Ordering number: EN 2756

SANYO | No.2756

2SC4403

NPN Epitaxial Planar Silicon Transistor

VHF/UHF Local Oscillator Applications

Applications

- VHF/UHF oscillators

Features

- High cutoff frequency : f_T = 3.0GHz typ
- High power gain : MAG = 12dB typ (f = 0.9GHz)
- Small noise figure : NF = 2.5dB typ (f = 0.9GHz)
- Very small-sized package permitting 2SC4403-applied sets to be made smaller and slimmer

Absolute Maximum Ratings at Ta = 25°C

			unit
Collector to Base Voltage	V_{CBO}	25	V
Collector to Emitter Voltage	V_{CEO}	16	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current	I_C	70	mA
Collector Dissipation	P_C	150	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55 to +150	°C

Electrical Characteristics at Ta = 25°C

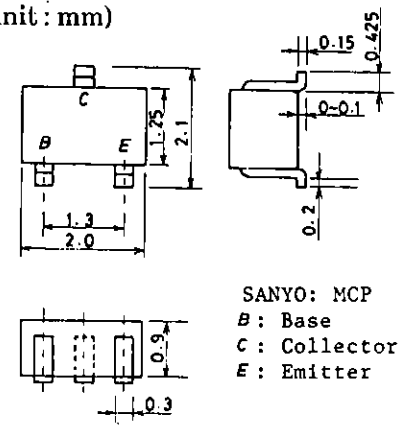
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB} = 16V, I_E = 0			1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 2V, I_C = 0			10	μA
DC Current Gain	h_{FE}	V_{CE} = 10V, I_C = 10mA	※40		※200	
Gain-Bandwidth Product	f_T	V_{CE} = 10V, I_C = 10mA	1.5	3.0		GHz
Output Capacitance	c_{ob}	V_{CB} = 10V, f = 1MHz		0.65	1.0	pF
Reverse Transfer Capacitance	c_{re}	V_{CB} = 10V, f = 1MHz		0.45		pF
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

※ The 2SC4403 is classified by 10mA h_{FE} as follows:

40 2 80	60 3 120	100 4 200

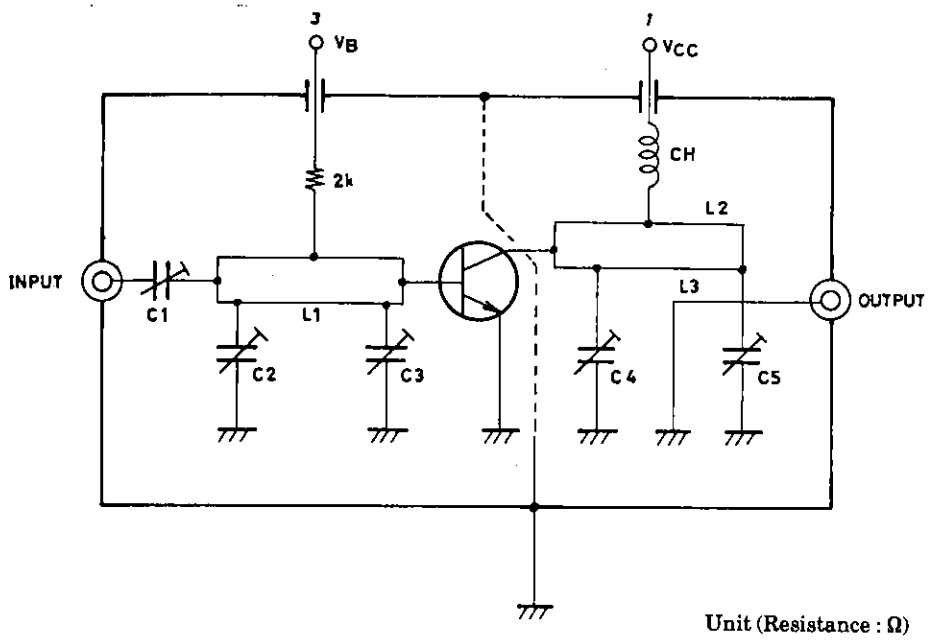
(Note) Marking : LY
h_{FE} rank : 2,3,4
●For CP package version, use the 2SC3772.

