

# **2SB0709A** (2SB709A)

### Silicon PNP epitaxial planar type

For general amplification

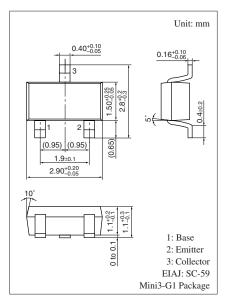
Complementary to 2SD0601A (2SD601A)

#### ■ Features

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

#### ■ Absolute Maximum Ratings $T_a = 25$ °C

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	-45	V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	-45	V
Emitter-base voltage (Collector open)	$V_{EBO}$	-7	V
Collector current	$I_C$	-100	mA
Peak collector current	$I_{CP}$	-200	mA
Collector power dissipation	P <sub>C</sub>	200	mW
Junction temperature	$T_{j}$	150	°C
Storage temperature	$T_{stg}$	-55 to +150	°C



Marking Symbol: B

### ■ Electrical Characteristics $T_a = 25$ °C $\pm 3$ °C

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	$I_C = -10 \ \mu A, I_E = 0$	-45			V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	$I_C = -2 \text{ mA}, I_B = 0$	-45			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = -10 \ \mu A, I_C = 0$	-7			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = -20 \text{ V}, I_E = 0$			- 0.1	μΑ
Collector-emitter cutoff current (Base open)	I <sub>CEO</sub>	$V_{CE} = -10 \text{ V}, I_B = 0$			-100	μΑ
Forward current transfer ratio *	$h_{FE}$	$V_{CE} = -10 \text{ V}, I_{C} = -2 \text{ mA}$	160		460	_
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}$		- 0.3	- 0.5	V
Transition frequency	$f_T$	$V_{CB} = -10 \text{ V}, I_E = 1 \text{ mA}, f = 200 \text{ MHz}$		80		MHz
Collector output capacitance	C <sub>ob</sub>	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		2.7		pF
(Common base, input open circuited)						

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

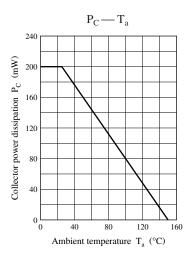
#### 2. \*: Rank classification

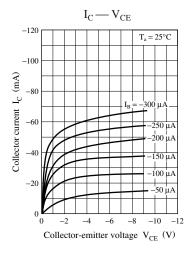
Rank	Q	R	S	No-rank
$h_{FE}$	160 to 260	210 to 340	290 to 460	160 to 460
Marking symbol	BQ	BR	BS	В

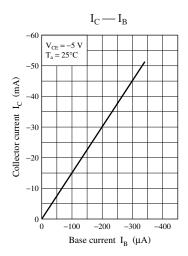
Product of no-rank is not classified and have no marking symbol for rank.

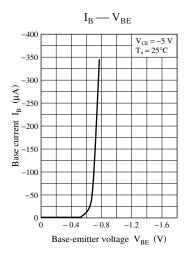
Note) The part number in the parenthesis shows conventional part number.

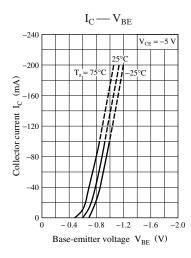
### **Panasonic**

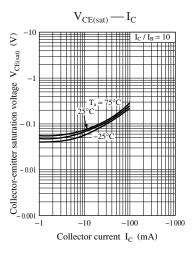


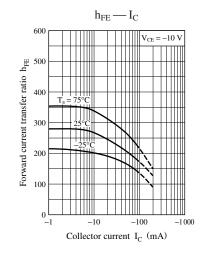


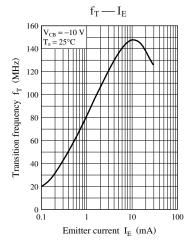


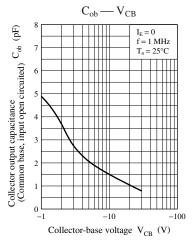




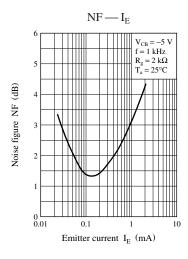


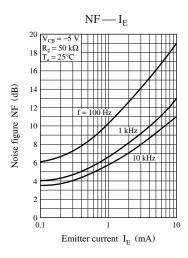


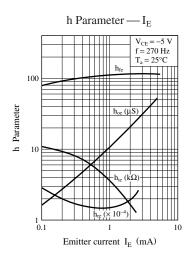


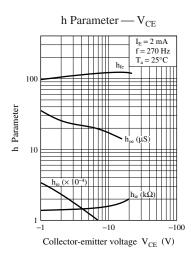


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