

# 2SA2010

## Silicon PNP epitaxial planar type

For DC-DC converter

For various driver circuits

### ■ Features

- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- High-speed switching
- Mini type package, allowing downsizing and thinning 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)	$V_{CBO}$	-15	V
Collector-emitter voltage (Base open)	$V_{CEO}$	-15	V
Emitter-base voltage (Collector open)	$V_{EBO}$	-5	V
Collector current	$I_C$	-2.5	A
Peak collector current	$I_{CP}$	-10	A
Collector power dissipation *	$P_C$	600	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

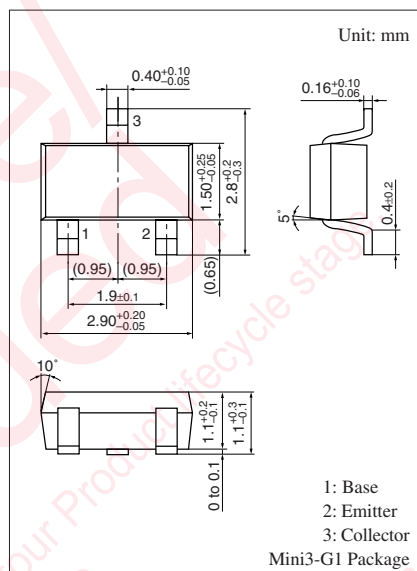
Note) \*: Measure on the ceramic substrate at 15 mm × 15 mm × 0.6 mm

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

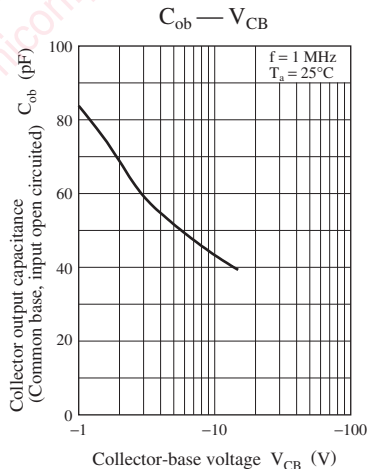
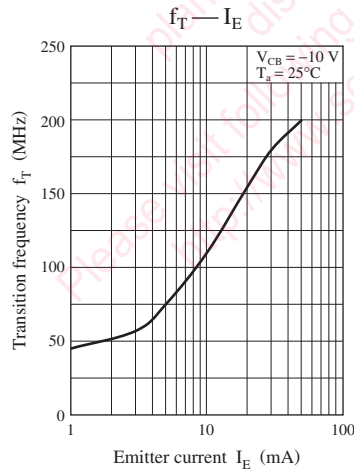
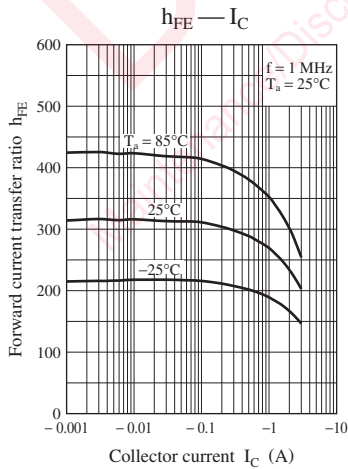
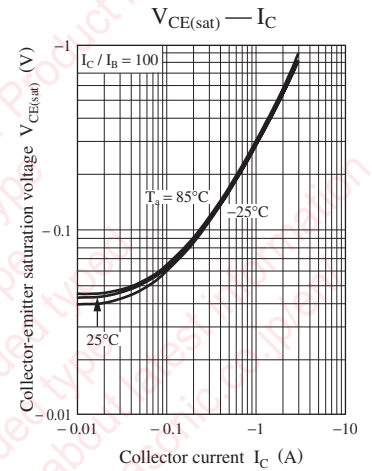
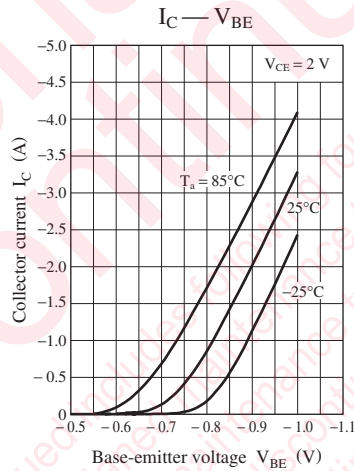
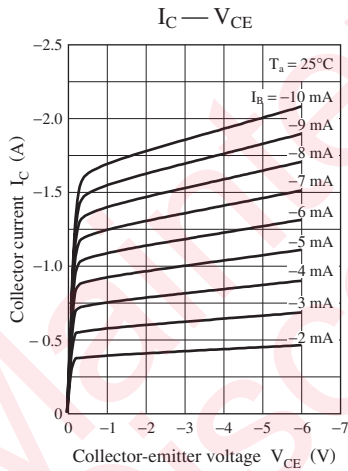
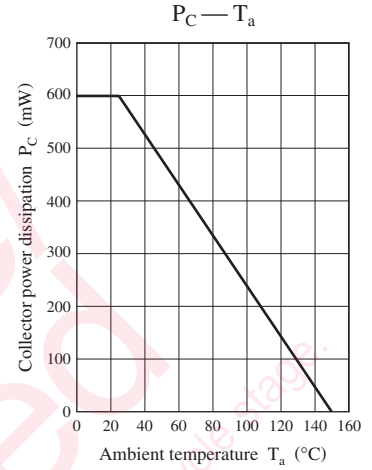
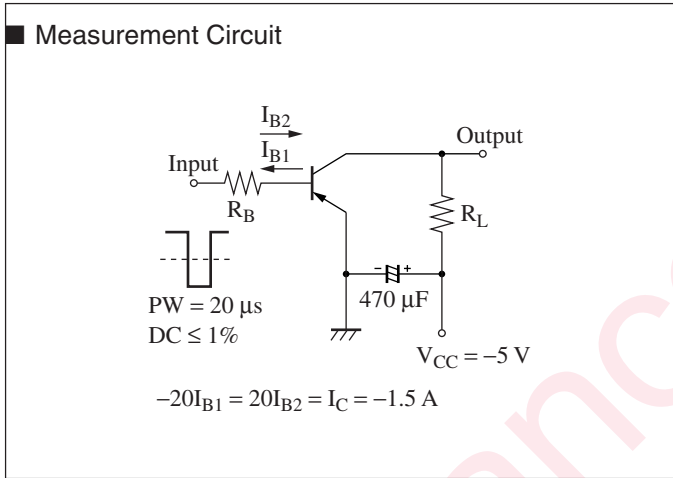
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = -10 \mu\text{A}, I_E = 0$	-15			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = -1 \text{ mA}, I_B = 0$	-15			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = -10 \mu\text{A}, I_C = 0$	-5			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = -10 \text{ V}, I_E = 0$			-0.1	$\mu\text{A}$
Forward current transfer ratio *	$h_{FE1}$	$V_{CE} = -2 \text{ V}, I_C = -100 \text{ mA}$	200		560	—
	$h_{FE2}$	$V_{CE} = -2 \text{ V}, I_C = -2.5 \text{ A}$	100			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = -1 \text{ A}, I_B = -10 \text{ mA}$		-140		mV
		$I_C = -2.5 \text{ A}, I_B = -50 \text{ mA}$		-270	-320	
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)	$C_{ob}$	$V_{CB} = -10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		40		pF
Turn-on time	$t_{on}$	Refer to the measurement circuit		35		ns
Turn-off time	$t_{off}$			10		ns
Storage time	$t_{stg}$			110		ns

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

2. \*: Pulse measurement



Marking Symbol: AS



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