

# XN4504

## Silicon NPN epitaxial planer transistor

For amplification of low frequency output

### Features

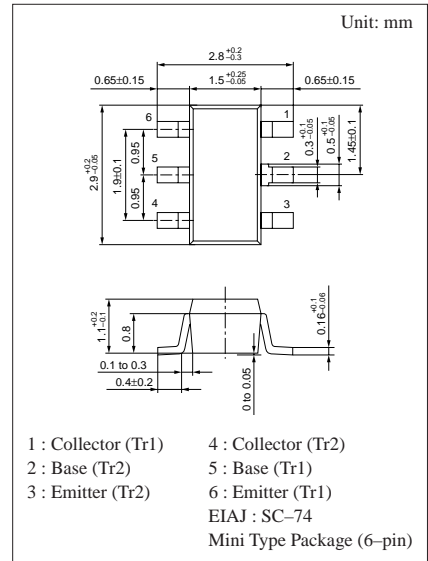
- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

### Basic Part Number of Element

- 2SD1328 × 2 elements

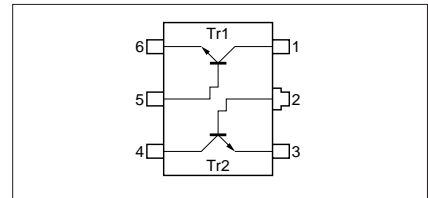
### Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Rated	Unit
Rating of element	Collector to base voltage	$V_{CBO}$	25	V
	Collector to emitter voltage	$V_{CEO}$	20	V
	Emitter to base voltage	$V_{EBO}$	12	V
	Collector current	$I_C$	0.5	A
	Peak collector current	$I_{CP}$	1	A
Overall	Total power dissipation	$P_T$	300	mW
	Junction temperature	$T_j$	150	°C
	Storage temperature	$T_{sig}$	-55 to +150	°C



Marking Symbol: 5X

Internal Connection

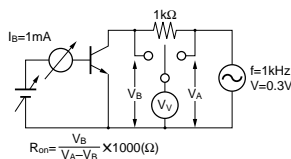


### Electrical Characteristics (Ta=25°C)

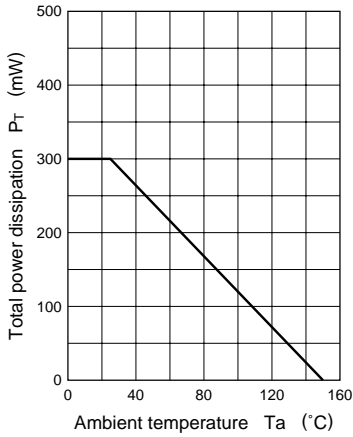
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to base voltage	$V_{CBO}$	$I_C = 10\mu A, I_E = 0$	25			V
Collector to emitter voltage	$V_{CEO}$	$I_C = 1mA, I_B = 0$	20			V
Emitter to base voltage	$V_{EBO}$	$I_E = 10\mu A, I_C = 0$	12			V
Collector cutoff current	$I_{CBO}$	$V_{CB} = 25V, I_E = 0$			0.1	$\mu A$
Forward current transfer ratio	$h_{FE1}$	$V_{CE} = 2V, I_C = 500mA^{*1}$	200		800	
	$h_{FE2}$	$V_{CE} = 2V, I_C = 1A^{*1}$	60			
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 500mA, I_B = 20mA$		0.13	0.4	V
Base to emitter saturation voltage	$V_{BE(sat)}$	$I_C = 500mA, I_B = 50mA$			1.2	V
Transition frequency	$f_T$	$V_{CB} = 10V, I_E = -50mA, f = 200MHz$		200		MHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$		10		pF
ON Resistance	$R_{on}^{*2}$			1.0		$\Omega$

\*1 Pulse measurement

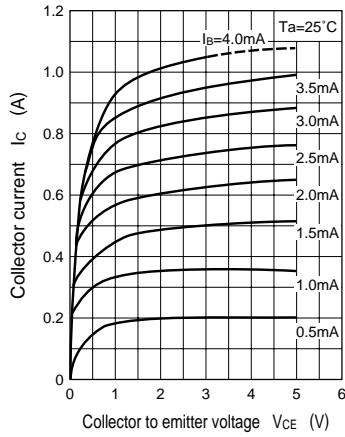
\*2  $R_{on}$  test circuit



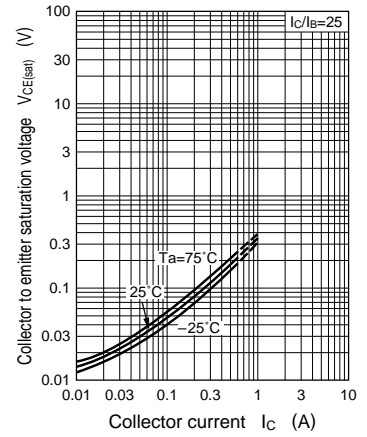
$P_T - T_a$



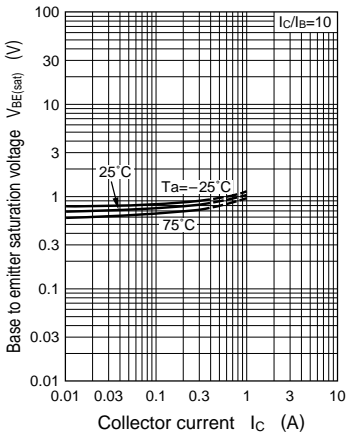
$I_C - V_{CE}$



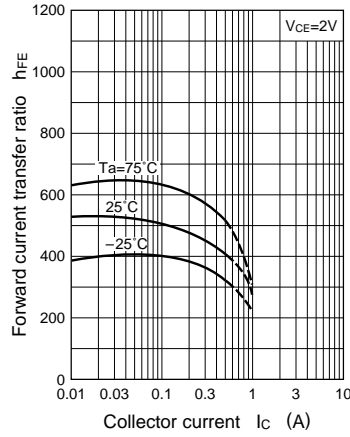
$V_{CE(sat)} - I_C$



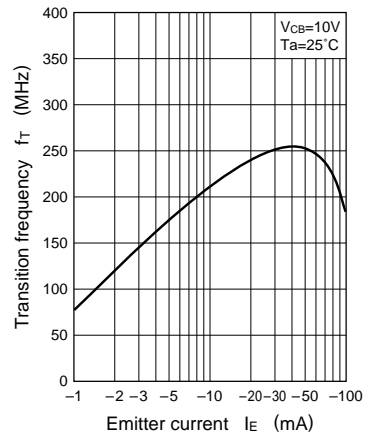
$V_{BE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

