

**2SC3770**

## UHF, VHF Oscillator Mixer, HF Amplifier Applications

### Applications

- UHF/VHF frequency converters, local oscillators, HF amplifiers.

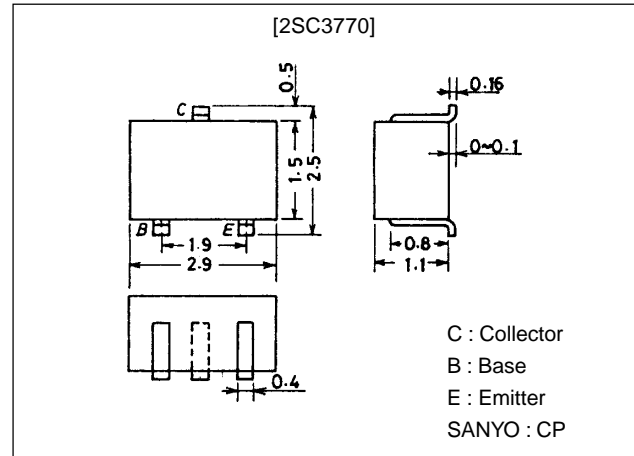
### Features

- High power gain : PG=15dB typ (f=0.4GHz).
- High cutoff frequency :  $f_T=1.2$ GHz typ.

### Package Dimensions

unit:mm

2018A



### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	$V_{CB0}$		30	V
Collector-to-Emitter Voltage	$V_{CE0}$		20	V
Emitter-to-Base Voltage	$V_{EB0}$		3	V
Collector Current	$I_C$		30	mA
Base Current	$I_B$		10	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 $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CB0}$	$V_{CB}=20\text{V}, I_E=0$			1.0	$\mu\text{A}$
Emitter Cutoff Current	$I_{EB0}$	$V_{EB}=2\text{V}, I_C=0$			10	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=10\text{V}, I_C=3\text{mA}$	40*		200*	
Gain-Bandwidth Product	$f_T$	$V_{CE}=10\text{V}, I_C=3\text{mA}$	0.6	1.2		GHz
Output Capacitance	$C_{ob}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		0.7		pF
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=10\text{V}, f=1\text{MHz}$		0.6		pF
Power Gain	PG	$V_{CE}=10\text{V}, I_C=5\text{mA}, f=0.4\text{GHz}$		15		dB

\* : The 2SC3770 is classified by 3mA  $h_{FE}$  as follows :

40	2	80	60	3	120	100	4	200
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(Note) Marking : JY

