

# XN06543 (XN6543)

## Silicon NPN epitaxial planar type

For low-noise amplification (2 GHz band)

### ■ Features

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

### ■ Basic Part Number

- 2SC3904 × 2

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

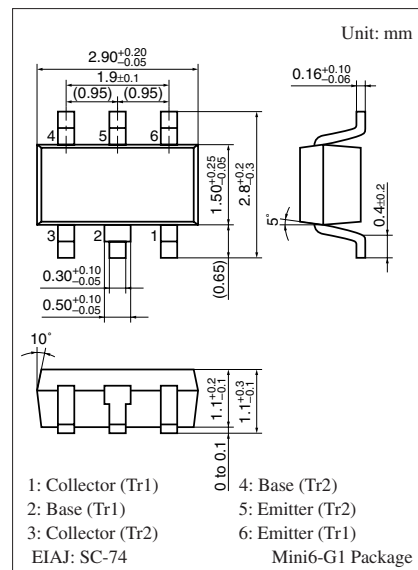
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	15	V
Collector-emitter voltage (Base open)	$V_{CEO}$	10	V
Emitter-base voltage (Collector open)	$V_{EBO}$	2	V
Collector current	$I_C$	65	mA
Total power dissipation	$P_T$	200	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 10\text{ V}, I_E = 0$			1	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 1\text{ V}, I_C = 0$			1	$\mu\text{A}$
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 8\text{ V}, I_C = 20\text{ mA}$	50	120	300	—
$h_{FE}$ ratio *	$h_{FE(\text{Small}/\text{Large})}$	$V_{CE} = 8\text{ V}, I_C = 20\text{ mA}$	0.50	0.99		—
Transition frequency	$f_T$	$V_{CE} = 8\text{ V}, I_C = 20\text{ mA}, f = 200\text{ MHz}$	7.0	8.5		GHz
Noise figure	NF	$V_{CE} = 8\text{ V}, I_C = 7\text{ mA}, f = 1.5\text{ GHz}$		2.2	3.0	dB
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		0.6	1.0	pF
Forward transfer gain	$ S_{21c} ^2$	$V_{CE} = 8\text{ V}, I_C = 20\text{ mA}, f = 1.5\text{ GHz}$	7	9		dB
Maximum unilateral power gain	$G_{UM}$	$V_{CE} = 8\text{ V}, I_C = 20\text{ mA}, f = 1.5\text{ GHz}$		10		dB

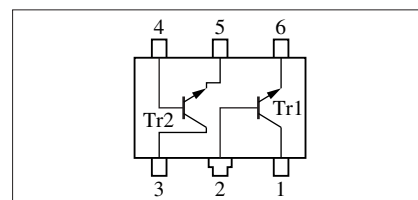
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Ratio between 2 elements

