

2SD2184

Silicon NPN epitaxial planer 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	Ratings	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}	$-55 \sim +150$	$^\circ\text{C}$

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

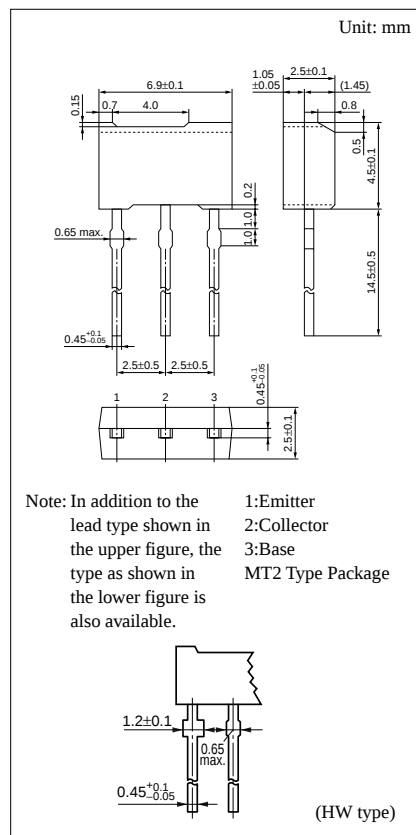
Electrical Characteristics ($T_a=25^\circ\text{C}$)

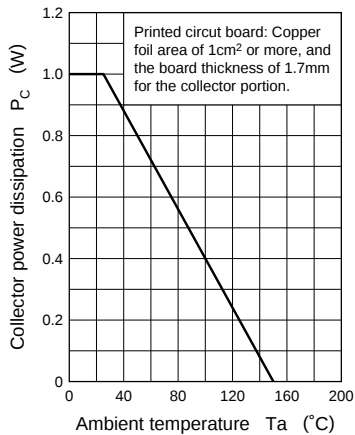
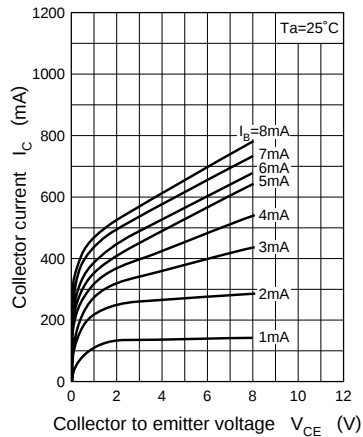
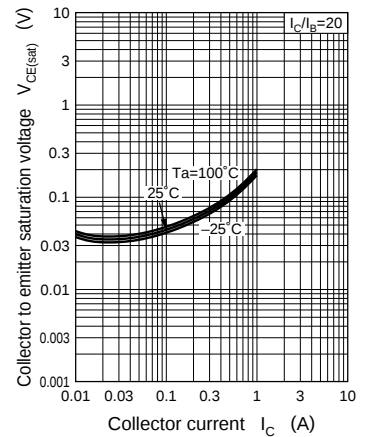
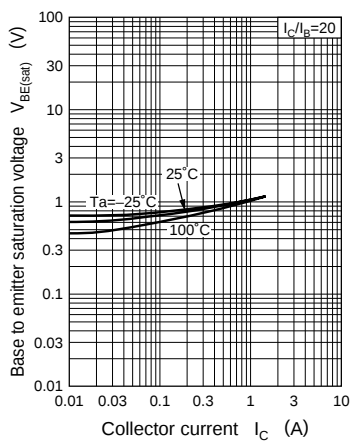
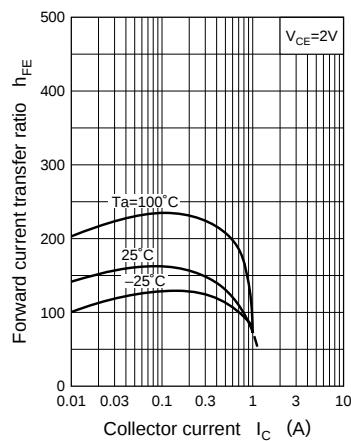
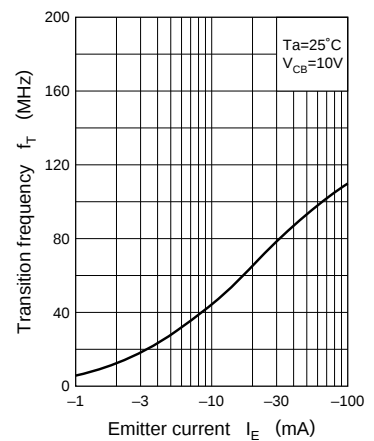
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 75\text{V}, I_E = 0$			0.1	μA
Collector to base voltage	V_{CBO}	$I_C = 10\mu\text{A}, I_E = 0$	150			V
Collector to emitter voltage	V_{CEO}	$I_C = 1\text{mA}, I_B = 0$	150			V
Emitter to base voltage	V_{EBO}	$I_E = 10\mu\text{A}, I_C = 0$	5			V
Forward current transfer ratio	h_{FE1}^{*1}	$V_{CE} = 2\text{V}, I_C = 100\text{mA}$	120		340	
	h_{FE2}	$V_{CE} = 2\text{V}, I_C = 500\text{mA}$	40			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500\text{mA}, I_B = 25\text{mA}^{*2}$		0.11	0.3	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500\text{mA}, I_B = 25\text{mA}^{*2}$		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

*2 Pulse measurement

*1 h_{FE1} Rank classification

Rank	R	S
h_{FE1}	120 ~ 240	170 ~ 340



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