

<b>SANYO</b>	No.1945B	<b>2SC3772</b>
		NPN Epitaxial Planar Silicon Transistor <b>UHF Oscillator, Mixer, Low-Noise Amp, Wide-Band Amp Applications</b>

**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:  $f_T=3.0\text{GHz}$  typ.

**Absolute Maximum Ratings at Ta=25°C**

			unit
Collector to Base Voltage	$V_{CB0}$	25	V
Collector to Emitter Voltage	$V_{CE0}$	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	$T_J$	150	°C
Storage Temperature	$T_{stg}$	-55 to +150	°C

**Electrical Characteristics at Ta=25°C**

			min	typ	max	unit
Collector Cutoff Current	$I_{CB0}$	$V_{CB}=16V, I_E=0$			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	$ S_{21e}^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	$V_{CE}=10V, I_C=3mA, f=0.9GHz$		2.5		dB

See specified Test Circuit.

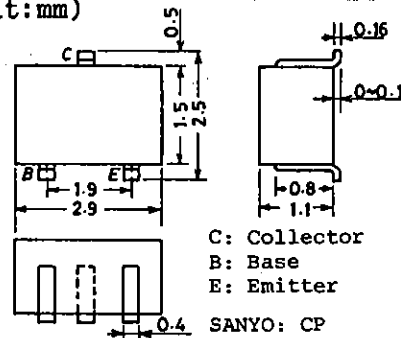
\*: The 2SC3772 is classified by 10mA  $h_{FE}$  as follows:

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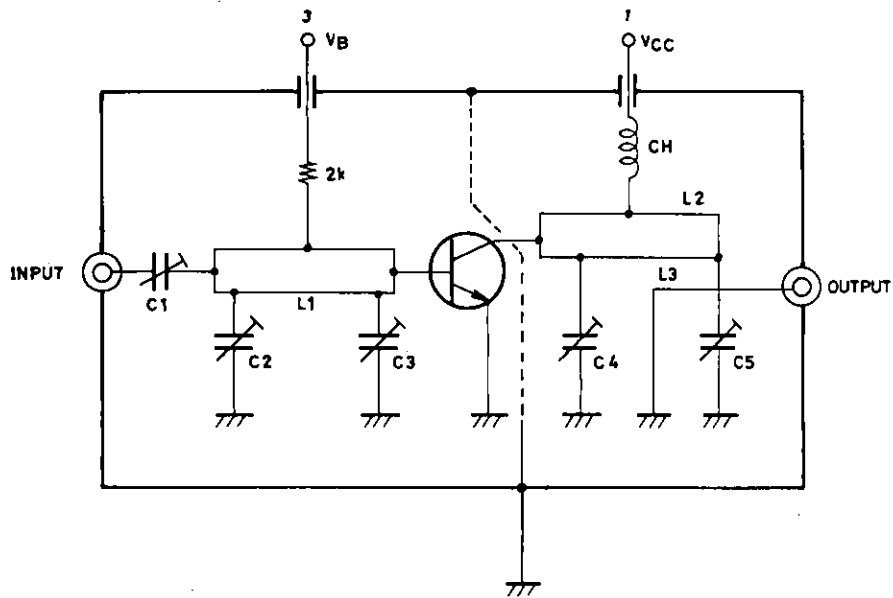
(Note) Marking :LY  
 $h_{FE}$  rank :2,3,4

