Ordering number: EN 3007

SANYO

No.3007

2SC4365

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=12dB typ (V_{CE}=3V,I_C=10mA)
  : NF=1.5dB typ (V_{CE}=3V,I_C=5mA)

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	50	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}=1V,I_C=0			1.0	μA
DC Current Gain	h_{FE}	V_{CE}=3V,I_C=10mA	40※		200※	
Gain-Bandwidth Product	f_T	V_{CE}=3V,I_C=10mA		3.0		GHz
Output Capacitance	c_{ob}	V_{CB}=3V,f=1MHz		0.9	1.5	pF
Reverse Transfer Capacitance	c_{re}	V_{CB}=3V,f=1MHz		0.85		pF
Forward Transfer Gain	$\|S21e\|^2$	V_{CE}=3V,I_C=10mA,f=0.9GHz		7		dB
Maximum Available Power Gain	MAG	V_{CE}=3V,I_C=10mA,f=0.9GHz		12		dB
Noise Figure	NF	V_{CE}=3V,I_C=5mA,f=0.9GHz		1.5	3.0	dB

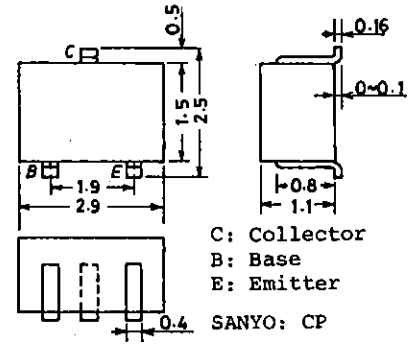
※ The 2SC4365 is classified by 10mA h_{FE} as follows:

40 2 80	60 3 120	100 4 200

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

Package Dimensions 2018A

(unit : mm)



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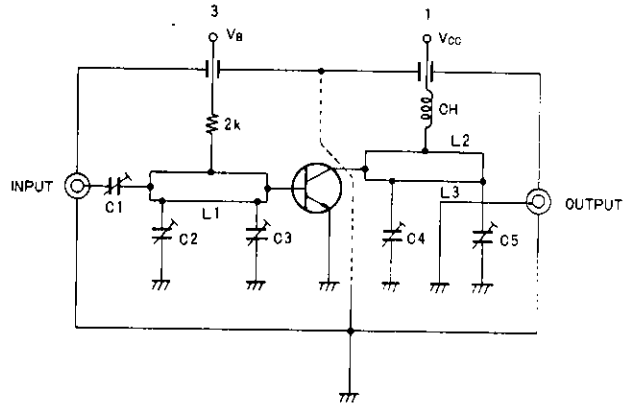
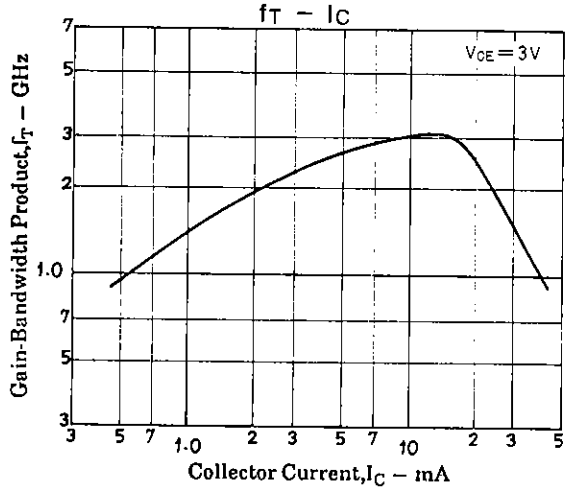
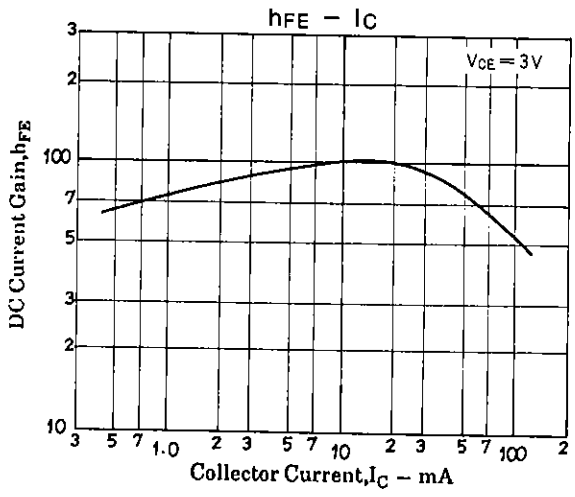
NF Test Circuit

