

**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	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB} = 2\text{V}, I_C = 0$			10	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE} = 10\text{V}, I_C = 10\text{mA}$	$\times 40$		$\times 200$	
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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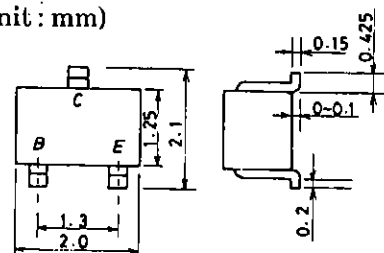
(Note) Marking: LY

$h_{FE}$  rank: 2,3,4

● For CP package version, use the 2SC3772.

**Package Dimensions 2059**

(unit: mm)



SANYO: MCP

B: Base

C: Collector

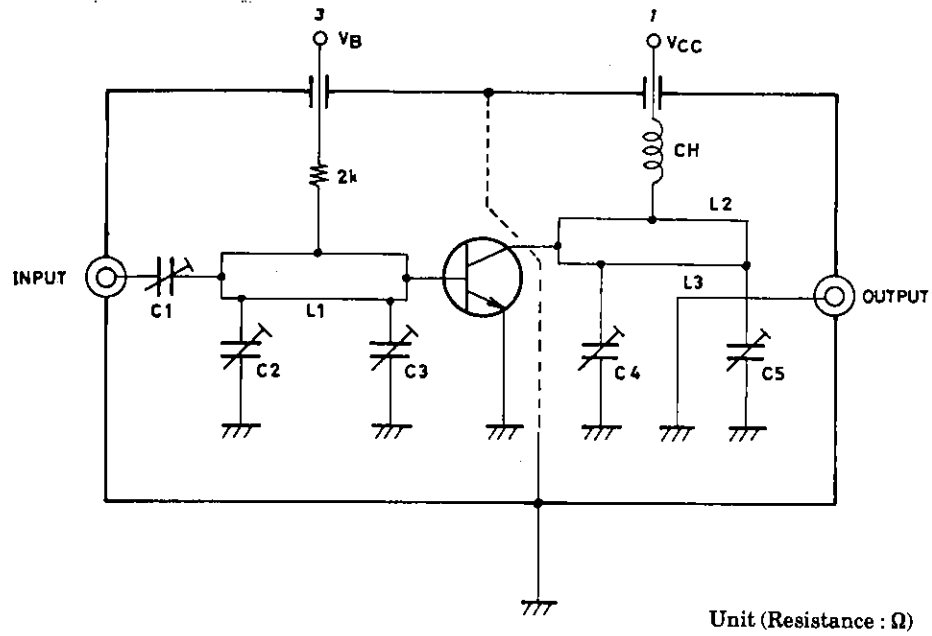
E: Emitter

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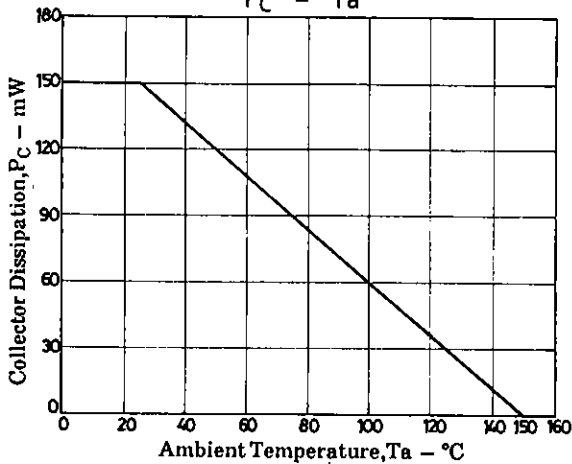
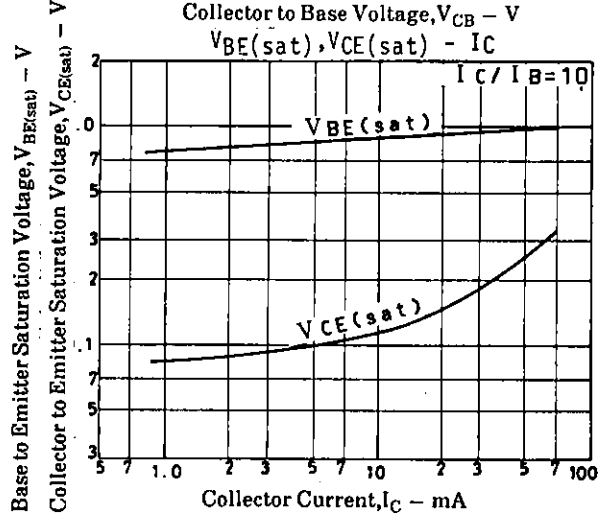
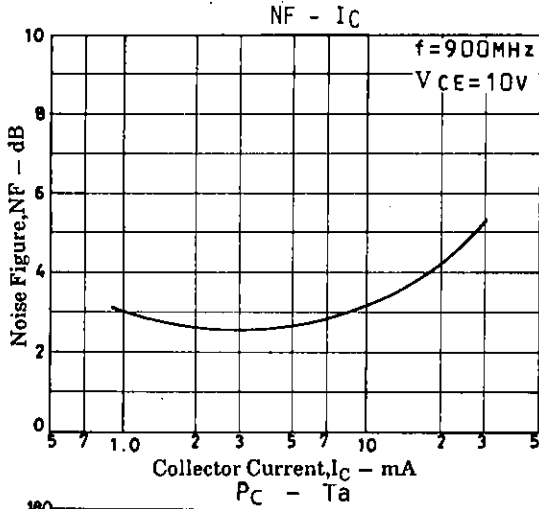
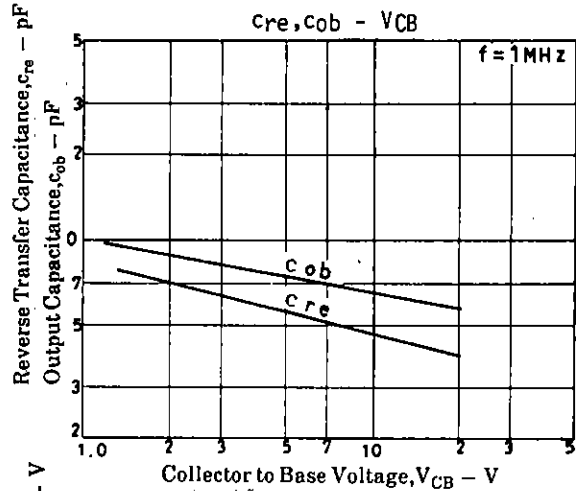
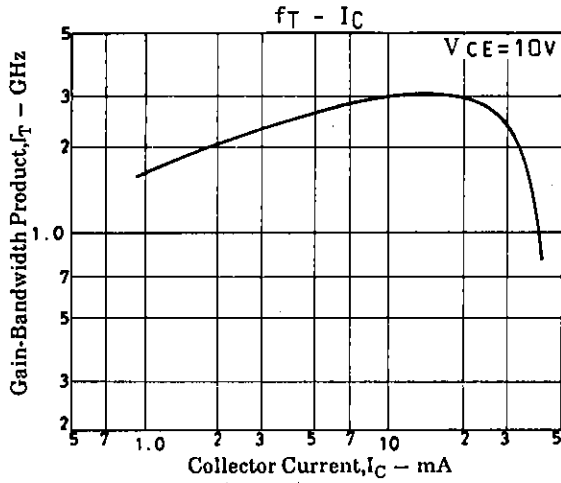
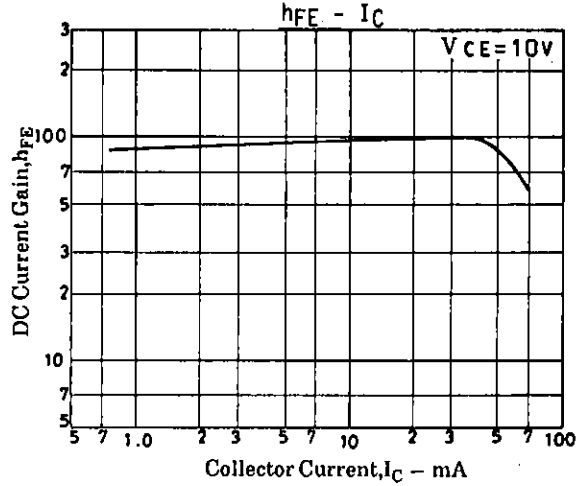
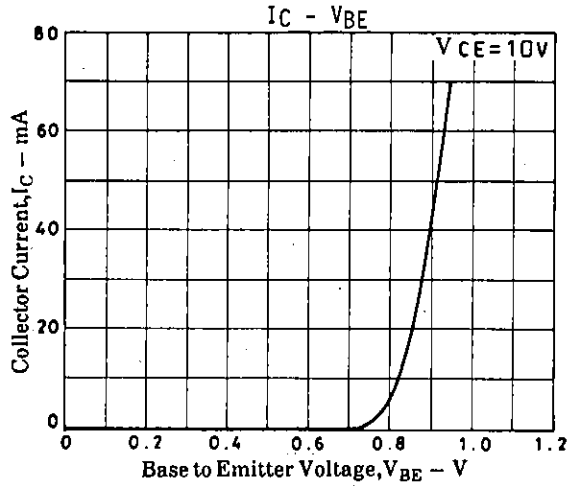
4298TA, TS No.2756-1/4

