

# 2SD2504

## Silicon NPN epitaxial planar type

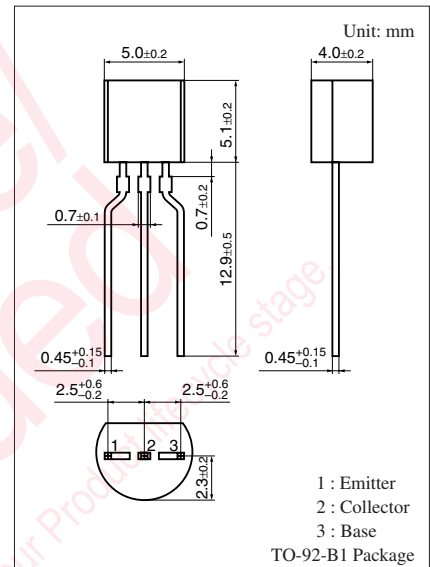
For low-frequency power amplification

### ■ Features

- Low collector-emitter saturation voltage  $V_{CE(sat)}$
- Large collector current  $I_C$

### ■ 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)	$V_{CEO}$	10	V
Emitter-base voltage (Collector open)	$V_{EBO}$	10	V
Collector current	$I_C$	5	A
Peak collector current *	$I_{CP}$	9	A
Collector power dissipation	$P_C$	750	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

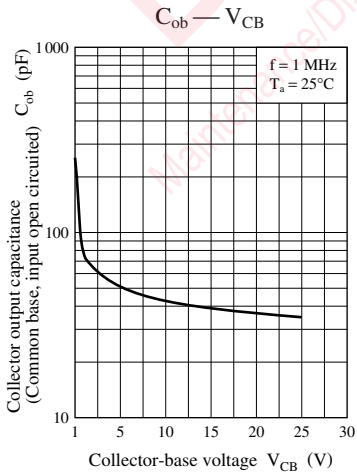
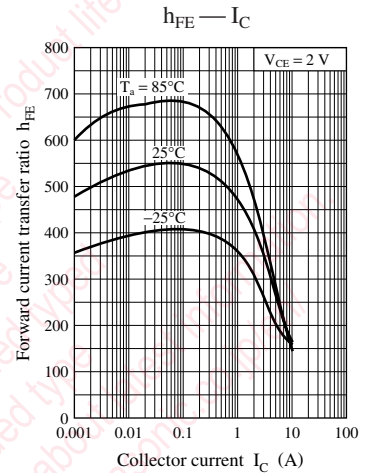
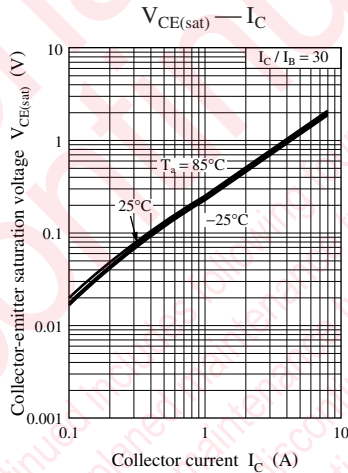
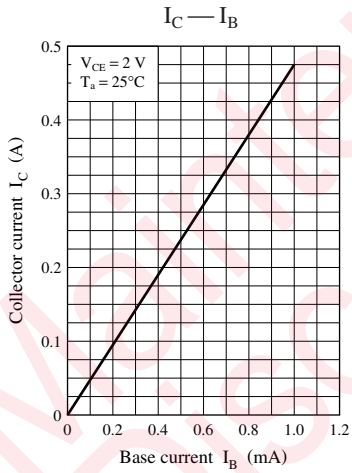
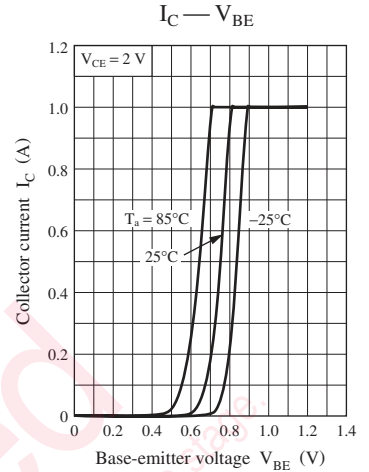
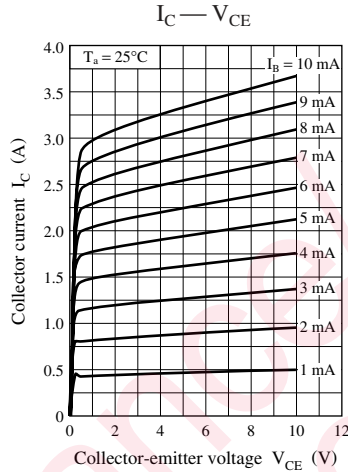
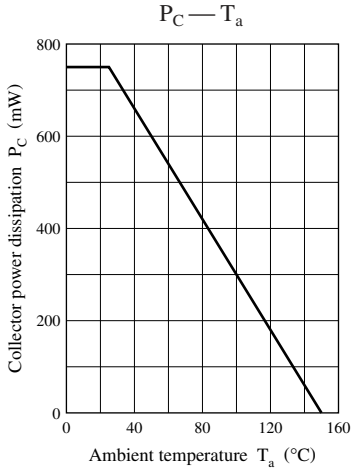
(Note) \*:  $t = 380 \mu\text{s}$ 

### ■ 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)	$V_{CBO}$	$I_C = 1 \text{ mA}, I_E = 0$	10			V
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 10 \mu\text{A}, I_B = 0$	10			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 10 \text{ V}, I_E = 0$			0.1	$\mu\text{A}$
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = 5 \text{ V}, I_B = 0$			1.0	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 5 \text{ V}, I_E = 0$			0.1	$\mu\text{A}$
Forward current transfer ratio *	$h_{FE1}$	$V_{CE} = 2 \text{ V}, I_C = 0.5 \text{ A}$	300		800	—
	$h_{FE2}$	$V_{CE} = 2 \text{ V}, I_C = 2 \text{ A}$	195			
Collector-emitter saturation voltage *	$V_{CE(sat)}$	$I_C = 3 \text{ A}, I_B = 0.1 \text{ A}$		0.28	0.50	V
Transition frequency	$f_T$	$V_{CB} = 6 \text{ V}, I_E = -50 \text{ mA}, f = 200 \text{ MHz}$		170		MHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 20 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		45	65	pF

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

2. \*: Pulse measurement



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