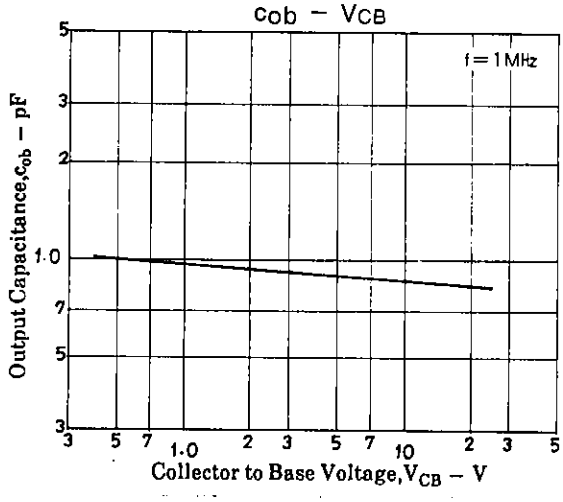


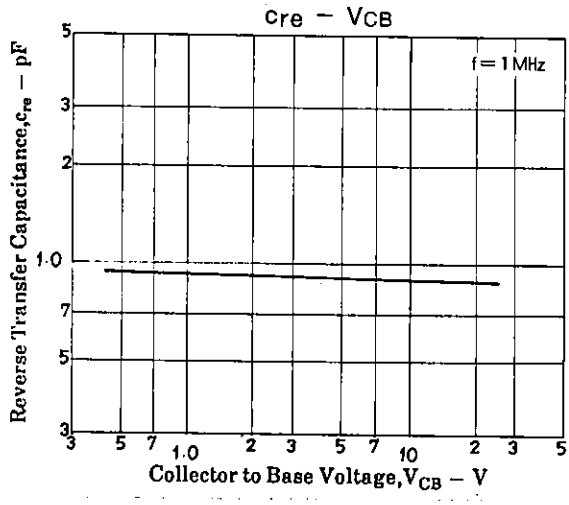
	900MHz	
C1	~5pF	
C2	~10pF	
C3	~10pF	
C4	~10pF	
C5	~10pF	
L1	W≒1.5mm, l≒25mm	**strip line**
L2	W≒4mm, l≒25mm	**strip line**
L3	0.5φ, l≒40mm	
CH	**2t+bead core**	

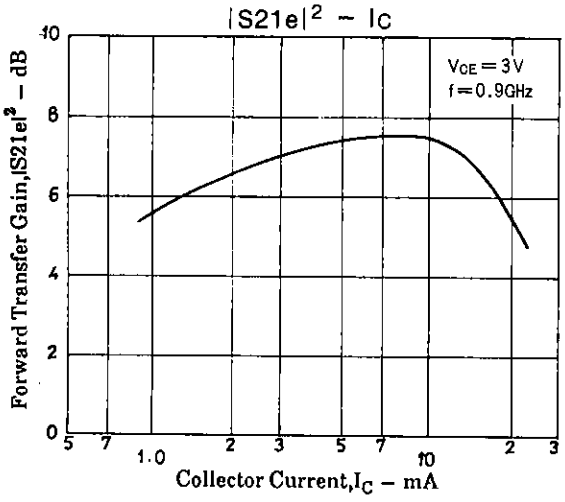
Unit (Resistance : Ω)

