

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

## Silicon PNP epitaxial planar type

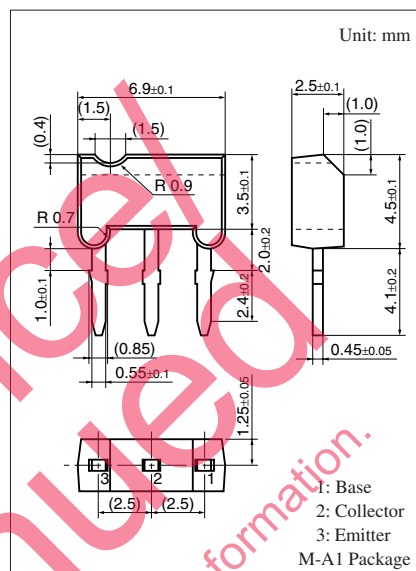
For low-frequency general amplification

### ■ 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	$V_{CBO}$	-30	V
	2SB0644		-60	
Collector-emitter voltage (Base open)	2SB0643	$V_{CEO}$	-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	°C
Storage temperature		$T_{stg}$	-55 to +150	°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 2SB0644	$V_{CBO}$ $I_C = -10\ \mu\text{A}$ , $I_E = 0$	-30			V
			-60			
Collector-emitter voltage (Base open)	2SB0643 2SB0644	$V_{CEO}$ $I_C = -2\ \text{mA}$ , $I_B = 0$	-25			V
			-50			
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 <sup>*1</sup>	$h_{FE1}$ <sup>*2</sup>	$V_{CE} = -10\ \text{V}$ , $I_C = -10\ \text{mA}$	85		340	—
	$h_{FE2}$	$V_{CE} = -10\ \text{V}$ , $I_C = -500\ \text{mA}$	40	90		—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = -300\ \text{mA}$ , $I_B = -30\ \text{mA}$		-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

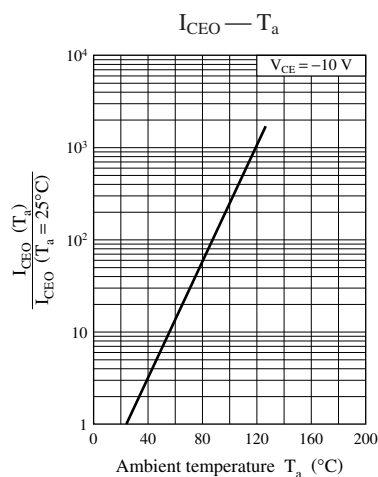
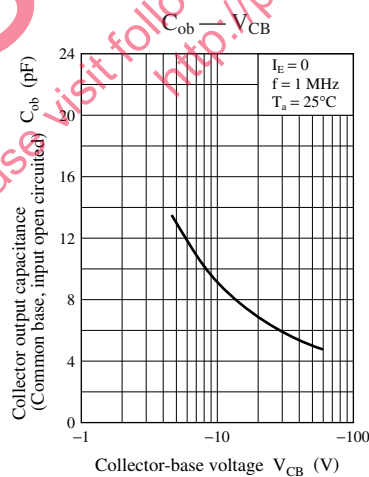
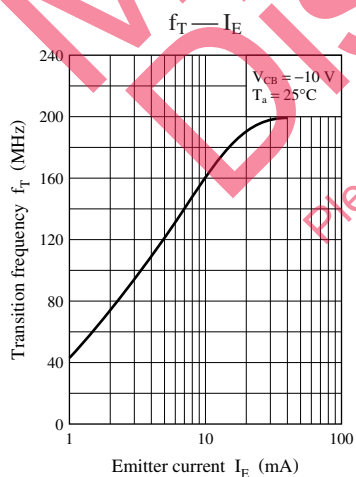
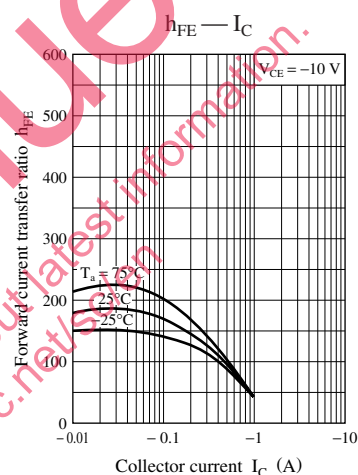
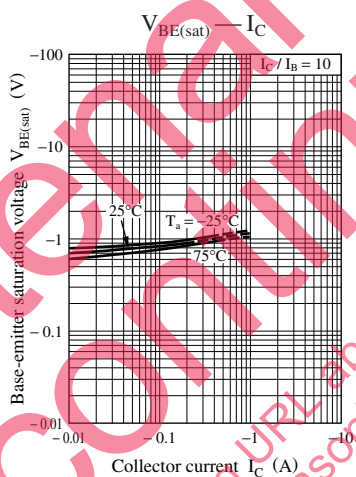
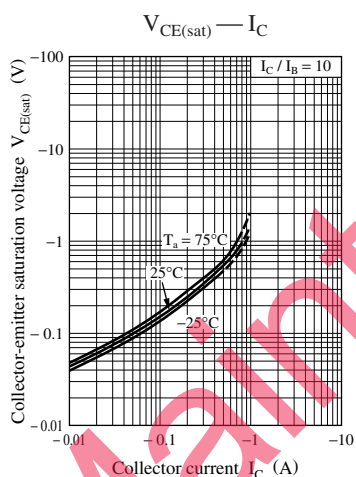
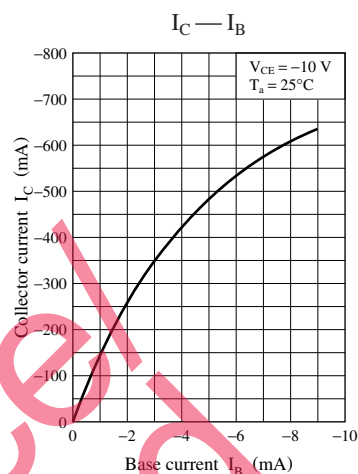
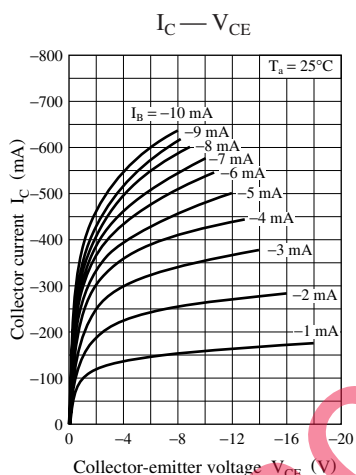
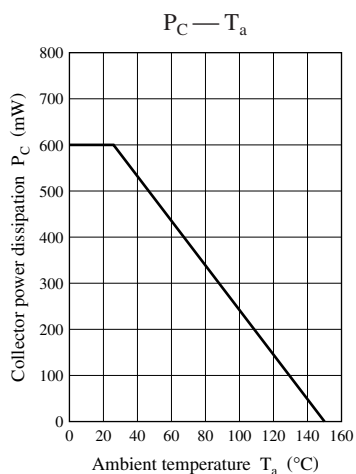
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

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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