Ordering number: EN 3008

SANYO

No.3008

2SC4364

NPN Epitaxial Planar Silicon Transistor

VHF. UHF/MIX. OSC. Low-Voltage High-Frequency Amp Applications

Features

- Low-voltage operation : f_T = 3.0GHz typ (V_{CE} = 3V)
  : MAG = 11dB typ (V_{CE} = 3V, I_C = 3mA)
  : NF = 3.0dB typ (V_{CE} = 3V, I_C = 3mA)

Absolute Maximum Ratings at Ta = 25°C

			unit
Collector to Base Voltage	V_{CBO}	25	V
Collector to Emitter Voltage	V_{CEO}	15	V
Emitter to Base Voltage	V_{EBO}	3	V
Collector Current	I_C	30	mA
Collector Dissipation	P_C	250	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	−55 to +150	°C

Electrical Characteristics at Ta = 25°C

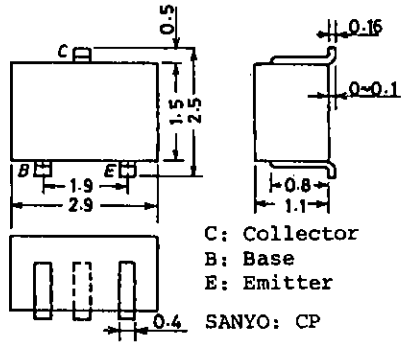
			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB} = 15V, I_E = 0			1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = 2V, I_C = 0			1.0	μA
DC Current Gain	h_{FE}	V_{CE} = 3V, I_C = 3mA	40※		200※	
Gain-Bandwidth Product	f_T	V_{CE} = 3V, I_C = 3mA		3.0		GHz
Output Capacitance	c_{ob}	V_{CB} = 3V, f = 1MHz		0.75	1.3	pF
Reverse Transfer Capacitance	c_{re}	V_{CB} = 3V, f = 1MHz		0.7		pF
Forward Transfer Gain	$\|S21e\|^2$	V_{CE} = 3V, I_C = 3mA, f = 0.9GHz		7		dB
Maximum Available Power Gain	MAG	V_{CE} = 3V, I_C = 3mA, f = 0.9GHz		11		dB
Noise Figure	NF	V_{CE} = 3V, I_C = 3mA, f = 0.9GHz		3.0	5.0	dB

※ The 2SC4364 is classified by 3mA h_{FE} as follows:

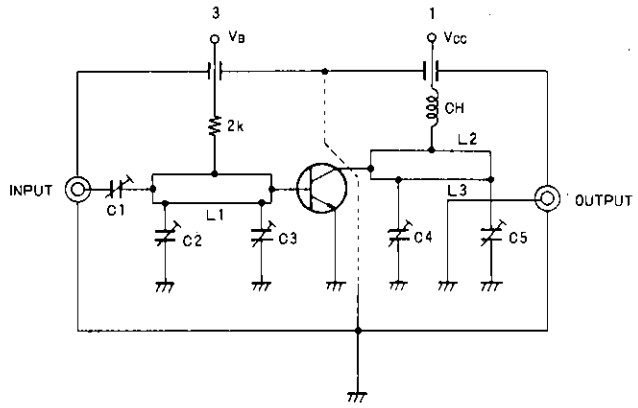
40 2 80	60 3 120	100 4 200

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

Package Dimensions 2018A
(unit : mm)

