

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

Silicon PNP epitaxial planer type

For low-power general amplification

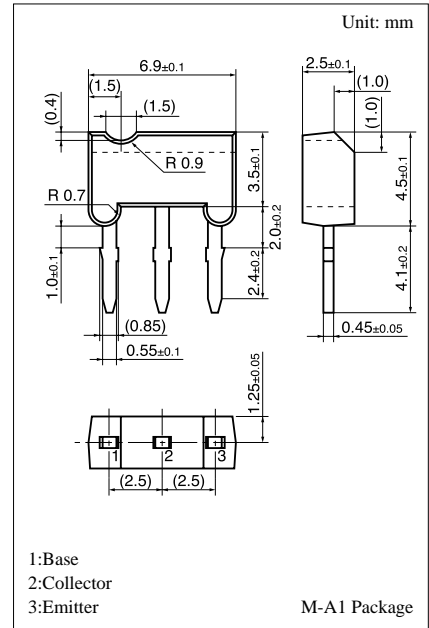
Complementary to 2SD0638 (2SD638) and 2SD0639 (2SD639)

## ■ Features

- M type package allowing easy automatic and manual insertion as well as stand-alone fixing to the printed circuit board.

## ■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Rated	Unit
Collector to base voltage	V <sub>CBO</sub>	-30	V
2SB0644		-60	
Collector to emitter voltage	V <sub>CEO</sub>	-25	V
2SB0644		-50	
Emitter to base voltage	V <sub>EBO</sub>	-7	V
Peak collector current	I <sub>CP</sub>	-1	A
Collector current	I <sub>C</sub>	-0.5	A
Collector power dissipation	P <sub>C</sub>	600	mW
Junction temperature	T <sub>j</sub>	150	°C
Storage temperature	T <sub>stg</sub>	-55 ~ +150	°C



## ■ Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = -20V, I <sub>E</sub> = 0			-100	nA
	I <sub>CEO</sub>	V <sub>CE</sub> = -20V, I <sub>B</sub> = 0			-1	μA
Collector to base voltage	V <sub>CBO</sub>	I <sub>C</sub> = -10μA, I <sub>E</sub> = 0	-30			V
			-60			
Collector to emitter voltage	V <sub>CEO</sub>	I <sub>C</sub> = -2mA, I <sub>B</sub> = 0	-25			V
			-50			
Emitter to base voltage	V <sub>EBO</sub>	I <sub>E</sub> = -10μA, I <sub>C</sub> = 0	-7			V
Forward current transfer ratio	h <sub>FE1</sub> <sup>*1</sup>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -150mA <sup>*2</sup>	85		340	
	h <sub>FE2</sub>	V <sub>CE</sub> = -10V, I <sub>C</sub> = -500mA <sup>*2</sup>	40	90		
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = -300mA, I <sub>B</sub> = -30mA <sup>*2</sup>		-0.35	-0.6	V
Transition frequency	f <sub>T</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 10mA, f = 200MHz		200		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = -10V, I <sub>E</sub> = 0, f = 1MHz		6	15	pF

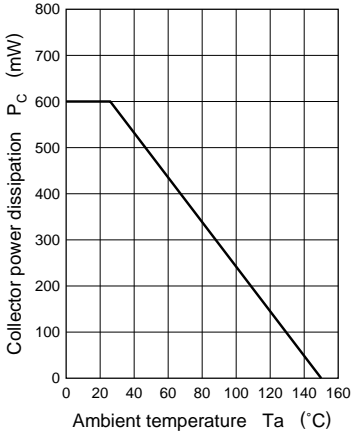
<sup>\*2</sup> Pulse measurement

<sup>\*1</sup>h<sub>FE1</sub> Rank classification

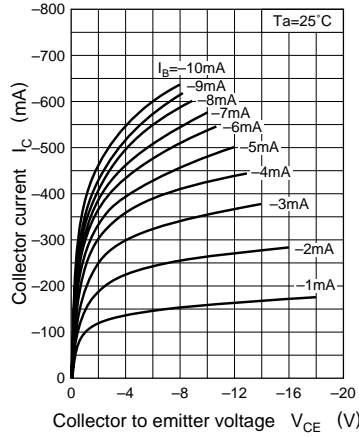
Rank	Q	R	S
h <sub>FE1</sub>	85 ~ 170	120 ~ 240	170 ~ 340

Note.) The Part numbers in the Parenthesis show conventional part number.

