## 2SB1693

## Silicon PNP epitaxial planar type

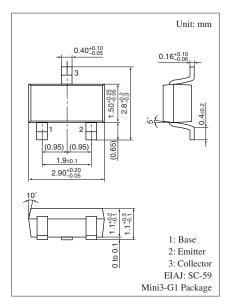
### For general amplification

#### ■ Features

- Large collector current I<sub>C</sub>
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

## ■ Absolute Maximum Ratings $T_a = 25$ °C

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	-40	V	
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	-20	V	
Emitter-base voltage (Collector open)	$V_{EBO}$	-15	V	
Collector current	$I_C$	- 0.5	A	
Peak collector current	$I_{CP}$	-1	A	
Collector power dissipation	P <sub>C</sub>	200	mW	
Junction temperature	$T_{j}$	150	°C	
Storage temperature	T <sub>stg</sub>	-55 to +150	°C	



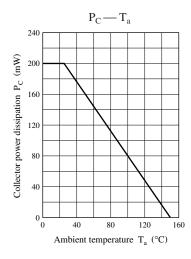
Marking Symbol: 3D

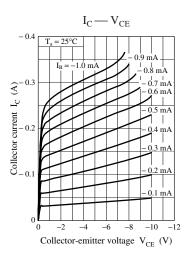
## $\blacksquare$ Electrical Characteristics $T_a = 25 ^{\circ}C \pm 3 ^{\circ}C$

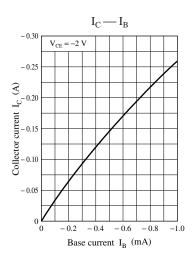
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	$I_C = -10 \ \mu A, \ I_E = 0$	-40			V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	$I_C = -2 \text{ mA}, I_B = 0$	-20			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = -10 \ \mu A, I_C = 0$	-15			V
Forward current transfer ratio *	h <sub>FE1</sub>	$V_{CE} = -2 \text{ V}, I_{C} = -100 \text{ mA}$	160		560	_
	h <sub>FE2</sub>	$V_{CE} = -2 \text{ V}, I_C = -500 \text{ mA}$	100			
Collector-emitter saturation voltage *	V <sub>CE(sat)</sub>	$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}$		-60	-300	mV
		$I_C = -0.5 \text{ A}, I_B = -25 \text{ mA}$		-210	-500	
Transition frequency	$f_T$	$V_{CB} = -5 \text{ V}, I_E = 50 \text{ mA}, f = 200 \text{ MHz}$		170		MHz
Collector output capacitance	C <sub>ob</sub>	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		16		pF
(Common base, input open circuited)						

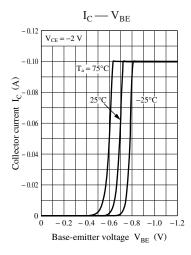
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

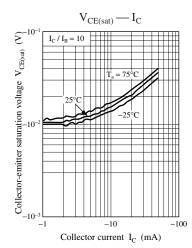
<sup>2. \*:</sup> Pulse measurement

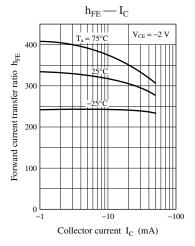


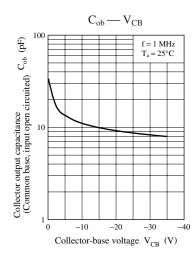












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