2SD1994A

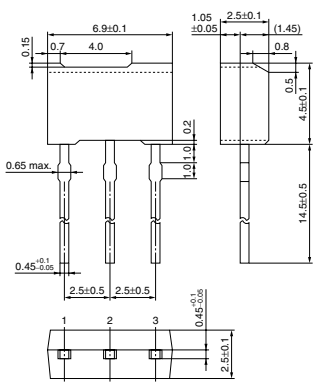
Silicon NPN epitaxial planer type

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

■ Features

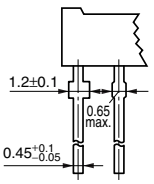
- Low collector to emitter saturation voltage $V_{CE(sat)}$
- Output of 2 W to 3 W is obtained with a complementary pair with 2SB1322A
- Allowing supply with the radial taping

Unit: mm



Note) In addition to the lead type shown in the upper figure, the type as shown in the lower figure is also available.

1: Emitter
2: Collector
3: Base
MT2 Type Package



(HW Type)

■ Absolute Maximum Ratings $T_a = 25°C$

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	°C
Storage temperature	T_{stg}	−55 to +150	°C

Note) ∗: Printed circuit board: Copper foil area of 1 cm^2 or more, and the board thickness of 1.7 mm for the collector portion

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

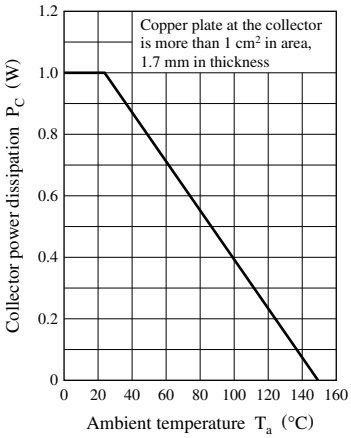
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 20 V, I_E = 0			0.1	µA
Collector to base voltage	V_{CBO}	I_C = 10 µA, I_E = 0	60			V
Collector to emitter voltage	V_{CEO}	I_C = 2 mA, I_B = 0	50			V
Emitter to base voltage	V_{EBO}	I_E = 10 µA, I_C = 0	5			V
Forward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

Note) ∗1: Pulse measurement
∗2: Rank classification

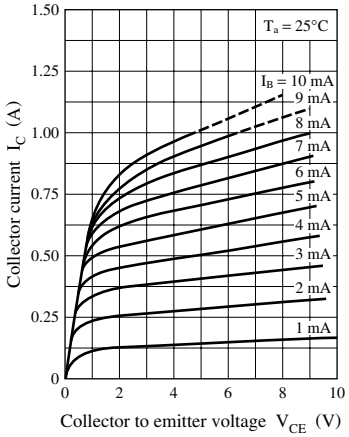
Rank	Q	R	S	No-rank
h_{FE1}	85 to 170	120 to 240	170 to 340	85 to 340

