

# XN04504 (XN4504)

Silicon NPN epitaxial planer transistor

For amplification of low frequency output

## Features

- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

## Basic Part Number of Element

- 2SD1328 × 2 elements

## Absolute Maximum Ratings (Ta=25°C)

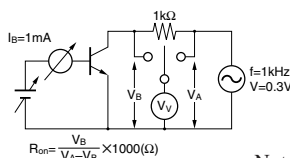
Parameter	Symbol	Rated	Unit	
Rating of element	Collector to base voltage	V <sub>CBO</sub>	25	V
	Collector to emitter voltage	V <sub>CEO</sub>	20	V
	Emitter to base voltage	V <sub>EBO</sub>	12	V
	Collector current	I <sub>C</sub>	0.5	A
	Peak collector current	I <sub>CP</sub>	1	A
Overall	Total power dissipation	P <sub>T</sub>	300	mW
	Junction temperature	T <sub>j</sub>	150	°C
	Storage temperature	T <sub>stg</sub>	-55 to +150	°C

## Electrical Characteristics (Ta=25°C)

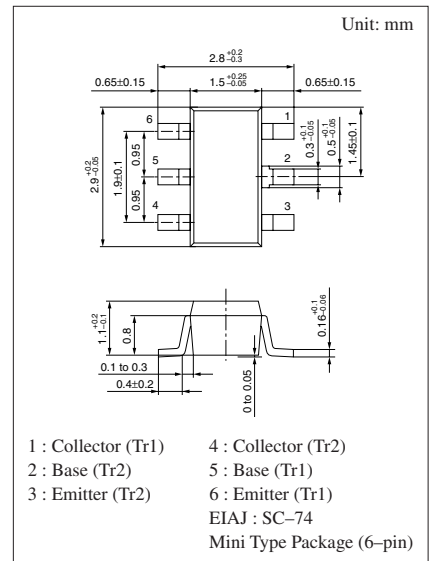
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	V <sub>CBO</sub>	I <sub>C</sub> = 10μA, I <sub>E</sub> = 0	25			V
Collector to emitter voltage	V <sub>CEO</sub>	I <sub>C</sub> = 1mA, I <sub>B</sub> = 0	20			V
Emitter to base voltage	V <sub>EBO</sub>	I <sub>E</sub> = 10μA, I <sub>C</sub> = 0	12			V
Collector cutoff current	I <sub>CBO</sub>	V <sub>CB</sub> = 25V, I <sub>E</sub> = 0			0.1	μA
Forward current transfer ratio	h <sub>FE1</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 500mA <sup>*1</sup>	200		800	
	h <sub>FE2</sub>	V <sub>CE</sub> = 2V, I <sub>C</sub> = 1A <sup>*1</sup>	60			
Collector to emitter saturation voltage	V <sub>CE(sat)</sub>	I <sub>C</sub> = 500mA, I <sub>B</sub> = 20mA		0.13	0.4	V
Base to emitter saturation voltage	V <sub>BE(sat)</sub>	I <sub>C</sub> = 500mA, I <sub>B</sub> = 50mA			1.2	V
Transition frequency	f <sub>T</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = -50mA, f = 200MHz		200		MHz
Collector output capacitance	C <sub>ob</sub>	V <sub>CB</sub> = 10V, I <sub>E</sub> = 0, f = 1MHz		10		pF
ON Resistance	R <sub>on</sub> <sup>*2</sup>			1.0		Ω

<sup>\*1</sup> Pulse measurement

<sup>\*2</sup> R<sub>on</sub> test circuit

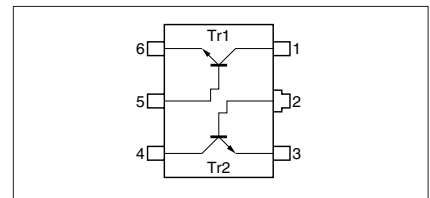


(Note.) The Part number in the Parenthesis shows conventional part number.

