

2SB1438

Silicon PNP epitaxial planar type

For low-frequency power amplification

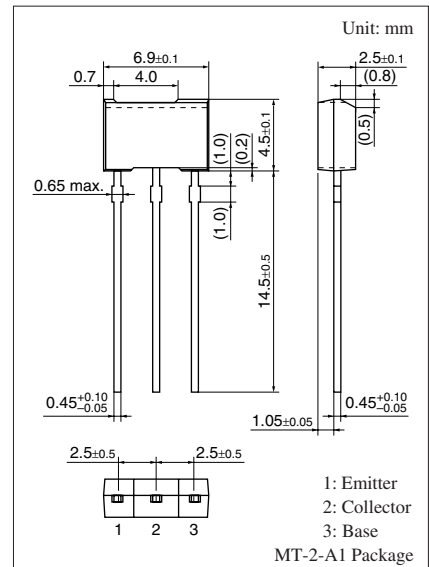
■ Features

- 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 cm^2 or more, and the board thickness of 1.7 mm for the collector portion



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

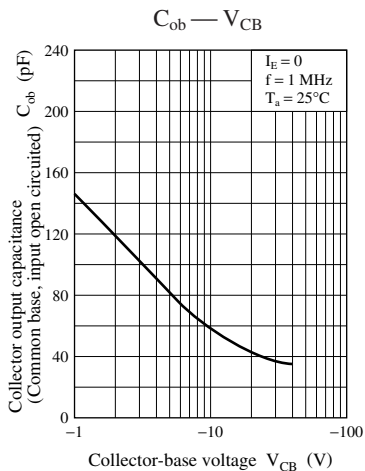
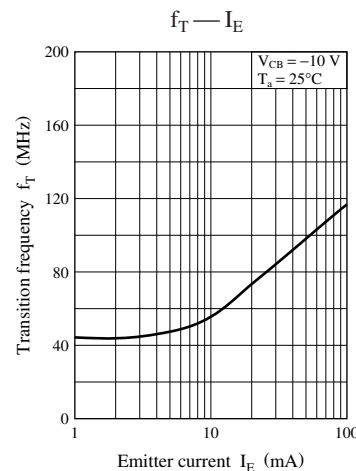
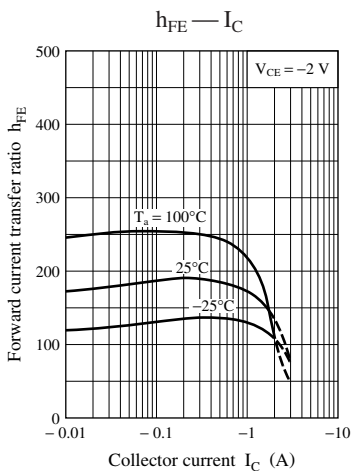
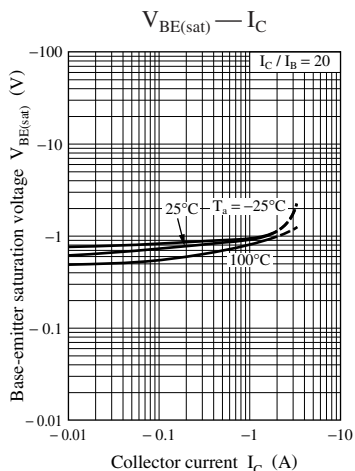
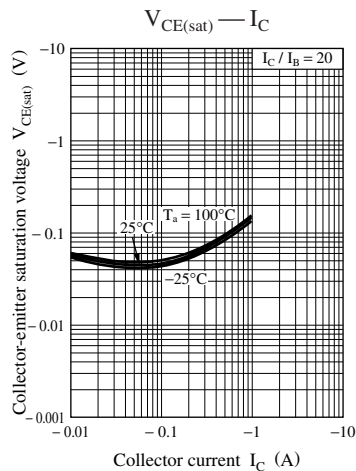
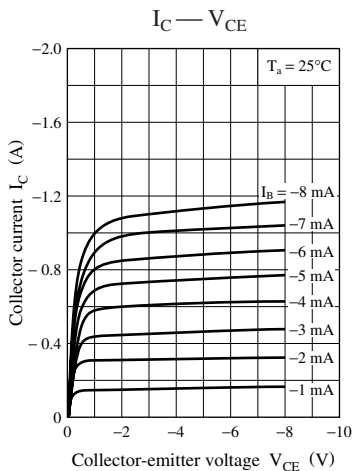
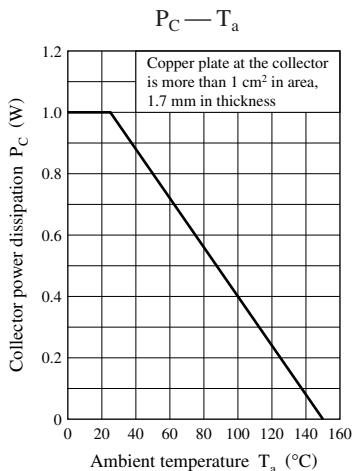
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	V_{CBO}	$I_C = -10\ \mu\text{A}$, $I_E = 0$	-100			V
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = -1\ \text{mA}$, $I_B = 0$	-100			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = -10\ \mu\text{A}$, $I_C = 0$	-5			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = -50\ \text{V}$, $I_E = 0$			-0.1	μA
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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