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

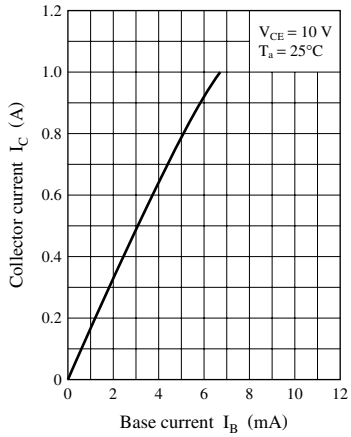
P_C — T_a



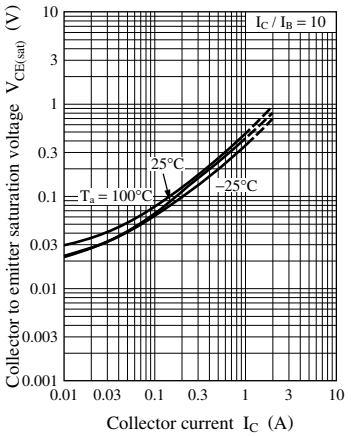
I_C — V_{CE}



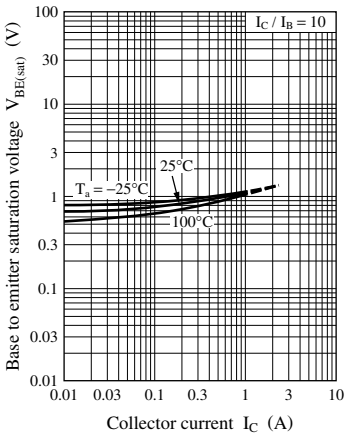
I_C — I_B



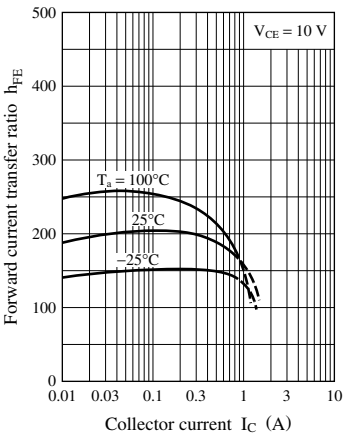
$V_{CE(sat)}$ — I_C



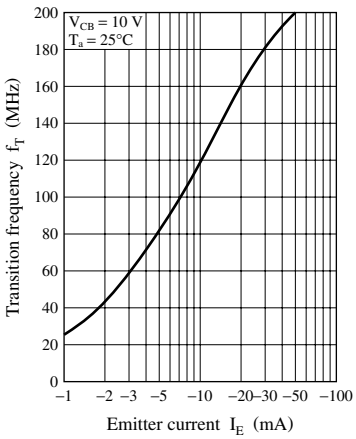
$V_{BE(sat)}$ — I_C



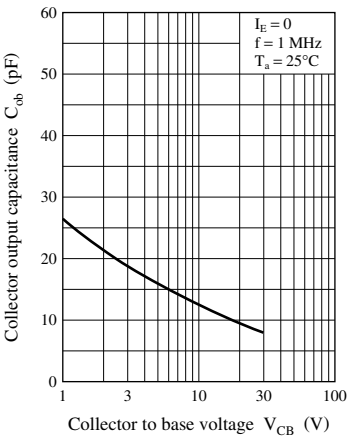
h_{FE} — I_C



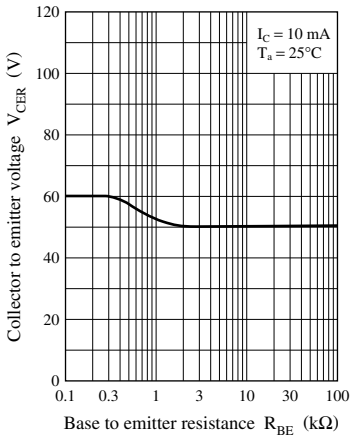
f_T — I_E



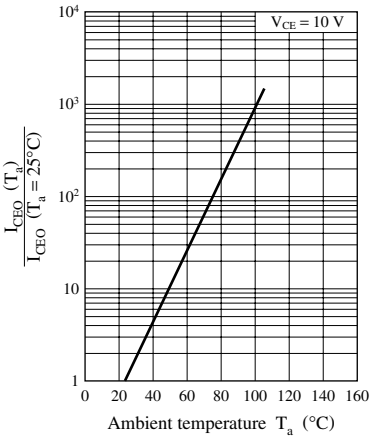
C_{ob} — V_{CB}



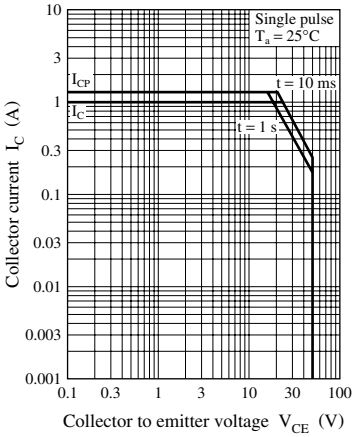
V_{CER} — R_{BE}



I_{CEO} — T_a



Area of safe operation (ASO)



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