

# 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 $T_a = 25^\circ\text{C}$

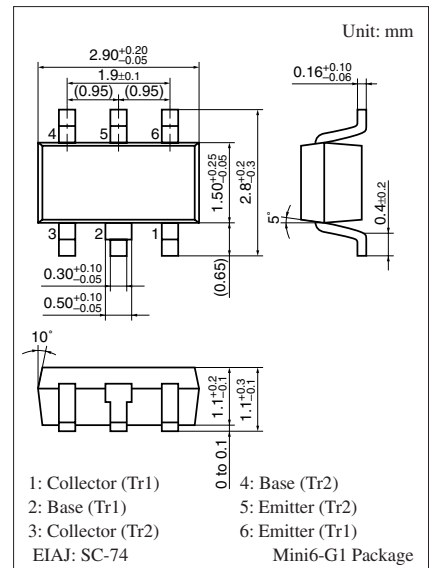
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{\text{CBO}}$	15	V
Collector-emitter voltage (Base open)	$V_{\text{CEO}}$	10	V
Emitter-base voltage (Collector open)	$V_{\text{EBO}}$	2	V
Collector current	$I_{\text{C}}$	65	mA
Total power dissipation	$P_{\text{T}}$	200	mW
Junction temperature	$T_{\text{j}}$	150	$^\circ\text{C}$
Storage temperature	$T_{\text{stg}}$	-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)	$I_{\text{CBO}}$	$V_{\text{CB}} = 10 \text{ V}, I_{\text{E}} = 0$			1	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{\text{EBO}}$	$V_{\text{EB}} = 1 \text{ V}, I_{\text{C}} = 0$			1	$\mu\text{A}$
Forward current transfer ratio	$h_{\text{FE}}$	$V_{\text{CE}} = 8 \text{ V}, I_{\text{C}} = 20 \text{ mA}$	50	120	300	—
$h_{\text{FE}}$ ratio *	$h_{\text{FE}}(\text{Small})$ $/\text{Large}$	$V_{\text{CE}} = 8 \text{ V}, I_{\text{C}} = 20 \text{ mA}$	0.50	0.99		—
Transition frequency	$f_{\text{T}}$	$V_{\text{CE}} = 8 \text{ V}, I_{\text{C}} = 20 \text{ mA}, f = 200 \text{ MHz}$	7.0	8.5		GHz
Noise figure	NF	$V_{\text{CE}} = 8 \text{ V}, I_{\text{C}} = 7 \text{ mA}, f = 1.5 \text{ GHz}$		2.2	3.0	dB
Collector output capacitance (Common base, input open circuited)	$C_{\text{ob}}$	$V_{\text{CB}} = 10 \text{ V}, I_{\text{E}} = 0, f = 1 \text{ MHz}$		0.6	1.0	pF
Forward transfer gain	$ S_{21c} ^2$	$V_{\text{CE}} = 8 \text{ V}, I_{\text{C}} = 20 \text{ mA}, f = 1.5 \text{ GHz}$	7	9		dB
Maximum unilateral power gain	$G_{\text{UM}}$	$V_{\text{CE}} = 8 \text{ V}, I_{\text{C}} = 20 \text{ mA}, f = 1.5 \text{ GHz}$		10		dB

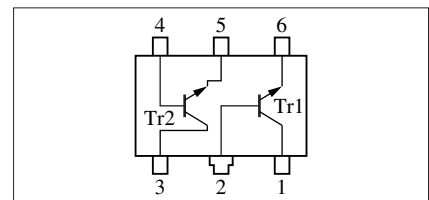
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*: Ratio between 2 elements

