

<b>SANYO</b>	No.1948B	<b>2SC3775</b>
		NPN Epitaxial Planar Silicon Transistor <b>UHF Low-Noise Amp, Wide-Band Amp Applications</b>

**Applications**

- . UHF low-noise amplifiers, wide-band amplifiers

**Features**

- . Small noise figure: NF=1.5dB typ(f=0.9GHz).
- . High power gain: MAG=14dB typ(f=0.9GHz).
- . High cutoff frequency:  $f_T=5.0\text{GHz}$  typ.

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

			unit
Collector to Base Voltage	$V_{CB0}$	20	V
Collector to Emitter Voltage	$V_{CEO}$	12	V
Emitter to Base Voltage	$V_{EBO}$	3	V
Collector Current	$I_C$	100	mA
Base Current	$I_B$	30	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	$I_{CB0}$ $V_{CB}=12V, I_E=0$			1.0	$\mu A$
Emitter Cutoff Current	$I_{EBO}$ $V_{EB}=2V, I_C=0$			10	$\mu A$
DC Current Gain	$h_{FE}$ $V_{CE}=10V, I_C=20mA$	40*		200*	
Gain-Bandwidth Product	$f_T$ $V_{CE}=10V, I_C=20mA$		5.0		GHz
Output Capacitance	$c_{ob}$ $V_{CB}=10V, f=1MHz$		0.9		pF
Reverse Transfer Capacitance	$c_{re}$ $V_{CB}=10V, f=1MHz$		0.6		pF
Forward Transfer Gain	$ S_{21e} ^2$ $V_{CE}=10V, I_C=20mA, f=0.9GHz$	8.5	10		dB
Maximum Available Power Gain	MAG $V_{CE}=10V, I_C=20mA, f=0.9GHz$		14		dB
Noise Figure	NF $V_{CE}=10V, I_C=5mA, f=0.9GHz$	1.5	3.0		dB

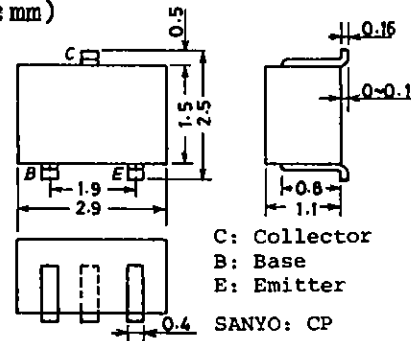
See specified Test Circuit.

\*: The 2SC3775 is classified by 20mA  $h_{FE}$  as follows:

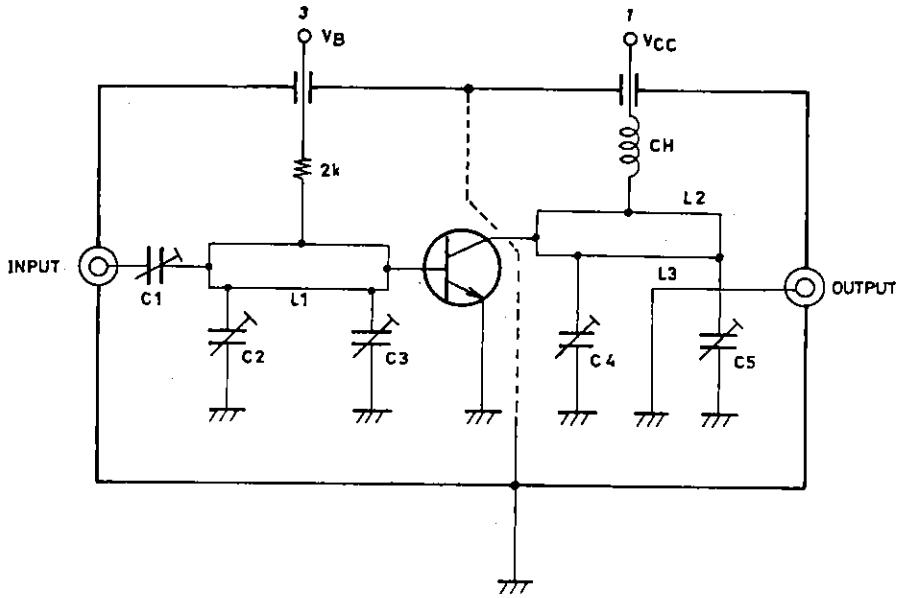
40	2	80	60	3	120	100	4	200
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(Note) Marking : OY  
 $h_{FE}$  rank : 2,3,4

