# XN04504 (XN4504)

# Silicon NPN epitaxial planar type

For amplification of low-frequency output

### ■ Features

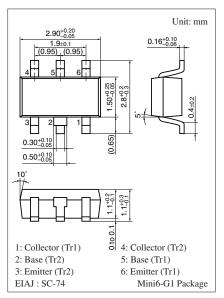
- Two elements incorporated into one package
- Reduction of the mounting area and assembly cost by one half

### ■ Basic Part Number

• 2SD1328 × 2

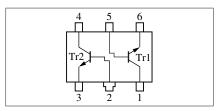
## ■ Absolute Maximum Ratings $T_a = 25$ °C

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	25	V	
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	20	V	
Emitter-base voltage (Collector open)	$V_{EBO}$	12	V	
Collector current	$I_C$	0.5	A	
Peak collector current	$I_{CP}$	1	A	
Total power dissipation	$P_{T}$	300	mW	
Junction temperature	$T_{j}$	150	°C	
Storage temperature	$T_{stg}$	-55 to +150	°C	



Marking Symbol: 5X

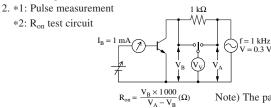
#### Internal Connection



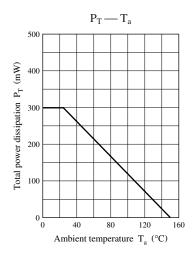
## ■ Electrical Characteristics $T_a = 25$ °C $\pm 3$ °C

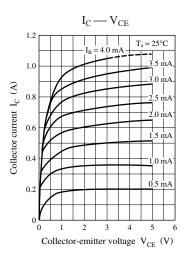
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = 10 \mu\text{A},  I_E = 0$	25			V
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	$I_C = 1 \text{ mA}, I_B = 0$	20			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 10 \ \mu A, I_C = 0$	12			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 25 \text{ V}, I_{E} = 0$			100	nA
Forward current transfer ratio *1	h <sub>FE1</sub>	$V_{CE} = 2 \text{ V}, I_{C} = 0.5 \text{ A}$	200		800	_
	h <sub>FE2</sub>	$V_{CE} = 2 \text{ V}, I_{C} = 1 \text{ A}$	60			
Collector-emitter saturation voltage *1	V <sub>CE(sat)</sub>	$I_C = 0.5 \text{ A}, I_B = 20 \text{ mA}$		0.13	0.40	V
Base-emitter saturation voltage *1	V <sub>BE(sat)</sub>	$I_C = 0.5 \text{ A}, I_B = 50 \text{ mA}$			1.2	V
Transition frequency	$f_T$	$V_{CB} = 10 \text{ V}, I_{E} = -50 \text{ mA}, f = 200 \text{ MHz}$		200		MHz
Collector output capacitance	C <sub>ob</sub>	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		10		pF
(Common base, input open circuited)						
ON resistance *2	Ron			1.0		Ω

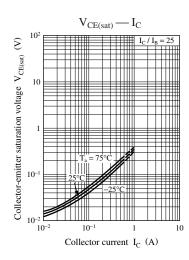
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

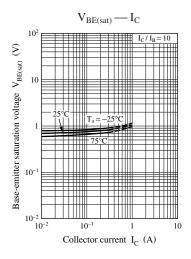


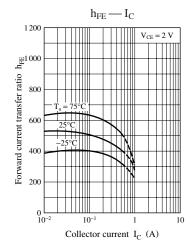
Note) The part number in the parenthesis shows conventional part number.

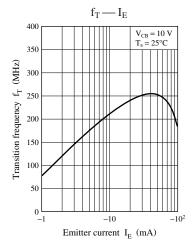


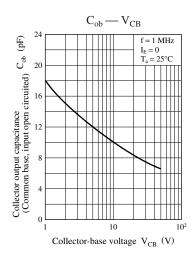












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