

# 2SB0709A (2SB709A)

Silicon PNP epitaxial planer type

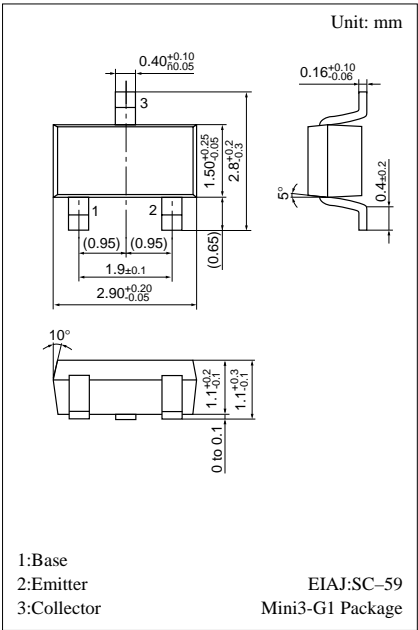
For general amplification  
Complementary to 2SD0601A (2SD601A)

## Features

- High forward current transfer ratio  $h_{FE}$ .
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

## Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-45	V
Collector to emitter voltage	$V_{CEO}$	-45	V
Emitter to base voltage	$V_{EBO}$	-7	V
Peak collector current	$I_{CP}$	-200	mA
Collector current	$I_C$	-100	mA
Collector power dissipation	$P_C$	200	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ +150	°C



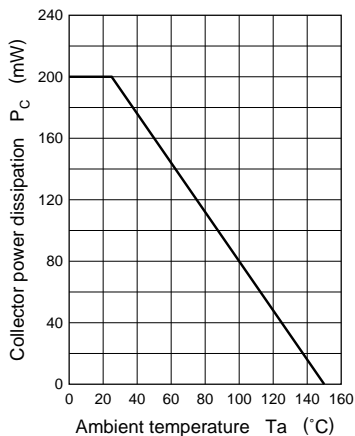
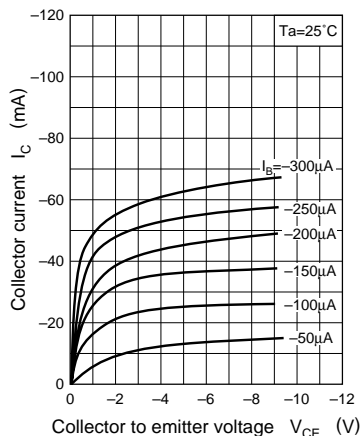
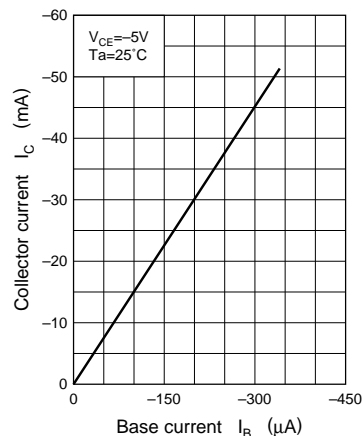
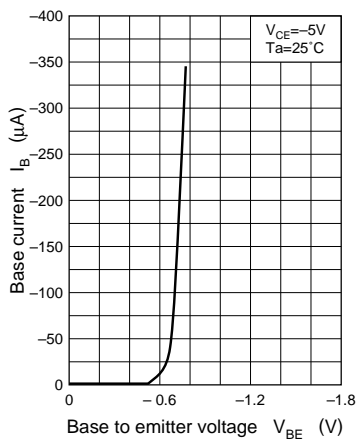
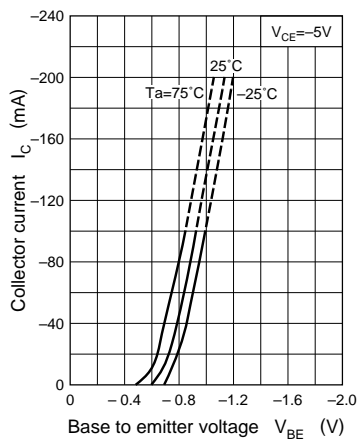
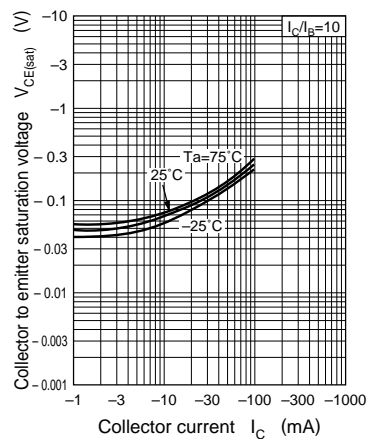
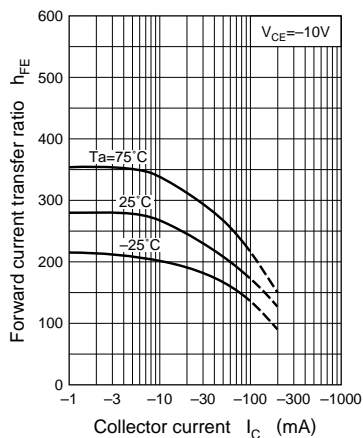
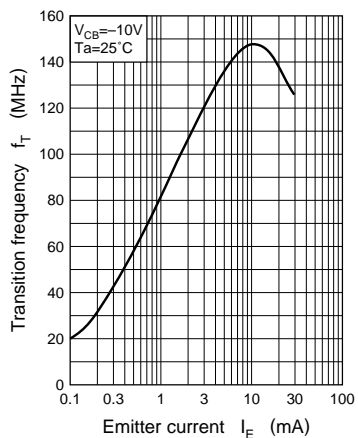
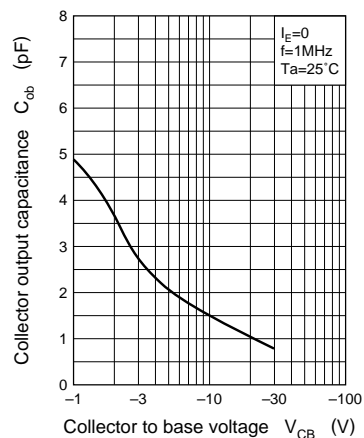
## Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -20V, I_E = 0$			-0.1	$\mu A$
	$I_{CEO}$	$V_{CE} = -10V, I_B = 0$			-100	$\mu A$
Collector to base voltage	$V_{CBO}$	$I_C = -10\mu A, I_E = 0$	-45			V
Collector to emitter voltage	$V_{CEO}$	$I_C = -2mA, I_B = 0$	-45			V
Emitter to base voltage	$V_{EBO}$	$I_E = -10\mu A, I_C = 0$	-7			V
Forward current transfer ratio	$h_{FE}^*$	$V_{CE} = -10V, I_C = -2mA$	160		460	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100mA, I_B = -10mA$		-0.3	-0.5	V
Transition frequency	$f_T$	$V_{CB} = -10V, I_E = 1mA, f = 200MHz$		80		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$		2.7		pF

