

XN6543

Silicon NPN epitaxial planer transistor

For low-noise amplification (2GHz band)

■ Features

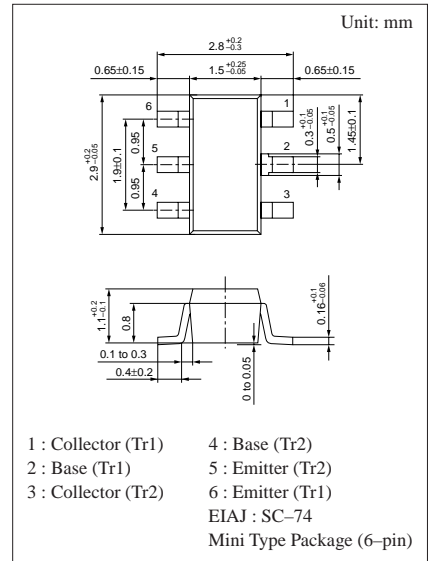
- Two elements incorporated into one package.
- Reduction of the mounting area and assembly cost by one half.

■ Basic Part Number of Element

- 2SC3904 × 2 elements

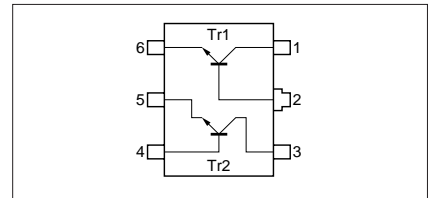
■ Absolute Maximum Ratings (Ta=25°C)

Parameter		Symbol	Ratings	Unit
Rating of element	Collector to base voltage	V_{CBO}	15	V
	Collector to emitter voltage	V_{CEO}	10	V
	Emitter to base voltage	V_{EBO}	2	V
Overall	Collector current	I_C	65	mA
	Total power dissipation	P_T	200	mW
	Junction temperature	T_j	150	°C
	Storage temperature	T_{sig}	-55 to +150	°C



Marking Symbol: 9Y

Internal Connection

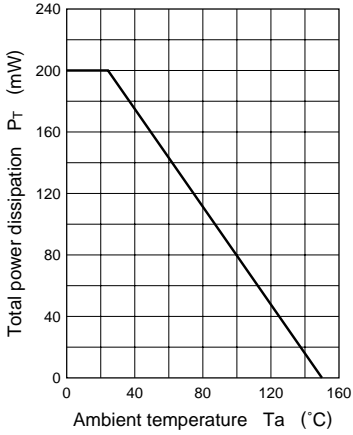


■ Electrical Characteristics (Ta=25°C)

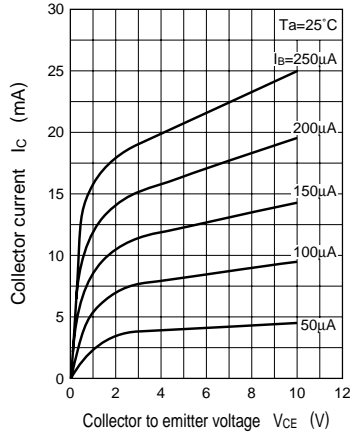
Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	$V_{CB} = 10V, I_E = 0$			1	μA
Emitter cutoff current	I_{EBO}	$V_{EB} = 1V, I_C = 0$			1	μA
Forward current transfer ratio	h_{FE}	$V_{CE} = 8V, I_C = 20mA$	50	120	300	
Forward current transfer h_{FE} ratio	$h_{FE}(\text{small/large})^{*1}$	$V_{CE} = 8V, I_C = 20mA$	0.5	0.99		
Transition frequency	f_T	$V_{CE} = 8V, I_C = 20mA$	7.0	8.5		GHz
Collector output capacitance	C_{ob}	$V_{CB} = 10V, I_E = 0, f = 1MHz$		0.6	1.0	pF
Forward transfer gain	$ S_{21e} ^2$	$V_{CE} = 8V, I_C = 20mA, f = 1.5GHz$	7	9		dB
Power gain	GUM	$V_{CE} = 8V, I_C = 20mA, f = 1.5GHz$		10		dB
Noise figure	NF	$V_{CE} = 8V, I_C = 7mA, f = 1.5GHz$		2.2	3.0	dB