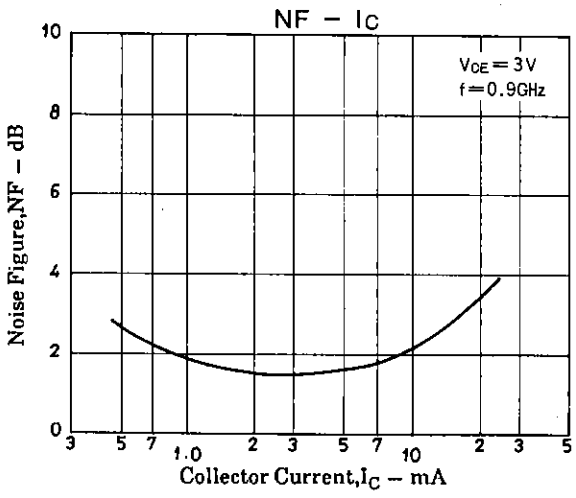


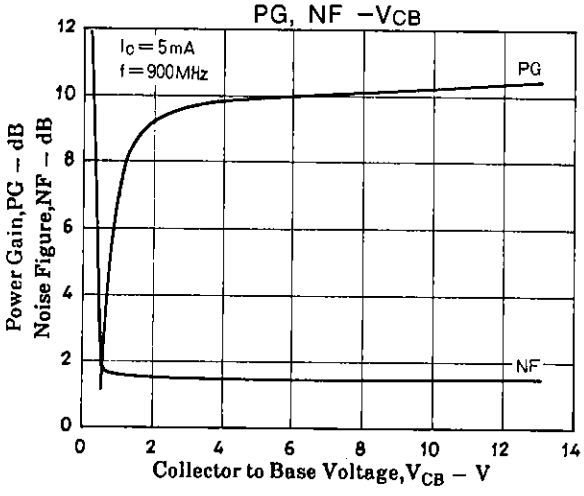


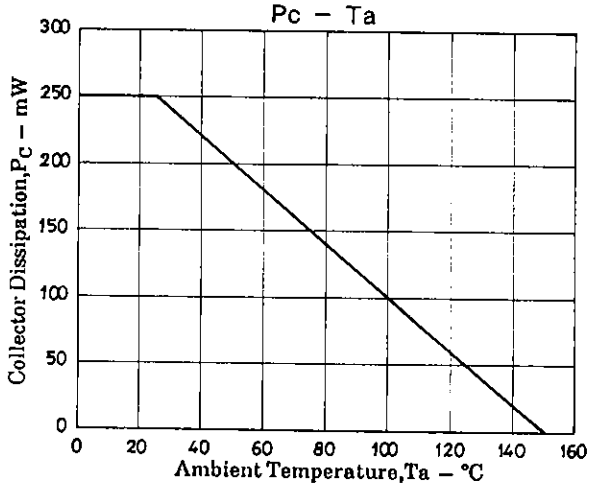








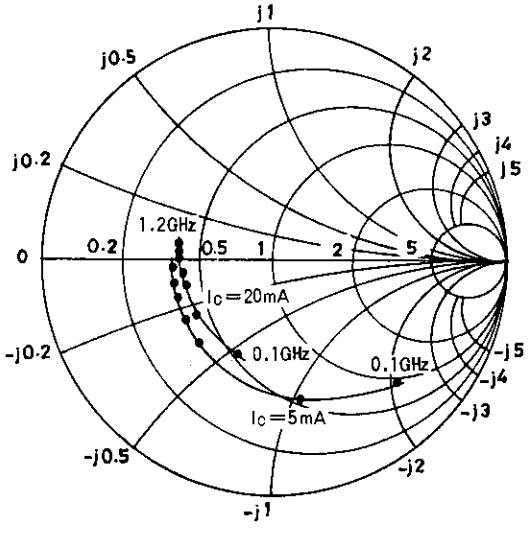




S parameter

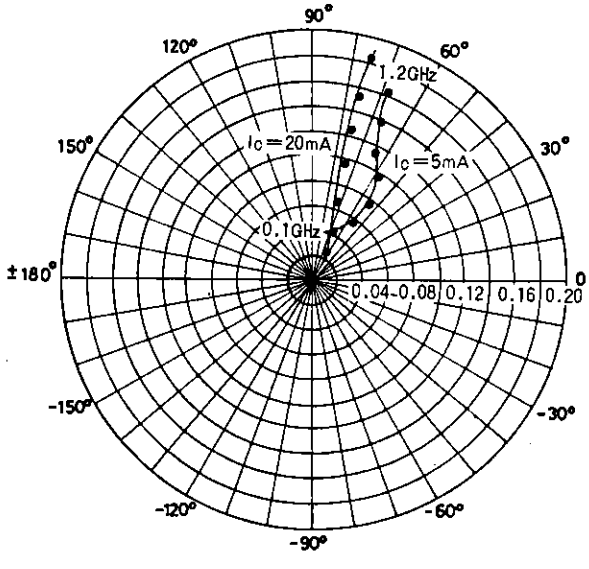
S11e : VCE = 3 V

f = 100MHz, 200~1200MHz (200MHz step)

