

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

Silicon PNP epitaxial planar type

For low-power general amplification

Complementary to 2SD0638 (2SD638) and 2SD0639 (2SD639)

■ 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 to base voltage	2SB0643	V_{CBO}	-30	V
	2SB0644		-60	
Collector to emitter voltage	2SB0643	V_{CEO}	-25	V
	2SB0644		-50	
Emitter to base voltage	V_{EBO}	-7	V	
Peak collector current	I_{CP}	-1	A	
Collector current	I_{C}	-0.5	A	
Collector power dissipation	P_{C}	600	mW	
Junction temperature	T_{J}	150	$^\circ\text{C}$	
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$	

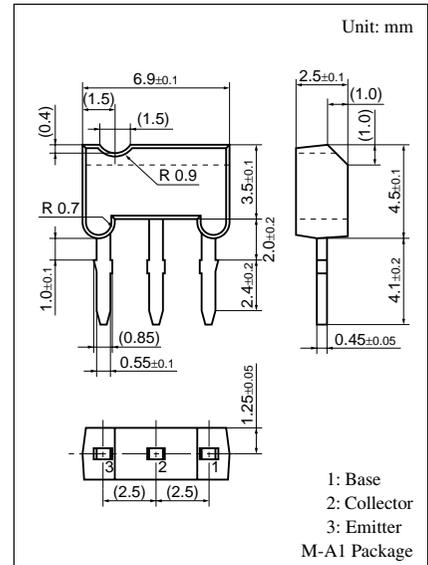
■ Electrical Characteristics $T_a = 25^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector cutoff current	I_{CBO}	$V_{\text{CB}} = -20\text{ V}, I_{\text{E}} = 0$			-100	nA
	I_{CEO}	$V_{\text{CE}} = -20\text{ V}, I_{\text{B}} = 0$			-1	μA
Collector to base voltage	2SB0643	V_{CBO}	$I_{\text{C}} = -10\ \mu\text{A}, I_{\text{E}} = 0$	-30		V
	2SB0644			-60		
Collector to emitter voltage	2SB0643	V_{CEO}	$I_{\text{C}} = -2\text{ mA}, I_{\text{B}} = 0$	-25		V
	2SB0644			-50		
Emitter to base voltage	V_{EBO}	$I_{\text{E}} = -10\ \mu\text{A}, I_{\text{C}} = 0$	-7		V	
Forward current transfer ratio *1	h_{FE1} *2	$V_{\text{CE}} = -10\text{ V}, I_{\text{C}} = -150\text{ mA}$	85		340	
	h_{FE2}	$V_{\text{CE}} = -10\text{ V}, I_{\text{C}} = -500\text{ mA}$	40	90		
Collector to emitter saturation voltage *1	$V_{\text{CE(sat)}}$	$I_{\text{C}} = -300\text{ mA}, I_{\text{B}} = -30\text{ mA}$		-0.35	-0.6	V
Transition frequency	f_{T}	$V_{\text{CB}} = -10\text{ V}, I_{\text{E}} = 10\text{ mA}, f = 200\text{ MHz}$		200		MHz
Collector output capacitance	C_{ob}	$V_{\text{CB}} = -10\text{ V}, I_{\text{E}} = 0, f = 1\text{ MHz}$		6	15	pF

