SANYO

No.1946B

2SC3773

NPN Epitaxial Planar Silicon Transistor

UHF Oscillator, Mixer, Low-Noise Amp, Wide-Band Amp Applications

Applications

. UHF frequency converters, local oscillators, low-noise amplifiers, wide-band amplifiers.

Features

. Small noise figure: NF=3.0dB typ(f=0.9GHz).
. High power gain: MAG=12dB typ(f=0.9GHz).
. High cutoff frequency: f_T=3.5GHz typ.

Absolute Maximum Ratings at Ta=25°C

			unit
Collector to Base Voltage	V_{CBO}	25	V
Collector to Emitter Voltage	V_{CEO}	16	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Base Current	I_B	20	mA
Collector Dissipation	P_C	250	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55 to +150	°C

Electrical Characteristics at Ta=25°C

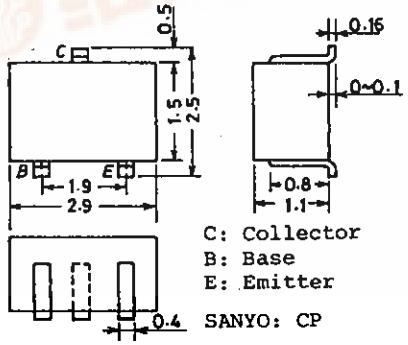
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=16V,I_E=0			1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=2V,I_C=0			10	μA
DC Current Gain	h_{FE}	V_{CE}=10V,I_C=5mA	40*		200*	
Gain-Bandwidth Product	f_T	V_{CE}=10V,I_C=5mA	1.8	3.5		GHz
Output Capacitance	c_{ob}	V_{CB}=10V,f=1MHz		0.6	1.0	pF
Reverse Transfer Capacitance	c_{re}	V_{CB}=10V,f=1MHz		0.45		pF
Forward Transfer Gain	$\|S21e\|^2$	V_{CE}=10V,I_C=10mA,f=0.9GHz	7.5	9		dB
Maximum Available Power Gain	MAG	V_{CE}=10V,I_C=10mA,f=0.9GHz		12		dB
Noise Figure	NF	V_{CE}=10V,I_C=3mA,f=0.9GHz, See specified Test Circuit.		3.0	5.0	dB

*: The 2SC3773 is classified by 5mA h_{FE} as follows:

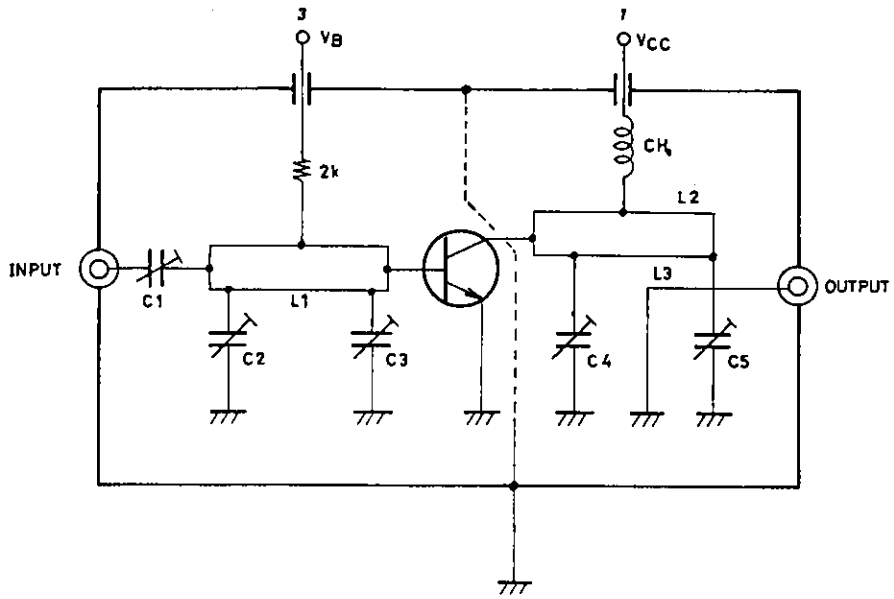
40	2	80	60	3	120	100	4	200

(Note) Marking :MY
h_{FE} rank :2,3,4

Package Dimensions 2018A
(unit:mm)