Package Dimensions 2059
(unit : mm)



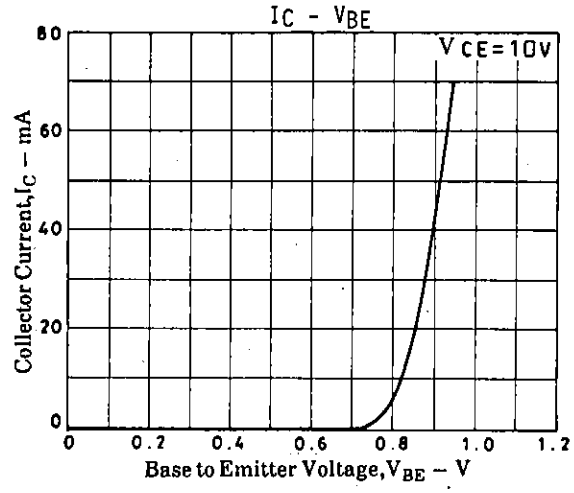
SANYO: MCP
B : Base
C : Collector
E : Emitter

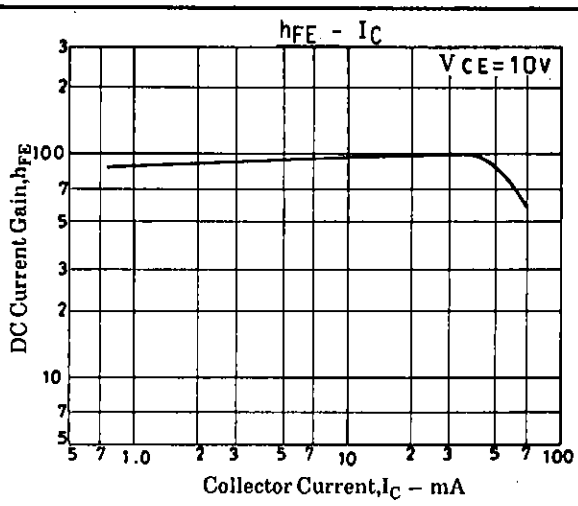
NF Test Circuit

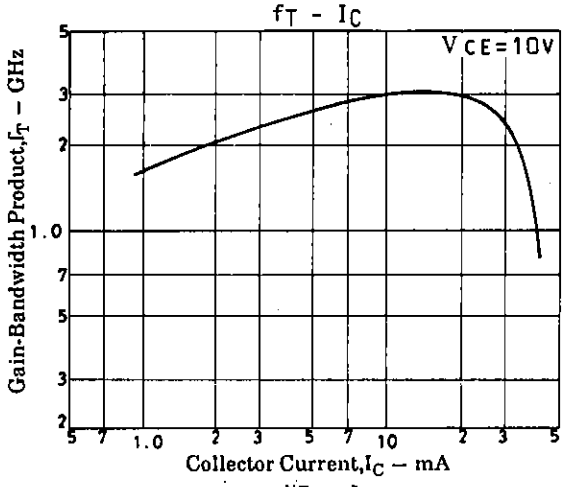


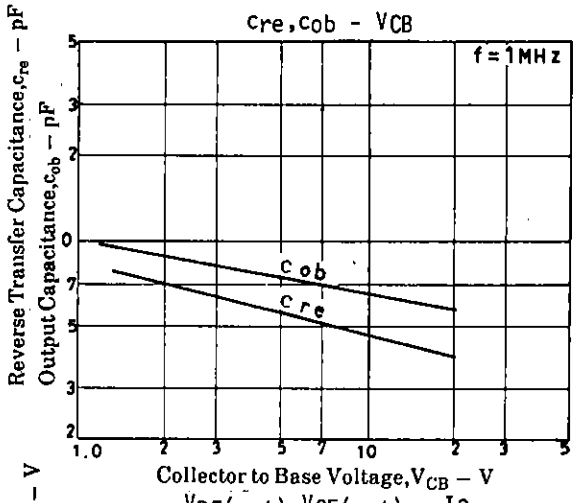
Unit (Resistance : Ω)

