

2SC3776

UHF Oscillator, Mixer, Low-Noise Amplifier, Wide-Band Amplifier Applications

Applications

· UHF frequency converters, local oscillators, lownoise amplifiers, wide-band amplifiers.

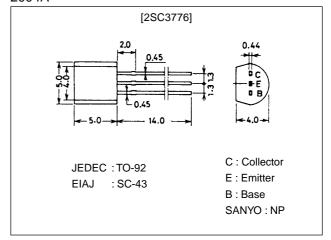
Features

- · Small noise figure : NF=2.5dB typ (f=0.9GHz).
- · High power gain : MAG=12dB typ (f=0.9GHz).
- · High cutoff frequency : f_T=3.0GHz typ.

Package Dimensions

unit:mm

2004A



Specifications

Absolute Maximum Ratings at Ta = 25°C

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		25	V
Collector-to-Emitter Voltage	VCEO		16	V
Emitter-to-Base Voltage	VEBO		3	V
Collector Current	IC		70	mA
Base Current	IB		20	mA
Collector Dissipation	PC		400	mW
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

Electrical Characteristics at Ta = 25°C

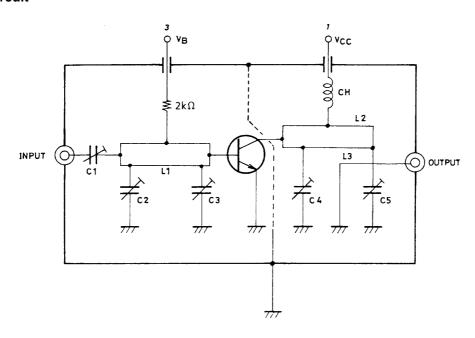
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	Oille
Collector Cutoff Current	I _{CBO}	V _{CB} =16V, I _E =0			1.0	μΑ
Emitter Cutoff Current	I _{EBO}	V _{EB} =2V, I _C =0			10	μΑ
DC Current Gain	hFE	V _{CE} =10V, I _C =10mA	40*		200*	
Gain-Bandwidth Product	fT	V _{CE} =10V, I _C =10mA	1.5	3.0		GHz
Output Capacitance	C _{ob}	V _{CB} =10V, f=1MHz		0.7	1.0	pF
Reverse Transfer Capacitance	C _{re}	V _{CB} =10V, f=1MHz		0.45		pF

- * : The 2SC3776 is classified by 10mA h $_{FE}$ as follows : $\begin{bmatrix} 40 & \text{C} & 80 & 60 & \text{D} & 120 & 100 & \text{E} & 200 \end{bmatrix}$
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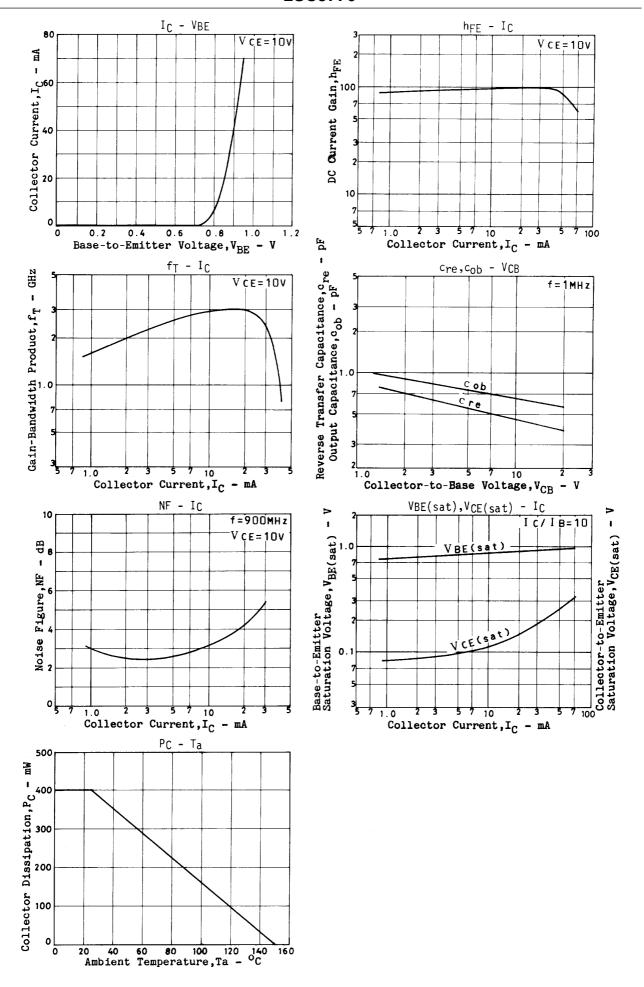
2SC3776

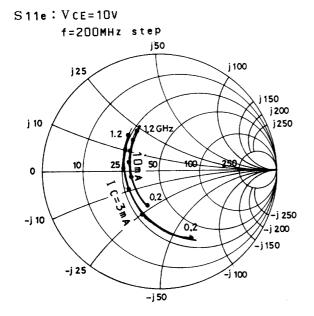
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Forward Transfer Gain	S21e ²	V _{CE} =10V, I _C =10mA, f=0.9GHz	7	9		dB
Maximum Available Power Gain	MAG	V _{CE} =10V, I _C =10mA, f=0.9GHz		12		dB
Noise Figure	NF	V _{CE} =10V, I _C =3mA, f=0.9GHz, See specified Test Circuit.		2.5		dB

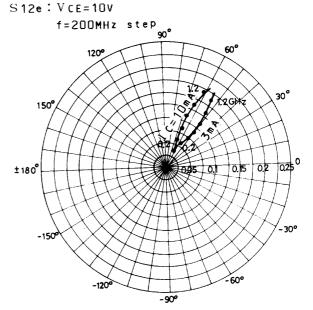
NF Test Circuit

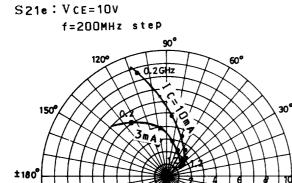


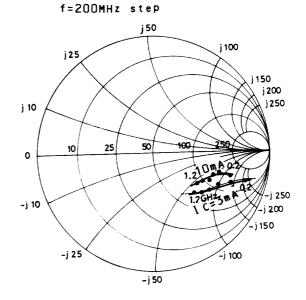
	900MHz		
C1	~5pF		
C2	~10pF		
СЗ	~10pF		
C4	~10pF		
C5	~10pF		
L1	W ≈ 1.5mm, I ≈ 25mm		
	Strip line		
L2	W ≈ 4mm, I ≈ 25mm		
	Strip line		
L3	0.5φ, I ≈ 40mm		
CH	2t+bead core		











S22e: VcE=10V

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