Ordering number : EN 5098

SANYO

No.5098

2SA1969

PNP Epitaxial Planar Silicon Transistor

High-Frequency Medium-Output Amplifier, Medium-Current Ultrahigh-Speed Switching Applications

Features

- High f_T (f_T = 1.7GHz typ).
- Large current capacity (I_C = −400mA).

Absolute Maximum Ratings at Ta = 25°C

				unit
Collector-to-Base Voltage	V_{CBO}		−10	V
Collector-to-Emitter Voltage	V_{CEO}		−10	V
Emitter-to-Base Voltage	V_{EBO}		−2	V
Collector Current	I_C		−400	mA
Collector Current (Pulse)	I_{CP}		−800	mA
Collector Dissipation	P_C	Mounted on ceramic board (250mm²×0.8mm)	1.3	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		−55 to +150	°C

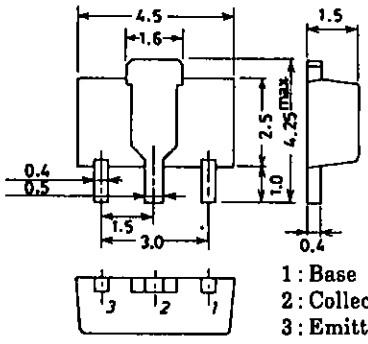
Electrical Characteristics at Ta = 25°C

			min	typ	max	unit
Collector Cutoff Current	I_{CBO}	V_{CB} = −10V, I_E = 0			−1.0	μA
Emitter Cutoff Current	I_{EBO}	V_{EB} = −1V, I_C = 0			−10	μA
DC Current Gain	$h_{FE}(1)$	V_{CE} = −5V, I_C = −50mA	20		120	
	$h_{FE}(2)$	V_{CE} = −5V, I_C = −400mA	5			
Gain-Bandwidth Product	f_T	V_{CE} = −5V, I_C = −100mA		1.7		GHz
Output Capacitance	Cob	V_{CB} = −10V, f = 1MHz		4.7	7.0	pF
Reverse Transfer Capacitance	Cre	V_{CB} = −10V, f = 1MHz		3.9		pF
C-E Saturation Voltage	$V_{CE(sat)}$	I_C = −200mA, I_B = −20mA		−0.4	−1.0	V
B-E Saturation Voltage	$V_{BE(sat)}$	I_C = −200mA, I_B = −20mA		−0.9	−1.2	V

Marking : AQ

Package Dimensions 2038A

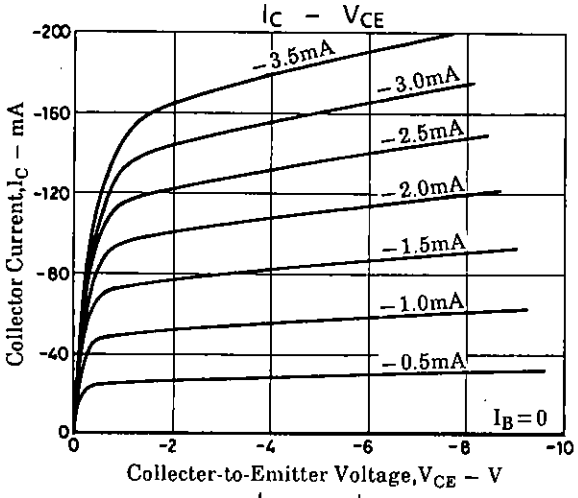
(unit : mm)



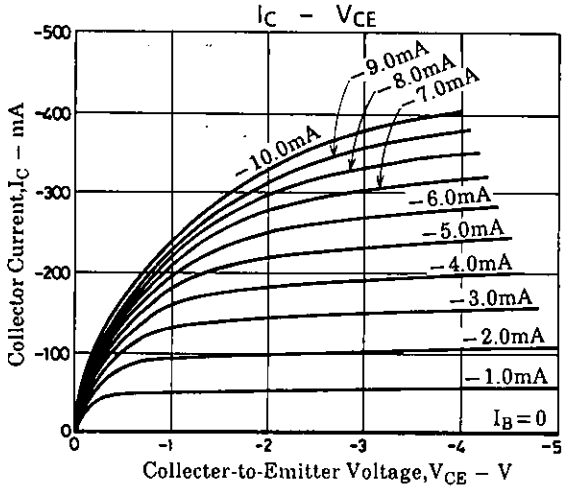
1 : Base
2 : Collector
3 : Emitter

SANYO : PCP
(Bottom View)