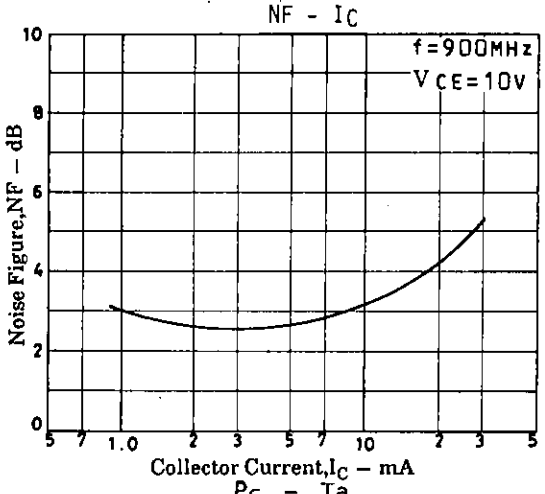
	900MHz
C1	~5pF
C2	~10pF
C3	~10pF
C4	~10pF
C5	~10pF
L1	W≒1.5mm, l≒25mm strip line
L2	W≒4mm, l≒25mm strip line
L3	0.5φ, l≒40mm
CH	2t+bead core

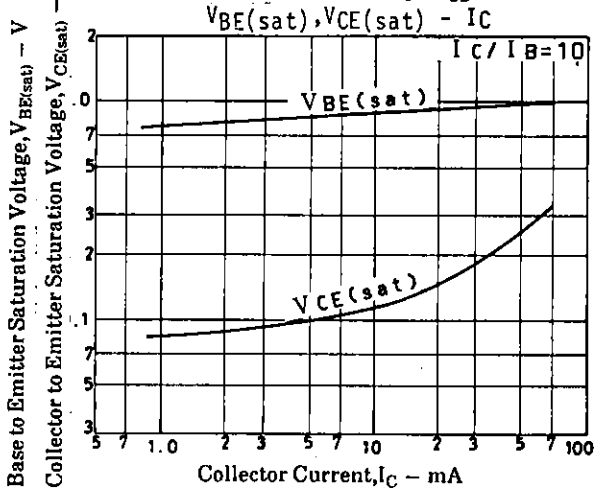

IC - VBE
VCE=10V
Collector Current,IC – mA
Base to Emitter Voltage,VBE – V

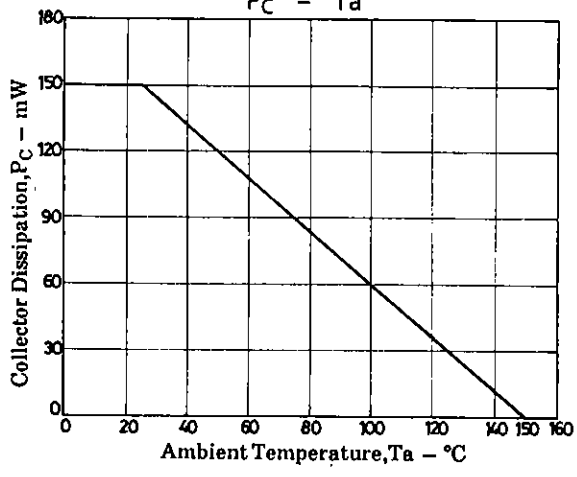

hFE - IC
VCE=10V
DC Current Gain,hFE
Collector Current,IC – mA


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

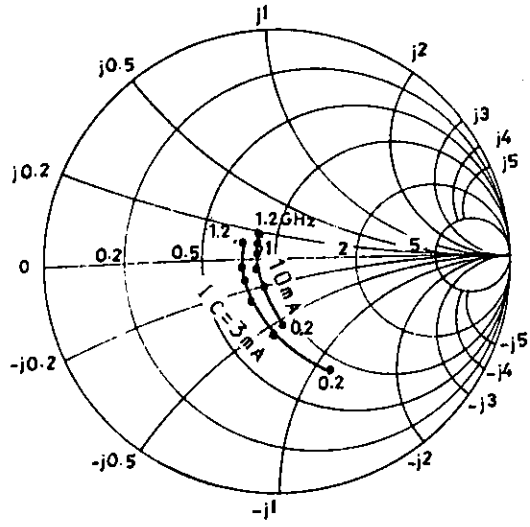

Cre,Cob - VCB
f=1MHz
Reverse Transfer Capacitance,Cre – pF
Output Capacitance,Cob – pF
Cob
Cre
Collector to Base Voltage,VCB – V