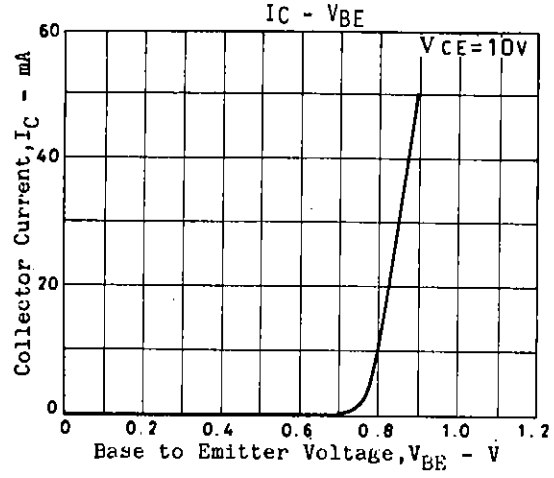
NF Test Circuit



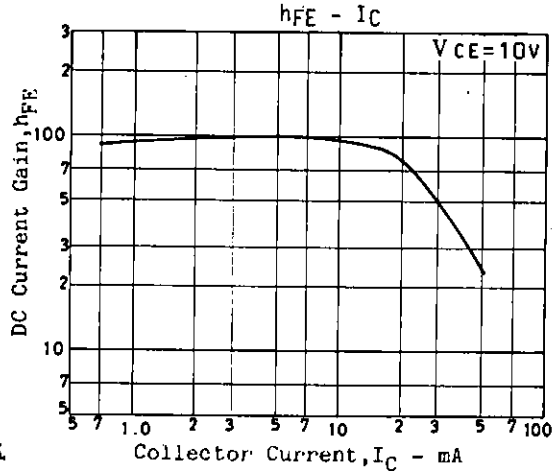
Unit (Resistance : Ω)