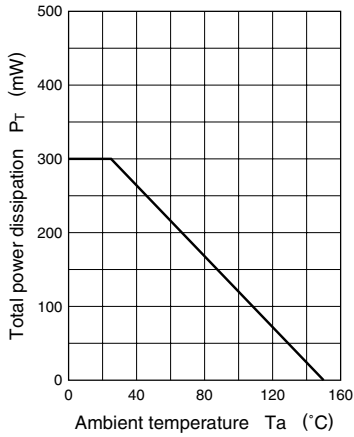


Marking Symbol: 5X

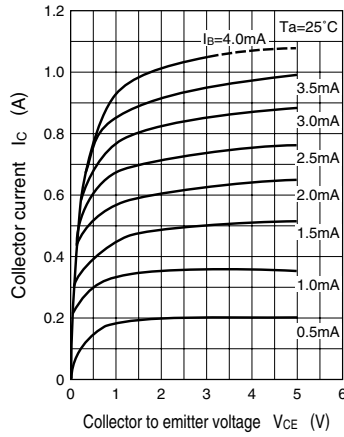
Internal Connection



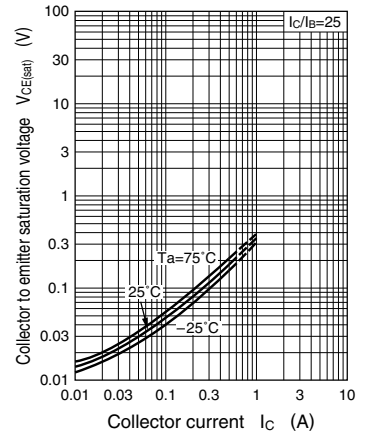
$P_T - T_a$



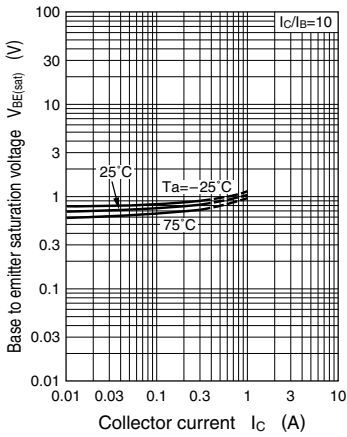
$I_C - V_{CE}$



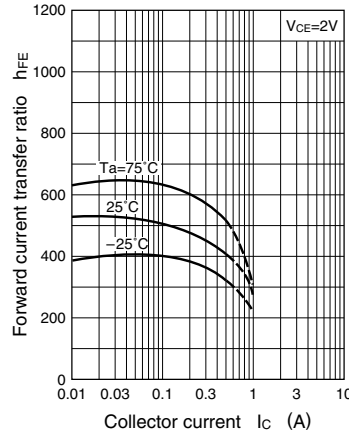
$V_{CE(sat)} - I_C$



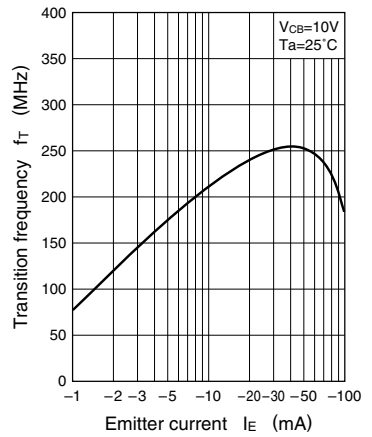
$V_{BE(sat)} - I_C$



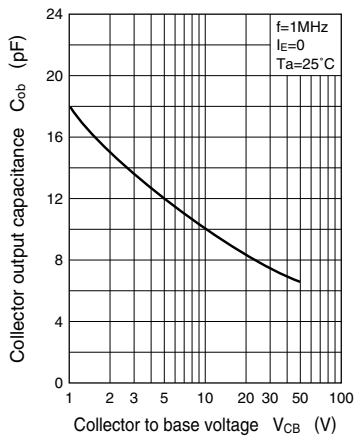
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



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