

# 2SD1994A

## Silicon NPN epitaxial planer type

For low-frequency power amplification and driver amplification  
Complementary to 2SB1322A

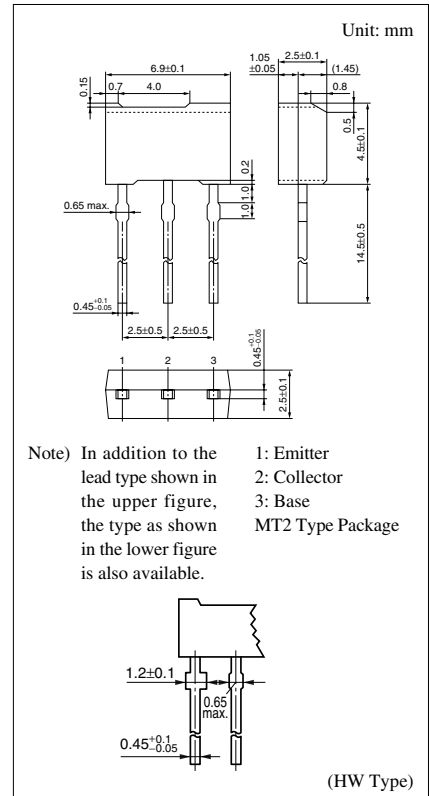
### ■ Features

- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- Output of 2 W to 3 W is obtained with a complementary pair with 2SB1322A
- Allowing supply with the radial taping

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	60	V
Collector to emitter voltage	$V_{CEO}$	50	V
Emitter to base voltage	$V_{EBO}$	5	V
Peak collector current	$I_{CP}$	1.5	A
Collector current	$I_C$	1	A
Collector power dissipation *	$P_C$	1	W
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

Note) \*: Printed circuit board: Copper foil area of 1 cm<sup>2</sup> or more, and the board thickness of 1.7 mm for the collector portion



### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

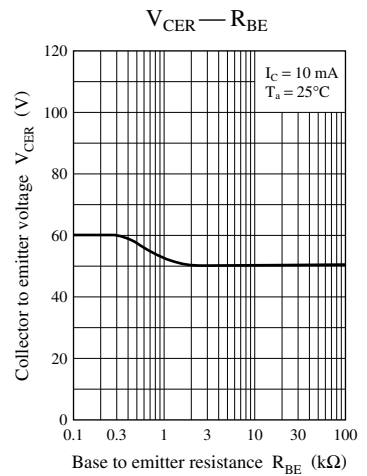
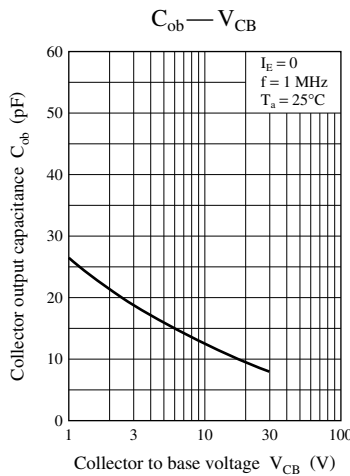
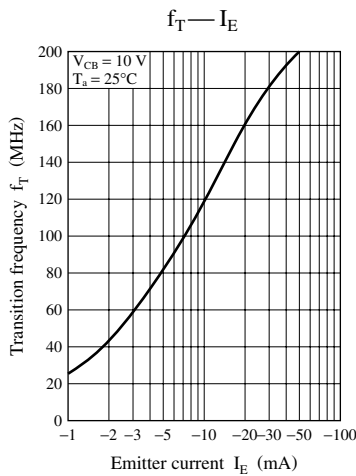
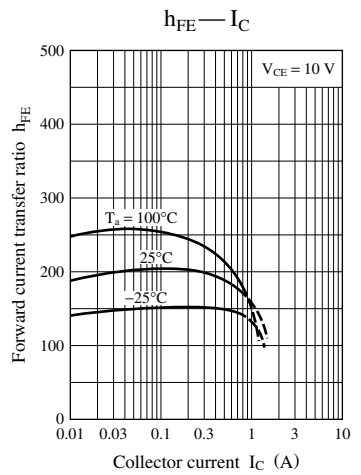
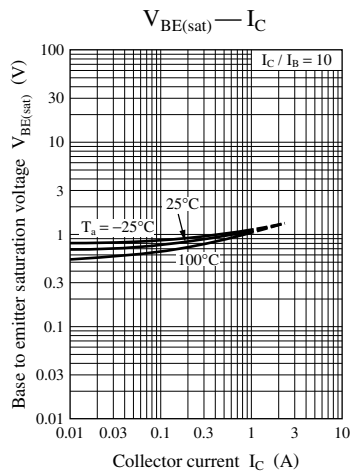
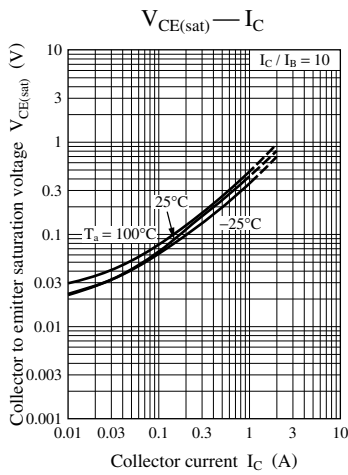
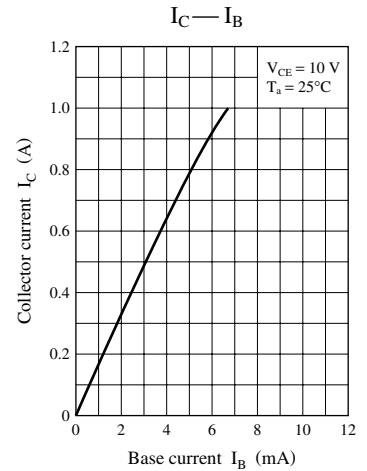
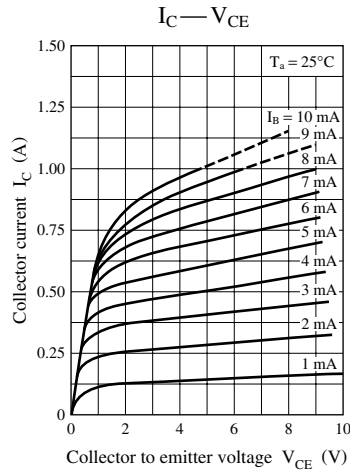
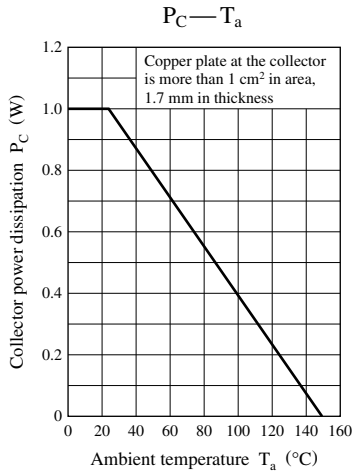
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 20\text{ V}, I_E = 0$			0.1	$\mu\text{A}$
Collector to base voltage	$V_{CBO}$	$I_C = 10\ \mu\text{A}, I_E = 0$	60			V
Collector to emitter voltage	$V_{CEO}$	$I_C = 2\ \text{mA}, I_B = 0$	50			V
Emitter to base voltage	$V_{EBO}$	$I_E = 10\ \mu\text{A}, I_C = 0$	5			V
Forward current transfer ratio *1	$h_{FE1}$ *2	$V_{CE} = 10\ \text{V}, I_C = 500\ \text{mA}$	85		340	
	$h_{FE2}$	$V_{CE} = 5\ \text{V}, I_C = 1\ \text{A}$	50	100		
Collector to emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = 500\ \text{mA}, I_B = 50\ \text{mA}$		0.2	0.4	V
Base to emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = 500\ \text{mA}, I_B = 50\ \text{mA}$		0.85	1.2	V
Transition frequency *1	$f_T$	$V_{CB} = 10\ \text{V}, I_E = -50\ \text{mA}, f = 200\ \text{MHz}$		200		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10\ \text{V}, I_E = 0, f = 1\ \text{MHz}$		11	20	pF

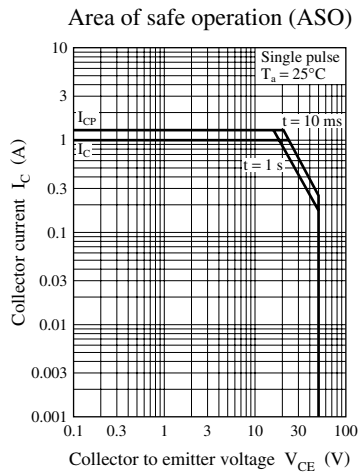
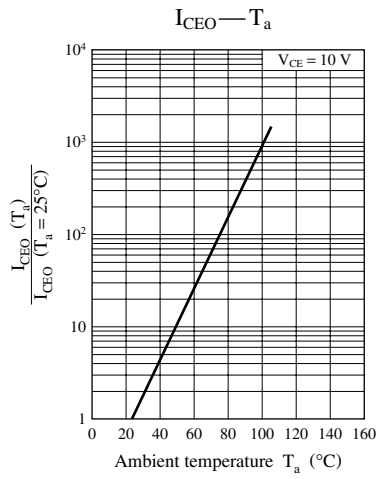
Note) \*1: Pulse measurement

\*2: Rank classification

Rank	Q	R	S	No-rank
$h_{FE1}$	85 to 170	120 to 240	170 to 340	85 to 340

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





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