

XP05531

Silicon NPN epitaxial planer transistor

For high frequency, oscillation and mixing

Features

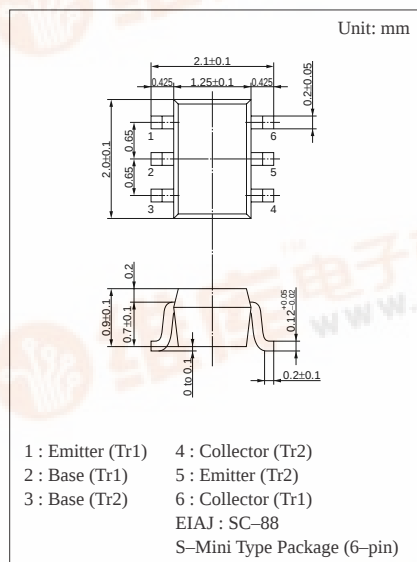
- High transition frequency f_T .
- Small collector output capacitance C_{ob} and reverse transfer capacitance C_{rb} .
- Two elements incorporated into one package.

Basic Part Number of Element

- 2SC3130 $\times$ 2 elements

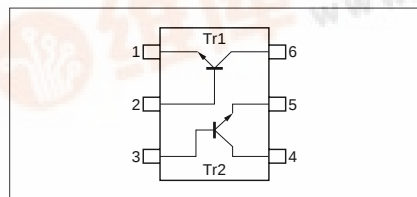
Absolute Maximum Ratings ($T_a=25^\circ\text{C}$)

	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	$^\circ\text{C}$
	Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



Marking Symbol: 5M

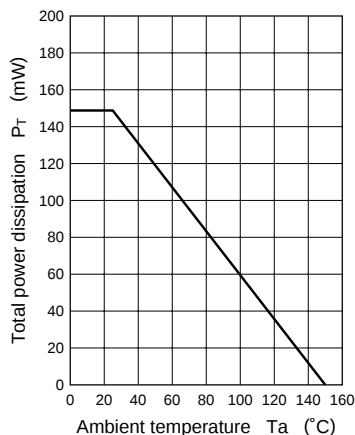
Internal Connection



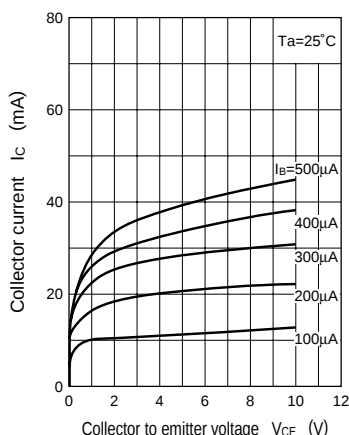
Electrical Characteristics ($T_a=25^\circ\text{C}$)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector to emitter voltage	V_{CEO}	$I_C = 2\text{mA}$, $I_B = 0$	10			V
Emitter to base voltage	V_{EBO}	$I_E = 10\mu\text{A}$, $I_C = 0$	3			V
Collector cutoff current	I_{CBO}	$V_{CB} = 10\text{V}$, $I_E = 0$			1	μA
	I_{CEO}	$V_{CE} = 10\text{V}$, $I_B = 0$			10	μA
Forward current transfer ratio	h_{FE1}	$V_{CE} = 4\text{V}$, $I_C = 5\text{mA}$	75		400	
h_{FE2}/h_{FE1} ratio	h_{FE2}/h_{FE1}	$V_{CE} = 4\text{V}$, $I_C = 100\mu\text{A}$ $V_{CE} = 4\text{V}$, $I_C = 5\text{mA}$		0.75	1.6	
Collector to emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20\text{mA}$, $I_B = 4\text{mA}$			0.5	V
Transition frequency	f_T	$V_{CB} = 4\text{V}$, $I_E = -5\text{mA}$, $f = 200\text{MHz}$	1.4	1.9	2.5	GHz
Collector output capacitance	C_{ob}	$V_{CB} = 4\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		0.9	1.1	pF
Common base reverse transfer capacitance	C_{rb}	$V_{CB} = 4\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		0.25	0.35	pF
Collector to base parameter	$r_{bb} \cdot C_C$	$V_{CB} = 4\text{V}$, $I_E = -5\text{mA}$, $f = 31.9\text{MHz}$		11.8	13.5	ps

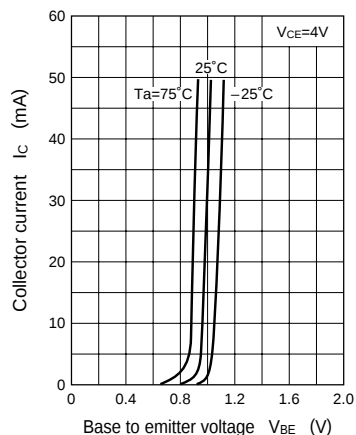
$P_T - T_a$



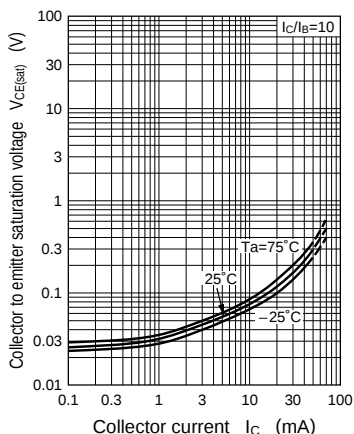
$I_C - V_{CE}$



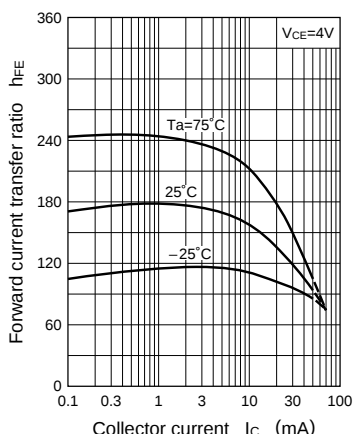
$I_C - V_{BE}$



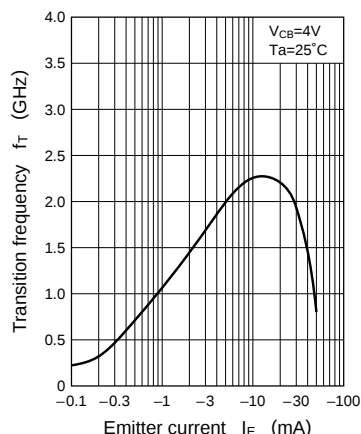
$V_{CE(sat)} - I_C$



$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$