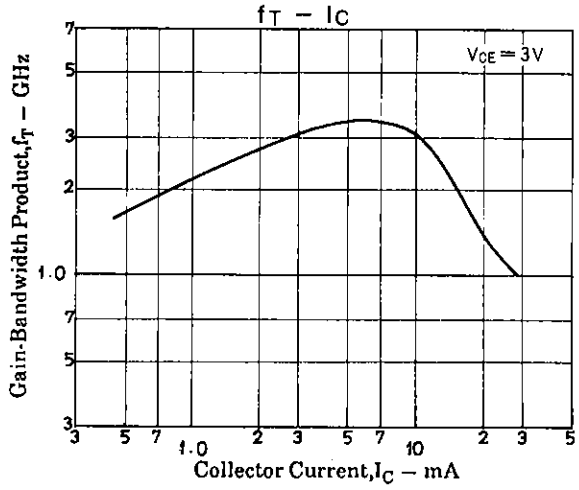


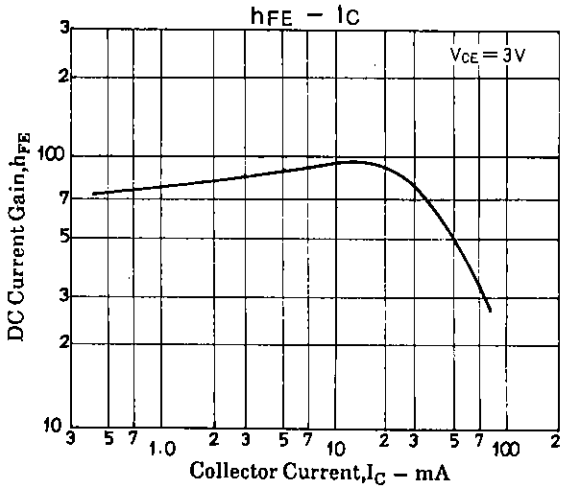
NF Test Circuit

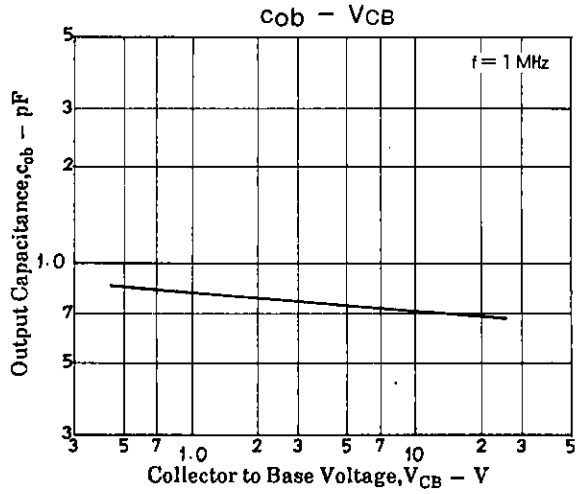


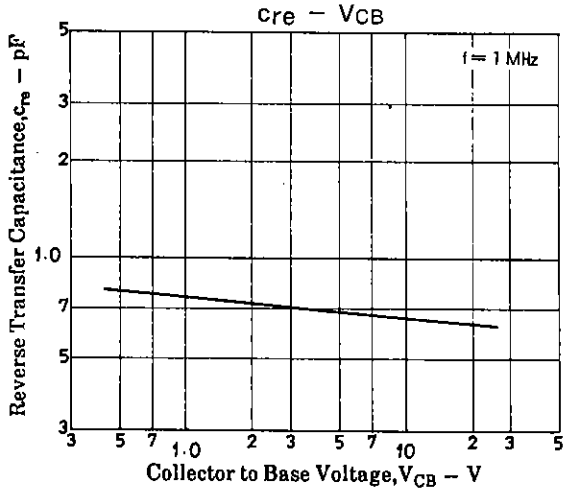
	900MHz	
C1	~5 pF	
C2	~10pF	
C3	~10pF	
C4	~10pF	
C5	~10pF	
L1	W÷1.5mm, 1 ÷25mm	strip line
L2	W÷4 mm, 1 ÷25mm	strip line
L3	0.5φ, 1 ÷40mm	
CH	2t+bead core	

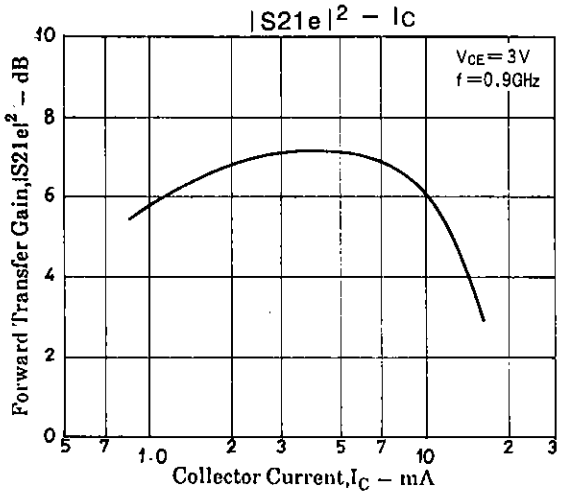
Unit (Resistance : Ω)

