## 2SA1309A

## Silicon PNP epitaxial planar type

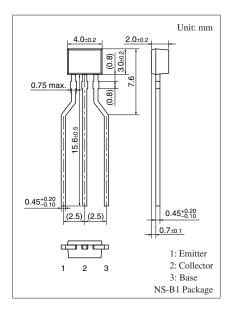
For low-frequency amplification Complementary to 2SC3311A

#### ■ Features

- High forward current transfer ratio h<sub>FE</sub>
- Allowing supply with the radial taping
- Optimum for high-density mounting

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	-60	V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	-50	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>	300	mW
Junction temperature	$T_j$	150	°C
Storage temperature	T <sub>stg</sub>	-55 to +150	°C



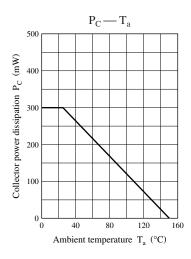
### ■ Electrical Characteristics $T_a = 25$ °C $\pm 3$ °C

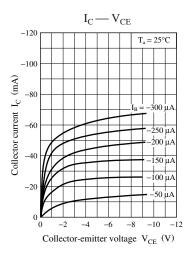
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	$I_C = -10 \ \mu A, I_E = 0$	-60			V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	$I_C = -2 \text{ mA}, I_B = 0$	-50			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = -10 \mu A, I_C = 0$	-7			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = -10 \text{ V}, I_E = 0$			-100	nA
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = -10 \text{ V}, I_B = 0$			-1	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>	$I_C = -50 \text{ mA}, I_B = -5 \text{ mA}$			- 0.3	V
Transition frequency	$f_T$	$V_{CB} = -10 \text{ V}, I_E = 1 \text{ mA}, f = 200 \text{ MHz}$		80		MHz
Collector output capacitance	Cob	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		3.5		pF
(Common base, input open circuited)						

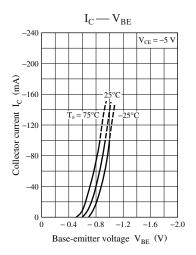
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

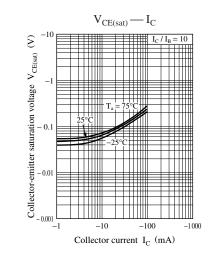
#### 2. \*: Rank classification

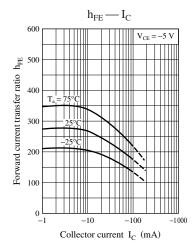
Rank	Q	R	S	No rank
$h_{\mathrm{FE}}$	160 to 260	210 to 340	290 to 460	160 to 460

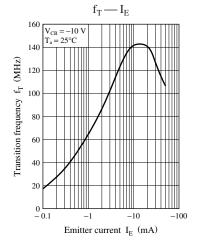


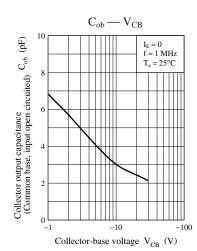












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