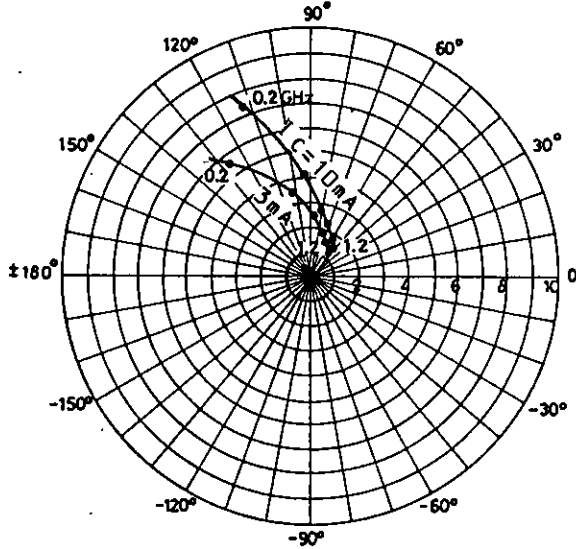
S12e : VCE=10V

f=200MHz step



S21e : VCE=10V

f=200MHz step



S22e : VCE=10V

f=200MHz step

