

# XN6537

## Silicon NPN epitaxial planer transistor

For wide-band low-noise amplification

### ■ Features

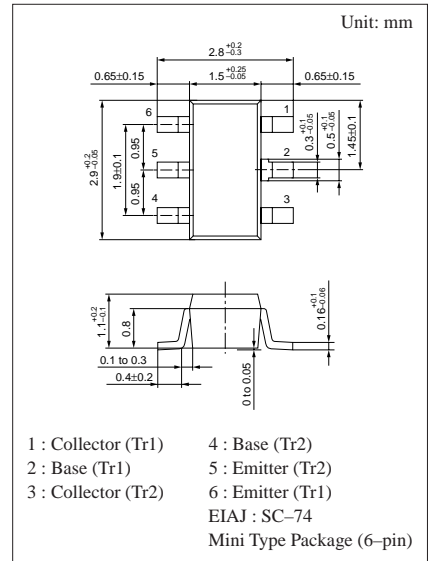
- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

### ■ Basic Part Number of Element

- 2SC3110 × 2 elements

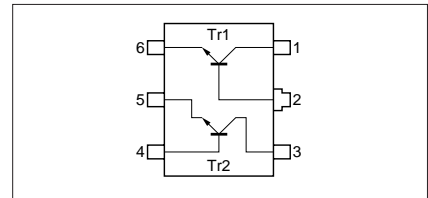
### ■ Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Ratings	Unit
Rating of element	Collector to base voltage	$V_{CBO}$	15	V
	Collector to emitter voltage	$V_{CEO}$	12	V
	Emitter to base voltage	$V_{EBO}$	2.5	V
	Collector current	$I_C$	30	mA
	Peak collector current	$I_{CP}$	50	mA
Overall	Total power dissipation	$P_T$	300	mW
	Junction temperature	$T_j$	150	°C
	Storage temperature	$T_{sig}$	-55 to +150	°C



Marking Symbol: 7H

Internal Connection

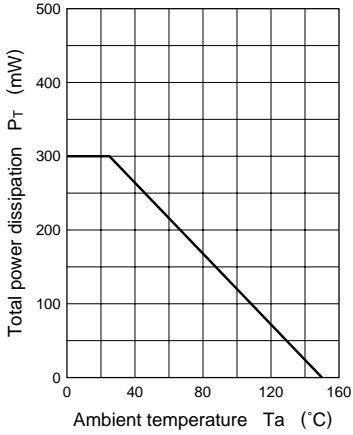


### ■ Electrical Characteristics (Ta=25°C)

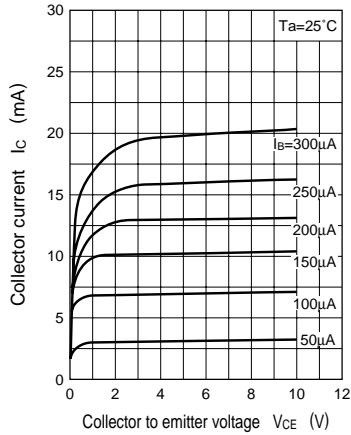
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	$I_{CBO}$	$V_{CB} = 10V, I_E = 0$			100	nA
Emitter cutoff current	$I_{EBO}$	$V_{EB} = 2V, I_C = 0$			1	μA
Forward current transfer ratio	$h_{FE}$	$V_{CE} = 10V, I_C = 10mA$	40			
Forward current transfer $h_{FE}$ ratio	$h_{FE}(\text{small/large})^{*1}$	$V_{CE} = 10V, I_C = 10mA$	0.5	0.99		
Transition frequency	$f_T$	$V_{CE} = 10V, I_C = 10mA, f = 200MHz$		4.5		GHz
Collector output capacitance	$C_{ob}$	$V_{CB} = 10V, I_E = 0, f = 1MHz$			1.2	pF
Forward transfer gain	$ S_{21e} ^2$	$V_{CE} = 10V, I_C = 20mA, f = 0.8GHz$		12		dB
Power gain	GUM	$V_{CE} = 10V, I_C = 20mA, f = 0.8GHz$		14		dB
Noise figure	NF	$V_{CE} = 10V, I_C = 5mA, f = 0.8GHz$		1.3		dB

