

# 2SC5813

## Silicon NPN epitaxial planar type

For DC-DC converter

### ■ Features

- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing

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

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	80	V
Collector-emitter voltage (Base open)	$V_{CEO}$	80	V
Emitter-base voltage (Collector open)	$V_{EBO}$	5	V
Collector current	$I_C$	1.5	A
Peak collector current	$I_{CP}$	3	A
Collector power dissipation *	$P_C$	600	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

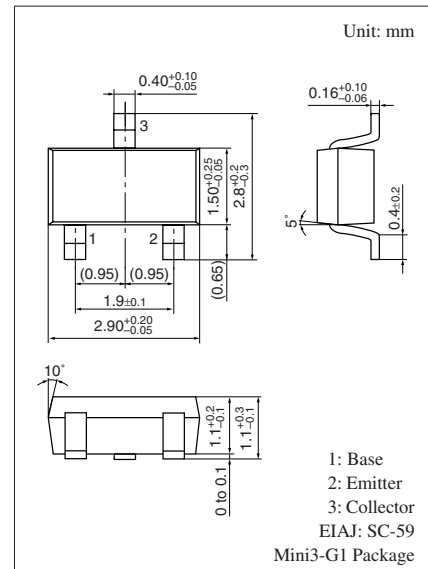
Note) \*: Measure on the ceramic substrate at 15 mm × 15 mm × 0.6 mm

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

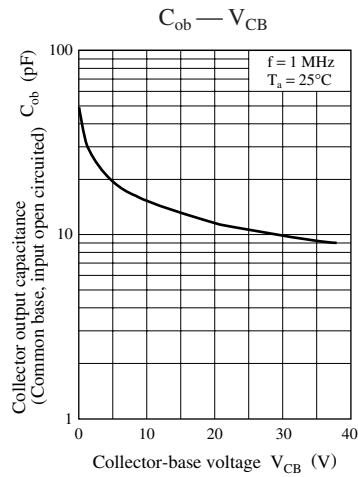
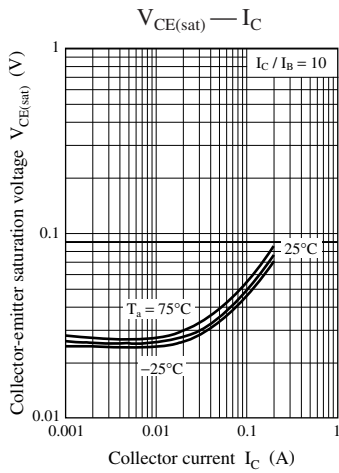
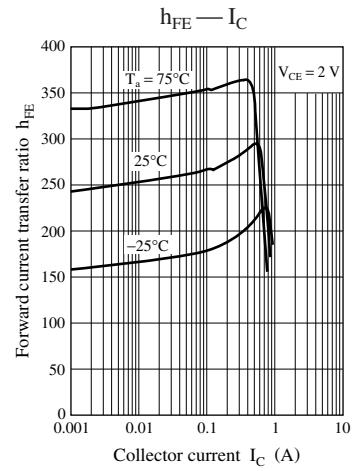
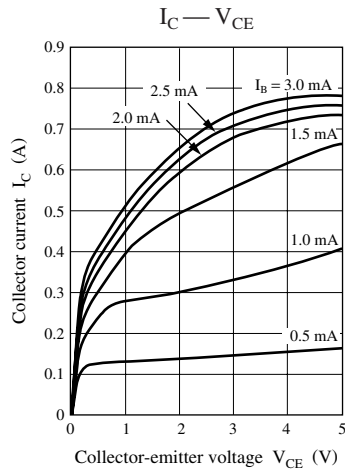
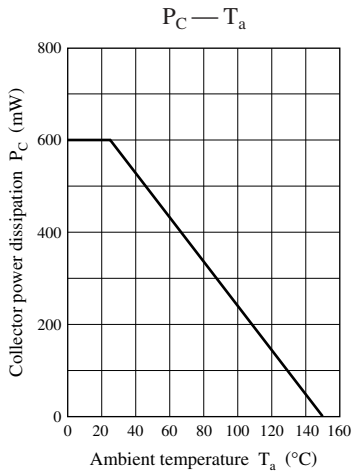
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = 10 \mu\text{A}, I_E = 0$	80			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 1 \text{ mA}, I_B = 0$	80			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 10 \mu\text{A}, I_C = 0$	5			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 40 \text{ V}, I_E = 0$			0.1	$\mu\text{A}$
Forward current transfer ratio *	$h_{FE}$	$V_{CE} = 2 \text{ V}, I_C = 100 \text{ mA}$	200			—
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 1 \text{ A}, I_B = 20 \text{ mA}$		350	500	mV
Transition frequency	$f_T$	$V_{CB} = 10 \text{ V}, I_E = -50 \text{ mA}, f = 200 \text{ MHz}$		180		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		15	25	pF

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

2. \*: Pulse measurement



Marking Symbol: 5H



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