Ordering number: EN 1945B

SANYO

No.1945B

2SC3772

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=2.5dB typ(f=0.9GHz).
. High power gain: MAG=12dB typ(f=0.9GHz).
. High cutoff frequency: f_T=3.0GHz 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	70	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

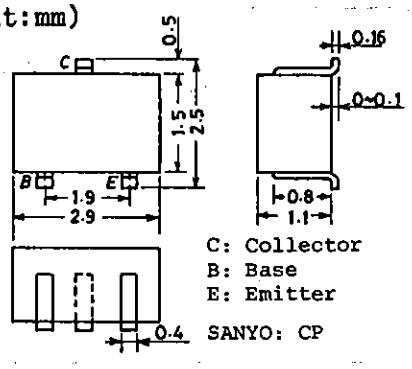
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB}=16V, I_E=0			1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB}=2V, I_C=0			10	μA
DC Current Gain	h_{FE}	V_{CE}=10V, I_C=10mA	40*		200*	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=10mA	1.5	3.0		GHz
Output Capacitance	c_{ob}	V_{CB}=10V, f=1MHz		0.65	1.0	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	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.		2.5		dB

*: The 2SC3772 is classified by 10mA h_{FE} as follows:

40	2	80	60	3	120	100	4	200

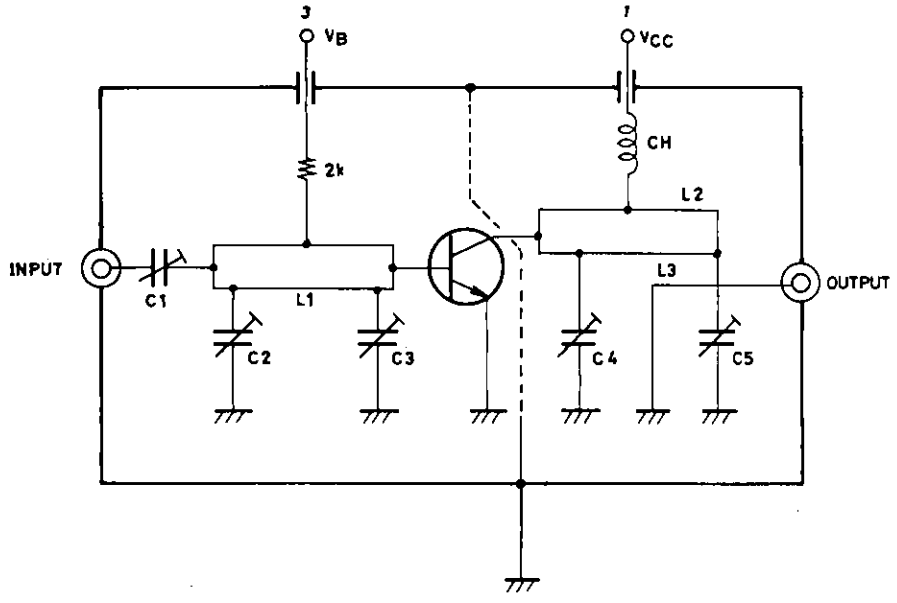
(Note) Marking :LY
h_{FE} rank :2,3,4

Package Dimensions 2018A
(unit:mm)



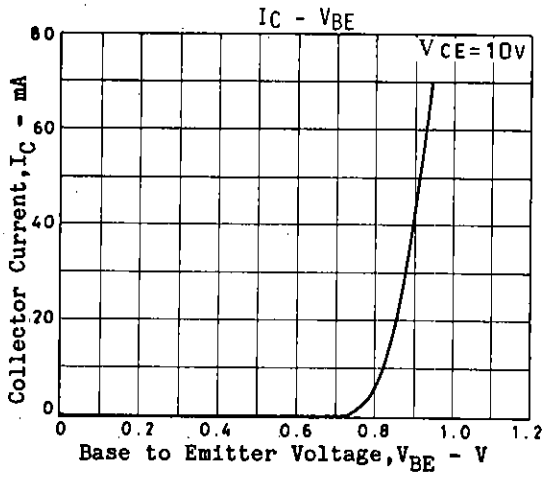
C: Collector
B: Base
E: Emitter
SANYO: CP