\*1 Ratio between 2 elements

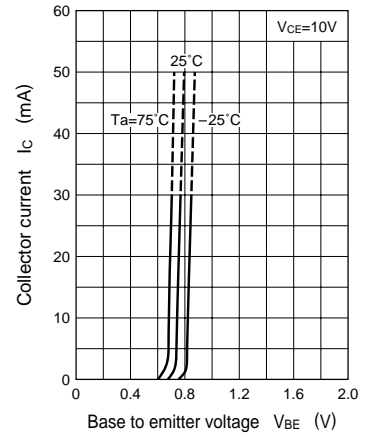
$P_T - T_a$



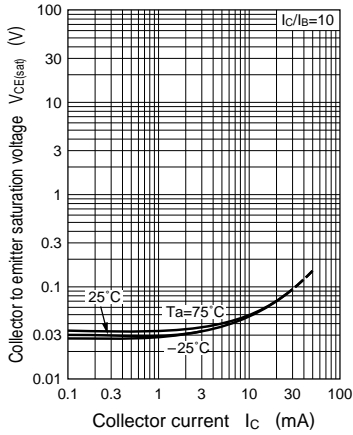
$I_C - V_{CE}$



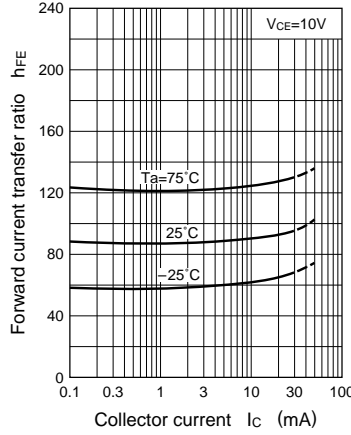
$I_C - V_{BE}$



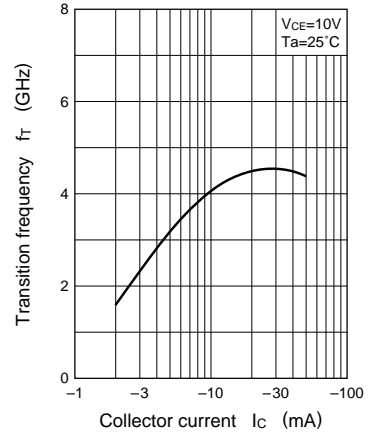
$V_{CE(sat)} - I_C$



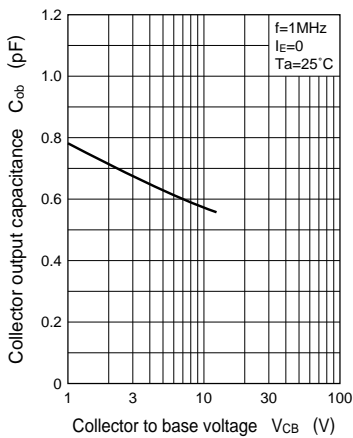
$h_{FE} - I_C$



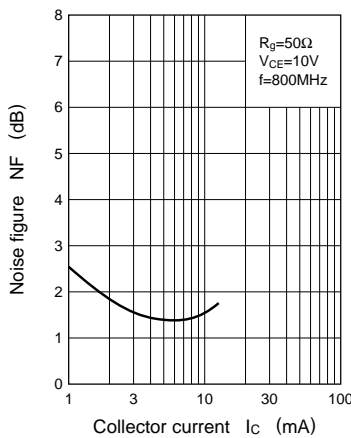
$f_T - I_C$



$C_{ob} - V_{CB}$



$NF - I_C$



$S_{11}, S_{22}$

