

# 2SA1309A

## Silicon PNP epitaxial planer type

For low-frequency amplification

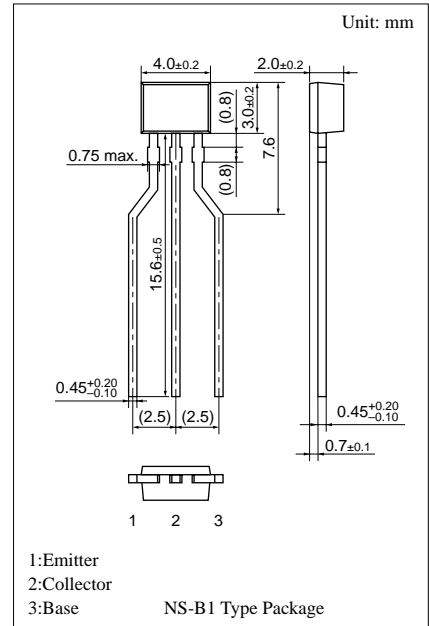
Complementary to 2SC3311A

### Features

- High forward current transfer ratio  $h_{FE}$ .
- Allowing supply with the radial taping.
- Optimum for high-density mounting.

### Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Ratings	Unit
Collector to base voltage	$V_{CBO}$	-60	V
Collector to emitter voltage	$V_{CEO}$	-50	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	$P_C$	300	mW
Junction temperature	$T_j$	150	°C
Storage temperature	$T_{stg}$	-55 ~ +150	°C



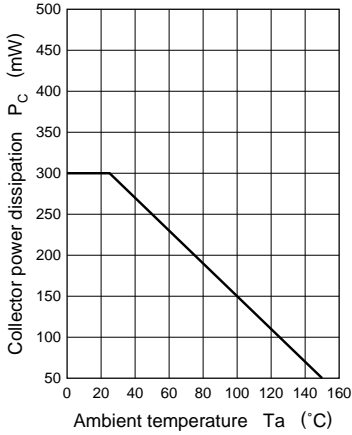
### Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = -10V, I_E = 0$			-100	nA
	$I_{CEO}$	$V_{CE} = -10V, I_B = 0$			-1	μA
Collector to base voltage	$V_{CBO}$	$I_C = -10\mu A, I_E = 0$	-60			V
Collector to emitter voltage	$V_{CEO}$	$I_C = -2mA, I_B = 0$	-50			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	$V_{CE(sat)}$	$I_C = -50mA, I_B = -5mA$			-0.3	V
Transition frequency	$f_T$	$V_{CB} = -10V, I_E = 1mA, f = 200MHz$		80		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = -10V, I_E = 0, f = 1MHz$		3.5		pF

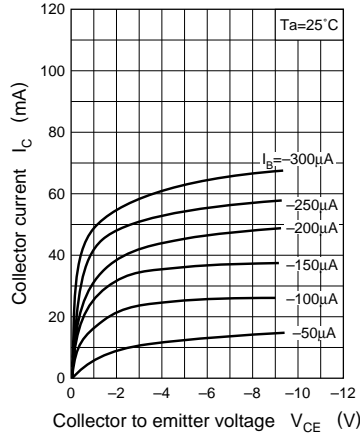
\* $h_{FE}$  Rank classification

Rank	Q	R	S
$h_{FE}$	160 ~ 260	210 ~ 340	290 ~ 460

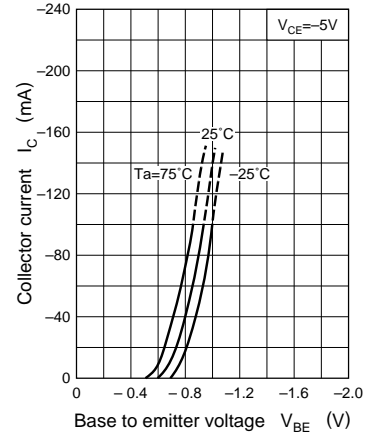
$P_C - T_a$



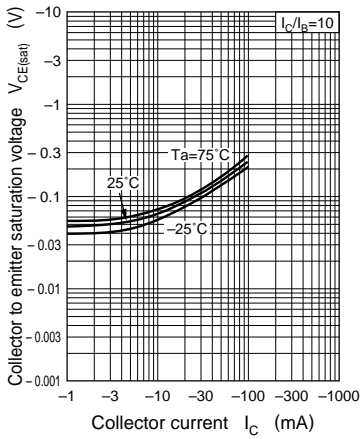
$I_C - V_{CE}$



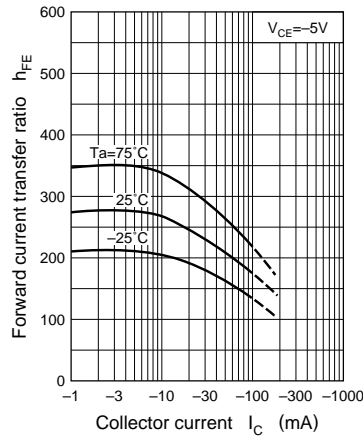
$I_C - V_{BE}$



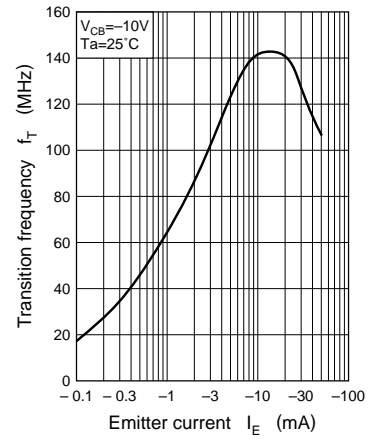
$V_{CE(sat)} - I_C$



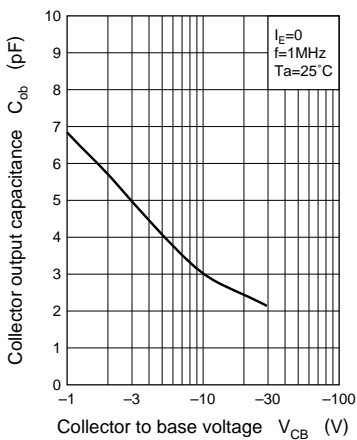
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



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