

# 2SB1438

## Silicon PNP epitaxial planar type

For low-frequency power amplification

### ■ Features

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

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	-100	V
Collector-emitter voltage (Base open)	$V_{CEO}$	-100	V
Emitter-base voltage (Collector open)	$V_{EBO}$	-5	V
Collector current	$I_C$	-2	A
Peak collector current	$I_{CP}$	-3	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) \*: Print circuit board: Copper foil area of  $1\text{ cm}^2$  or more, and the board thickness of 1.7 mm for the collector portion

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

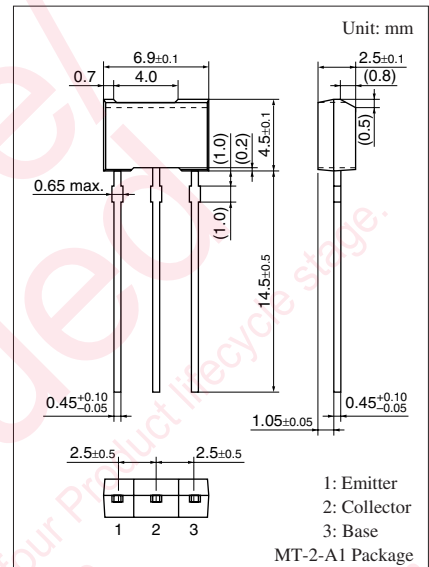
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = -10\ \mu\text{A}$ , $I_E = 0$	-100			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = -1\ \text{mA}$ , $I_B = 0$	-100			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = -10\ \mu\text{A}$ , $I_C = 0$	-5			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = -50\ \text{V}$ , $I_E = 0$			-0.1	$\mu\text{A}$
Forward current transfer ratio	$h_{FE1}$ *2	$V_{CE} = -2\ \text{V}$ , $I_C = -200\ \text{mA}$	120		340	—
	$h_{FE2}$ *1	$V_{CE} = -2\ \text{V}$ , $I_C = -1\ \text{A}$	60			
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = -1\ \text{A}$ , $I_B = -50\ \text{mA}$		-0.17	-0.30	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = -1\ \text{A}$ , $I_B = -50\ \text{mA}$		-0.85	-1.20	V
Transition frequency	$f_T$	$V_{CB} = -10\ \text{V}$ , $I_E = 50\ \text{mA}$ , $f = 200\ \text{MHz}$		90		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = -10\ \text{V}$ , $I_E = 0$ , $f = 1\ \text{MHz}$		70	90	pF

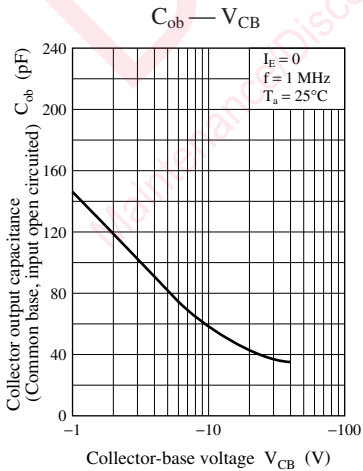
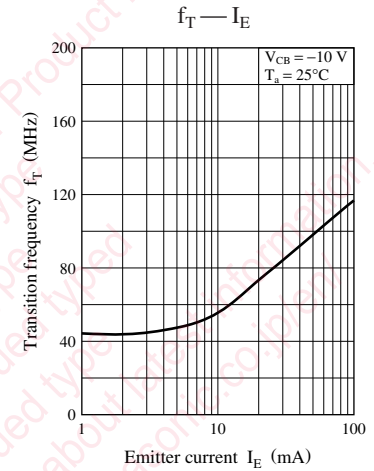
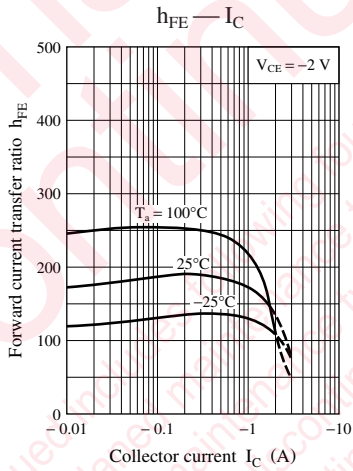
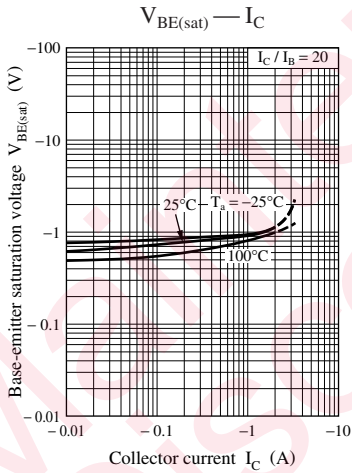
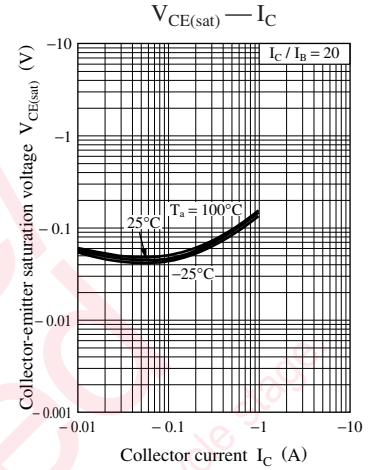
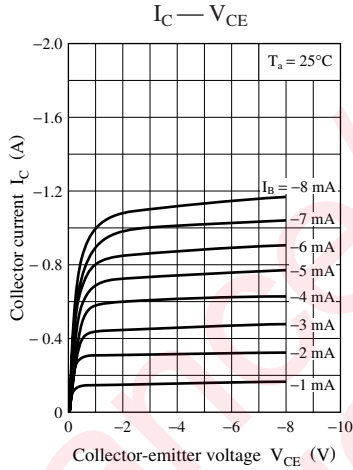
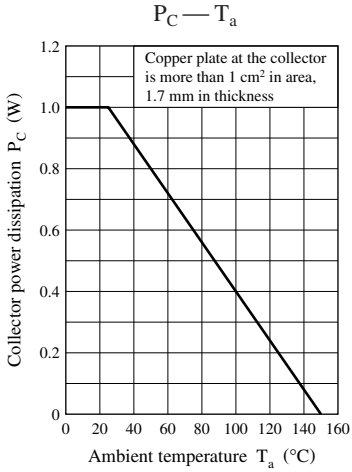
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*1: Pulse measurement

\*2: Rank classification

Rank	P	Q
$h_{FE1}$	120 to 240	170 to 340





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