

SANYO	No.5098	2SA1969
		PNP Epitaxial Planar Silicon Transistor High-Frequency Medium-Output Amplifier, Medium- Current Ultrahigh-Speed Switching Applications

Features

- High f_T ($f_T = 1.7\text{GHz typ}$).
- Large current capacity ($I_C = -400\text{mA}$).

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

			unit
Collector-to-Base Voltage	V_{CB0}	-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 ($250\text{mm}^2 \times 0.8\text{mm}$)	1.3 W
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

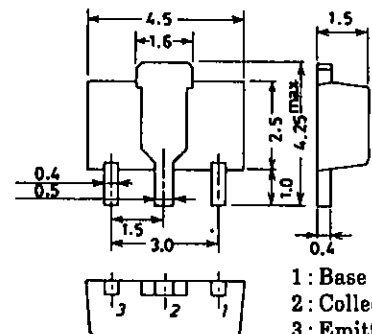
Electrical Characteristics at $T_a = 25^\circ\text{C}$

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

Marking: AQ

Package Dimensions 2038A

(unit: mm)



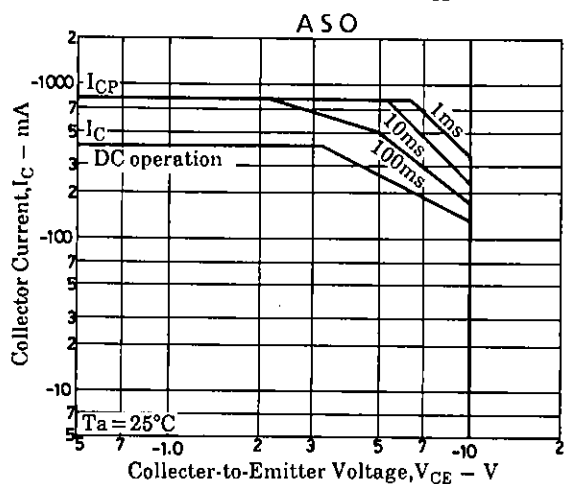
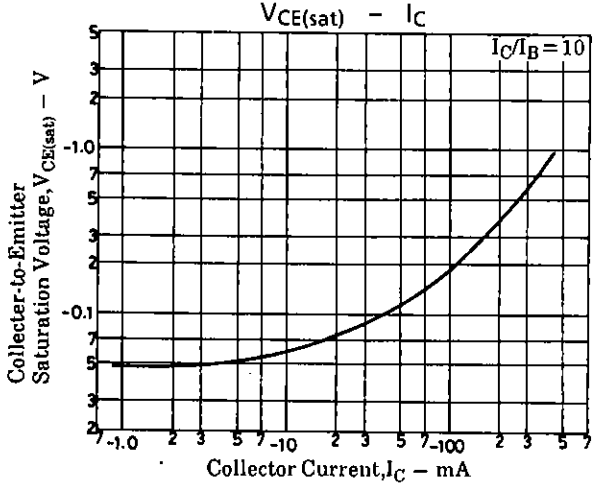
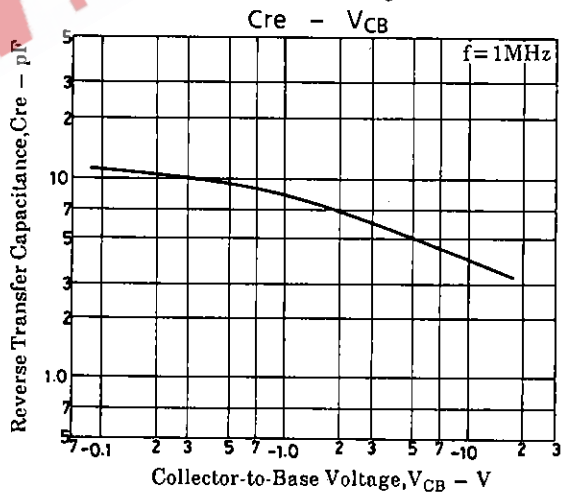
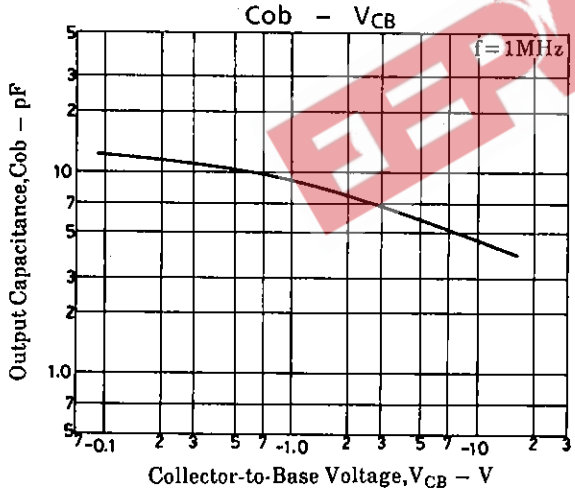
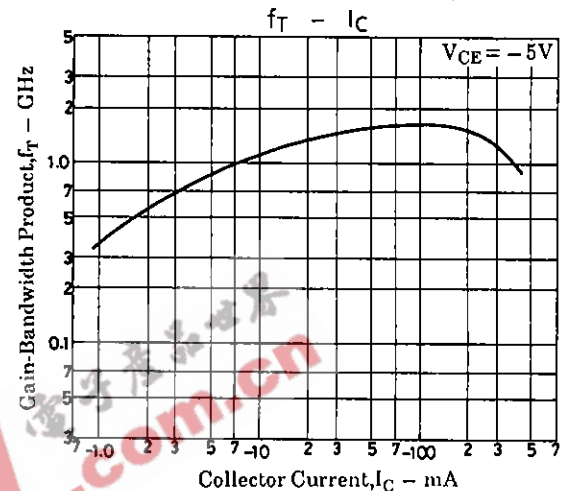
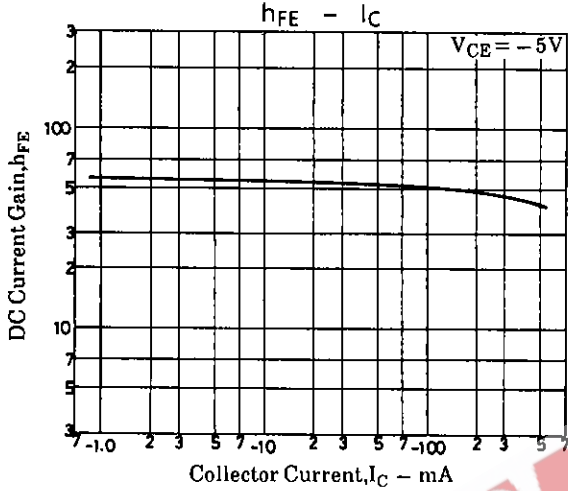
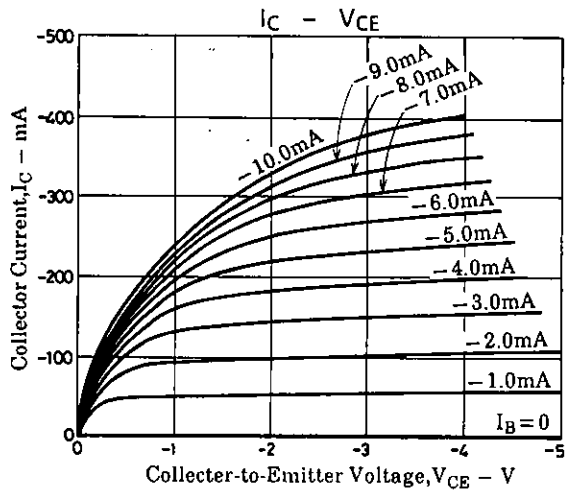
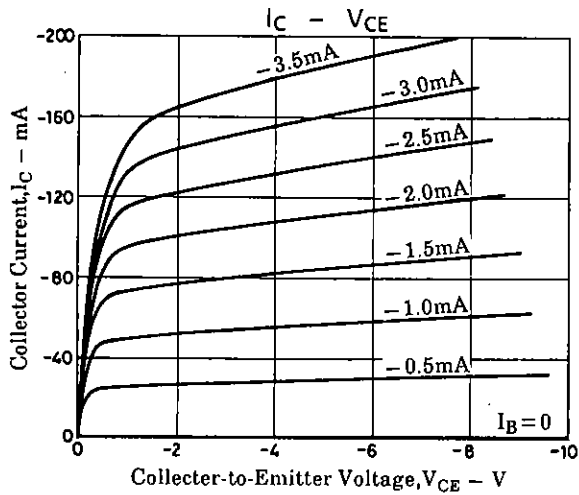
1: Base
2: Collector
3: Emitter

