XP05531

Silicon NPN epitaxial planer transistor

For high frequency, oscillation and mixing

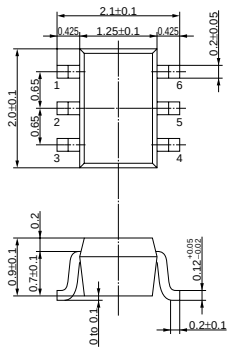
Features

- High transition frequency f_T.
- Small collector output capacitance C_{ob} and reverse transfer capacitance C_{rb}.
- Two elements incorporated into one package.

Basic Part Number of Element

- 2SC3130 × 2 elements

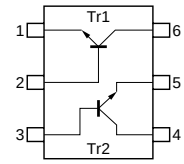
Unit: mm



1 : Emitter (Tr1)
2 : Base (Tr1)
3 : Base (Tr2)
4 : Collector (Tr2)
5 : Emitter (Tr2)
6 : Collector (Tr1)
EIAJ : SC–88
S–Mini Type Package (6–pin)

Marking Symbol: 5M

Internal Connection



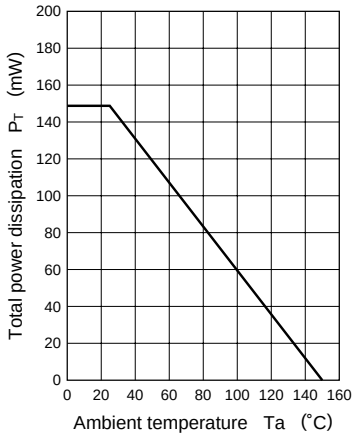
Absolute Maximum Ratings (Ta=25˚C)

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}	3	V
	Collector current	I_C	50	mA
Overall	Total power dissipation	P_T	150	mW
	Junction temperature	T_j	150	˚C
	Storage temperature	T_{stg}	–55 to +150	˚C

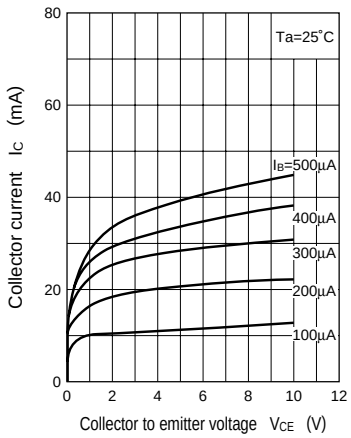
Electrical Characteristics (Ta=25˚C)

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 = 10μA, 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		400	
h_{FE2}/h_{FE1} ratio	h_{FE2}/h_{FE1}	$\frac{V_{CE} = 4V, I_C = 100\mu A}{V_{CE} = 4V, I_C = 5mA}$		0.75	1.6	
Collector to emitter saturation voltage	$V_{CE(sat)}$	I_C = 20mA, I_B = 4mA			0.5	V
Transition frequency	f_T	V_{CB} = 4V, I_E = –5mA, f = 200MHz	1.4	1.9	2.5	GHz
Collector output capacitance	C_{ob}	V_{CB} = 4V, I_E = 0, f = 1MHz		0.9	1.1	pF
Common base reverse transfer capacitance	C_{rb}	V_{CB} = 4V, I_E = 0, f = 1MHz		0.25	0.35	pF
Collector to base parameter	$r_{bb}.C_C$	V_{CB} = 4V, I_E = –5mA, f = 31.9MHz		11.8	13.5	ps

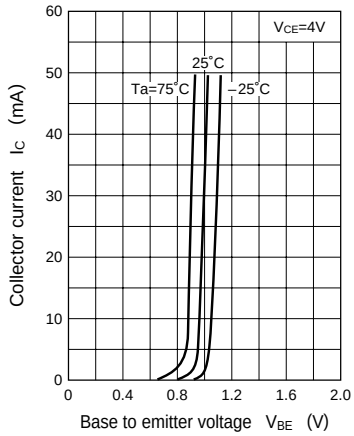
P_T — Ta



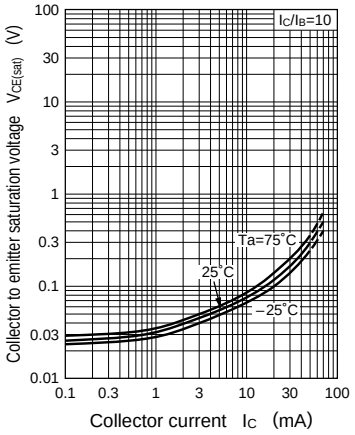
I_C — V_{CE}



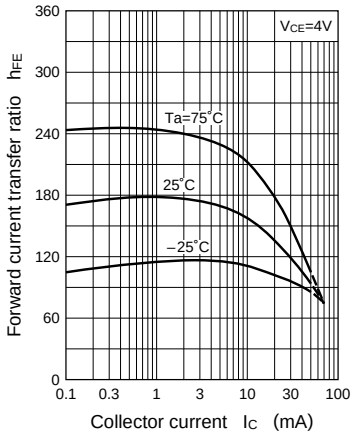
I_C — V_{BE}



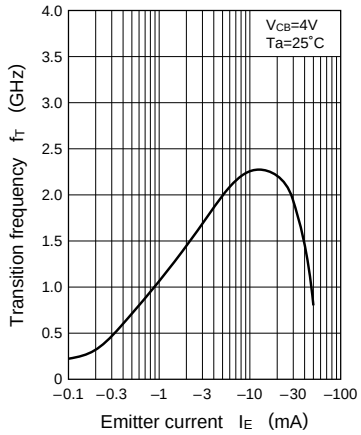
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



f_T — I_E



C_{ob} — V_{CB}