**Package Dimensions 2018A**  
(unit:mm)

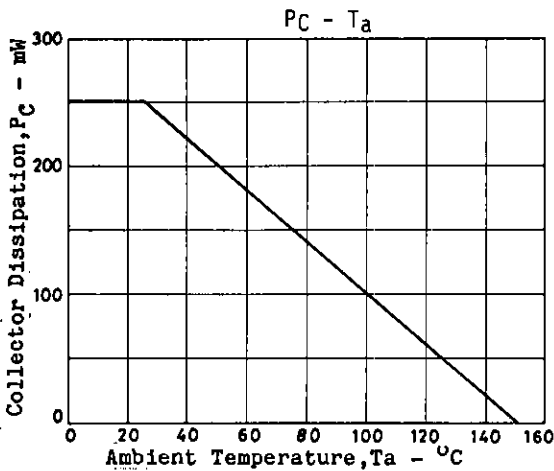
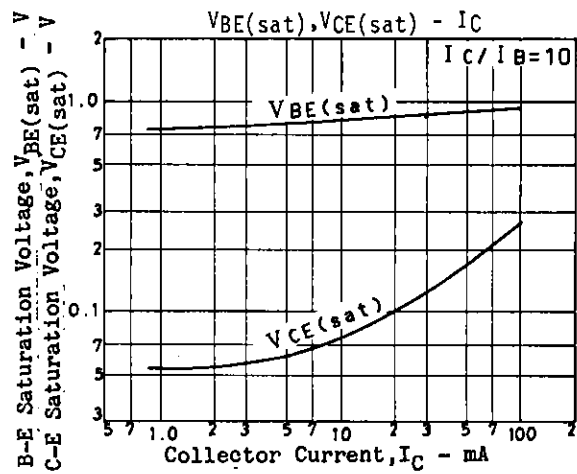
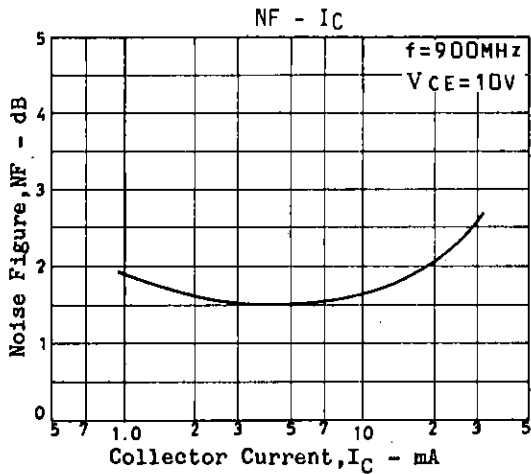
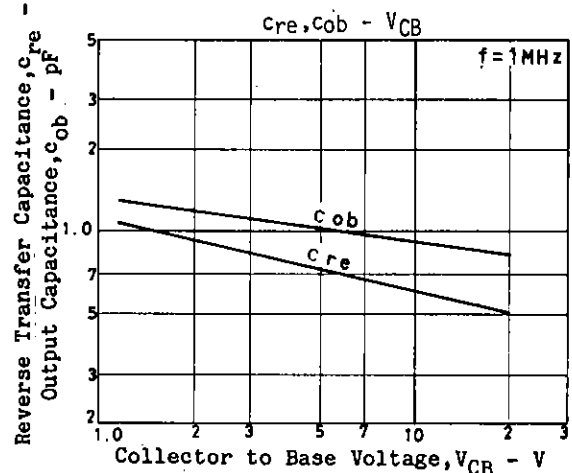
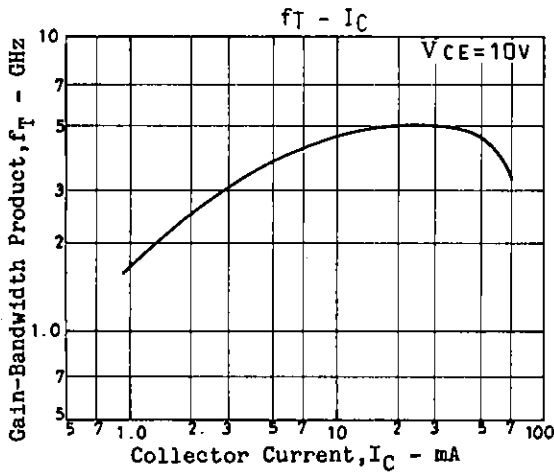
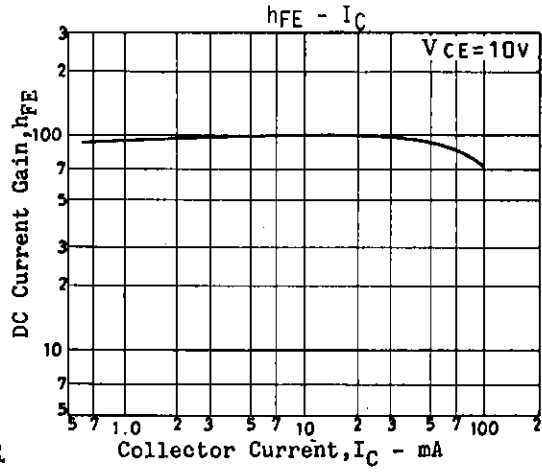
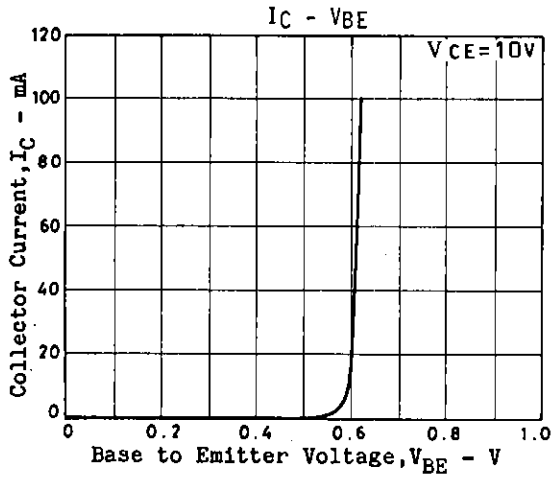


