

# 2SD2184

## Silicon NPN epitaxial planar type

For low-frequency output amplification

Complementary to 2SB1438

### ■ Features

- High collector to emitter voltage  $V_{CEO}$
- Low collector to emitter saturation voltage  $V_{CE(sat)}$
- Allowing supply with the radial taping

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

Parameter	Symbol	Rating	Unit
Collector to base voltage	$V_{CBO}$	150	V
Collector to emitter voltage	$V_{CEO}$	150	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

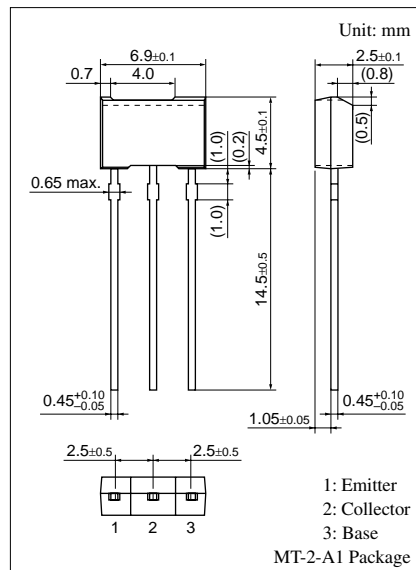
### ■ Electrical Characteristics $T_a = 25^\circ\text{C}$

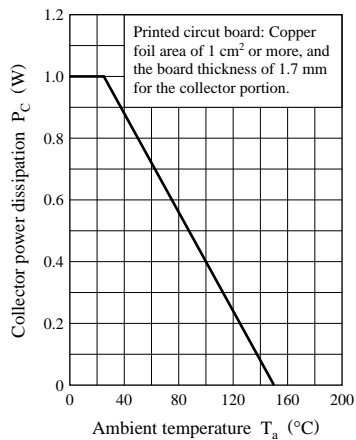
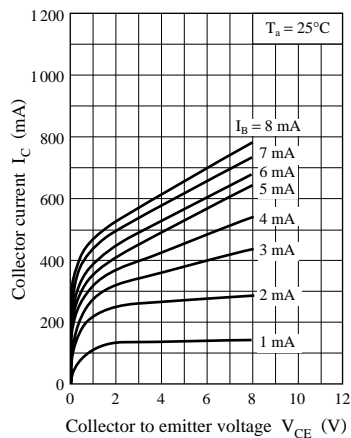
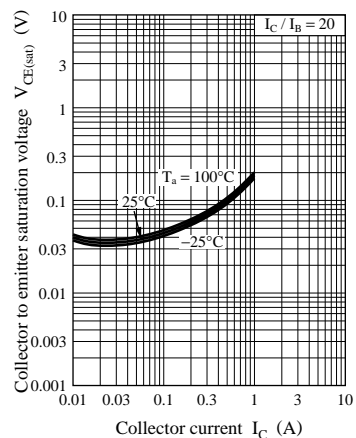
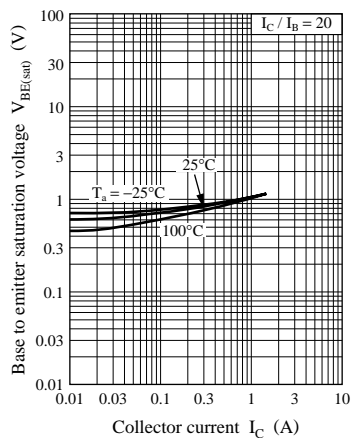
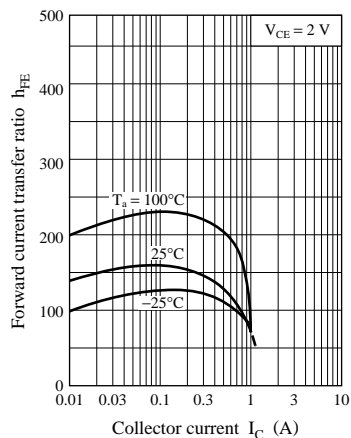
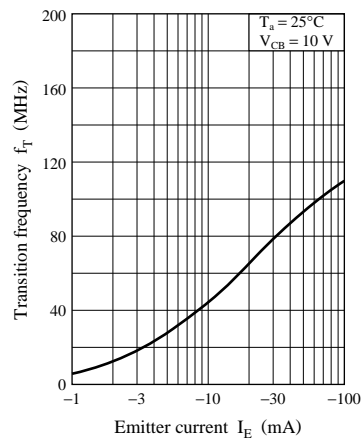
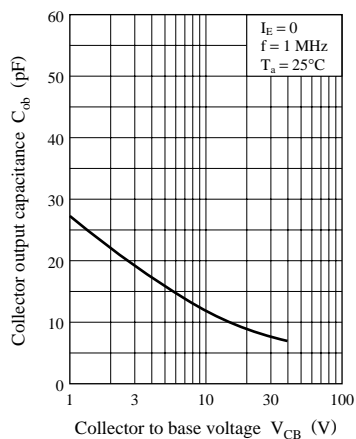
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 75\text{ V}, I_E = 0$			0.1	$\mu\text{A}$
Collector to base voltage	$V_{CBO}$	$I_C = 10\text{ }\mu\text{A}, I_E = 0$	150			V
Collector to emitter voltage	$V_{CEO}$	$I_C = 1\text{ mA}, I_B = 0$	150			V
Emitter to base voltage	$V_{EBO}$	$I_E = 10\text{ }\mu\text{A}, I_C = 0$	5			V
Forward current transfer ratio	$h_{FE1}$ *2	$V_{CE} = 2\text{ V}, I_C = 100\text{ mA}$	120		340	
	$h_{FE2}$	$V_{CE} = 2\text{ V}, I_C = 500\text{ mA}$	40			
Collector to emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = 500\text{ mA}, I_B = 25\text{ mA}$		0.11	0.3	V
Base to emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = 500\text{ mA}, I_B = 25\text{ mA}$		0.8	1.2	V
Transition frequency	$f_T$	$V_{CB} = 10\text{ V}, I_E = -50\text{ mA}, f = 200\text{ MHz}$		90		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		12	20	pF

Note) \*1: Pulse measurement

\*2:  $h_{FE}$  Rank classification

Rank	R	S
$h_{FE1}$	120 to 240	170 to 340



$P_C - T_a$  $I_C - V_{CE}$  $V_{CE(sat)} - I_C$  $V_{BE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $C_{ob} - V_{CB}$ 

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