

# 2SB0643, 2SB0644 (2SB643, 2SB644)

## Silicon PNP epitaxial planar type

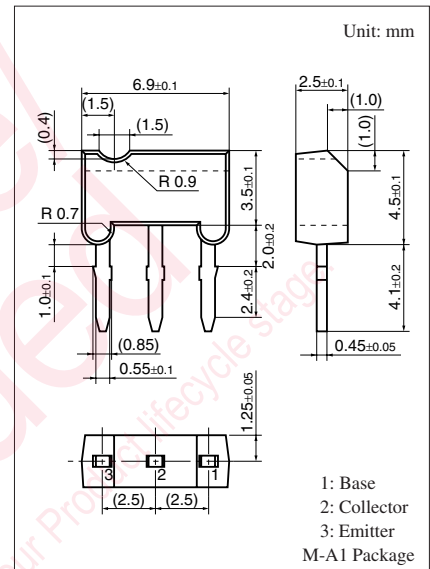
For low-frequency general amplification

### ■ Features

- 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)	2SB0643	-30	V
	2SB0644	-60	
Collector-emitter voltage (Base open)	2SB0643	-25	V
	2SB0644	-50	
Emitter-base voltage (Collector open)	$V_{EBO}$	-7	V
Collector current	$I_C$	-0.5	A
Peak collector current	$I_{CP}$	-1	A
Collector power dissipation	$P_C$	600	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



### ■ 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)	2SB0643	$I_C = -10 \mu\text{A}, I_E = 0$	-30			V
	2SB0644					
Collector-emitter voltage (Base open)	2SB0643	$I_C = -2 \text{ mA}, I_B = 0$	-25			V
	2SB0644					
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = -10 \mu\text{A}, I_C = 0$	-7			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = -20 \text{ V}, I_E = 0$			-0.1	$\mu\text{A}$
Collector-Emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = -20 \text{ V}, I_B = 0$			-1	$\mu\text{A}$
Forward current transfer ratio *1	$h_{FE1}$ *2	$V_{CE} = -10 \text{ V}, I_C = -10 \text{ mA}$	85		340	—
	$h_{FE2}$	$V_{CE} = -10 \text{ V}, I_C = -500 \text{ mA}$	40	90		—
Collector-emitter saturation voltage *1	$V_{CE(sat)}$	$I_C = -300 \text{ mA}, I_B = -30 \text{ mA}$		-0.35	-0.6	V
Transition frequency	$f_T$	$V_{CB} = -10 \text{ V}, I_E = 10 \text{ mA}, f = 200 \text{ MHz}$		200		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		6	15	pF