NF Test Circuit



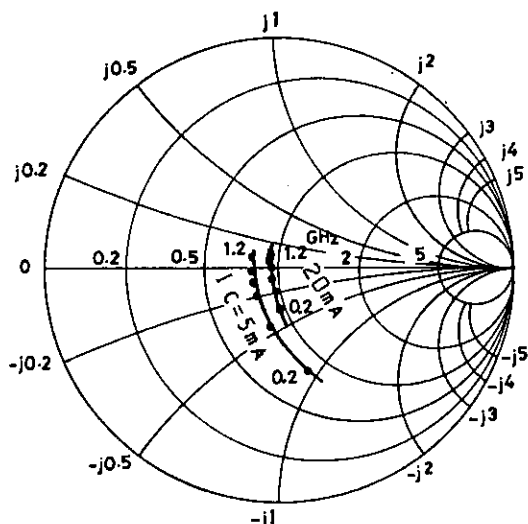
Unit (Resistance :  $\Omega$ )

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



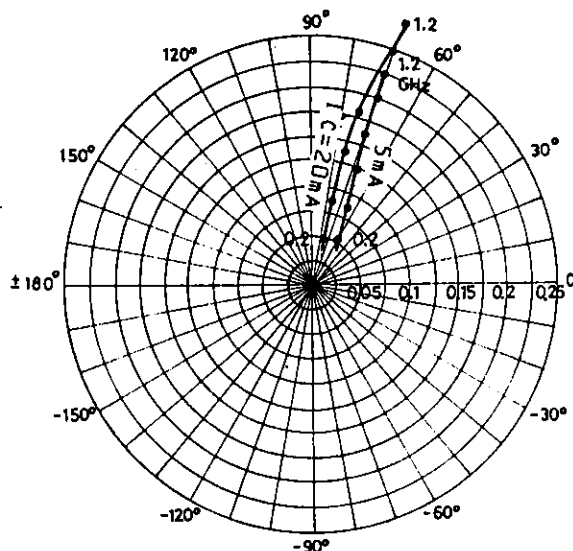
S11e : VCE=10V

f=200MHz step



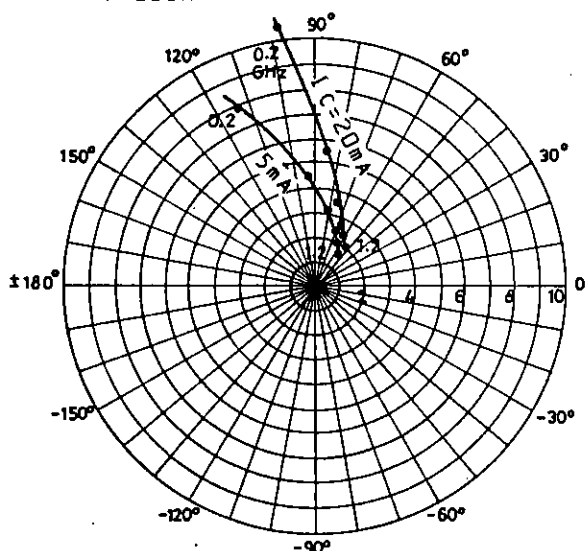
S12e : VCE=10V

f=200MHz step



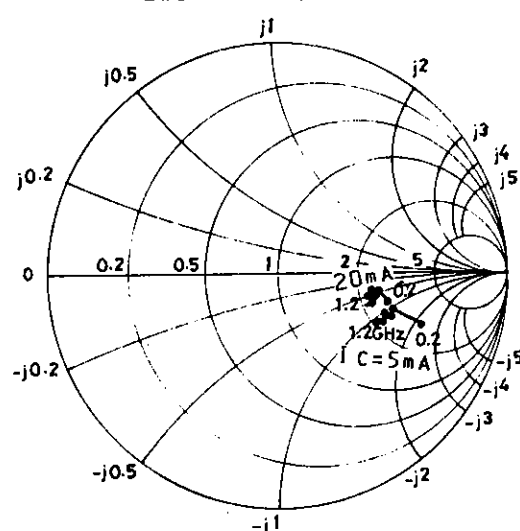
S21e : VCE=10V

f=200MHz step



S22e : VCE=10V

f=200MHz step



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