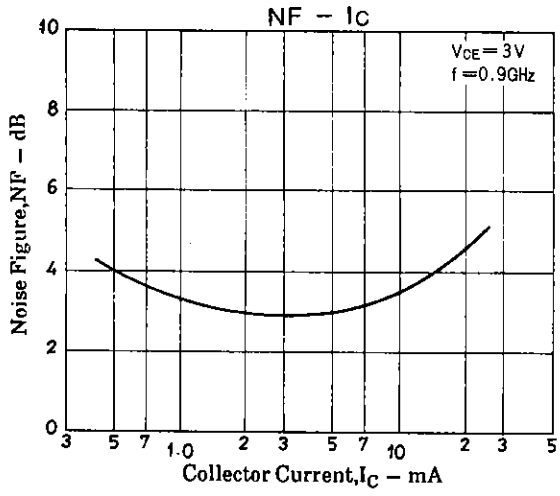


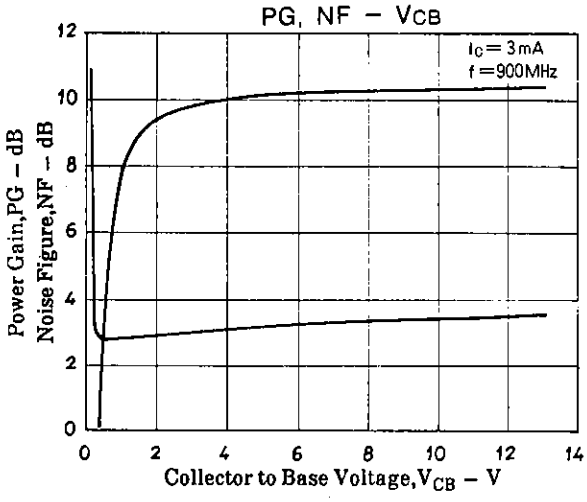


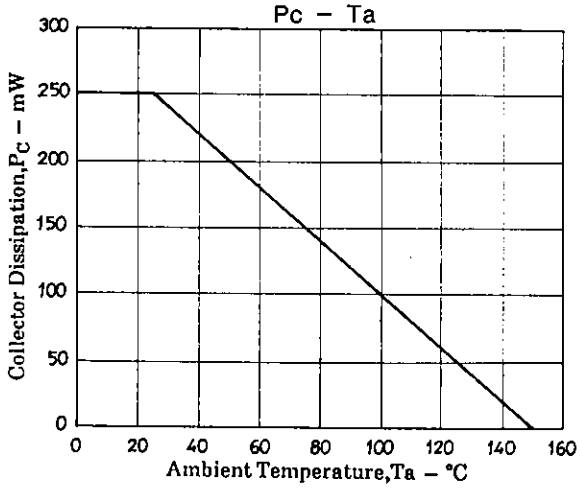








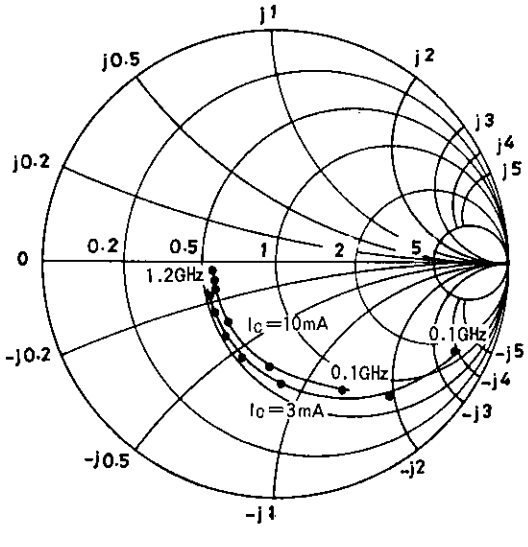


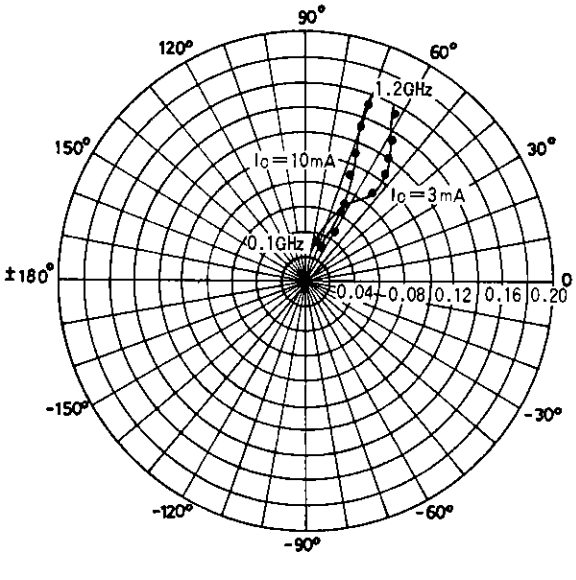


S parameter

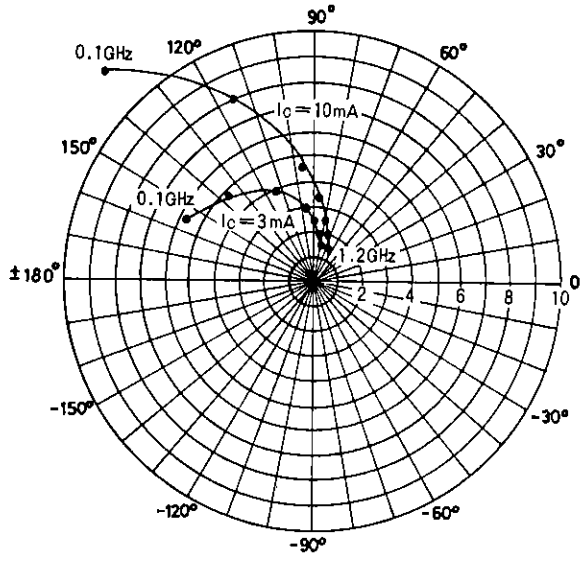
S11e : VCE= 3 V
f=100MHz, 200~1200MHz(200MHz step)

S12e : VCE= 3 V
f=100MHz, 200~1200MHz(200MHz step)

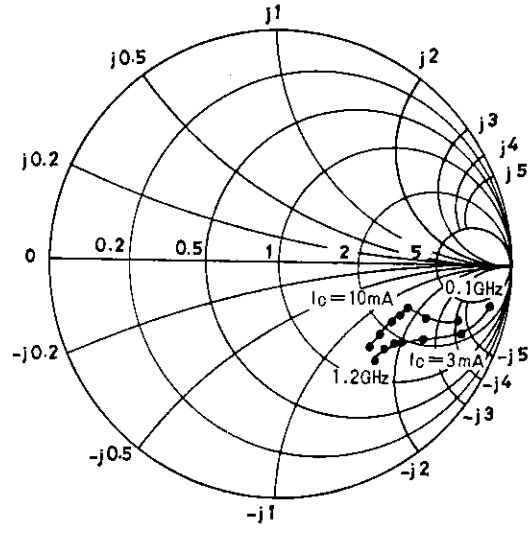




S21e : V_{CE}= 3 V
f=100MHz, 200~1200MHz(200MHz step)



S22e : V_{CE}=10V
f=100MHz, 200~1200MHz(200MHz step)



S parameter (Common emitter)
V_{CE}= 3 V, I_C= 3 mA, Z_O=50Ω

Freq (MHz)	$\|S_{11}\|$	$\angle S_{11}$	$\|S_{21}\|$	$\angle S_{21}$	$\|S_{12}\|$	$\angle S_{12}$	$\|S_{22}\|$	$\angle S_{22}$
100	0.874	−25.4	5.638	154.7	0.036	73.4	0.931	−12.4
200	0.758	−46.8	4.895	137.3	0.061	62.3	0.842	−19.9
400	0.555	−85.9	3.925	112.5	0.088	53.7	0.696	−26.7