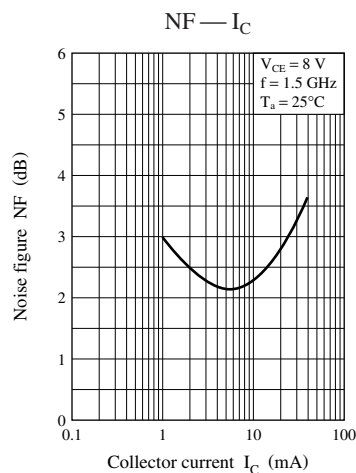
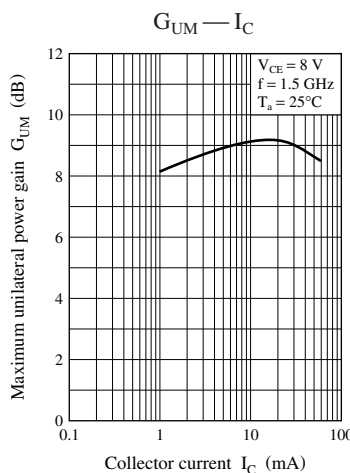
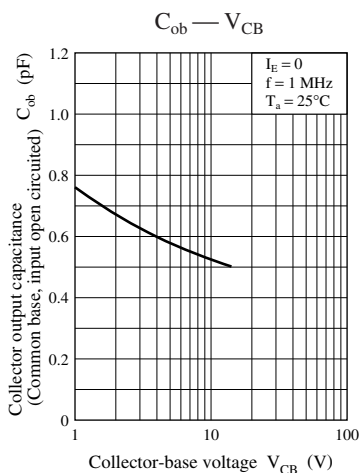
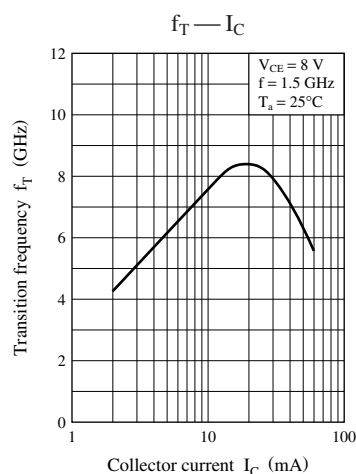
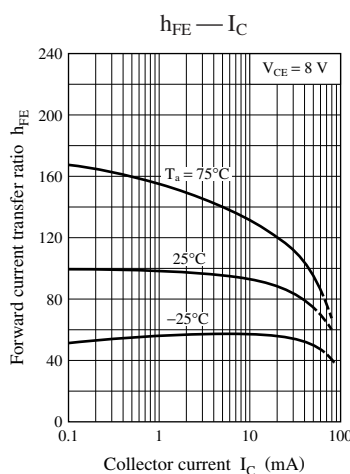
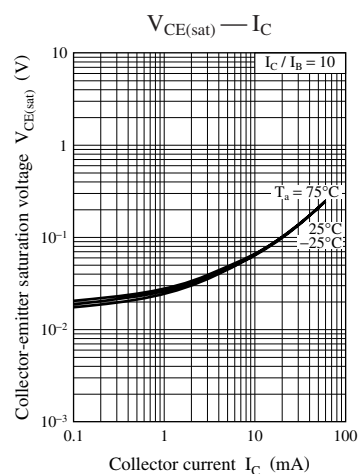
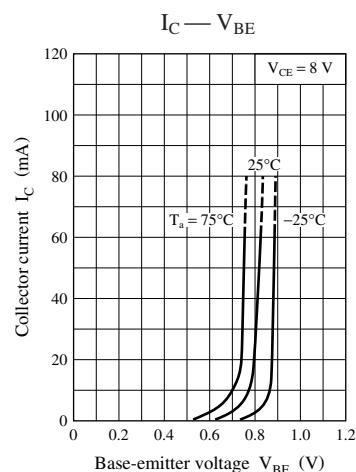
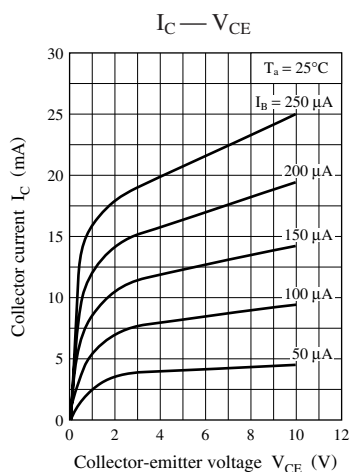
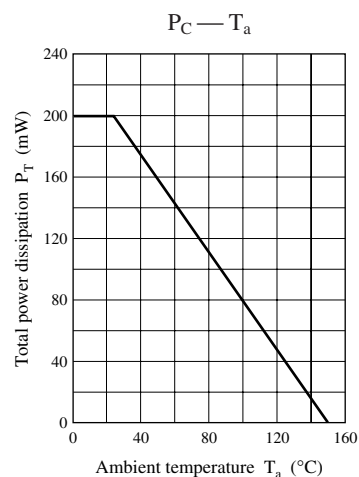


Marking Symbol: 9Y

Internal Connection



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



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