

# 2SB0819 (2SB819)

## Silicon PNP epitaxial planar type

For low-frequency output amplification

Complementary to 2SD1051

### ■ Features

- High collector-emitter voltage (Base open)  $V_{CEO}$
- Large collector power dissipation  $P_C$
- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	-50	V
Collector-emitter voltage (Base open)	$V_{CEO}$	-40	V
Emitter-base voltage (Collector open)	$V_{EBO}$	-5	V
Collector current	$I_C$	-1.5	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)	$V_{CBO}$	$I_C = -1\text{ mA}$ , $I_E = 0$	-50			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = -2\text{ mA}$ , $I_B = 0$	-40			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = -20\text{ V}$ , $I_E = 0$			-1	$\mu\text{A}$
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = -10\text{ V}$ , $I_B = 0$			-100	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = -5\text{ V}$ , $I_C = 0$			-10	$\mu\text{A}$
Forward current transfer ratio *1, 2	$h_{FE}$	$V_{CE} = -5\text{ V}$ , $I_C = -1\text{ A}$	80		220	—
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = -1.5\text{ A}$ , $I_B = -0.15\text{ A}$			-1	V
Base-emitter saturation voltage *1	$V_{BE(sat)}$	$I_C = -2\text{ A}$ , $I_B = -0.2\text{ A}$			-1.5	V
Transition frequency	$f_T$	$V_{CB} = -5\text{ V}$ , $I_E = 0.5\text{ A}$ , $f = 200\text{ MHz}$		150		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = -20\text{ V}$ , $I_E = 0$ , $f = 1\text{ MHz}$		45		pF

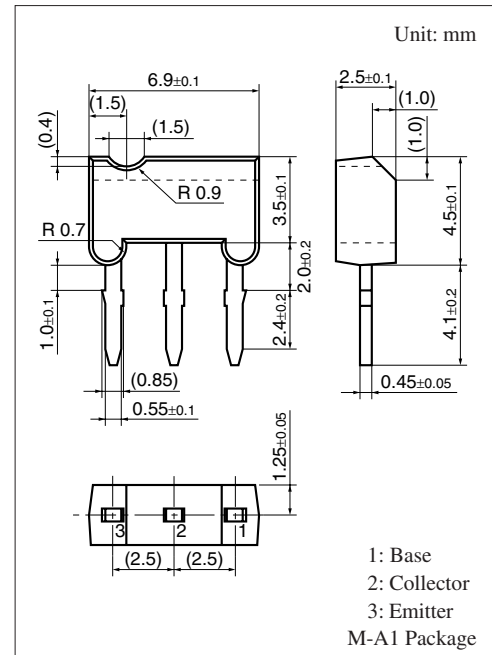
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

