

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: $f_T=3.5\text{GHz}$ typ.

Absolute Maximum Ratings at $T_a=25^\circ\text{C}$

			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	50	mA
Base Current	I_B	20	mA
Collector Dissipation	P_C	250	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a=25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB}=16\text{V}, I_E=0$			1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=2\text{V}, I_C=0$			10	μA
DC Current Gain	h_{FE}	$V_{CE}=10\text{V}, I_C=5\text{mA}$	40*		200*	
Gain-Bandwidth Product	f_T	$V_{CE}=10\text{V}, I_C=5\text{mA}$	1.8	3.5		GHz
Output Capacitance	c_{ob}	$V_{CB}=10\text{V}, f=1\text{MHz}$		0.6	1.0	pF
Reverse Transfer Capacitance	c_{re}	$V_{CB}=10\text{V}, f=1\text{MHz}$		0.45		pF
Forward Transfer Gain	$ S_{21e} ^2$	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=0.9\text{GHz}$	7.5	9		dB
Maximum Available Power Gain	MAG	$V_{CE}=10\text{V}, I_C=10\text{mA}, f=0.9\text{GHz}$		12		dB
Noise Figure	NF	$V_{CE}=10\text{V}, I_C=3\text{mA}, f=0.9\text{GHz}$		3.0	5.0	dB

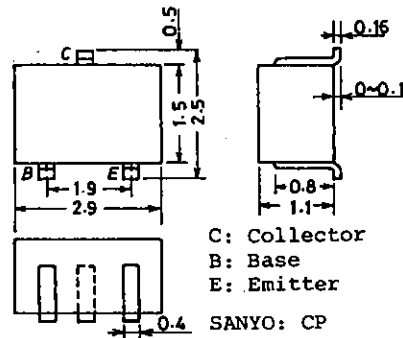
See specified Test Circuit.

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

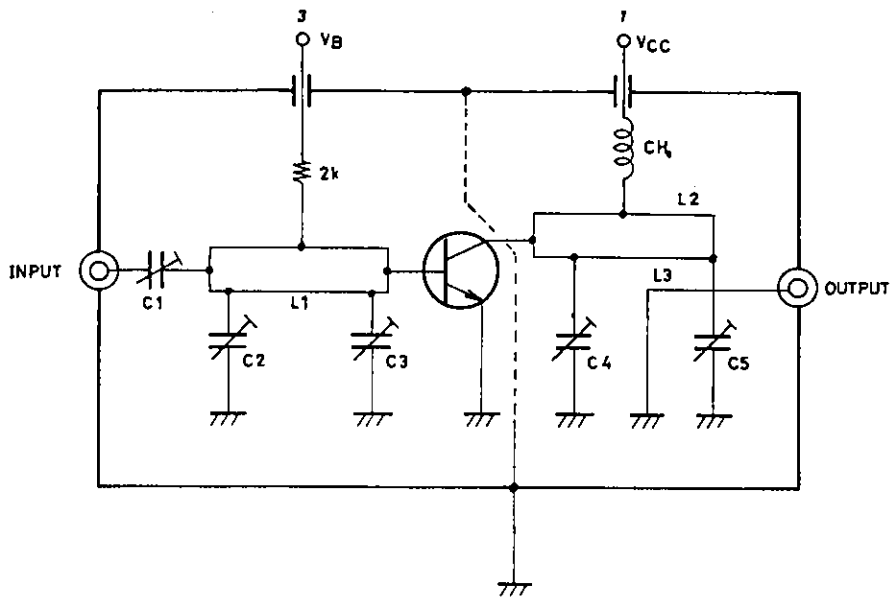
40	2	80	60	3	120	100	4	200
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(Note) Marking :MY
 h_{FE} rank :2,3,4

