Ordering number:EN2095A

NPN Epitaxial Planar Silicon Transistor

2SC3770

UHF, VHF Oscillator Mixer, HF Amplifier Applications

Applications

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

Features

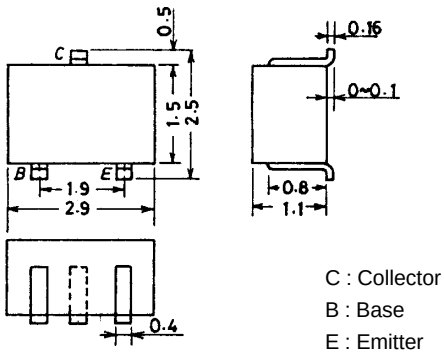
· High power gain : PG=15dB typ (f=0.4GHz).
· High cutoff frequency : f_T=1.2GHz typ.

Package Dimensions

unit:mm

2018A

[2SC3770]



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

Specifications

Absolute Maximum Ratings at Ta = 25˚C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V_{CBO}		30	V
Collector-to-Emitter Voltage	V_{CEO}		20	V
Emitter-to-Base Voltage	V_{EBO}		3	V
Collector Current	I_C		30	mA
Base Current	I_B		10	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

Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	I_{CBO}	V_{CB}=20V, 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=3mA	40*		200*	
Gain-Bandwidth Product	f_T	V_{CE}=10V, I_C=3mA	0.6	1.2		GHz
Output Capacitance	C_{ob}	V_{CB}=10V, f=1MHz		0.7		pF
Reverse Transfer Capacitance	C_{re}	V_{CB}=10V, f=1MHz		0.6		pF
Power Gain	PG	V_{CE}=10V, I_C=5mA, f=0.4GHz		15		dB

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

40	2	80	60	3	120	100	4	200

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

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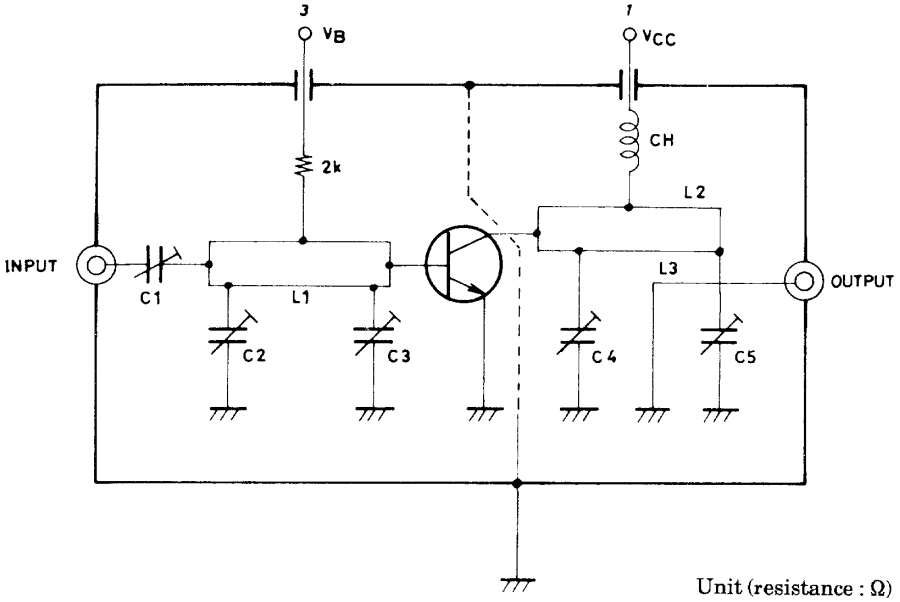
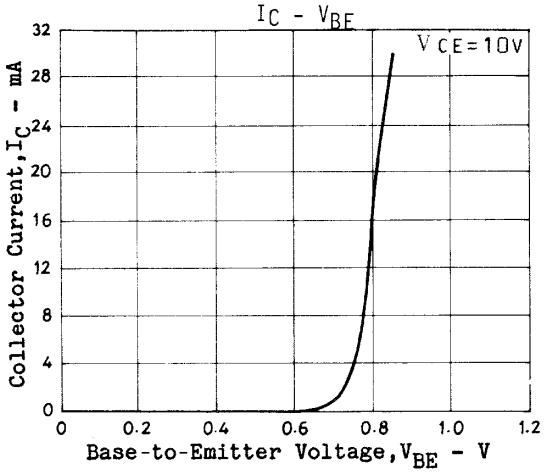
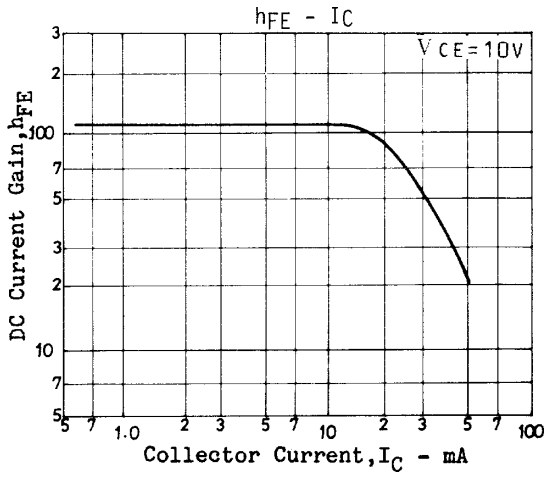
PG Test Circuit