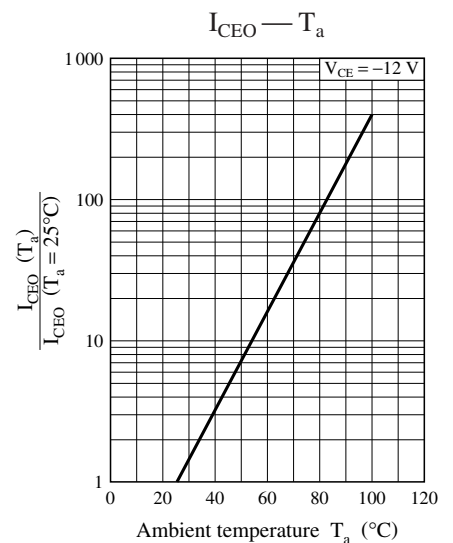
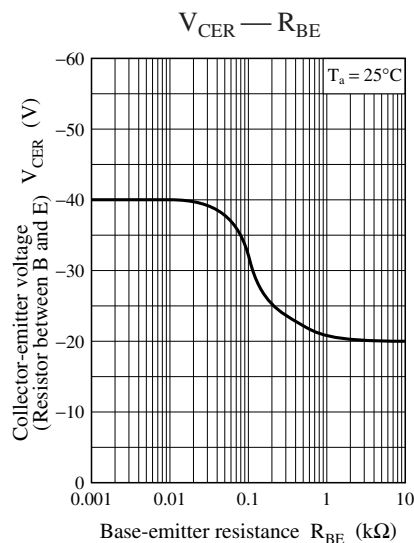
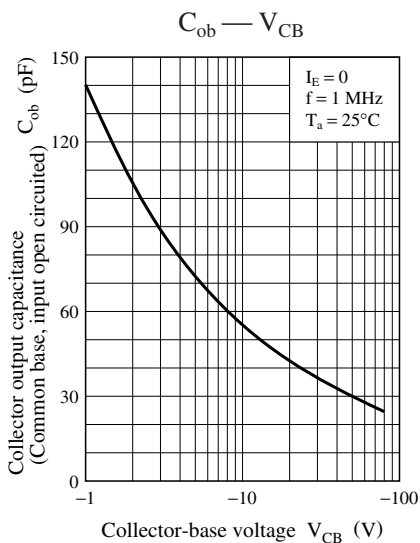
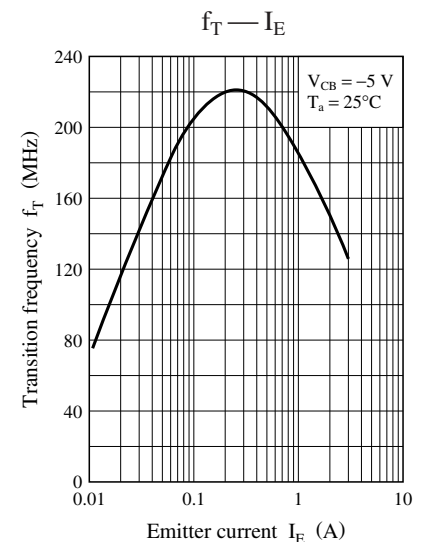
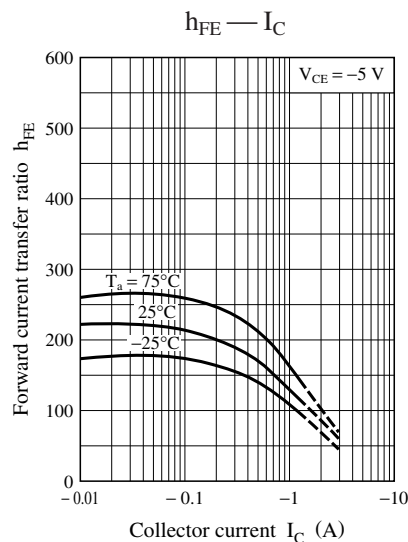
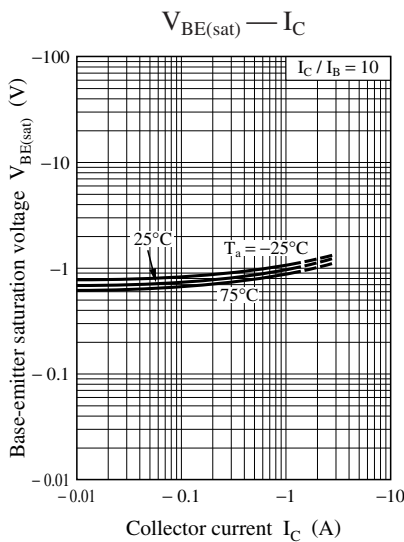
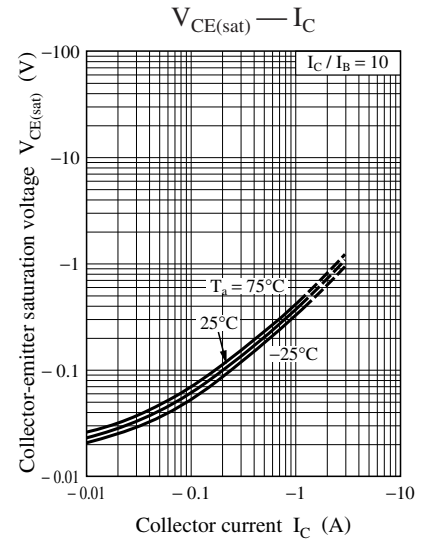
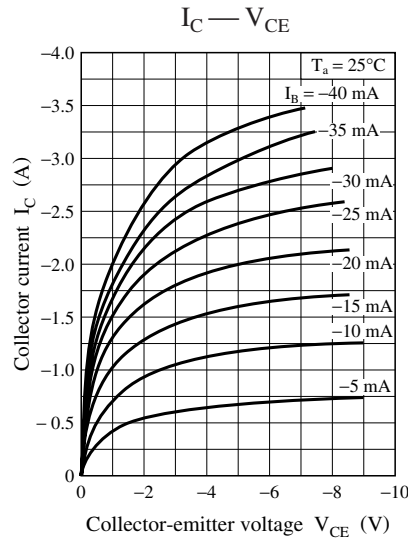
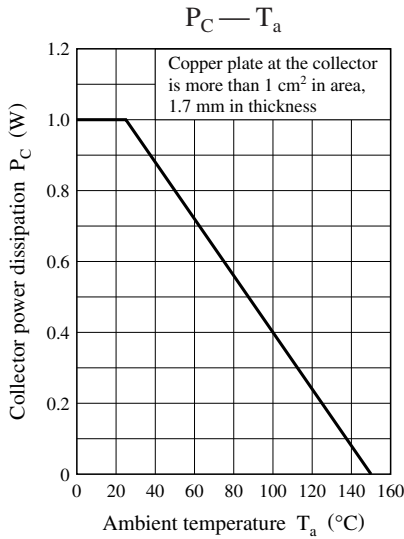
2. \*1: Pulse measurement

\*2: Rank classification

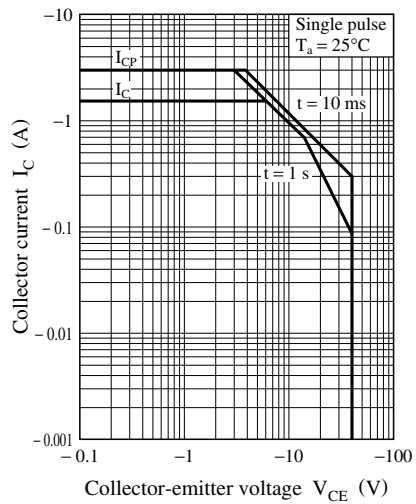
Rank	Q	R
$h_{FE}$	80 to 160	120 to 220

Note) The part number in the parenthesis shows conventional part number.





Safe operation area



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