600	0.437	−110.1	3.004	97.1	0.105	53.2	0.631	−30.3
800	0.377	−127.8	2.387	86.7	0.119	56.2	0.596	−32.9
900	0.361	−135.3	2.201	82.7	0.128	57.3	0.594	−34.4
1000	0.353	−141.9	2.014	79.1	0.135	56.5	0.586	−36.1
1200	0.340	−151.4	1.763	72.7	0.153	60.6	0.581	−40.1

V_{CE}= 3 V, I_C=10mA, Z_O=50Ω

Freq (MHz)	$\|S_{11}\|$	$\angle S_{11}$	$\|S_{21}\|$	$\angle S_{21}$	$\|S_{12}\|$	$\angle S_{12}$	$\|S_{22}\|$	$\angle S_{22}$
100	0.632	−59.2	11.508	135.2	0.031	63.9	0.811	−18.4
200	0.467	−92.6	7.923	115.1	0.045	58.7	0.677	−21.8
400	0.352	−129.6	4.570	95.5	0.067	61.8	0.584	−22.7
600	0.317	−147.2	3.190	85.3	0.089	65.4	0.561	−25.8
800	0.307	−157.8	2.432	78.1	0.109	68.6	0.548	−29.2
900	0.308	−162.6	2.217	75.1	0.122	69.1	0.551	−31.2
1000	0.314	−166.9	2.023	72.2	0.133	70.1	0.547	−33.3
1200	0.318	−172.2	1.756	67.0	0.156	70.1	0.549	−38.1

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