

SANYO	No.2756	2SC4403
	NPN Epitaxial Planar Silicon Transistor VHF/UHF Local Oscillator Applications	

Applications

- VHF/UHF oscillators

Features

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

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

			unit
Collector to Base Voltage	V_{CB0}	25	V
Collector to Emitter Voltage	V_{CE0}	16	V
Emitter to Base Voltage	V_{EB0}	3	V
Collector Current	I_C	70	mA
Collector Dissipation	P_C	150	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

Electrical Characteristics at $T_a = 25^\circ\text{C}$

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	$V_{CB} = 16\text{V}, I_E = 0$			1.0	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB} = 2\text{V}, I_C = 0$			10	μA
DC Current Gain	h_{FE}	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	≈ 40		≈ 200	
Gain-Bandwidth Product	f_T	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	1.5	3.0		GHz
Output Capacitance	c_{ob}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		0.65	1.0	pF
Reverse Transfer Capacitance	c_{re}	$V_{CB} = 10\text{V}, f = 1\text{MHz}$		0.45		pF
Forward Transfer Gain	$ S_{21} ^2$	$V_{CE} = 10\text{V}, I_C = 10\text{mA}, f = 0.9\text{GHz}$	7	9		dB
Maximum Available Power Gain	MAG	$V_{CE} = 10\text{V}, I_C = 10\text{mA}, f = 0.9\text{GHz}$		12		dB
Noise Figure	NF	$V_{CE} = 10\text{V}, I_C = 3\text{mA}, f = 0.9\text{GHz}$		2.5		dB

See specified Test Circuit.

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

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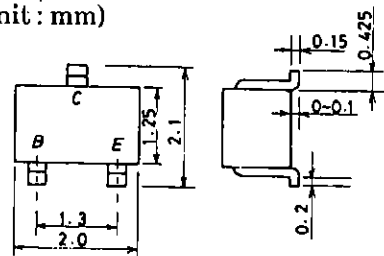
(Note) Marking: LY

h_{FE} rank: 2,3,4

● For CP package version, use the 2SC3772.

Package Dimensions 2059

(unit: mm)



