# XN06543 (XN6543)

### Silicon NPN epitaxial planer transistor

For low-noise amplification (2GHz band)

#### Features

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

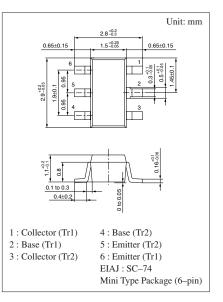
### Basic Part Number of Element

•  $2SC3904 \times 2$  elements

Parameter		Symbol	Ratings	Unit
Rating of element	Collector to base voltage	V <sub>CBO</sub>	15	V
	Collector to emitter voltage	V <sub>CEO</sub>	10	V
	Emitter to base voltage	$V_{EBO}$	2	V
	Collector current	I <sub>C</sub>	65	mA
Overall	Total power dissipation	P <sub>T</sub>	200	mW
	Junction temperature	$T_j$	150	°C
	Storage temperature	T <sub>stg</sub>	-55 to +150	°C

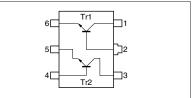
#### Absolute Maximum Ratings (Ta=25°C)

Electrical Characteristics (Ta=25°C)



#### Marking Symbol: 9Y

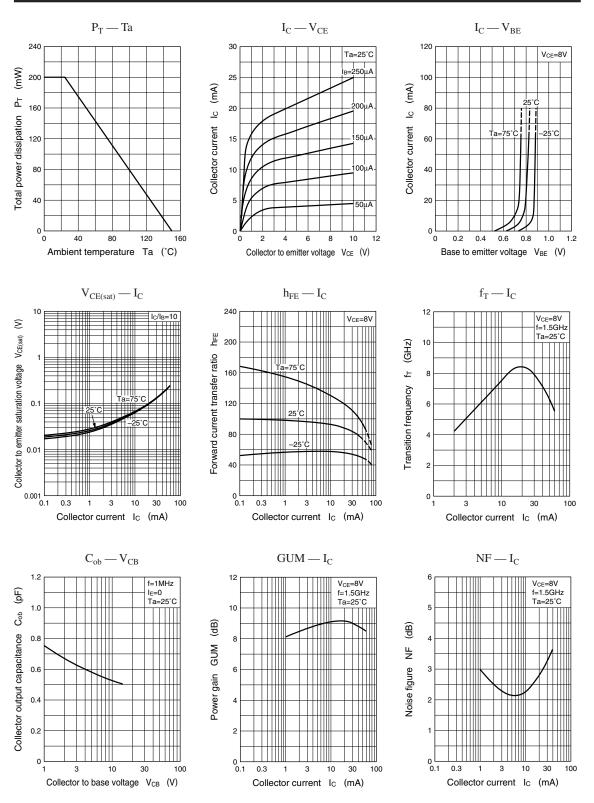
#### Internal Connection



#### Symbol Conditions Parameter min typ max Unit $V_{CB} = 10V, I_E = 0$ 1 Collector cutoff current $I_{\text{CBO}}$ μΑ $V_{EB} = 1V, I_C = 0$ Emitter cutoff current 1 $I_{\rm EBO}$ μΑ Forward current transfer ratio $V_{CE} = 8V, I_C = 20mA$ 50 120 300 h<sub>FE</sub> $V_{CE} = 8V, I_C = 20mA$ Forward current transfer $h_{\text{FE}}$ ratio hFE (small/large)\*1 0.5 0.99 Transition frequency $\mathbf{f}_{\mathrm{T}}$ $V_{CE} = 8V, I_C = 20mA$ 7.0 8.5 GHz $V_{CB} = 10V, I_E = 0, f = 1MHz$ 0.6 1.0 Collector output capacitance Cob pF Forward transfer gain | S<sub>21e</sub> |<sup>2</sup> $V_{CE} = 8V, I_C = 20mA, f = 1.5GHz$ 7 9 dB $V_{CE} = 8V, I_C = 20mA, f = 1.5GHz$ Power gain GUM 10 dB NF $V_{CE} = 8V, I_{C} = 7mA, f = 1.5GHz$ Noise figure 2.2 3.0 dB

\*1 Ratio between 2 elements

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



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