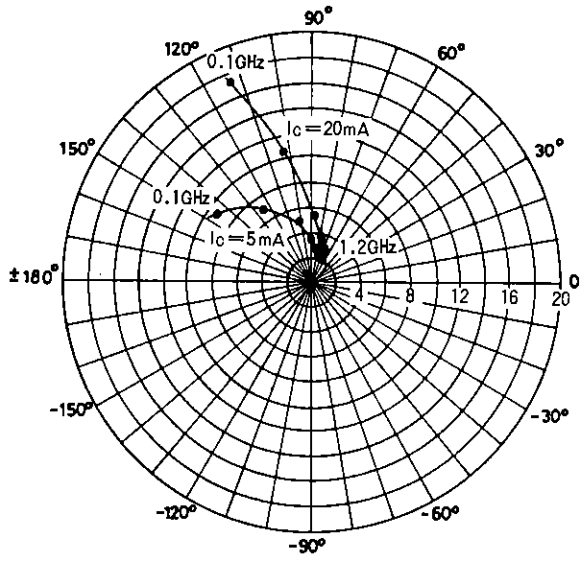


S12e : VCE = 3 V

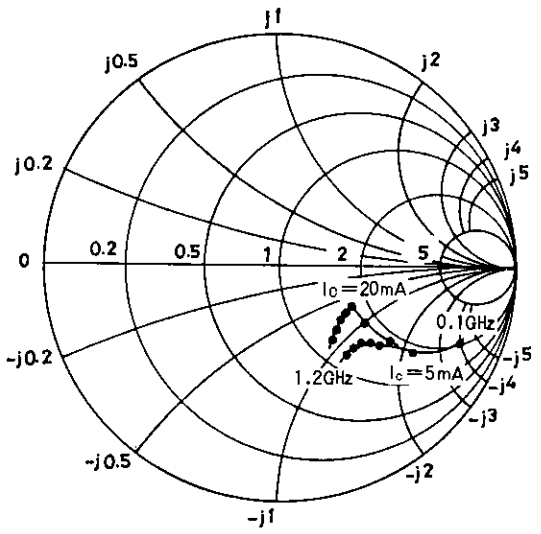
f = 100MHz, 200~1200MHz (200MHz step)



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



S22e : V_{CE}= 3 V
f=100MHz, 200~1200MHz(200MHz step)



S parameter (Common emitter)

V_{CE}= 3 V, I_C= 5 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	0.738	−45.7	9.352	143.7	0.040	65.0	0.827	−22.5
200	0.606	−80.3	7.183	123.9	0.059	54.4	0.664	−31.3
400	0.485	−129.6	4.814	99.4	0.079	53.5	0.506	−35.3
600	0.449	−149.5	3.426	87.4	0.097	58.1	0.463	−38.1
800	0.437	−161.2	2.626	78.8	0.115	63.5	0.444	−41.4
900	0.437	−165.9	2.392	75.6	0.127	65.2	0.446	−43.3
1000	0.444	−170.2	2.180	72.3	0.138	67.3	0.444	−45.4
1200	0.448	−175.7	1.891	66.8	0.163	69.0	0.451	−50.4

V_{CE}= 3 V, I_C=20mA, 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	0.446	−112.7	17.471	118.5	0.026	61.5	0.581	−32.6
200	0.421	−143.4	10.341	102.4	0.040	65.0	0.437	−32.2
400	0.414	−164.8	5.545	88.2	0.067	71.7	0.370	−30.5
600	0.412	−173.5	3.742	79.9	0.096	74.1	0.361	−34.4
800	0.412	−178.4	2.822	73.4	0.123	75.8	0.359	−39.1
900	0.418	179.1	2.566	70.9	0.139	75.6	0.365	−41.5
1000	0.428	176.8	2.326	68.1	0.153	76.0	0.366	−44.2
1200	0.435	174.0	2.013	63.2	0.182	74.9	0.398	−50.2