 $h_{FE}$  rank : 2, 3, 4

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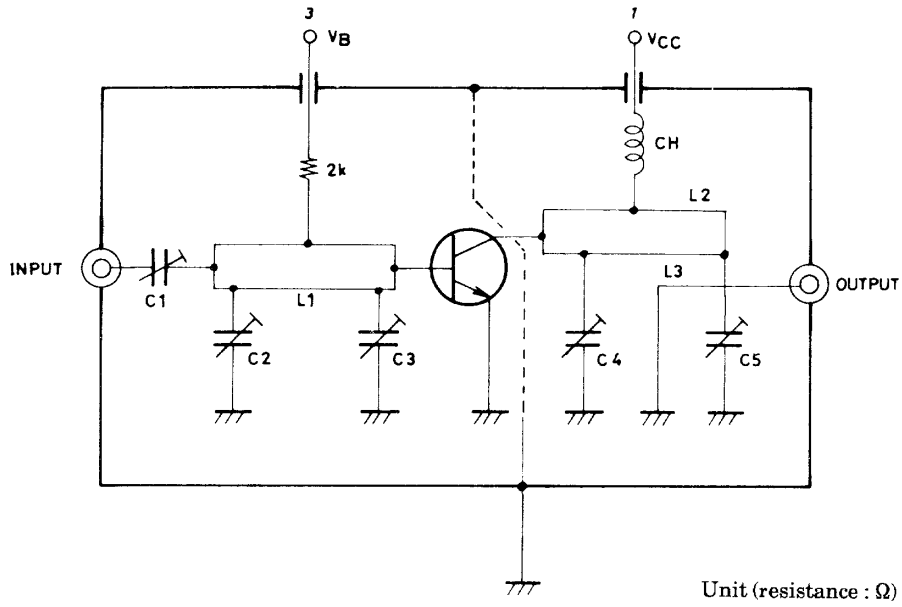
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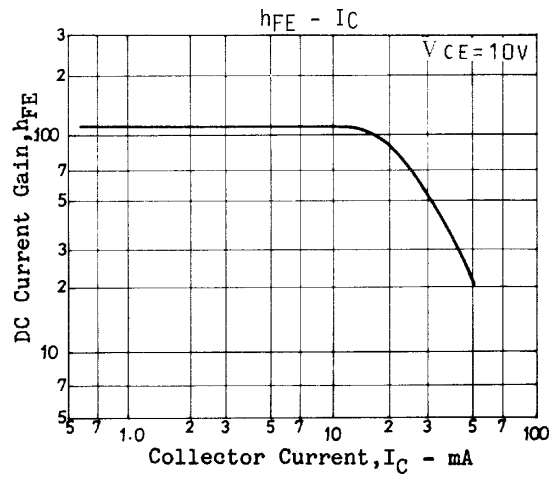
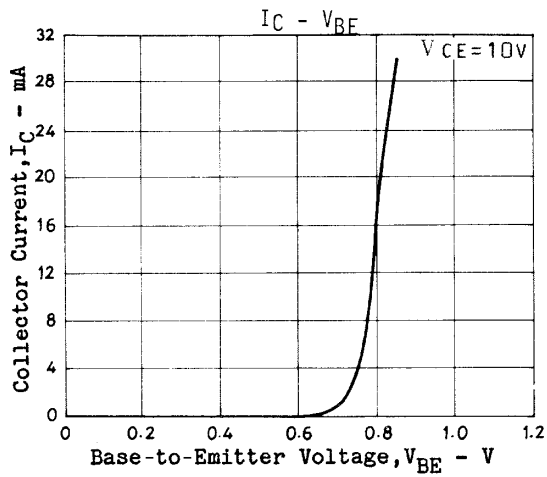
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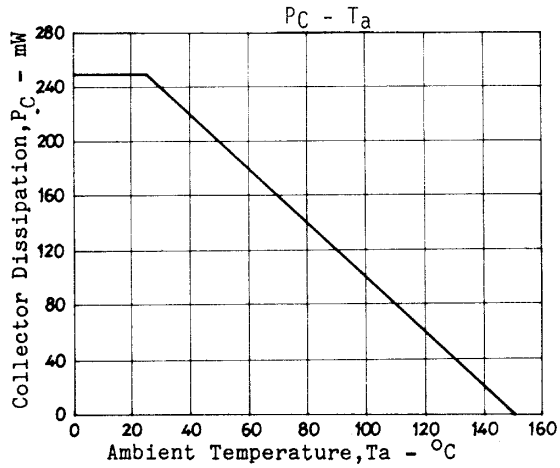
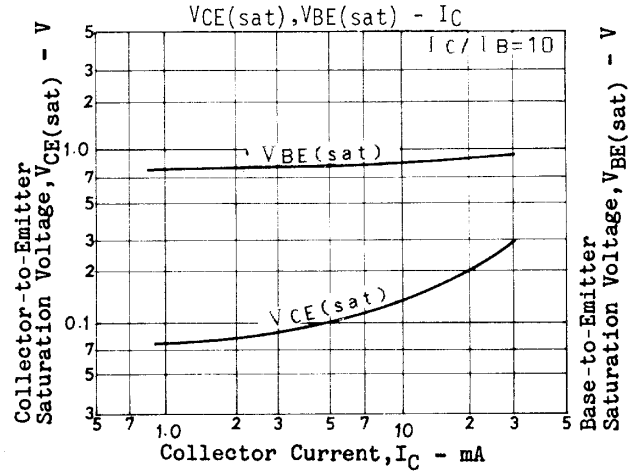
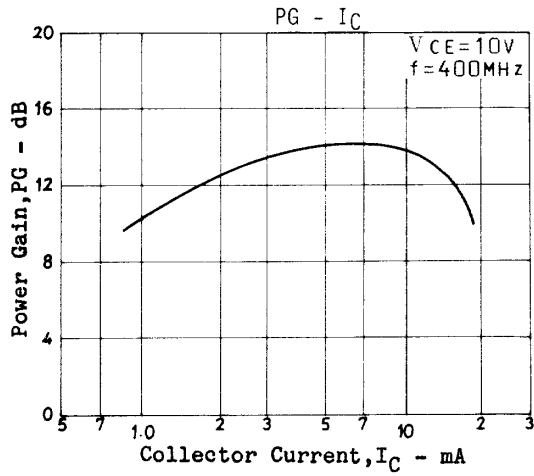
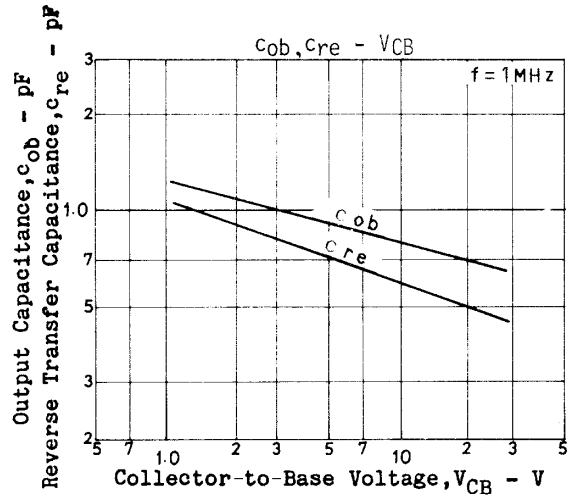
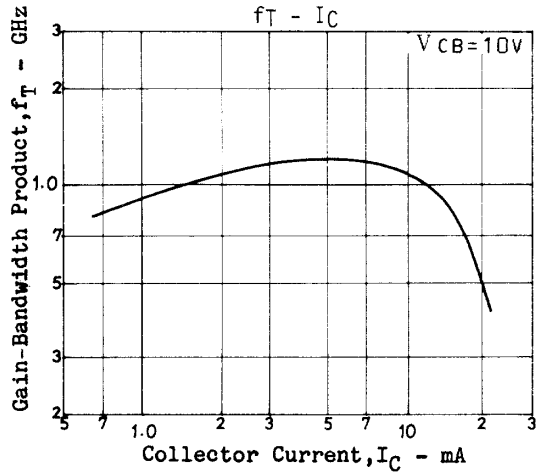
## PG Test Circuit



f=400MHz	
C1	~20pF
C2	~10pF
C3	~10pF
C4	~20pF
C5	~30pF
L1	2 $\phi$ , l=40mm 2/3 t
L2	2 $\phi$ , l=40mm 2/3 t
L3	1 $\phi$ , l=40mm 1/2 t



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