

2SA1969

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

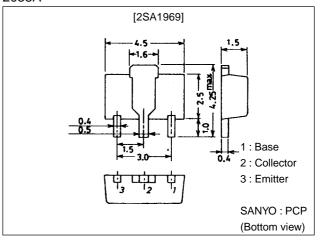
Features

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

Package Dimensions

unit:mm

2038A



Specifications

Absolute Maximum Ratings at Ta = 25°C

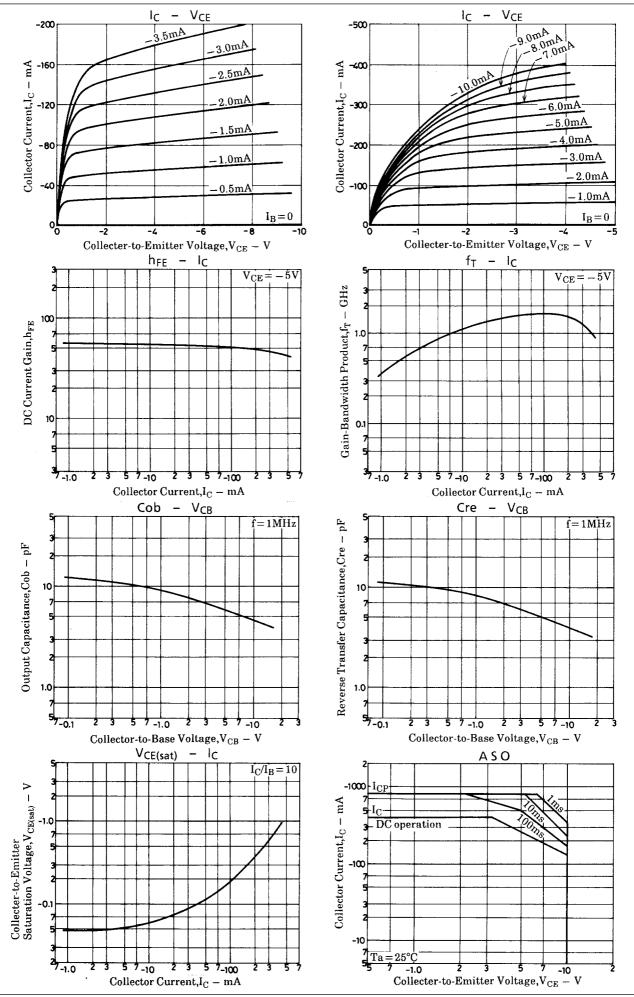
Parameter	Symbol	Conditions	Ratings	Unit
Collector-to-Base Voltage	V _{CBO}		-10	V
Collector-to-Emitter Voltage	V _{CEO}		-10	V
Emitter-to-Base Voltage	V _{EBO}		-2	V
Collector Current	IC		-400	mA
Collector Current (Pulse)	I _{CP}		-800	mA
Collector Dissipation	PC	Mounted on ceramic board (250mm²×0.8mm)	1.3	W
Junction Temperature	Tj		150	°C
Storage Temperature	Tstg		-55 to +150	°C

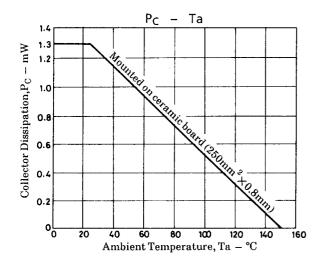
Electrical Characteristics at Ta = 25°C

Parameter	Symbol	Conditions	Ratings			Unit
Farameter	Symbol	Conditions		typ	max	Onit
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	fΤ	V _{CE} =-5V, I _C =-100mA		1.7		GHz
Output Capacitance	C _{ob}	V _{CB} =-10V, f=1MHz		4.7	7.0	pF
Reverse Transfer Capacitance	C _{re}	V _{CB} =-10V, f=1MHz		3.9		pF
Collector-to-Emitter Saturation Voltage	V _{CE(sat)}	I _C =-200mA, I _B =-20mA		-0.4	-1.0	V
Base-to-Emitter Saturation Voltage	V _{BE(sat)}	I _C =-200mA, I _B =-20mA		-0.9	-1.2	V

Marking : AQ

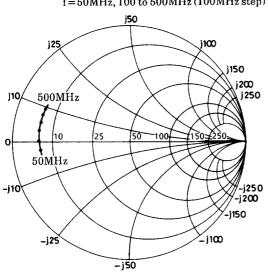
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 $V_{CE}\!=\!-5V$ $I_{C}\!=\!-100mA$ $f\!=\!50MHz,100$ to $500MHz\,(100MHz\,step)$



2SA1969 S21e

 $V_{CE} = -5V$ $I_{C} = -100 \text{mA}$ f = 50 MHz, 100 to 500 MHz (100 MHz step) 90° 120° 60° 150° -150° -120° -90°

 $2\mathrm{SA}1969\,\mathrm{S}12\mathrm{e}$

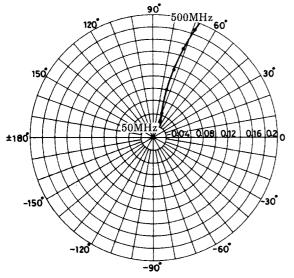
 $V_{CE} = -5V$ $I_{C} = -100 \text{mA}$

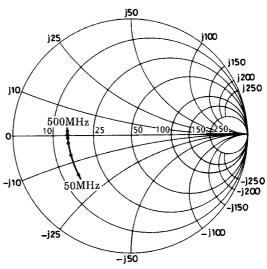
f = 50 MHz, 100 to 500 MHz (100 MHz step)

 $2\mathrm{SA}1969\,\mathrm{S}22\mathrm{e}$

 $V_{CE} = -5V$ $I_{C} = -100 \text{mA}$

f = 50 MHz, 100 to 500MHz (100MHz step)





S Parameter (Common emitter)

 V_{CE} = -5V, I_{C} = -100mA, Z_{O} = 50 Ω

Freq (MHz)	S ₁₁	∠S ₁₁	S ₂₁	∠S ₂₁	S ₁₂	∠S ₁₂	S ₂₂	∠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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