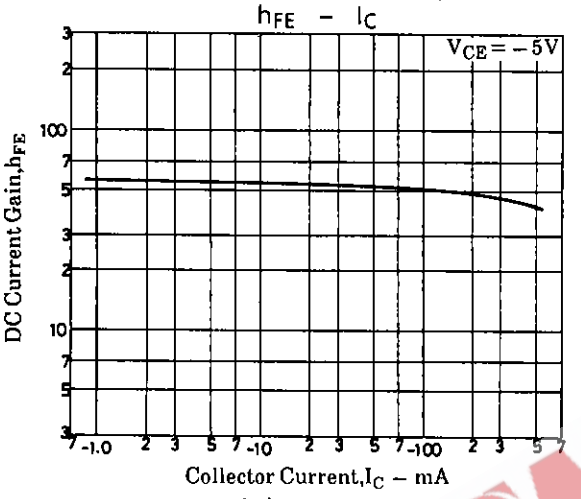
I_C – V_{CE}



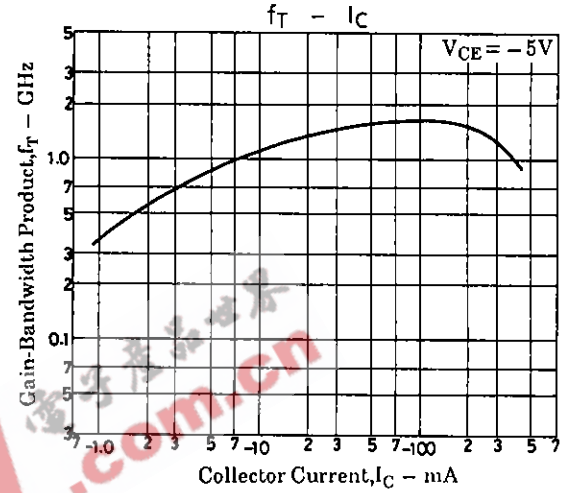
I_C – V_{CE}



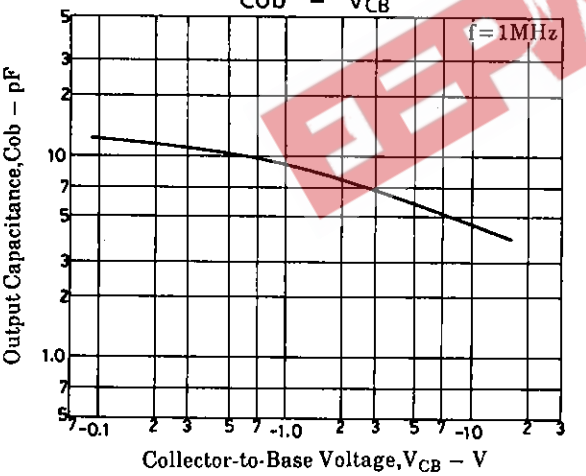
h_{FE} – I_C



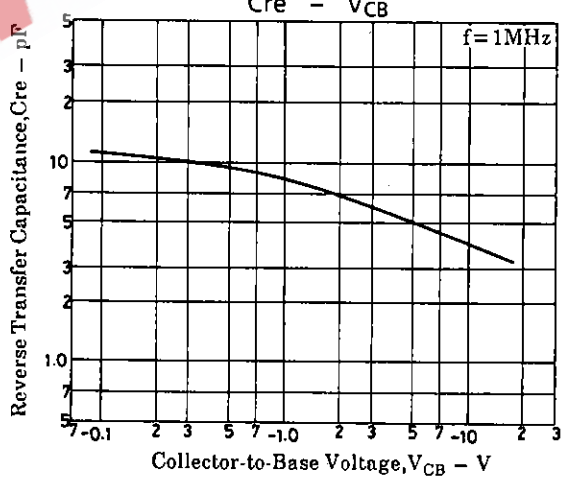
f_T – I_C



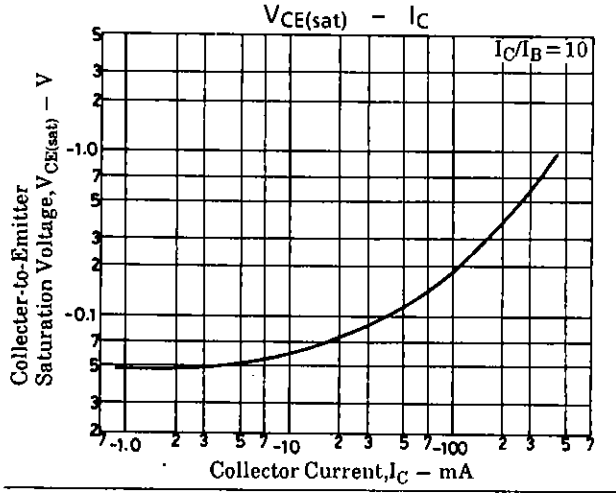
Cob – V_{CB}



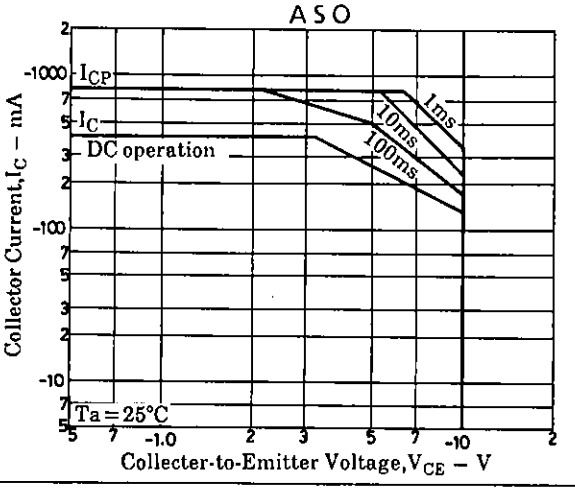
Cre – V_{CB}

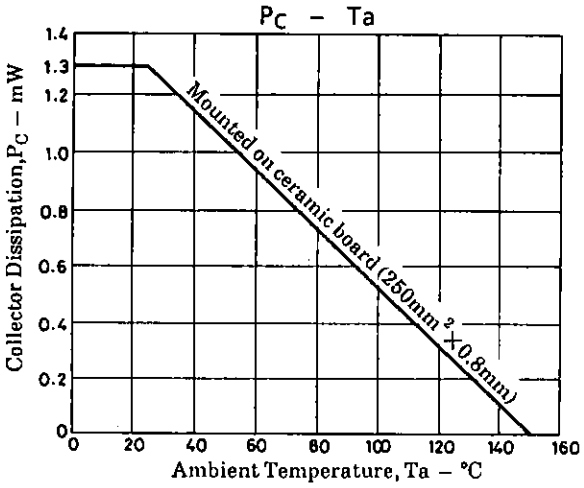


$V_{CE(sat)}$ – I_C



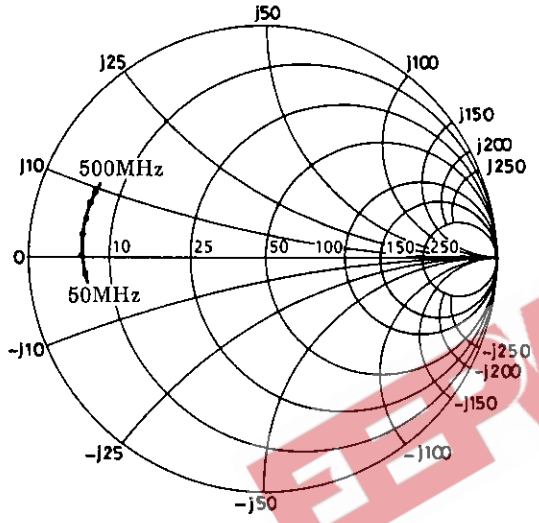
ASO