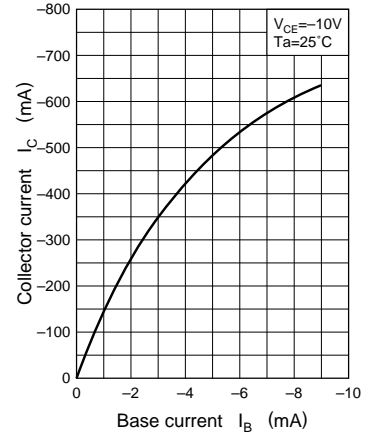
$P_C - T_a$



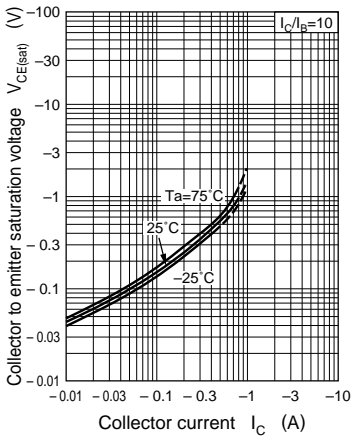
$I_C - V_{CE}$



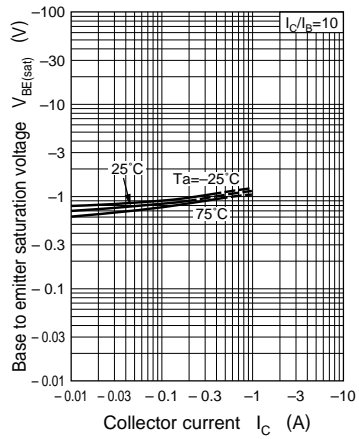
$I_C - I_B$



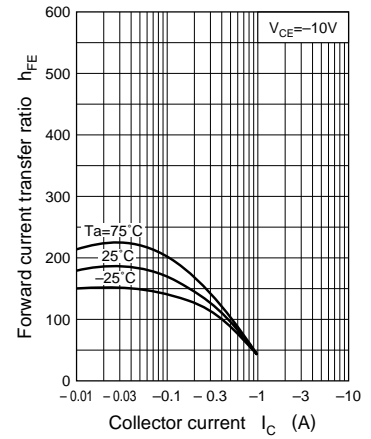
$V_{CE(sat)} - I_C$



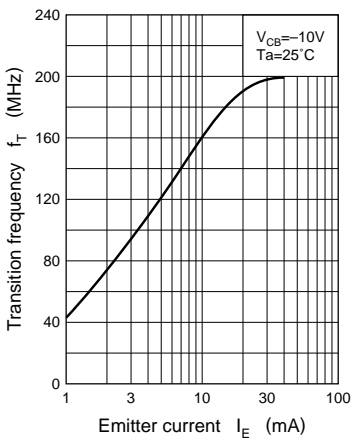
$V_{BE(sat)} - I_C$



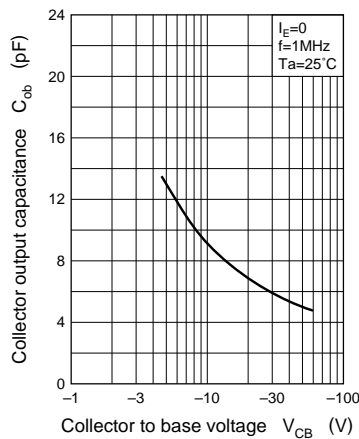
$h_{FE} - I_C$



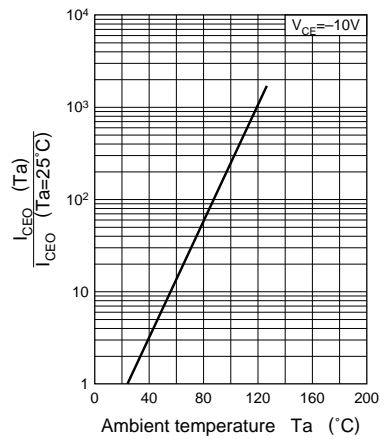
$f_T - I_E$



$C_{ob} - V_{CB}$



$I_{CEO} - T_a$



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