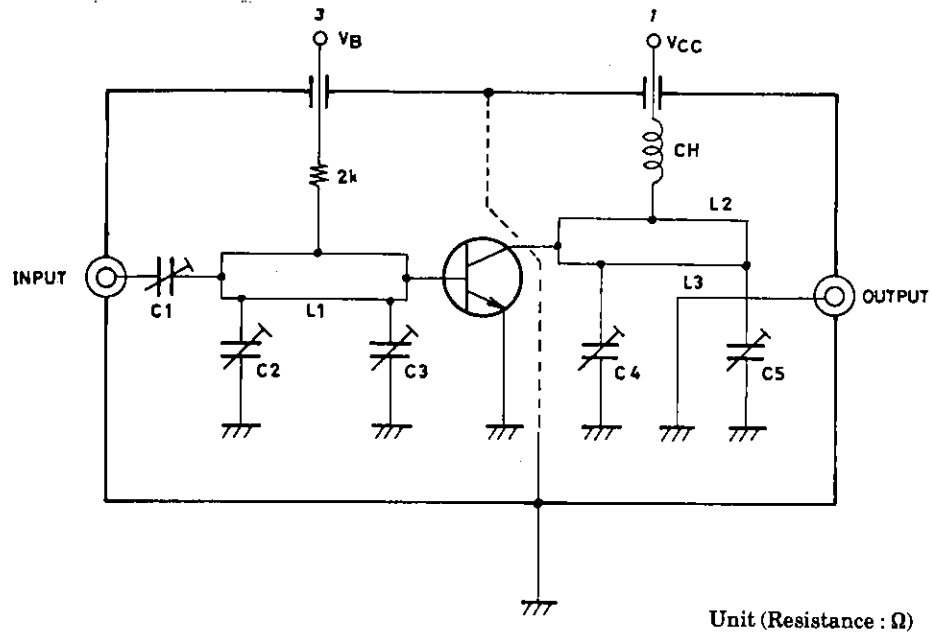
SANYO: MCP

B: Base

C: Collector

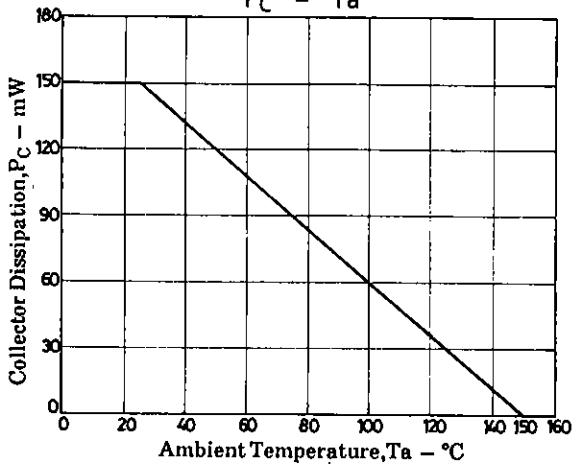
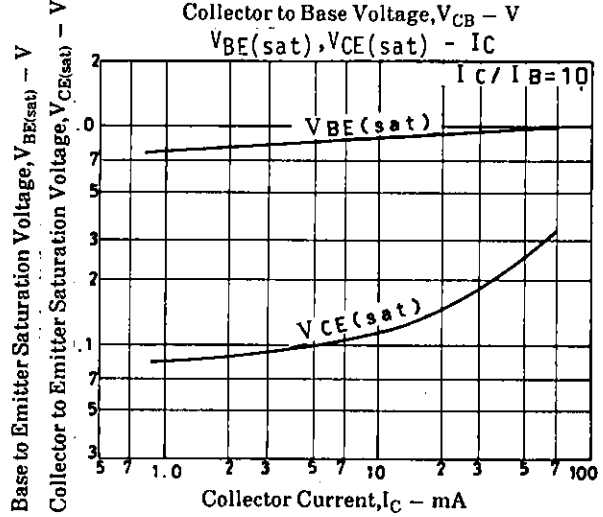
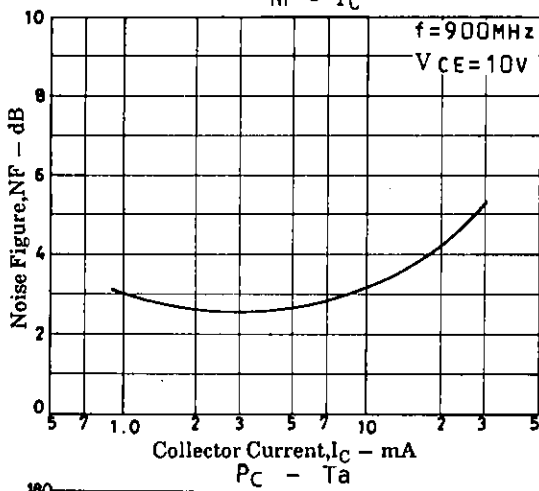