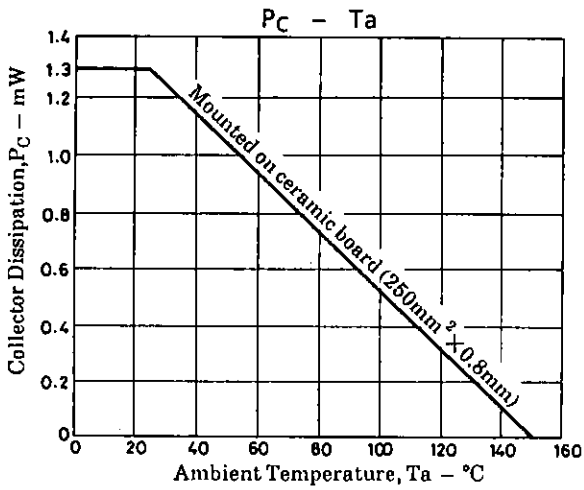
SANYO: PCP
(Bottom View)

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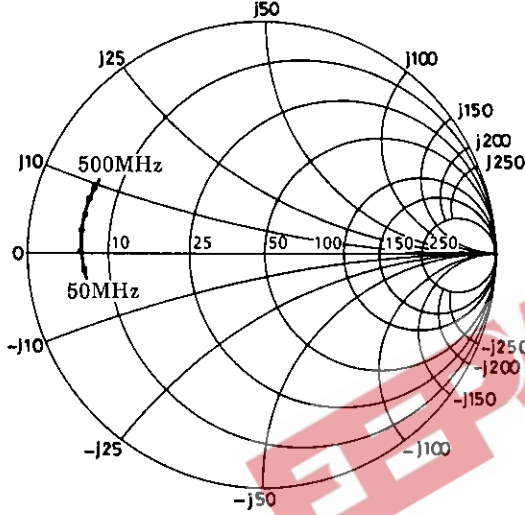
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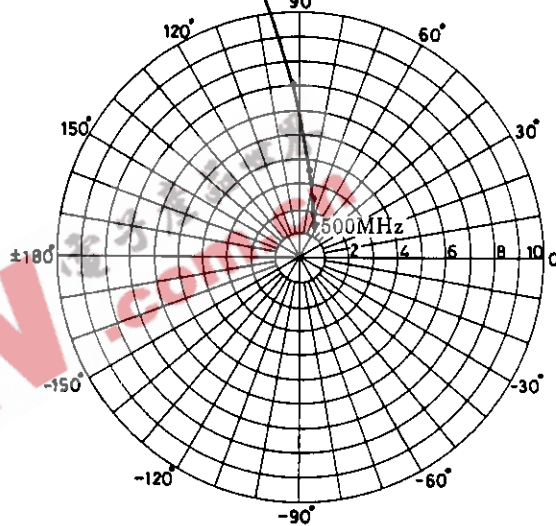
2SA1969 S11e

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



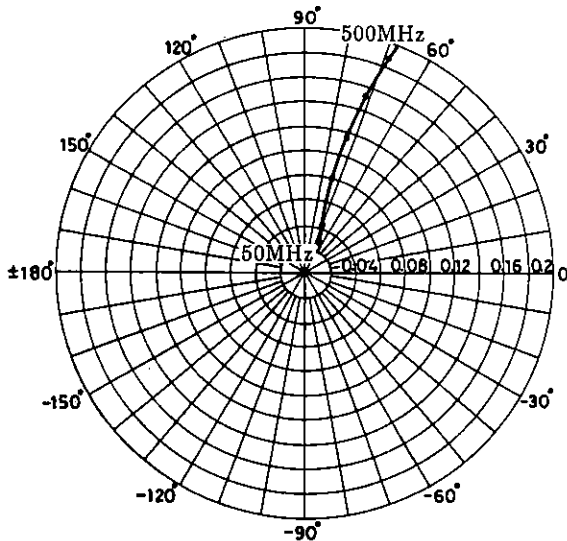
2SA1969 S21e

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



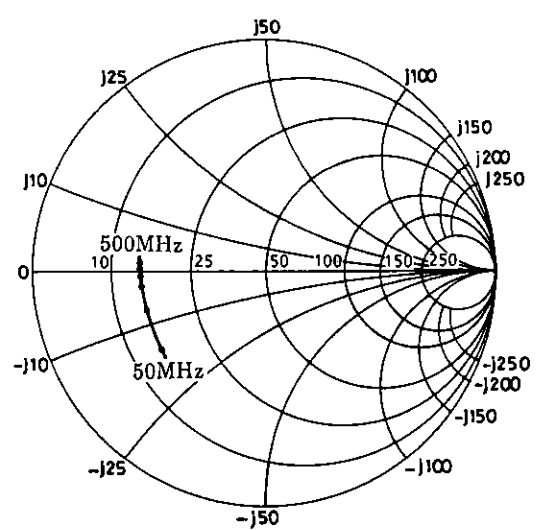
2SA1969 S12e

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) $V_{CE} = -5V, I_C = -100mA, Z_0 = 50\Omega$

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

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