

# XN01457

## Silicon PNP epitaxial planar type

For general amplification

### ■ Features

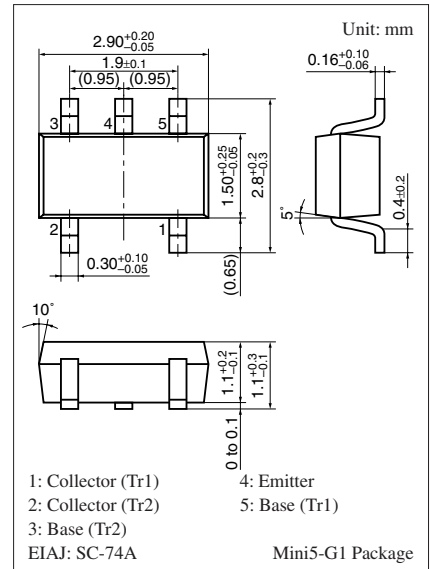
- Two elements incorporated into one package (Emitter-coupled transistors)
- Reduction of the mounting area and assembly cost by one half

### ■ Basic Part Number

- 2SB1693 × 2

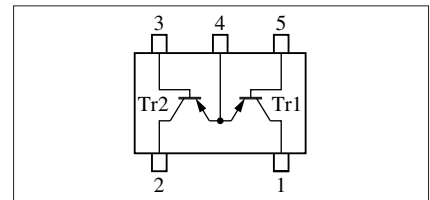
### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	-40	V
Collector-emitter voltage (Base open)	$V_{CEO}$	-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
Total power dissipation	$P_T$	300	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



Marking Symbol: 4Y

Internal Connection



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

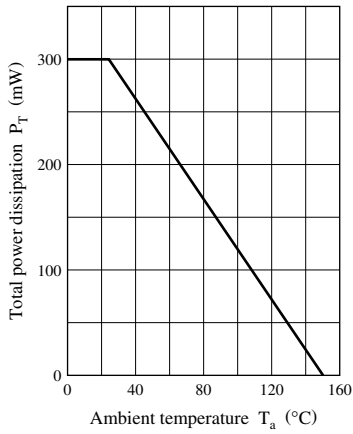
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = -10 \mu\text{A}, I_E = 0$	-40			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = -2 \text{ mA}, I_B = 0$	-20			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = -10 \mu\text{A}, I_C = 0$	-15			V
Forward current transfer ratio *1	$h_{FE1}$	$V_{CE} = -2 \text{ V}, I_C = -100 \text{ mA}$	160		560	—
	$h_{FE2}$	$V_{CE} = -2 \text{ V}, I_C = -500 \text{ mA}$	100			—
$h_{FE}$ ratio *1, 2	$h_{FE(\text{Small}/\text{Large})}$	$V_{CE} = -2 \text{ V}, I_C = -100 \text{ mA}$	0.50	0.99		—
Collector-emitter saturation voltage *1	$V_{CE(\text{sat})}$	$I_C = -100 \text{ mA}, I_B = -10 \text{ mA}$		-60	-300	mV
		$I_C = -0.5 \text{ A}, I_B = -25 \text{ mA}$		-210	-500	mV
Transition frequency	$f_T$	$V_{CB} = -5 \text{ V}, I_E = 50 \text{ mA}, f = 200 \text{ MHz}$		170		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		16		pF

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

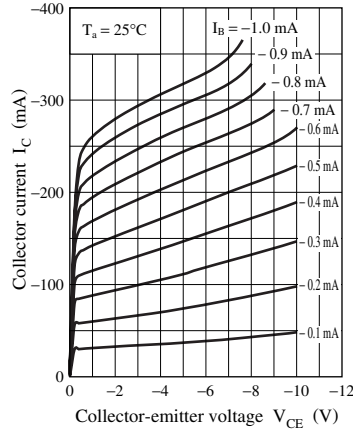
2. \*1: Pulse measurement

\*2: Ratio between 2 elements

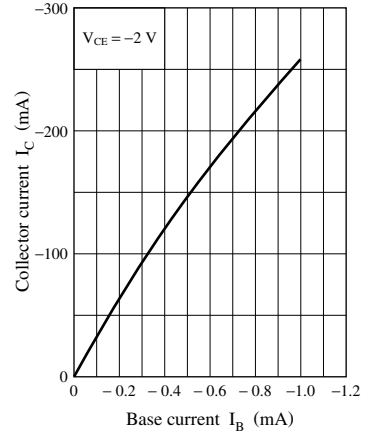
$P_T - T_a$



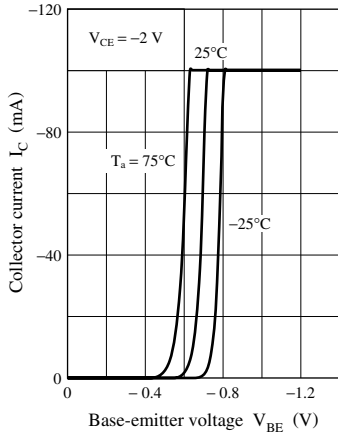
$I_C - V_{CE}$



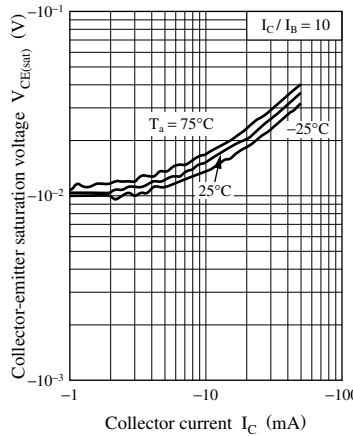
$I_C - I_B$



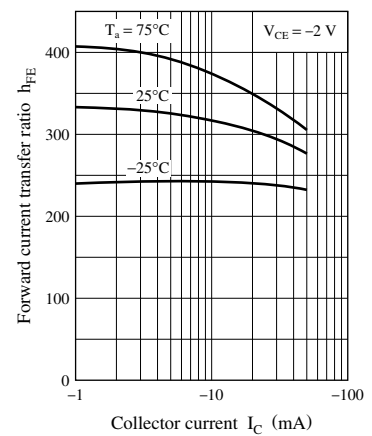
$I_C - V_{BE}$



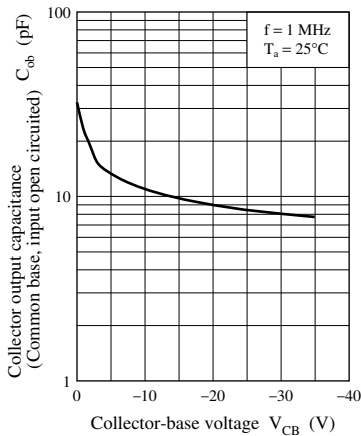
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$C_{ob} - V_{CB}$



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