

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	$^\circ\text{C}$	
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	V_{CBO} $I_C = -10 \mu\text{A}, I_E = 0$	-30			V
	2SB0644		-60			
Collector-emitter voltage (Base open)	2SB0643	V_{CEO} $I_C = -2 \text{ mA}, I_B = 0$	-25			V
	2SB0644		-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	μA
Collector-Emitter cutoff current (Base open)	I_{CEQ}	$V_{CE} = -20 \text{ V}, I_B = 0$			-1	μA
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	$V_{CE(sat)}$	$I_C = -300 \text{ mA}, I_B = -30 \text{ mA}$		-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

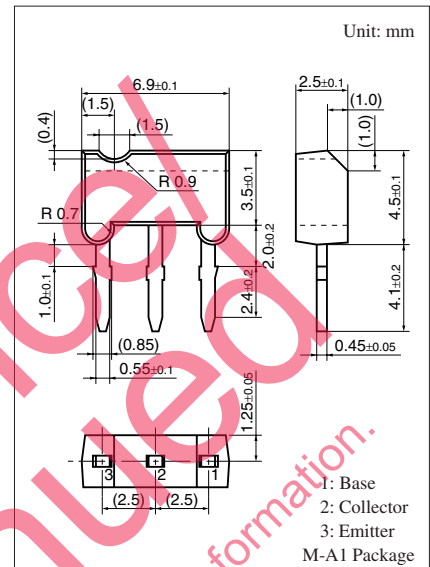
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

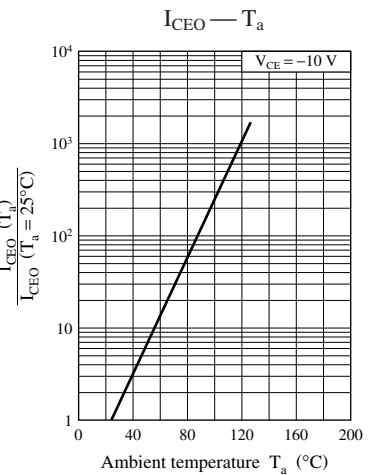
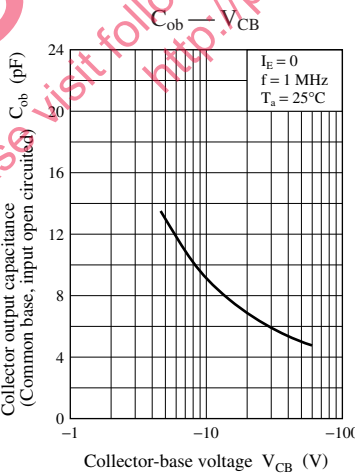
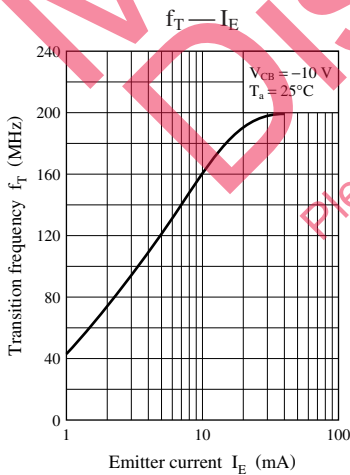
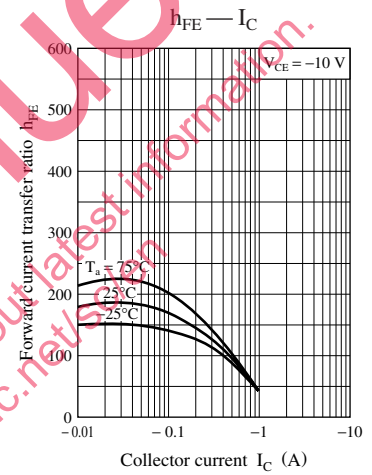
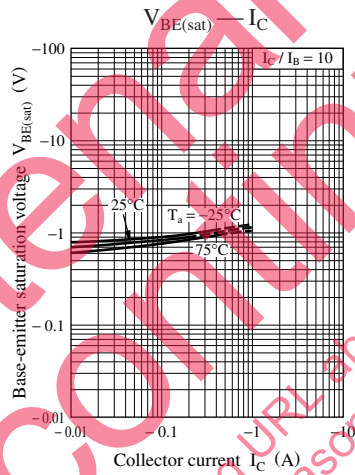
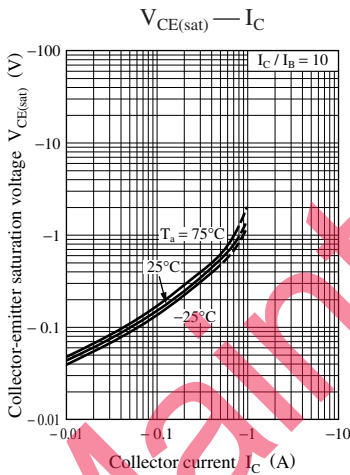
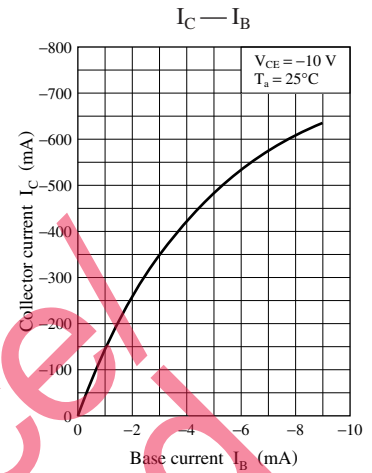
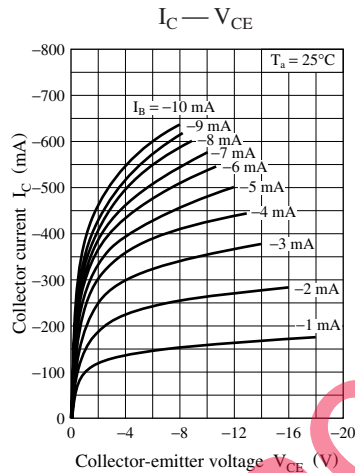
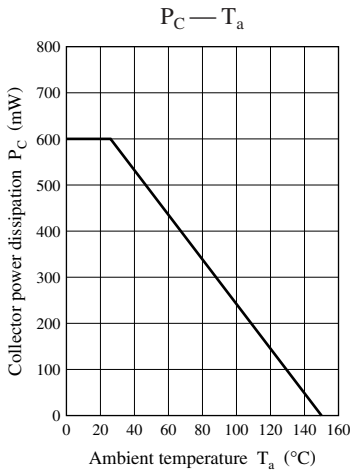
2. *1: Pulse measurement

*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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