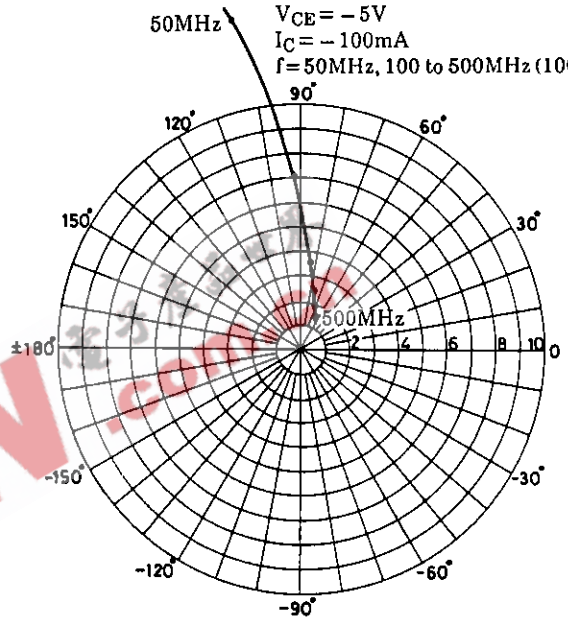
2SA1969 S11e

V_{CE} = –5V
I_C = –100mA
f=50MHz, 100 to 500MHz (100MHz step)



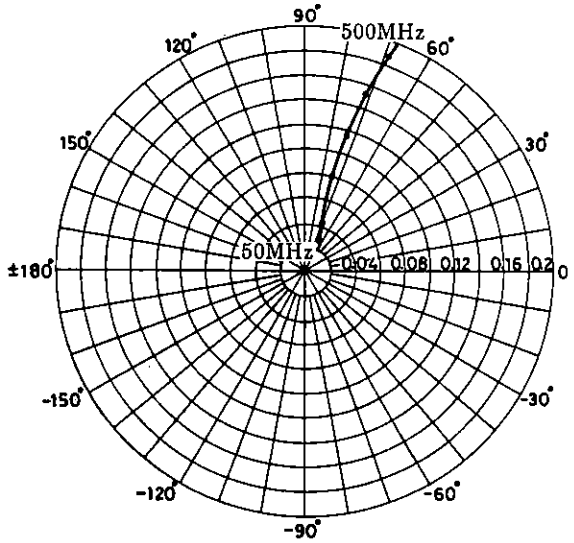
2SA1969 S21e

V_{CE} = –5V
I_C = –100mA
f=50MHz, 100 to 500MHz (100MHz step)



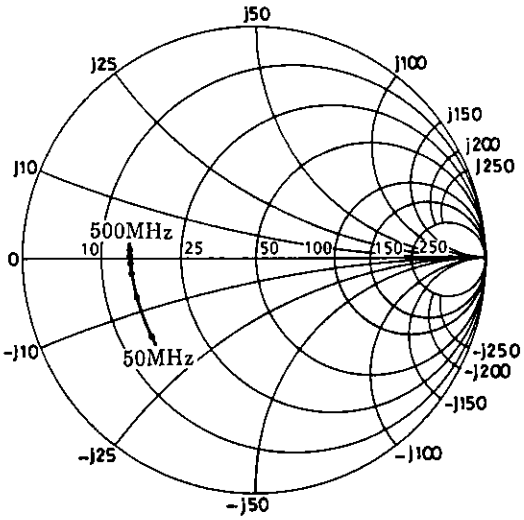
2SA1969 S12e

V_{CE} = –5V
I_C = –100mA
f=50MHz, 100 to 500MHz (100MHz step)



2SA1969 S22e

V_{CE} = –5V
I_C = –100mA
f=50MHz, 100 to 500MHz (100MHz step)



S Parameter (Common emitter)

$V_{CE} = -5V$, $I_C = -100mA$, $Z_O = 50\Omega$

Freq (MHz)	$\|S_{11}\|$	$\angle S_{11}$	$\|S_{21}\|$	$\angle S_{21}$	$\|S_{12}\|$	$\angle S_{12}$	$\|S_{22}\|$	$\angle S_{22}$
50	0.758	−174.7	13.652	102.0	0.025	63.4	0.565	−143.6
100	0.770	179.3	7.077	92.4	0.042	70.7	0.548	−162.0
200	0.774	172.7	3.601	83.4	0.080	74.0	0.543	−173.2
300	0.771	167.3	2.449	77.1	0.116	73.1	0.542	−178.0
400	0.769	162.3	1.888	71.6	0.152	71.0	0.544	178.8
500	0.765	157.9	1.562	66.5	0.187	68.7	0.544	176.3