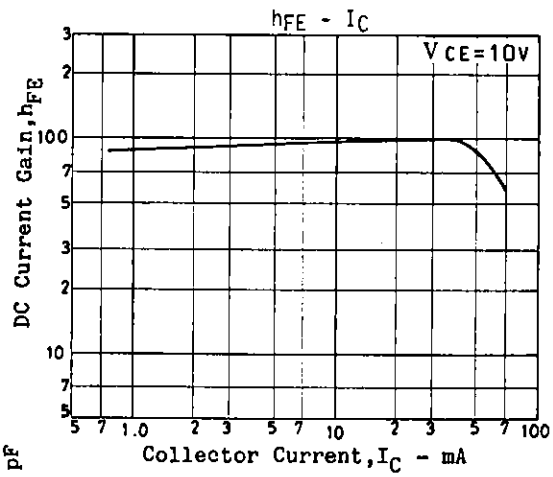
NF Test Circuit

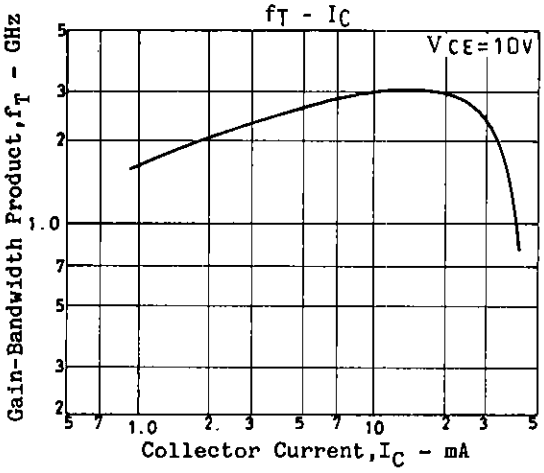


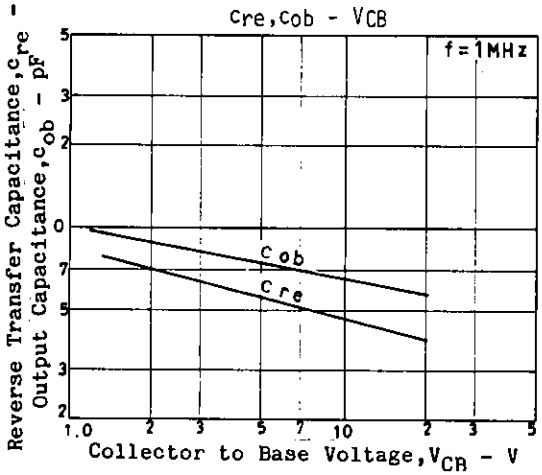
Unit (Resistance : Ω)

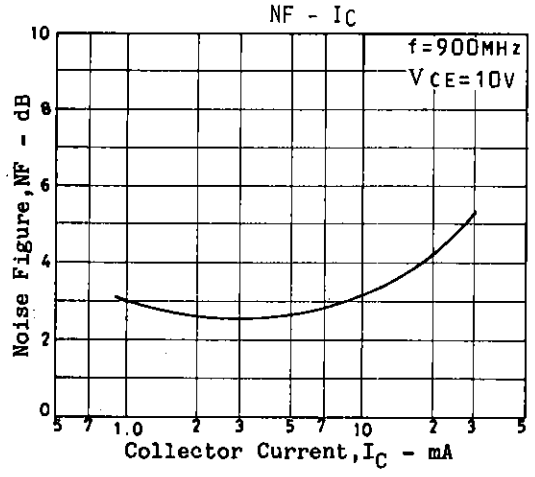
	900MHz
C1	~5pF
C2	~10pF
C3	~10pF
C4	~10pF
C5	~10pF
L1	W≒1.5mm, l≒25mm strip line
L2	W≒4mm, l≒25mm strip line
L3	0.5φ, l≒40mm
CH	2t+bead core

