

# 2SC5592

## Silicon NPN 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 of the equipment and automatic insertion through the tape packing

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

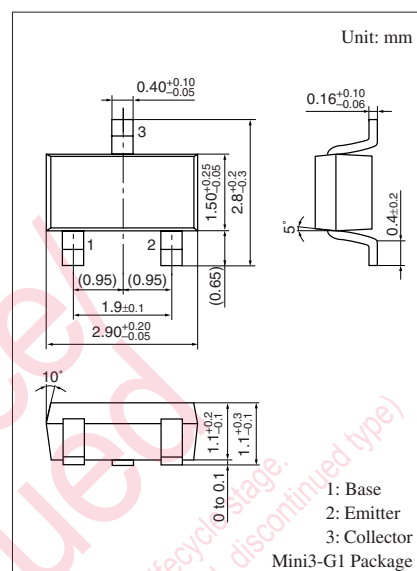
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	15	V
Collector-emitter voltage (Base open)	$V_{CEO}$	15	V
Emitter-base voltage (Collector open)	$V_{EBO}$	5	V
Collector current	$I_C$	2.5	A
Peak collector current	$I_{CP}$	10	A
Collector power dissipation *	$P_C$	600	mW
Junction 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

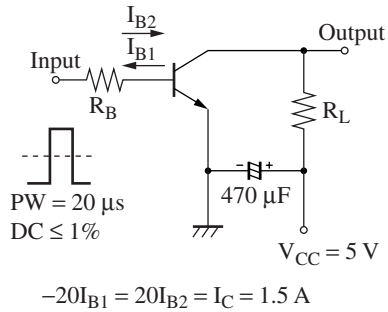
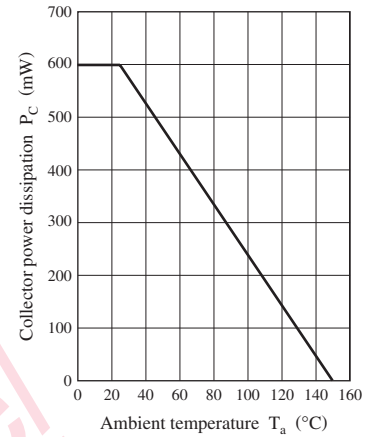
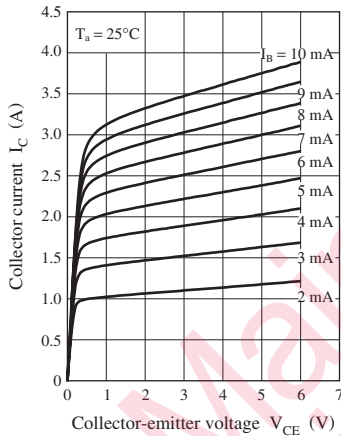
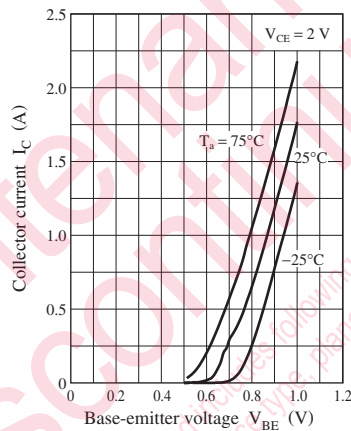
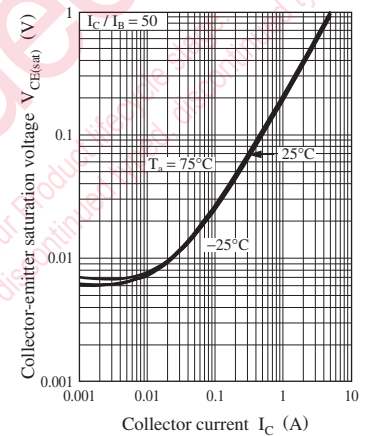
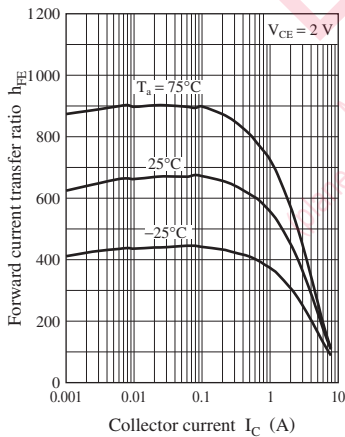
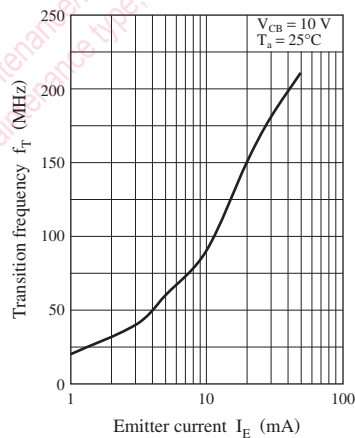
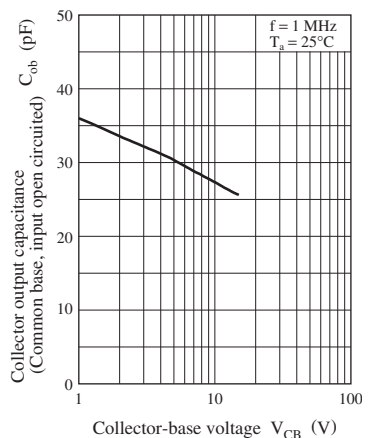
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

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 *	$h_{FE1}$	$V_{CE} = 2\ \text{V}$ , $I_C = 100\ \text{mA}$	400		1000	—
	$h_{FE2}$	$V_{CE} = 2\ \text{V}$ , $I_C = 2.5\ \text{A}$	280			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 1\ \text{A}$ , $I_B = 10\ \text{mA}$		110		mV
		$I_C = 2.5\ \text{A}$ , $I_B = 50\ \text{mA}$		220	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)	$C_{ob}$	$V_{CB} = 10\ \text{V}$ , $I_E = 0$ , $f = 1\ \text{MHz}$		30		pF
Turn-on time	$t_{on}$	Refer to the switching time measurement circuit		30		ns
Storage time	$t_{stg}$			100		ns
Fall time	$t_f$			10		ns

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

2. \*: Pulse measurement ( $\leq 1\ \text{ms}$ )

Switching time measurement circuit

 $P_C - T_a$  $I_C - V_{CE}$  $I_C - V_{BE}$  $V_{CE(sat)} - I_C$  $h_{FE} - I_C$  $f_T - I_E$  $C_{ob} - V_{CB}$ 

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