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

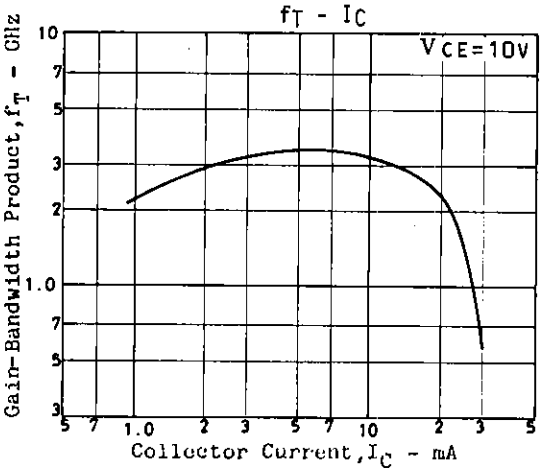
I_C - V_{BE}



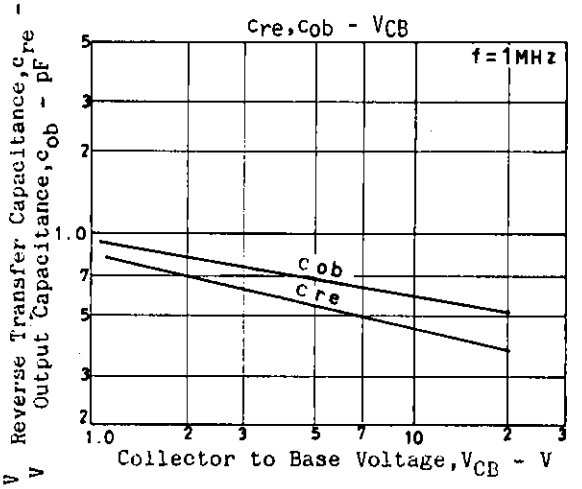
h_{FE} - I_C



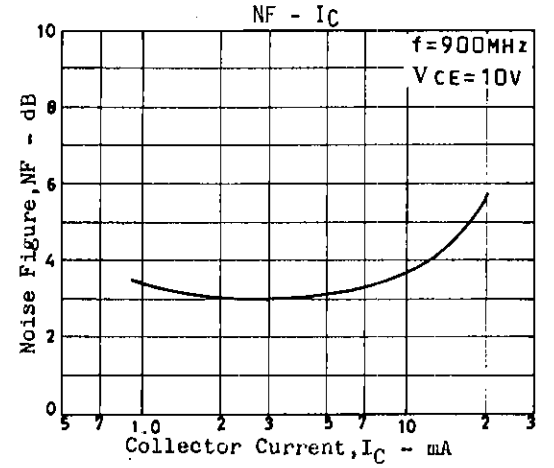
f_T - I_C



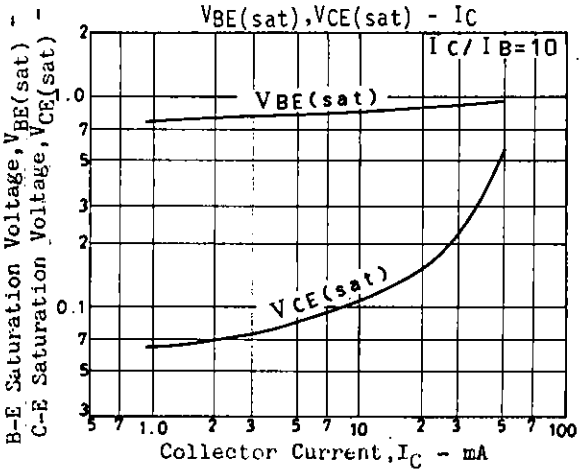
Cre, Cob - V_{CB}



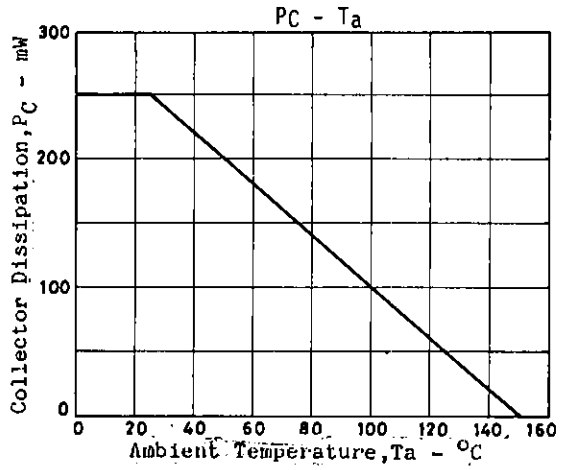
NF - I_C



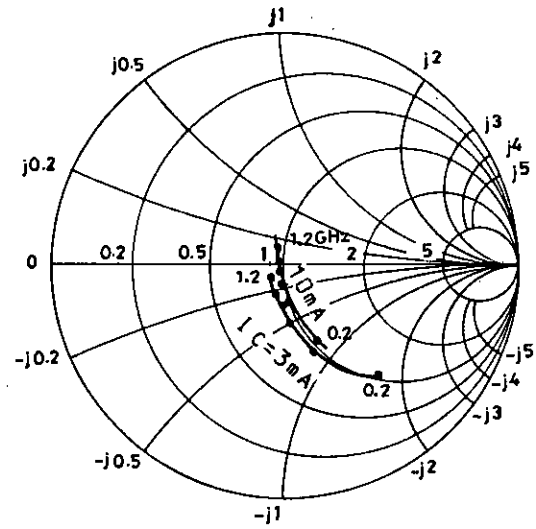
$V_{BE(sat)}$, $V_{CE(sat)}$ - I_C



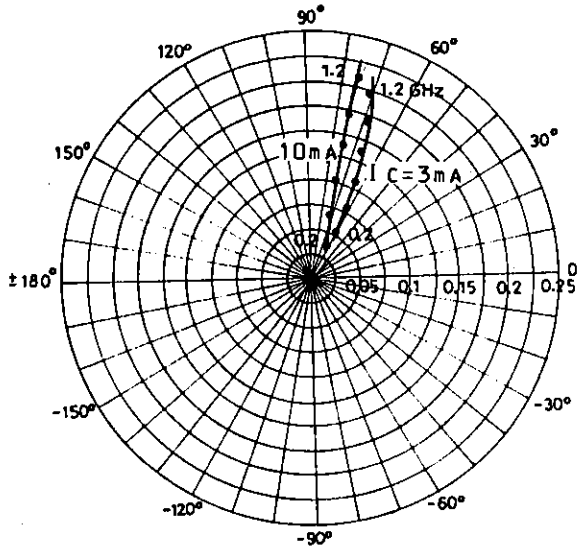
P_C - Ta



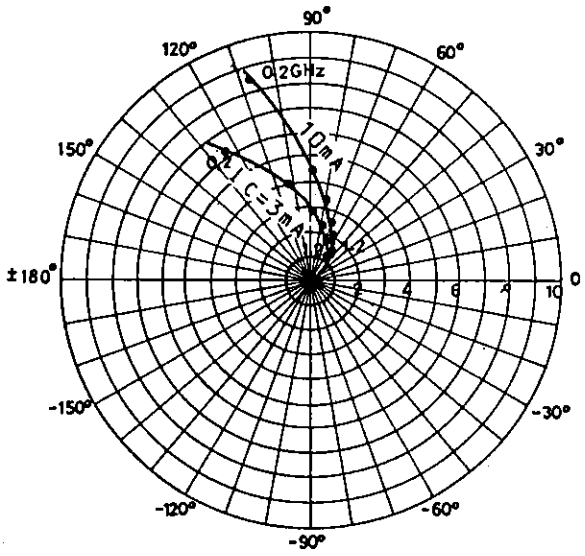
S11e : VCE=10V
f=200MHz step



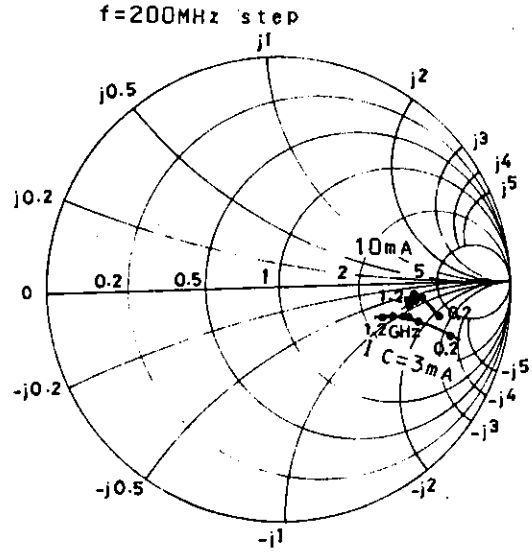
S12e : VCE=10V
f=200MHz step



S21e : VCE=10V
f=200MHz step



S22e : VCE=10V
f=200MHz step



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