*1 Ratio between 2 elements

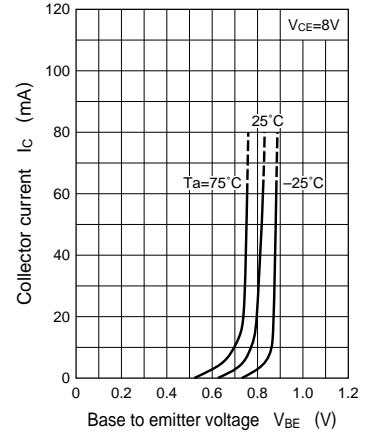
$P_T - T_a$



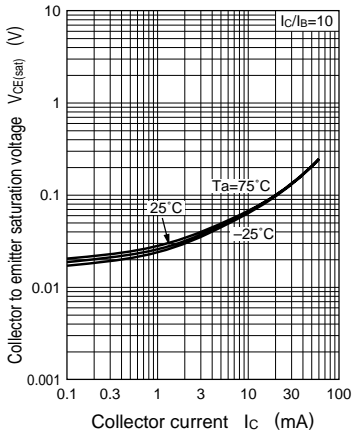
$I_C - V_{CE}$



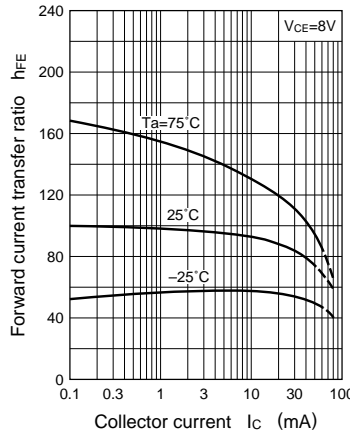
$I_C - V_{BE}$



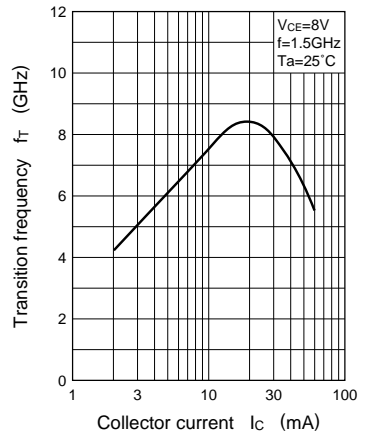
$V_{CE(sat)} - I_C$



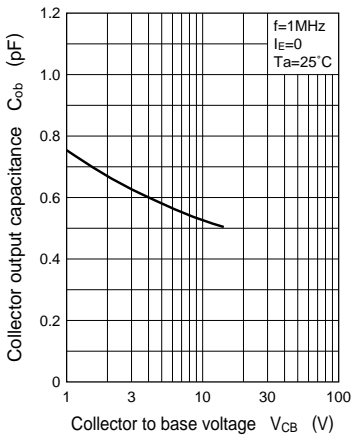
$h_{FE} - I_C$



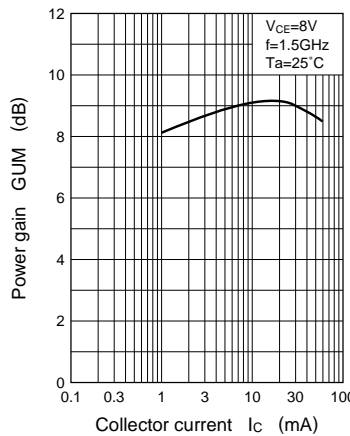
$f_T - I_C$



$C_{ob} - V_{CB}$



GUM - I_C



NF - I_C

