

XN2531

Silicon NPN epitaxial planer transistor

For high frequency, oscillation and mixing

Features

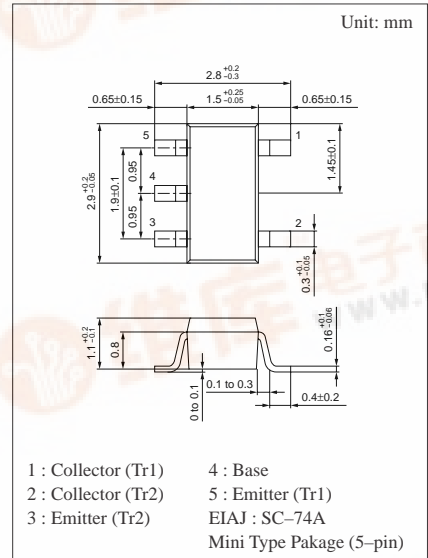
- Two elements incorporated into one package.
(Base-coupled transistors)
- Reduction of the mounting area and assembly cost by one half.

Basic Part Number of Element

- 2SC3130 × 2 elements

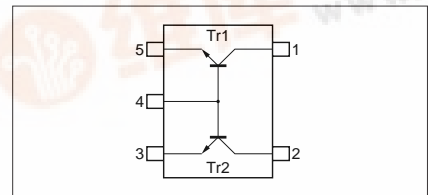
Absolute Maximum Ratings (Ta=25°C)

	Parameter	Symbol	Rated	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}	3	V
	Collector current	I_C	50	mA
Overall	Total power dissipation	P_T	200	mW
	Junction temperature	T_j	150	°C
	Storage temperature	T_{sig}	-55 to +150	°C



Marking Symbol: 9I

Internal Connection



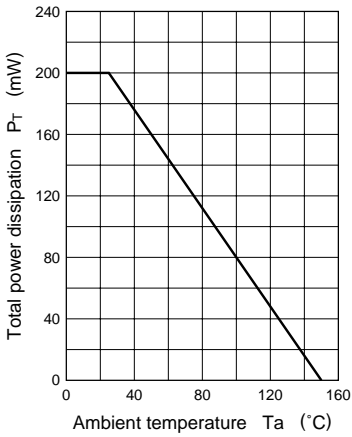
Electrical Characteristics (Ta=25°C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to emitter voltage	V_{CEO}	$I_C = 2mA, I_B = 0$	10			V
Emitter to base voltage	V_{EBO}	$I_E = 10\mu A, I_C = 0$	3			V
Collector cutoff current	I_{CBO}	$V_{CB} = 10V, I_E = 0$			1	μA
	I_{CEO}	$V_{CE} = 10V, I_B = 0$			10	μA
Forward current transfer ratio	h_{FE1}	$V_{CE} = 4V, I_C = 5mA$	75	200	400	
Forward current transfer h_{FE} ratio	$h_{FE} (small/large)^{1)}$	$V_{CE} = 4V, I_C = 5mA$	0.5	0.99		
h_{FE2}/h_{FE1} ratio	h_{FE2}/h_{FE1}	$V_{CE} = 4V, I_C = 100\mu A$ $V_{CE} = 4V, I_C = 5mA$	0.75		1.6	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20mA, I_B = 4mA$			0.5	V
Collector output capacitance	C_{ob}	$V_{CB} = 4V, I_E = 0, f = 1MHz$		0.9	1.1	pF
Transition frequency	f_T	$V_{CB} = 4V, I_E = -5mA, f = 200MHz$	1.4	1.9	2.5	GHz
Collector to base parameter	$r_{bb} \cdot C_C$	$V_{CB} = 4V, I_E = -5mA, f = 30MHz$		11.8	13.5	ps
Common base reverse transfer capacitance	C_{rb}	$V_{CB} = 4V, I_E = 0, f = 1MHz$		0.25	0.35	pF

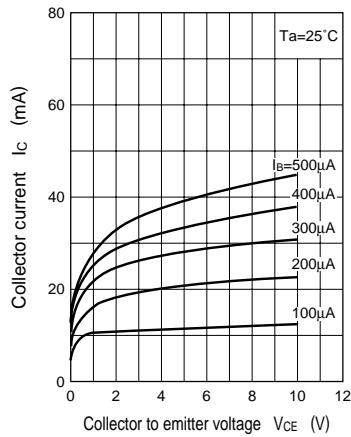
Ratio between 2 elements



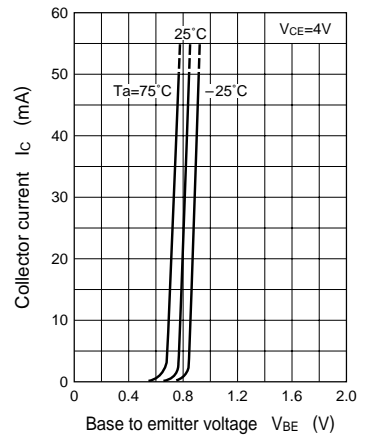
$P_T - T_a$



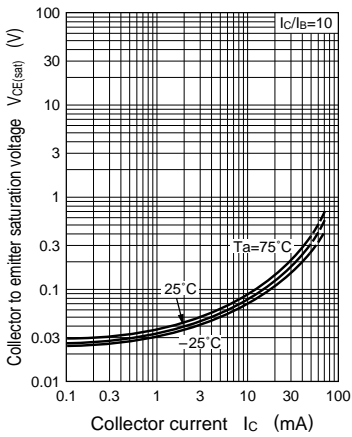
$I_C - V_{CE}$



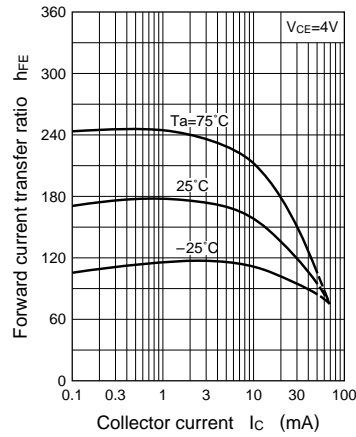
$I_C - V_{BE}$



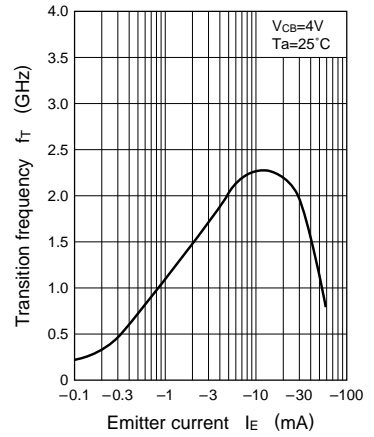
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

