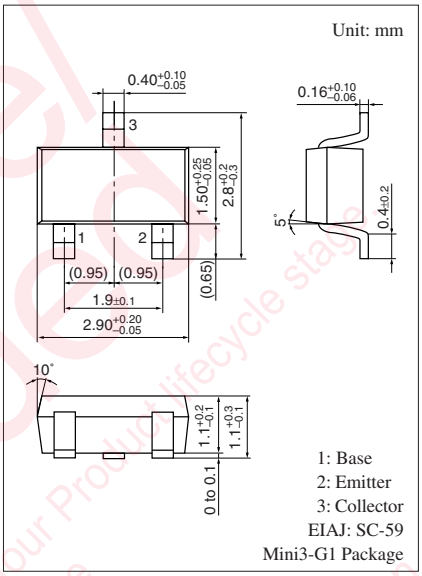
2SB0709A (2SB709A)

Silicon PNP epitaxial planar type

For general amplification
Complementary to 2SD0601A (2SD601A)



Marking Symbol: B

■ 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 $T_a = 25°C$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V_{CBO}	−45	V
Collector-emitter voltage (Base open)	V_{CEO}	−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_C	200	mW
Junction temperature	T_j	150	°C
Storage temperature	T_{stg}	−55 to +150	°C

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = -10$ µA, $I_E = 0$	−45			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -2$ mA, $I_B = 0$	−45			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = -10$ µA, $I_C = 0$	−7			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -20$ V, $I_E = 0$			− 0.1	µA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = -10$ V, $I_B = 0$			−100	µA
Forward current transfer ratio *	h_{FE}	$V_{CE} = -10$ V, $I_C = -2$ mA	160		460	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -100$ mA, $I_B = -10$ mA		− 0.3	− 0.5	V
Transition frequency	f_T	$V_{CB} = -10$ V, $I_E = 1$ mA, f = 200 MHz		80		MHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = -10$ V, $I_E = 0$, f = 1 MHz		2.7		pF

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.
2. *: Rank classification

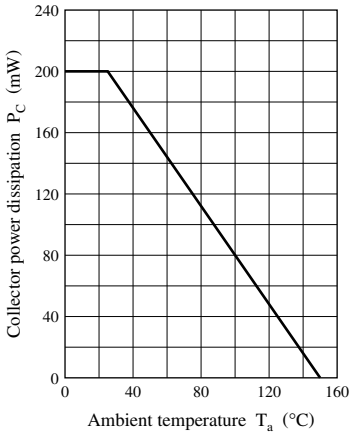
Rank	Q	R	S	No-rank
h_{FE}	160 to 260	210 to 340	290 to 460	160 to 460
Marking symbol	BQ	BR	BS	B

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

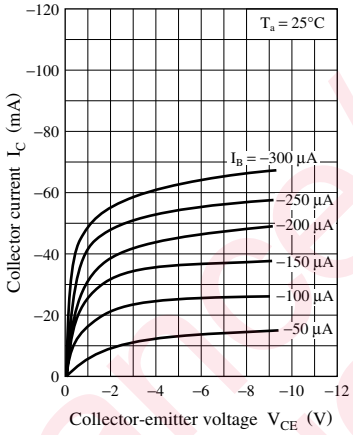
Note) The part number in the parenthesis shows conventional part number.

Maintenance/Discontinued
Maintenance/Discontinued includes following four Product lifecycle stage
Under maintenance type
Under discontinued typed
Discontinued type
Please refer following URL about latest information
https://www.semicon.panasonic.co.jp/en/