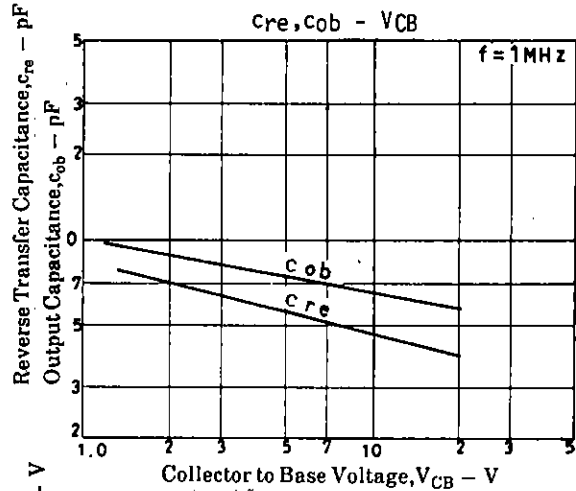
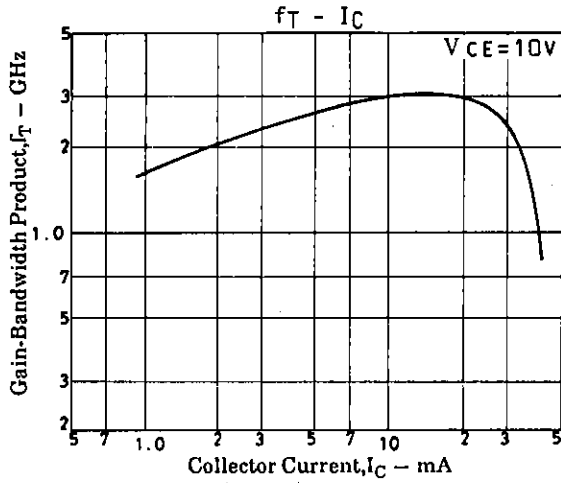
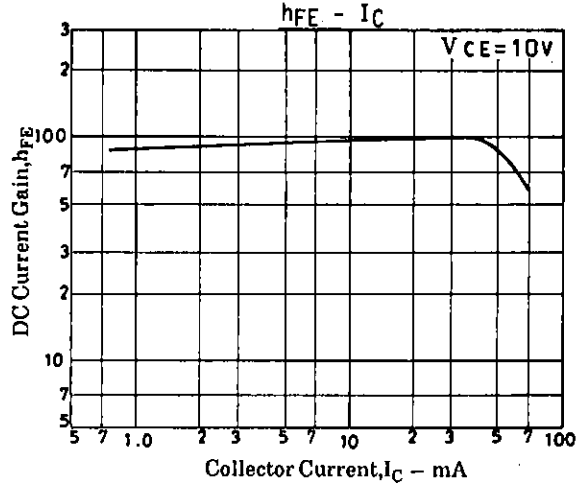
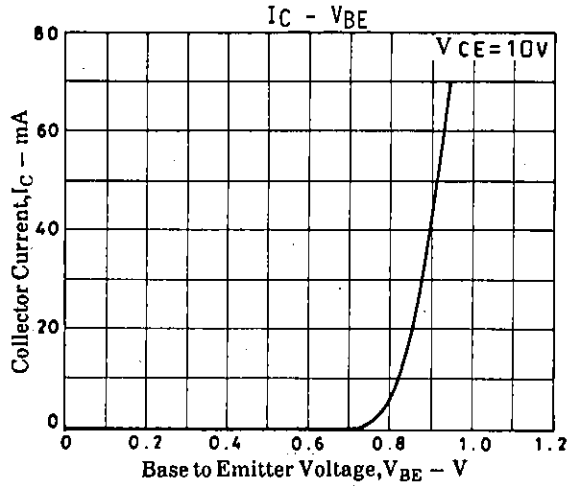
E: Emitter