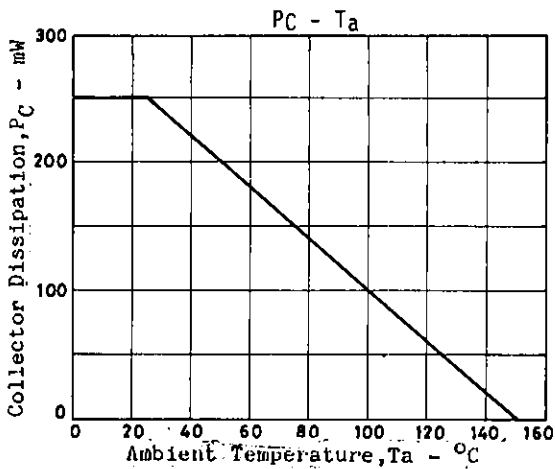
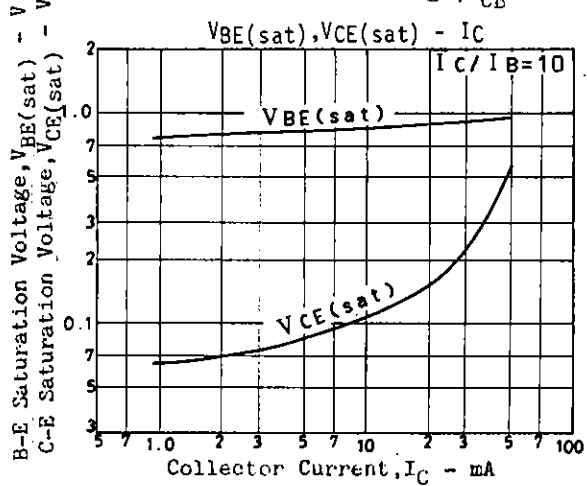
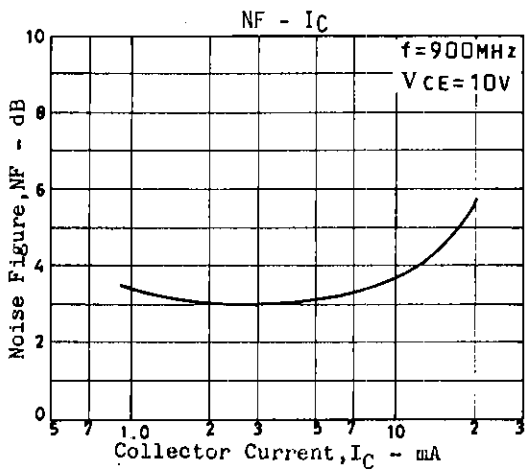
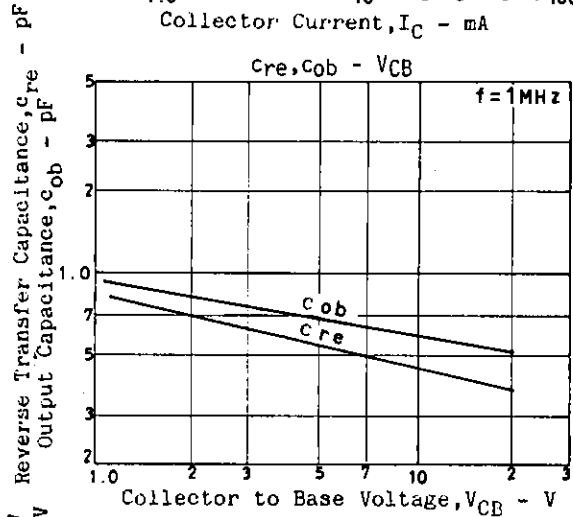
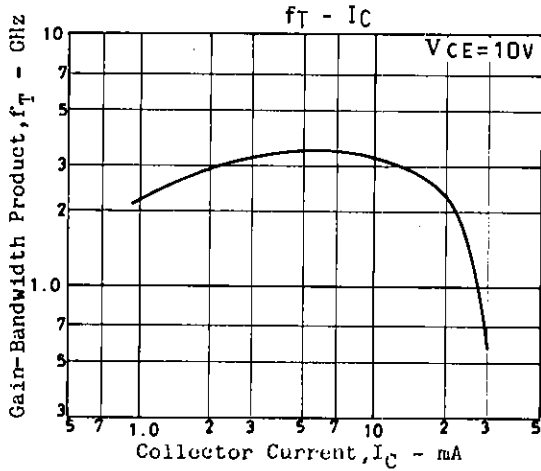
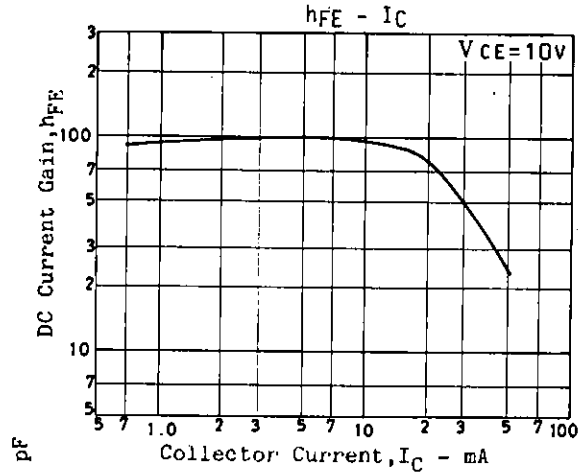
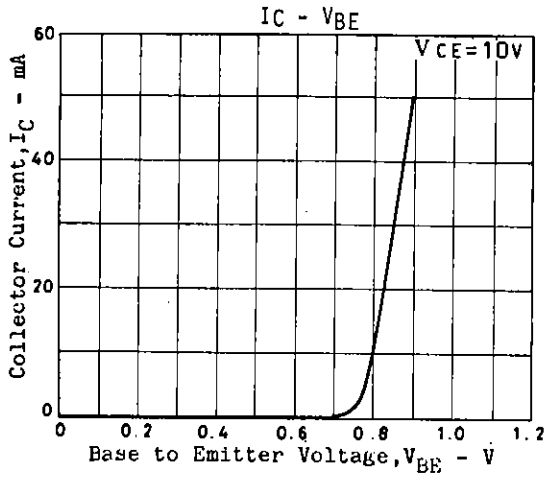
Package Dimensions 2018A
(unit:mm)