**Package Dimensions 2018A**

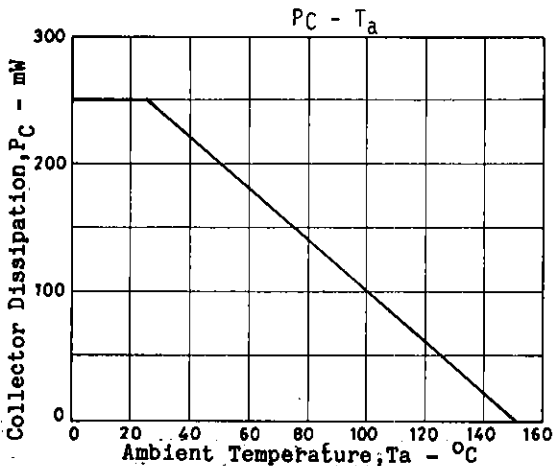
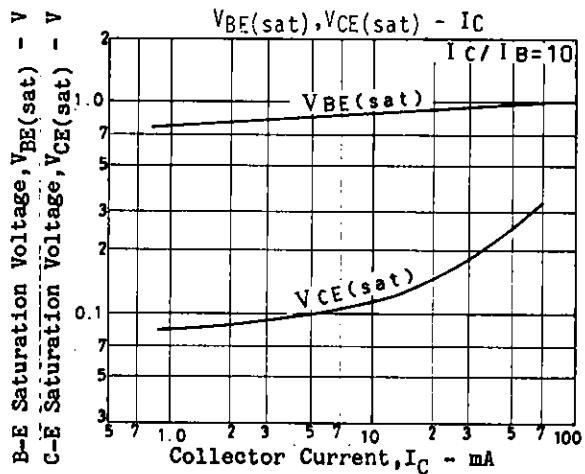
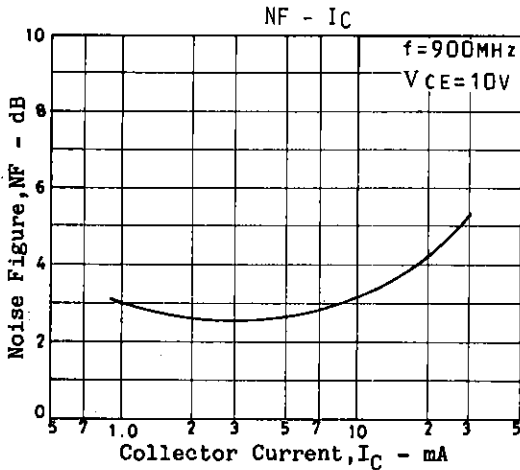
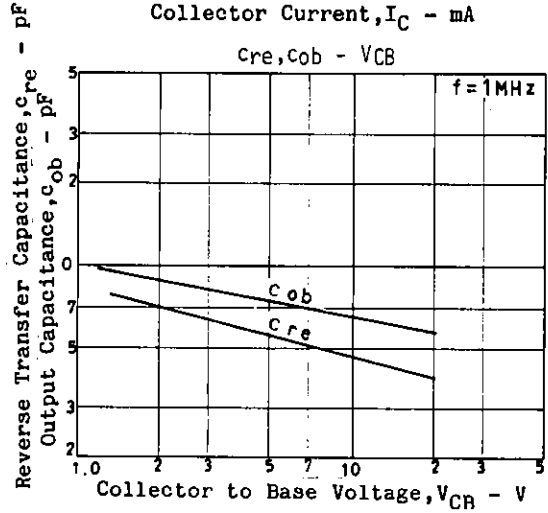
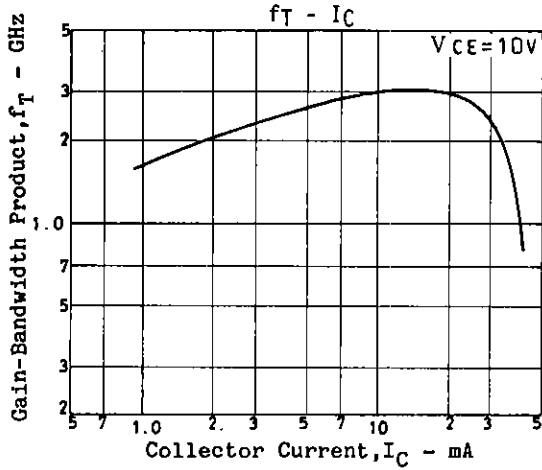
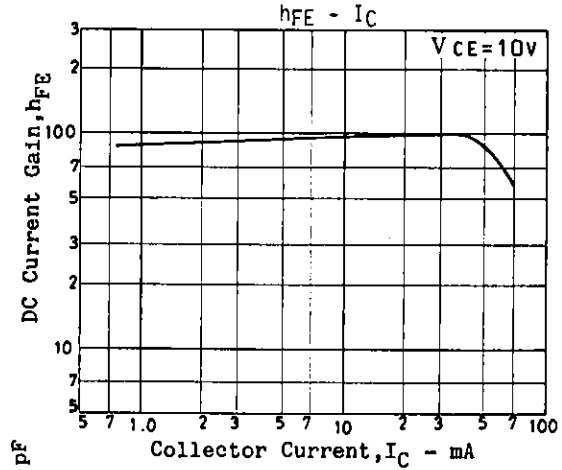
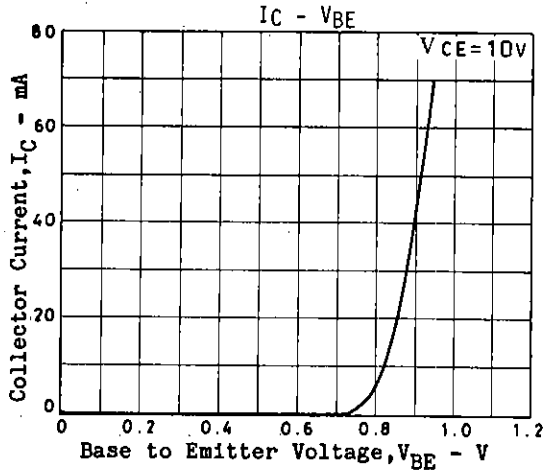
(unit:mm)



