

2SC4404

UHF Local Oscillator, Wide-Band Amplifier Applications

Applications

· UHF OSC, wide-band amplifiers.

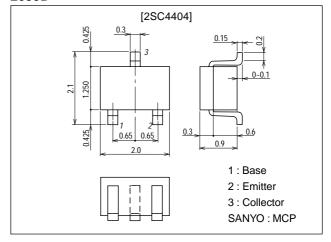
Features

- · High cutoff frequency : f_T=5.0GHz typ
- · High power gain : MAG=14dB typ (f=0.9GHz)
- · Small noise figure : NF=2.2dB typ (f=0.9GHz)
- · Very small-sized package permitting 2SC4404-applied sets to be made smaller and slimmer.

Package Dimensions

unit:mm

2059B



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		20	V
Collector-to-Emitter Voltage	V _{CEO}		12	V
Emitter-to-Base Voltage	V _{EBO}		3	V
Collector Current	I _C		70	mA
Collector Dissipation	PC		150	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	Oilit
Collector Cutoff Current	I _{CBO}	V _{CB} =12V, I _E =0			1.0	μΑ
Emitter Cutoff Current	I _{EBO}	V _{EB} =2V, I _C =0			10	μA
DC Current Gain	hFE	V _{CE} =10V, I _C =20mA	40*		200*	
Gain-Bandwidth Product	fΤ	V _{CE} =10V, I _C =20mA		5.0		GHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		0.75	1.1	pF
Reverse Transfer Capacitance	C _{re}	V _{CB} =10V, f=1MHz		0.5		pF

 \ast : The 2SC4404 is classified by 20mA h_{FE} as follows : [

40 2 80 60 3 120 100 4 200

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

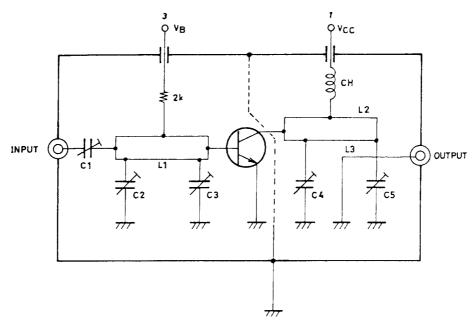
• For CP package version, use the 2SC3774.

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2SC4404

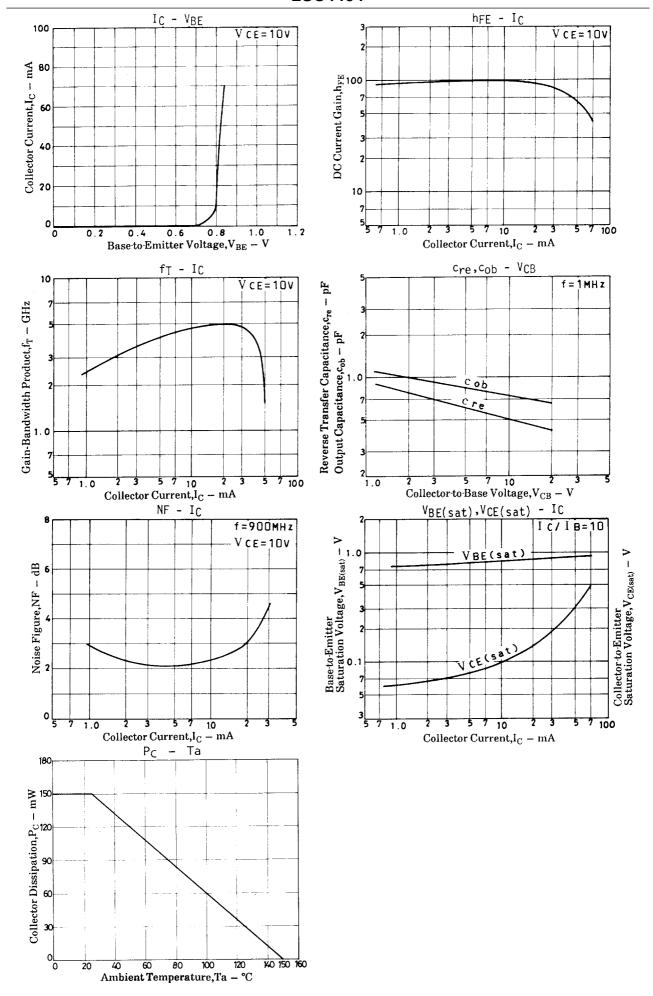
Parameter	Symbol	Symbol Conditions	Ratings			Unit
	Symbol		min	typ	max	01111
Forward Transfer Gain	S21e ²	V _{CE} =10V, I _C =20mA, f=0.9GHz		14		dB
Maximum Available Power Gain	MAG	V _{CE} =10V, I _C =20mA, f=0.9GHz		14		dB
Noise Figure	NF	V _{CE} =10V, I _C =5mA, f=0.9GHz See specified Test Circuit.		2.2		dB

NF Test Circuit

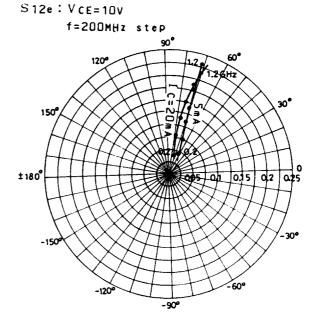


 $Unit \, (resistance : \Omega)$

	900MHz		
C1	~5pF		
C2	~10pF		
C3	~10pF		
C4	~10pF		
C5	~10pF		
L1	W ≈ 1.5mm, I ≈ 25mm		
	Strip line		
L2	W ≈ 4mm, I ≈ 25mm		
	Strip line		
L3	0.5φ, I ≈ 40mm		
CH	2t+bead core		



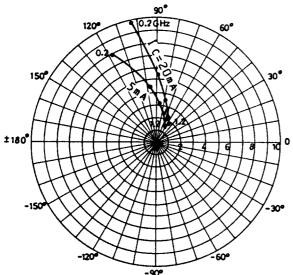
f = 200 MHz step j0.5 j2 j3 j4 j5 l C = 5 m A + 0.2 -j0.2 -j3

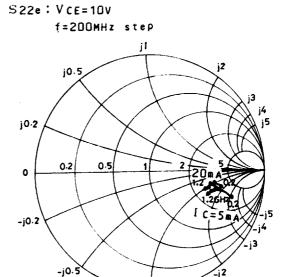


S21e: VCE=10V f=200MHz step

-j0.5

S11e: VCE=10v





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