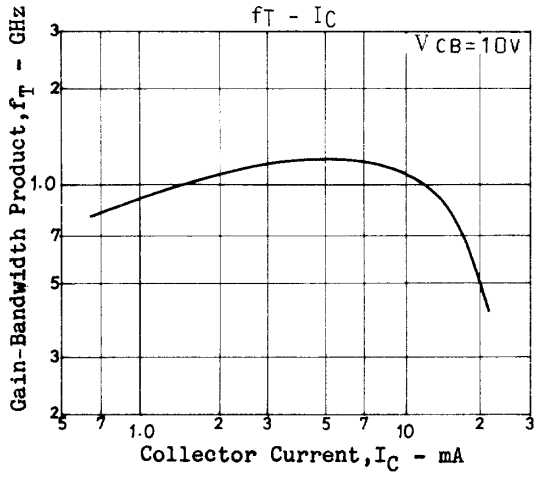


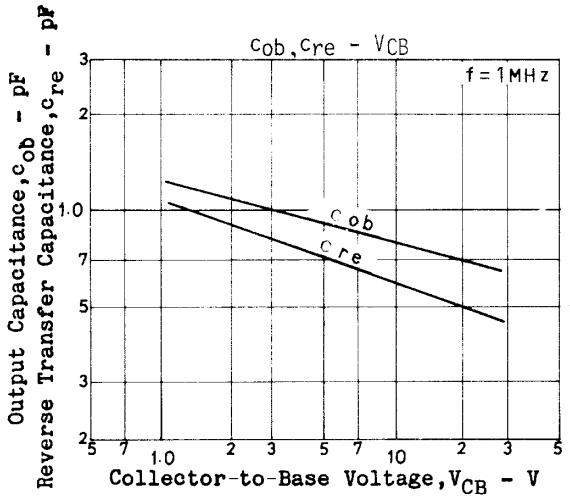
Unit (resistance : Ω)

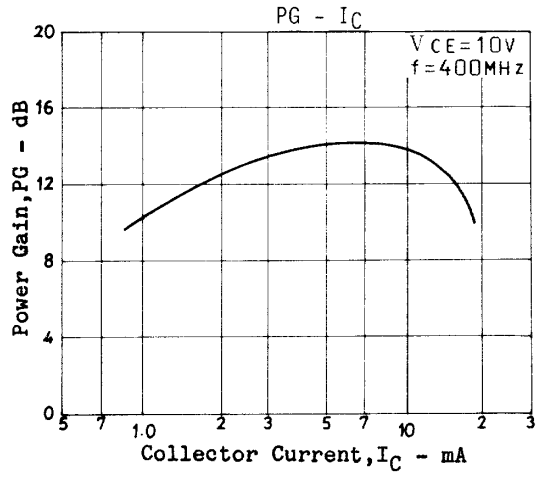
	f=400MHz
C1	~20pF
C2	~10pF
C3	~10pF
C4	~20pF
C5	~30pF
L1	2φ, l=40mm 2/3 t
L2	2φ, l=40mm 2/3 t
L3	1φ, l=40mm 1/2 t

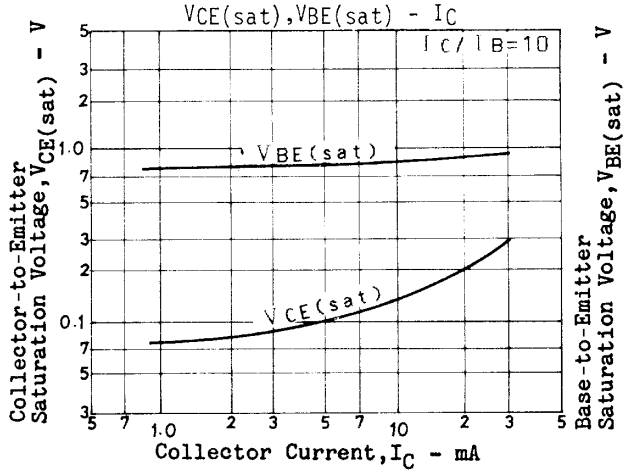


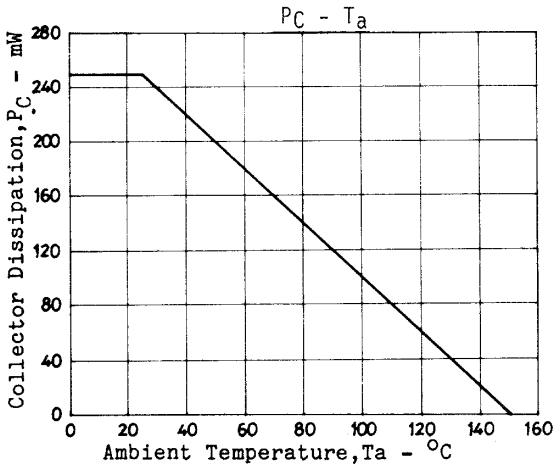



fT - IC
VCB=10V
Gain-Bandwidth Product, fT - GHz
Collector Current, IC - mA


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


PG - IC
VCE=10V
f=400MHz
Power Gain, PG - dB
Collector Current, IC - mA


VCE(sat), VBE(sat) - IC
IC/IB=10
Collector-to-Emitter Saturation Voltage, VCE(sat) - V
Base-to-Emitter Saturation Voltage, VBE(sat) - V
VBE(sat)
VCE(sat)
Collector Current, IC - mA


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