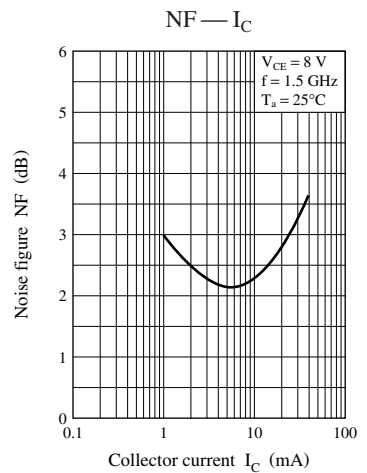
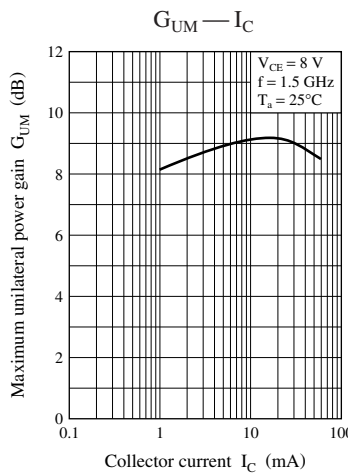
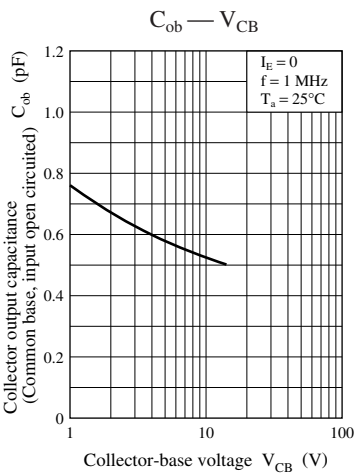
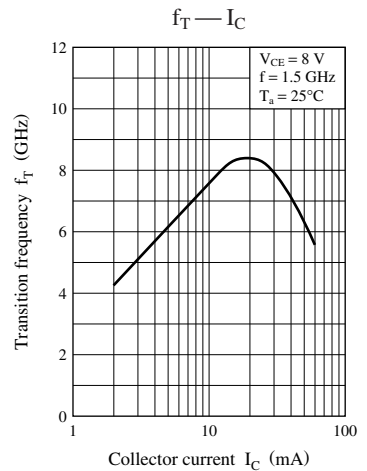
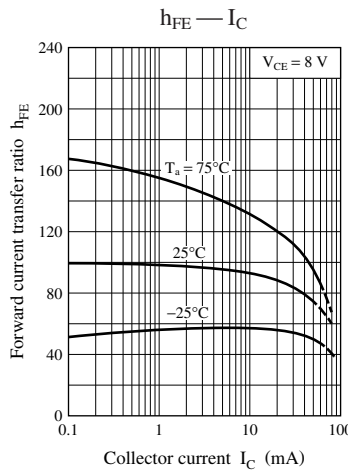
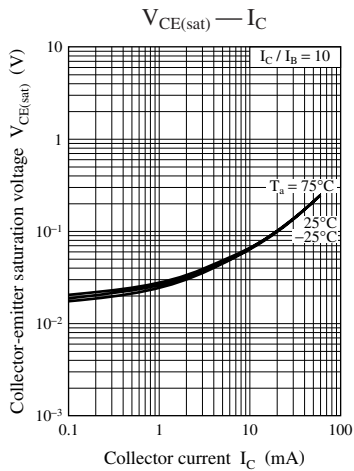
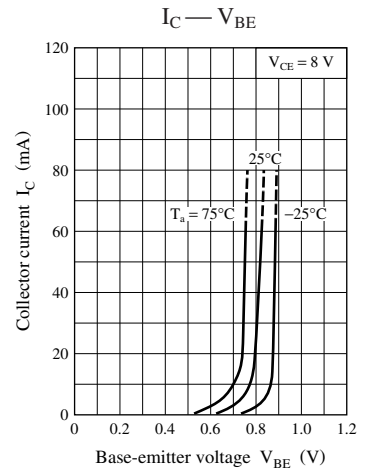
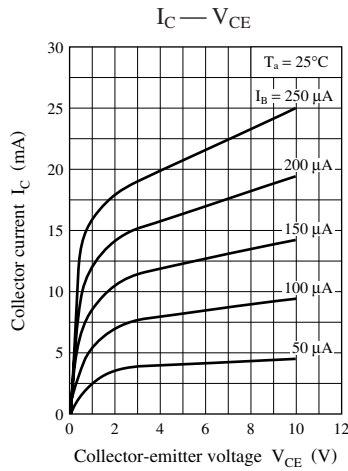
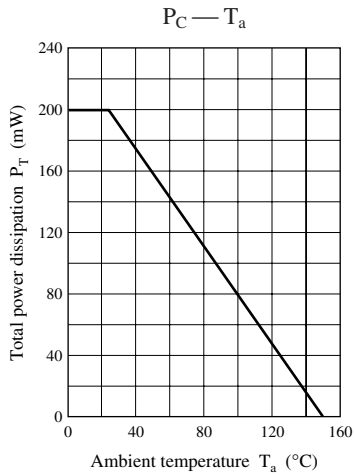


Marking Symbol: 9Y

Internal Connection



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



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