NF - IC
f=900MHz
VCE=10V
Noise Figure,NF – dB
Collector Current,IC – mA

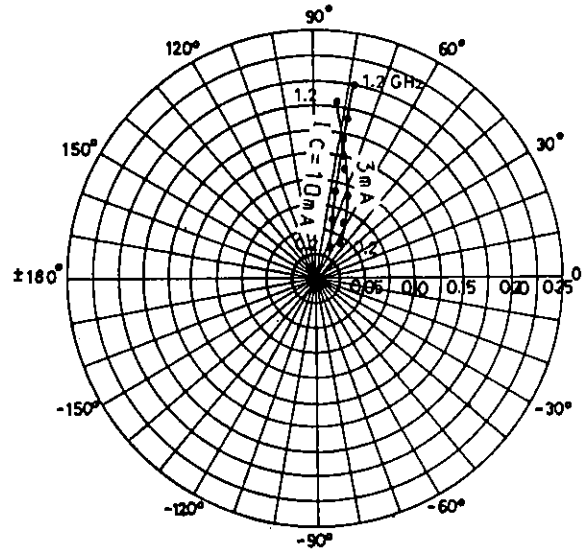

VBE(sat),VCE(sat) - IC
IC/IB=10
VBE(sat)
VCE(sat)
Base to Emitter Saturation Voltage,VBE(sat) – V
Collector to Emitter Saturation Voltage,VCE(sat) – V
Collector Current,IC – mA


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

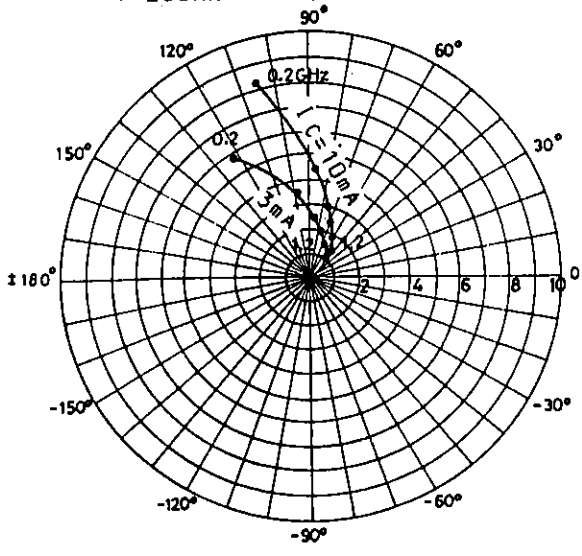
S11e : VCE=10V
f=200MHz step



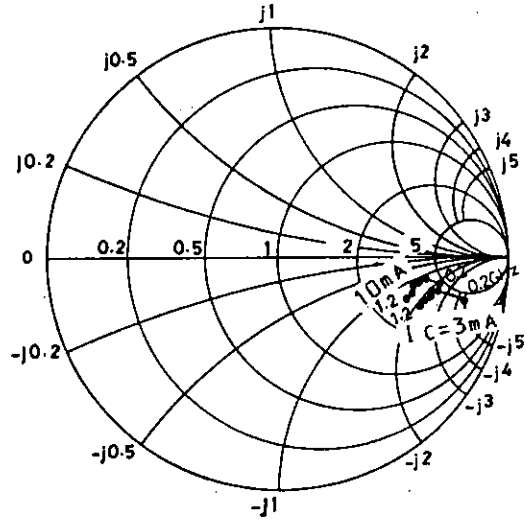
S12e : VCE=10V
f=200MHz step



S21e : VCE=10V
f=200MHz step



S22e : VCE=10V
f=200MHz step



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