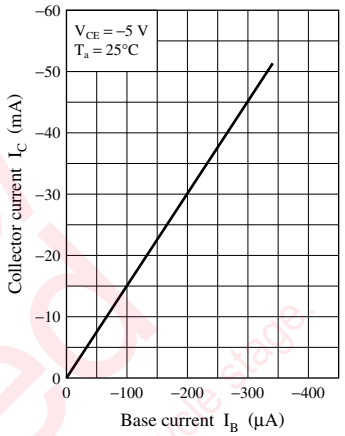
P_C — T_a



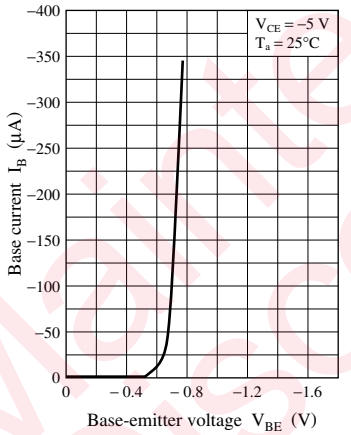
I_C — V_{CE}



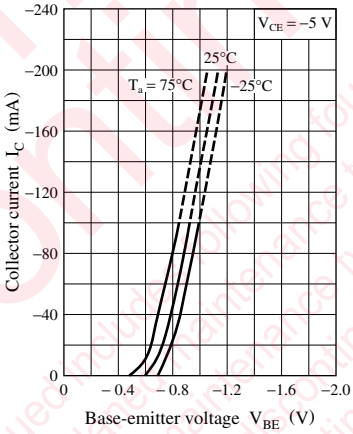
I_C — I_B



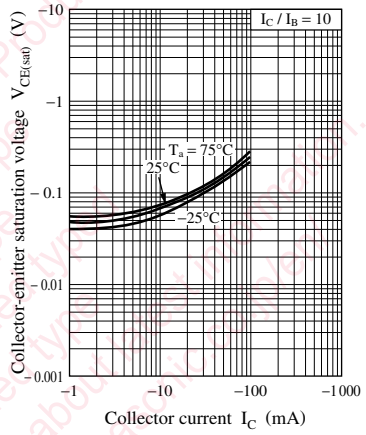
I_B — V_{BE}



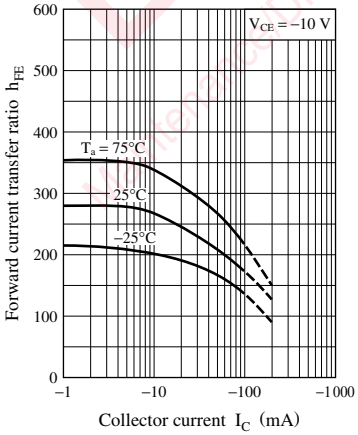
I_C — V_{BE}



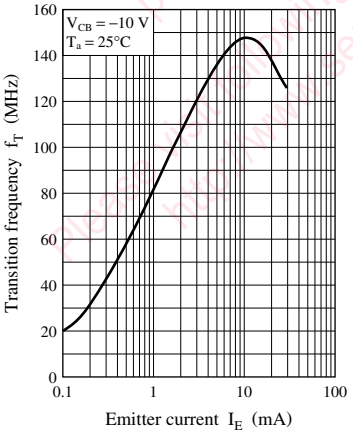
$V_{CE(sat)}$ — I_C



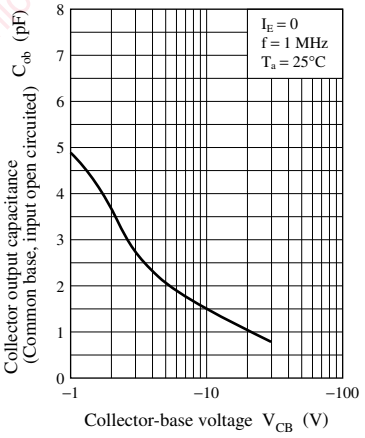
h_{FE} — I_C



f_T — I_E

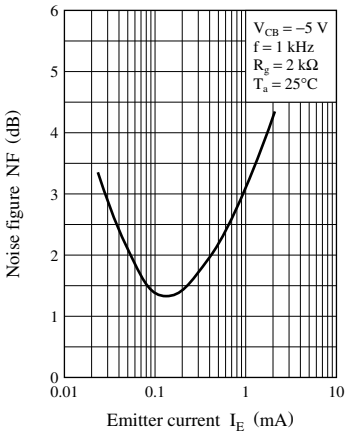


C_{ob} — V_{CB}

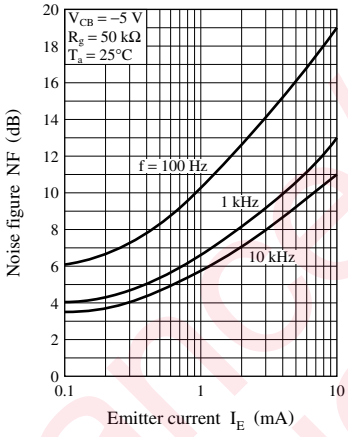


Maintenance/ Discontinued
This product is discontinued. Please refer to our Product lifecycle stage planned discontinuation type, maintenance type, discontinued type. For more information, please refer to the following URL about this product. http://www.semicon.panasonic.co.jp/en/

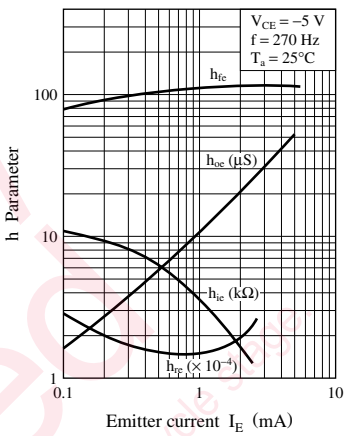
NF — I_E



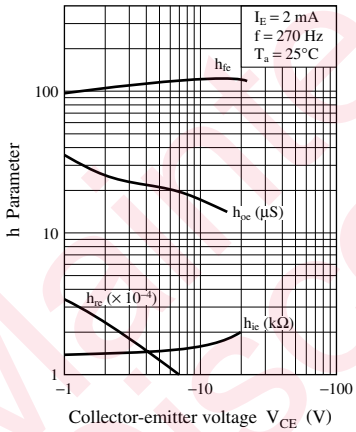
NF — I_E



h Parameter — I_E



h Parameter — V_{CE}



Maintenance/Discontinued includes following four Product lifecycle.
planed maintenance type
maintenance type
planed discontinued typed
discontinued type
Please visit following URL about latest information.
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Maintenance/Discontinued
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planed maintenance type
maintenance type
planed discontinued type
discontinued type
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