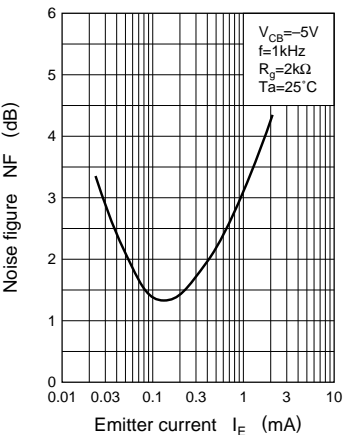
\* $h_{FE}$  Rank classification

Rank	Q	R	S
$h_{FE}$	160 ~ 260	210 ~ 340	290 ~ 460
Marking Symbol	BQ	BR	BS

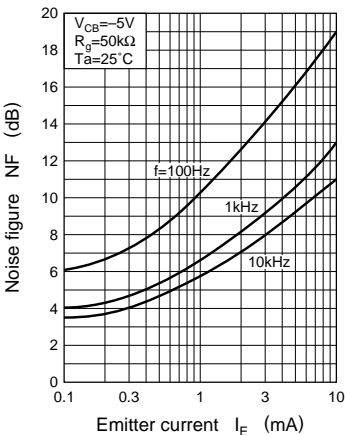
Note.) The Part number in the Parenthesis shows conventional part number.

$P_C - T_a$  $I_C - V_{CE}$  $I_C - I_B$  $I_B - V_{BE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $C_{ob} - V_{CB}$ 

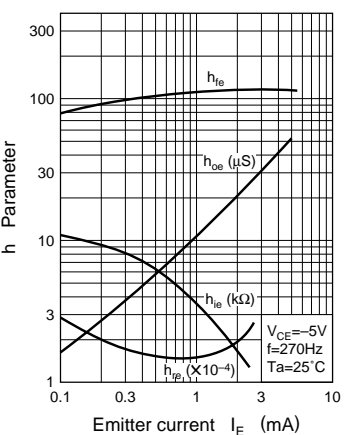
NF —  $I_E$



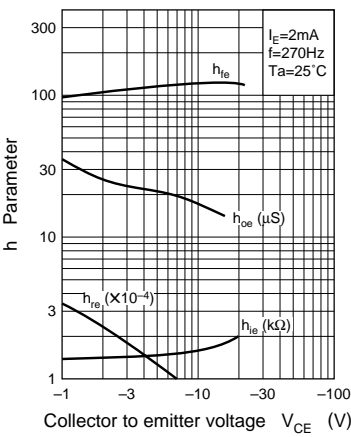
NF —  $I_E$



h Parameter —  $I_E$



h Parameter —  $V_{CE}$



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