## NF Test Circuit

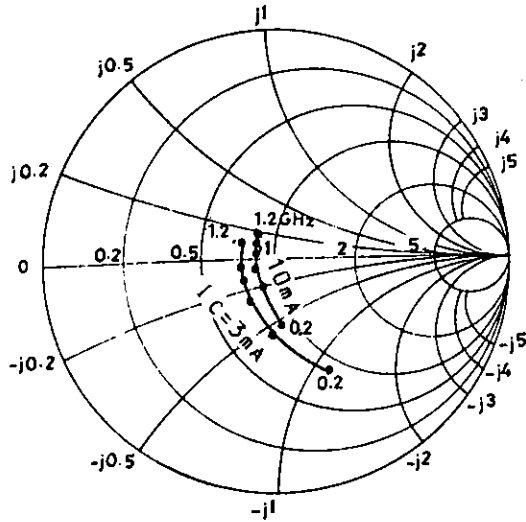


900MHz	
C1	~5 pF
C2	~10 pF
C3	~10 pF
C4	~10 pF
C5	~10 pF
L1	W ≐ 1.5 mm, l ≐ 25 mm strip line
L2	W ≐ 4 mm, l ≐ 25 mm strip line
L3	0.5 φ, l ≐ 40 mm
CH	2t + bead core

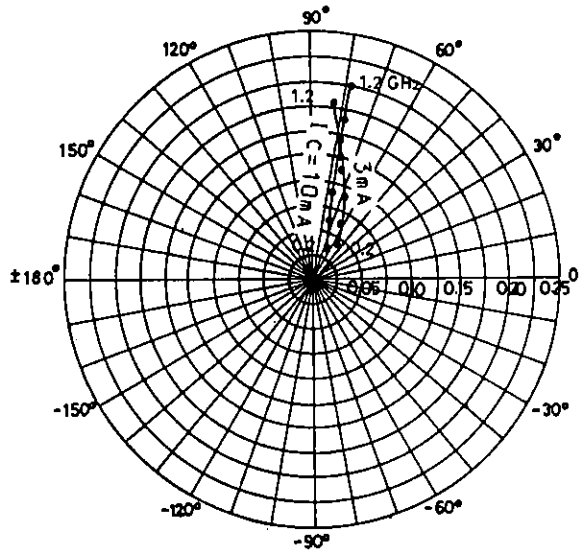
2SC4403



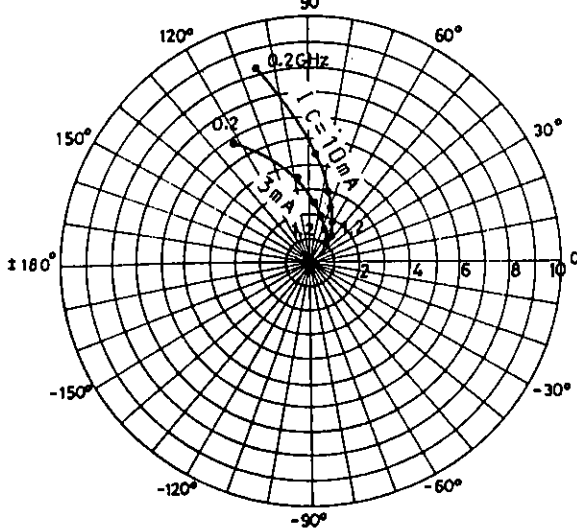
S11e : VCE=10V  
f=200MHz step



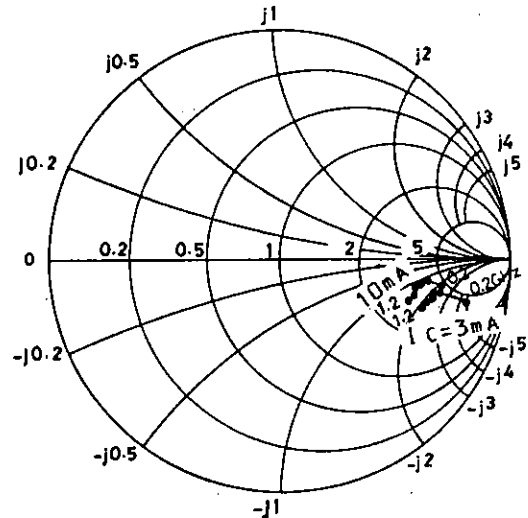
S12e : VCE=10V  
f=200MHz step



S21e : VCE=10V  
f=200MHz step



S22e : VCE=10V  
f=200MHz step



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