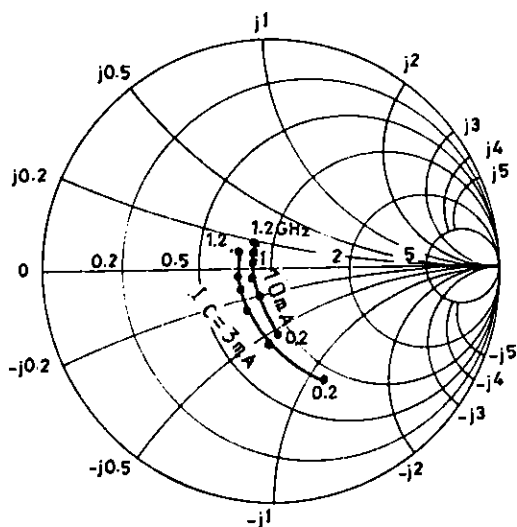
## NF Test Circuit

Unit (Resistance :  $\Omega$ )

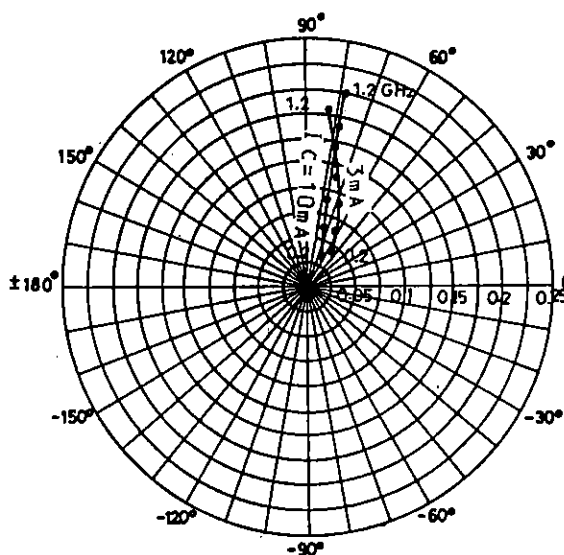
900MHz	
C1	~5 pF
C2	~10 pF
C3	~10 pF
C4	~10 pF
C5	~10 pF
L1	W $\div$ 1.5mm, l $\div$ 25mm strip line
L2	W $\div$ 4mm, l $\div$ 25mm strip line
L3	0.5 $\phi$ , l $\div$ 40mm
CH	2t+bead core



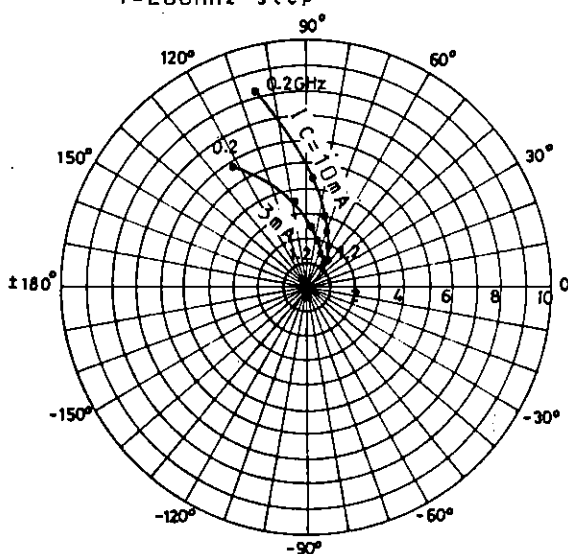
S11e :  $V_{CE}=10V$   
 $f=200MHz$  step



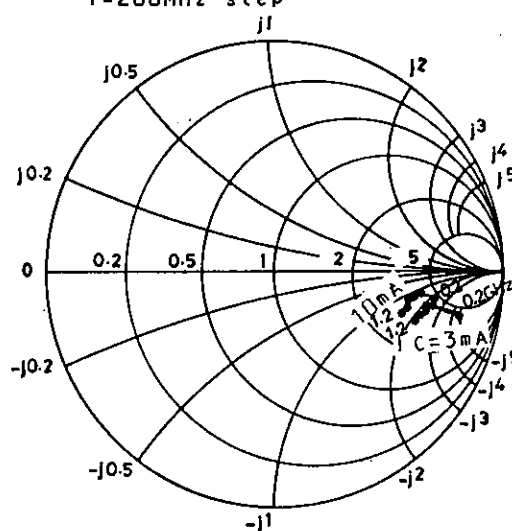
S12e :  $V_{CE}=10V$   
 $f=200MHz$  step



S21e :  $V_{CE}=10V$   
 $f=200MHz$  step



S22e :  $V_{CE}=10V$   
 $f=200MHz$  step



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