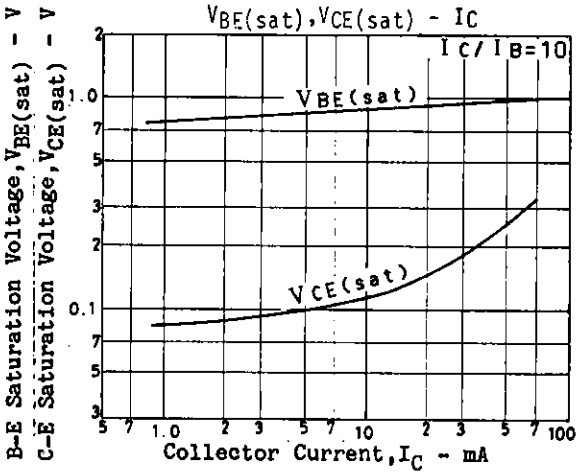

IC - VBE
VCE=10V
Collector Current,IC - mA
Base to Emitter Voltage,VBE - V

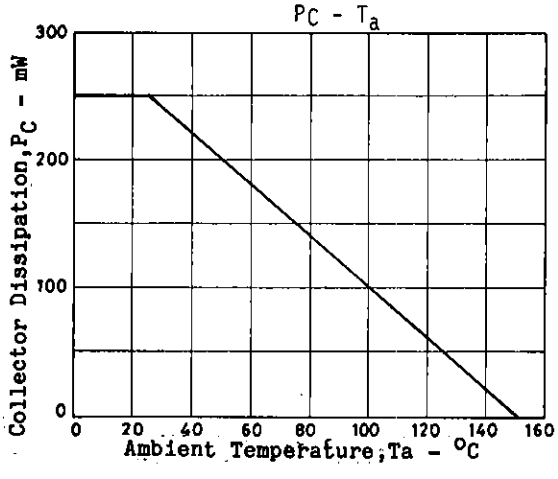

hFE - IC
VCE=10V
DC Current Gain,hFE
Collector Current,IC - mA


fT - IC
VCE=10V
Gain-Bandwidth Product,fT - GHz
Collector Current,IC - mA

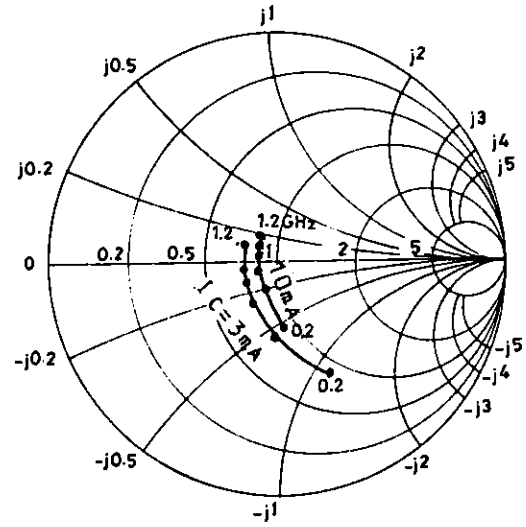

Cre,Cob - VCB
f=1MHz
Output Capacitance,Cob - pF
Reverse Transfer Capacitance,Cre - pF
Cob
Cre
Collector to Base Voltage,VCB - V


NF - IC
f=900MHz
VCE=10V
Noise Figure,NF - dB
Collector Current,IC - mA

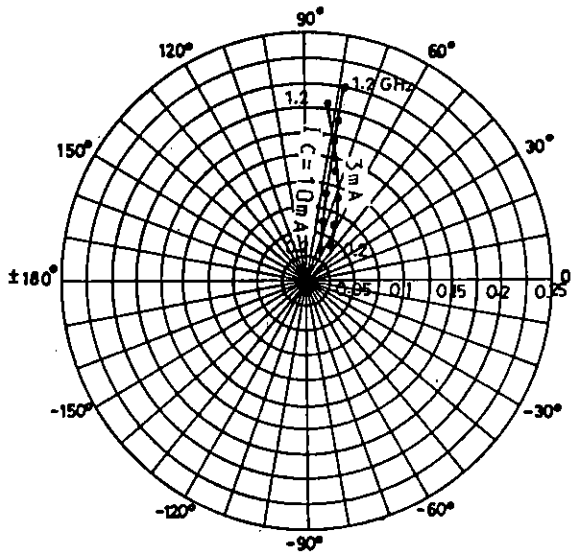

VBE(sat),VCE(sat) - IC
IC/IB=10
B-E Saturation Voltage,VBE(sat) - V
C-E Saturation Voltage,VCE(sat) - V
VBE(sat)
VCE(sat)
Collector Current,IC - mA


PC - Ta
Collector Dissipation,PC - mW
Ambient Temperature,Ta - °C

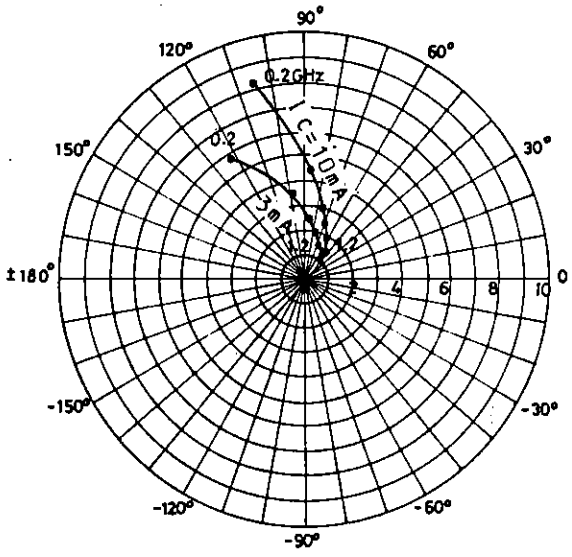
S11e : VCE=10V
f=200MHz step



S12e : VCE=10V
f=200MHz step



S21e : VCE=10V
f=200MHz step



S22e : VCE=10V
f=200MHz step