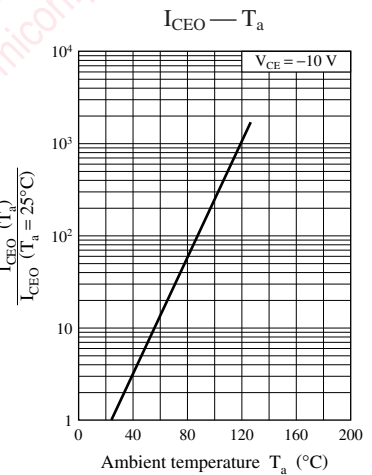
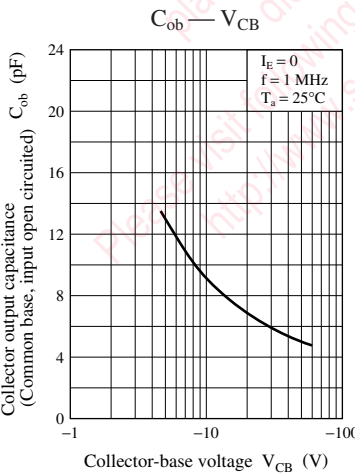
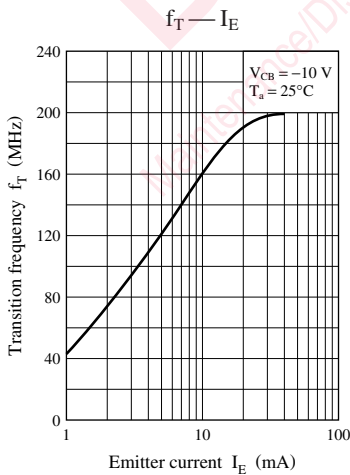
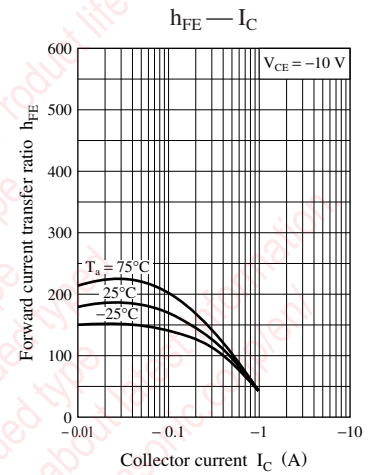
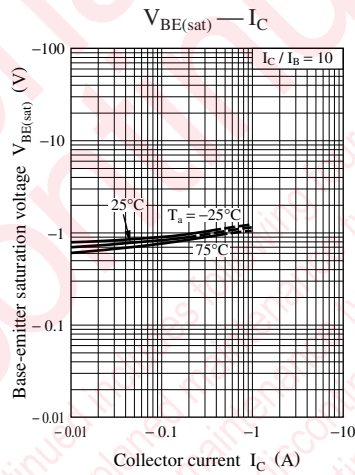
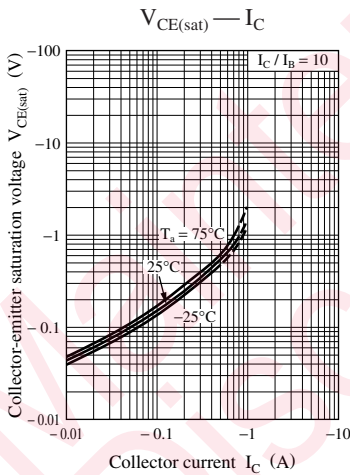
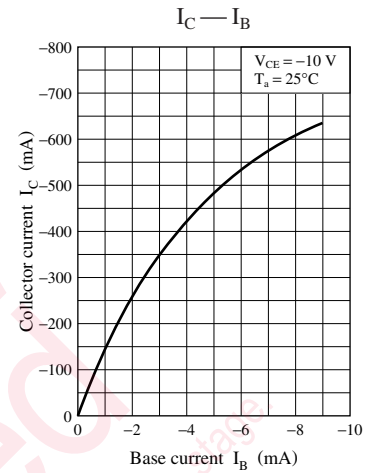
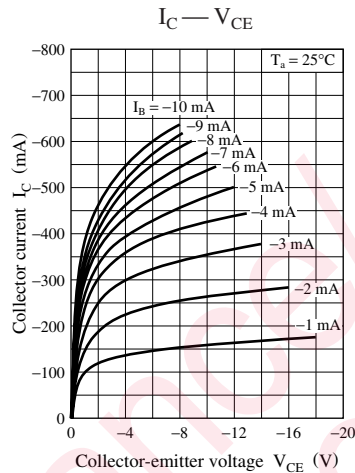
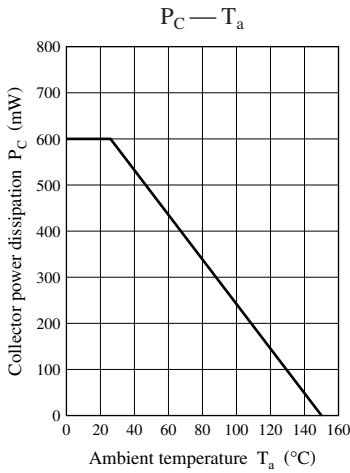
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*1: Pulse measurement

\*2: Rank classification

Rank	Q	R	S
$h_{FE1}$	85 to 170	120 to 240	170 to 340

Note) The part numbers in the parenthesis show conventional part number.



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