NF Test Circuit

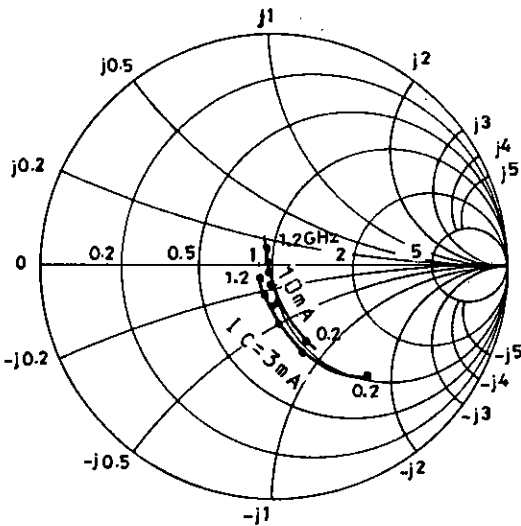
Unit (Resistance : Ω)

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 ϕ , l \div 40mm
CH	2t+bead core



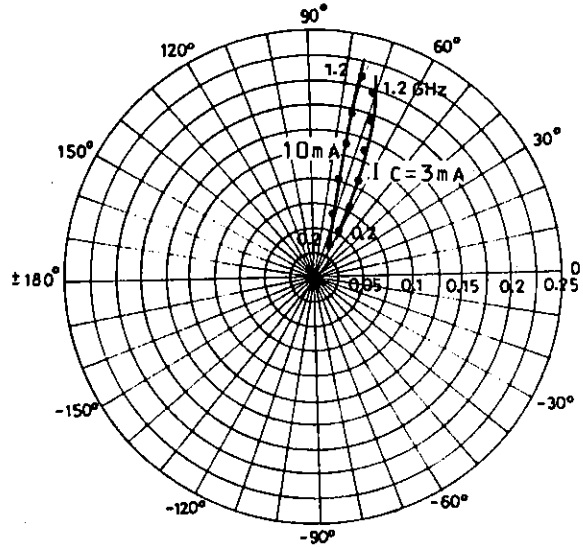
S11e : VCE=10V

f=200MHz step



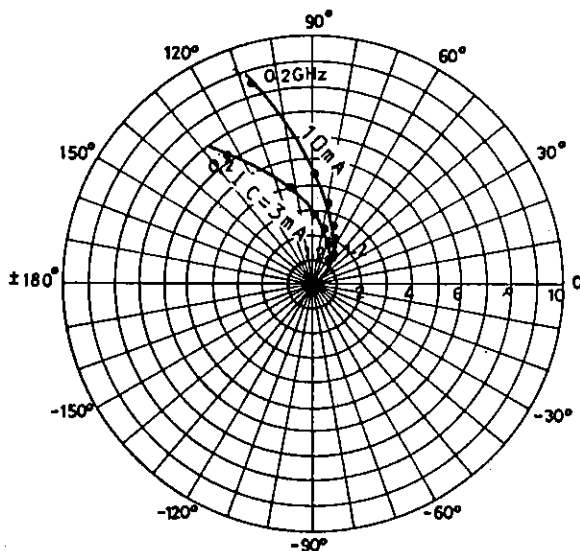
S12e : VCE=10V

f=200MHz step



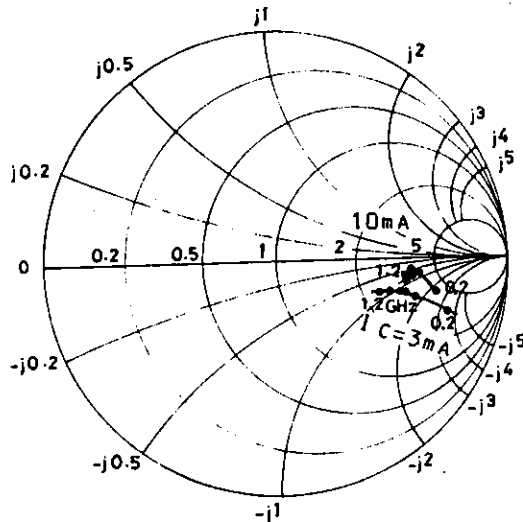
S21e : VCE=10V

f=200MHz step



S22e : VCE=10V

f=200MHz step



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