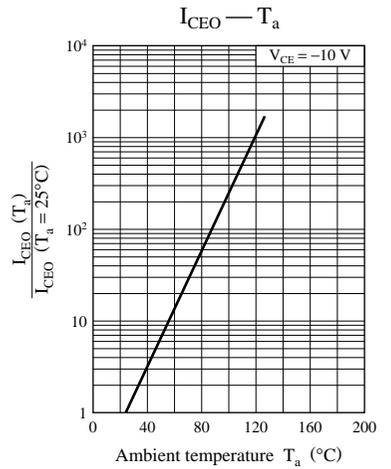
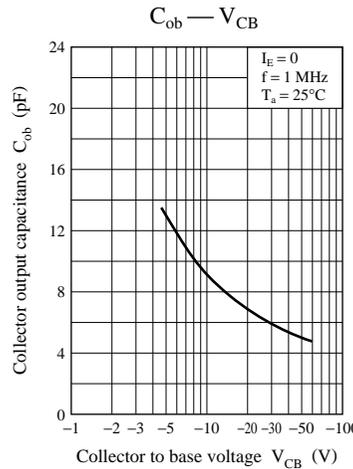
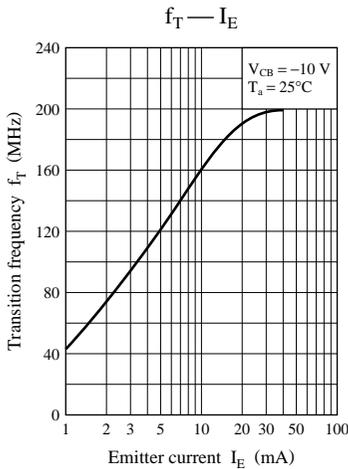
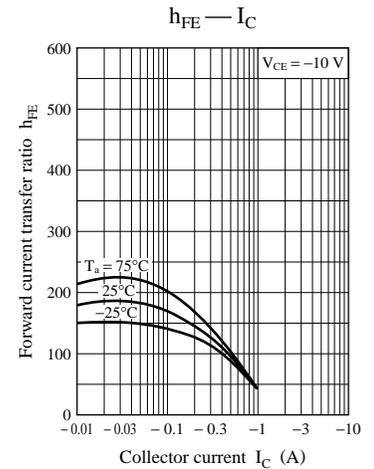
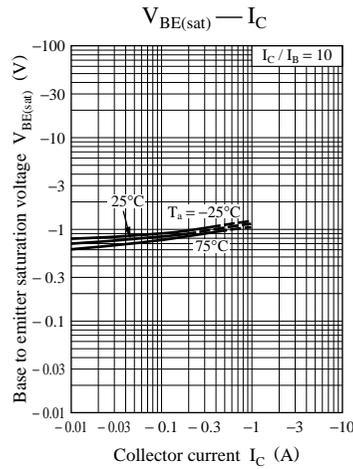
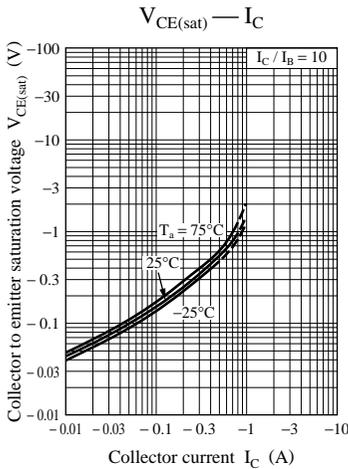
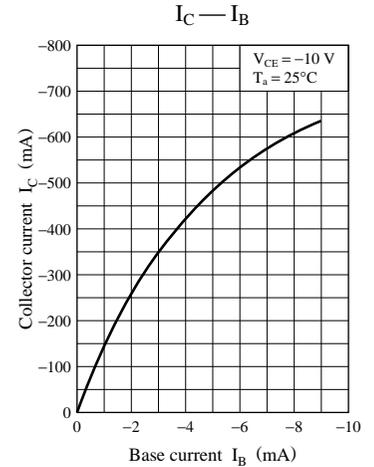
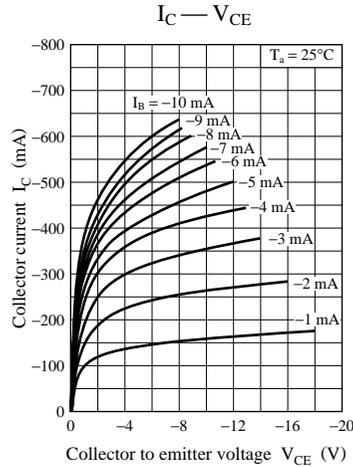
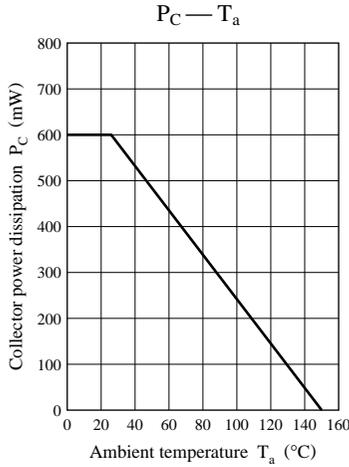
Note) *1: Pulse measurement

*2: h_{FE} 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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