NF Test Circuit

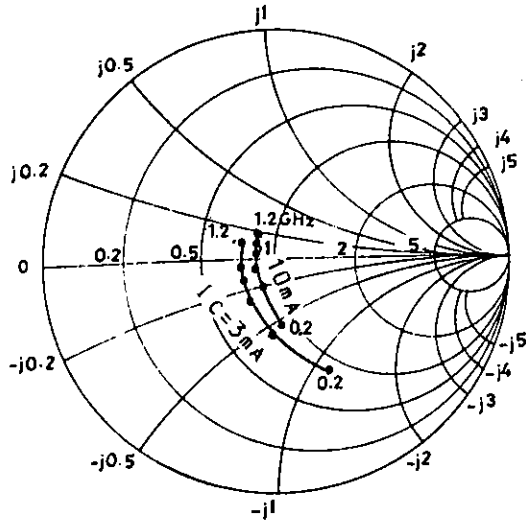


900MHz	
C1	$\sim 5 \text{ pF}$
C2	$\sim 10 \text{ pF}$
C3	$\sim 10 \text{ pF}$
C4	$\sim 10 \text{ pF}$
C5	$\sim 10 \text{ pF}$
L1	$W \doteq 1.5 \text{ mm}$, $l \doteq 25 \text{ mm}$ strip line
L2	$W \doteq 4 \text{ mm}$, $l \doteq 25 \text{ mm}$ strip line
L3	0.5ϕ , $l \doteq 40 \text{ mm}$
CH	$2t + \text{bead core}$

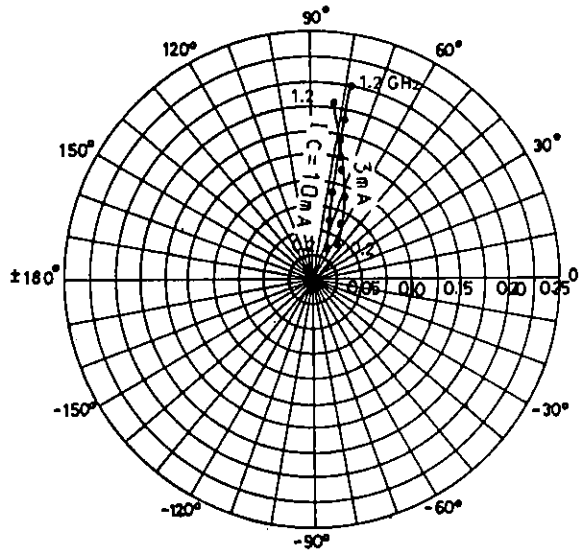
2SC4403



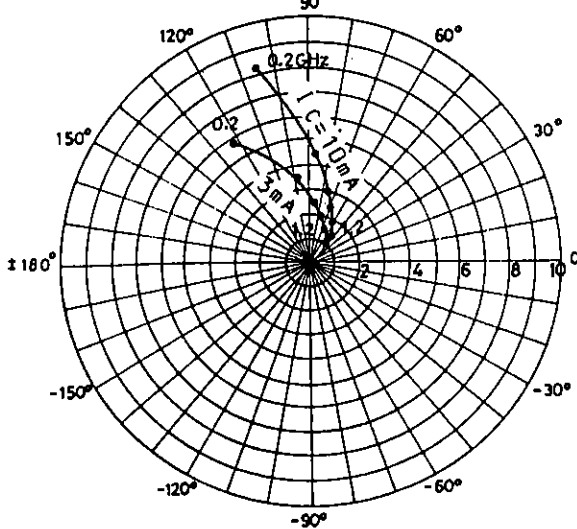
S11e : VCE=10V
f=200MHz step



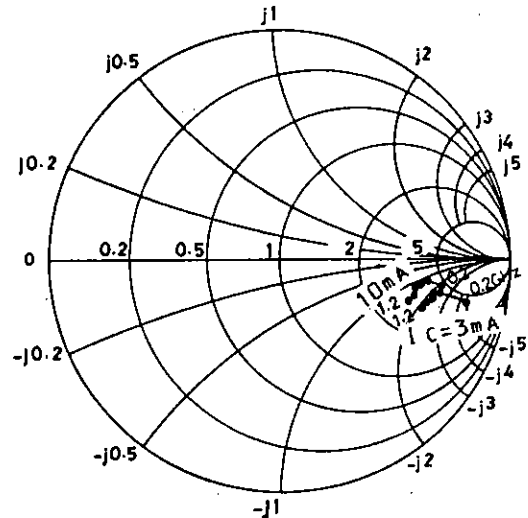
S12e : VCE=10V
f=200MHz step



S21e : VCE=10V
f=200MHz step



S22e : VCE=10V
f=200MHz step



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