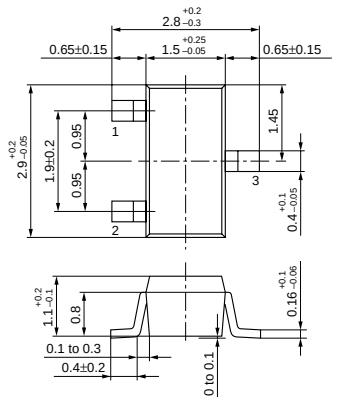
2SC3130

Silicon NPN epitaxial planer type

For high-frequency amplification/oscillation/mixing

Unit: mm



1:Base JEDEC:TO–236
2:Emitter EIAJ:SC–59
3:Collector Mini Type Package

Marking symbol : 1S

Features

- High transition frequency f_T.
- Small collector output capacitance C_{ob} and common base reverse transfer capacitance C_{rb}.
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing.

Absolute Maximum Ratings (Ta=25˚C)

Parameter	Symbol	Ratings	Unit
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
Collector power dissipation	P_C	150	mW
Junction temperature	T_j	150	˚C
Storage temperature	T_{stg}	–55 ~ +150	˚C

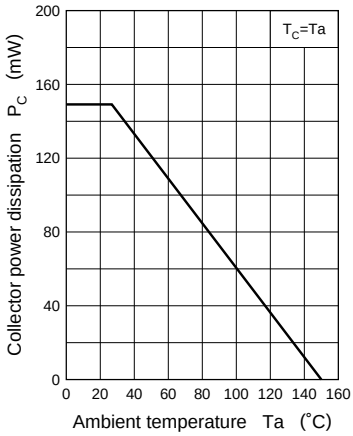
Electrical Characteristics (Ta=25˚C)

Parameter	Symbol	Conditions	min	typ	max	Unit
Collector cutoff current	I_{CBO}	V_{CB} = 10V, I_E = 0			1	μA
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
Forward current transfer ratio	h_{FE}*	V_{CE} = 4V, I_C = 5mA	75	200	400	
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		1.4		pF
Base time constant	$r_{bb}' \cdot C_C$	V_{CB} = 4V, I_E = –5mA, f = 31.9MHz		11		ps
Common emitter reverse transfer capacitance	C_{rb}	V_{CB} = 4V, I_E = 0, f = 1MHz		0.45		pF
h_{FE} ratio	Δh_{FE}	V_{CE} = 4V, I_C = 100μA / V_{CE} = 4V, I_C = 5mA	0.75		1.6	

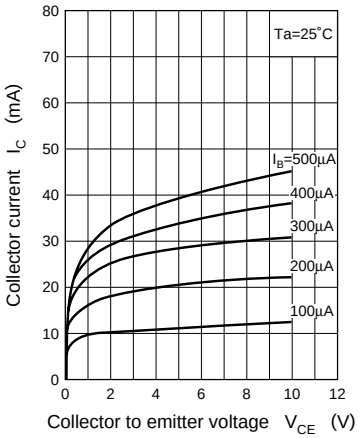
*h_{FE} Rank classification

Rank	P	Q	R
h_{FE}	75 ~ 130	110 ~ 220	200 ~ 400
Marking Symbol	1SP	1SQ	1SR

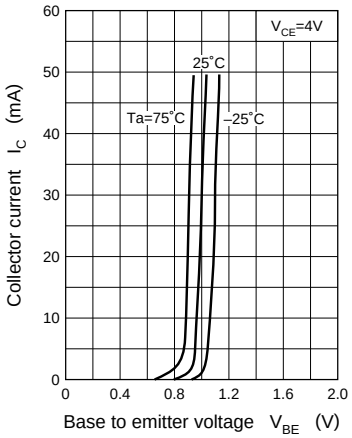
P_C — Ta



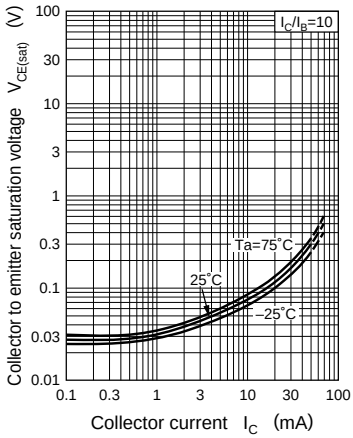
I_C — V_{CE}



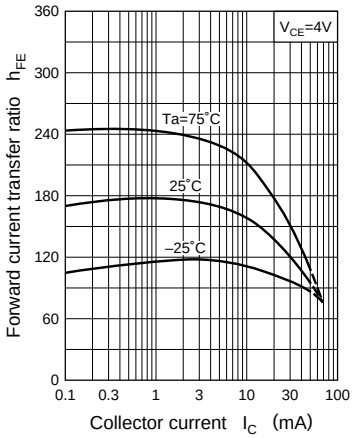
I_C — V_{BE}



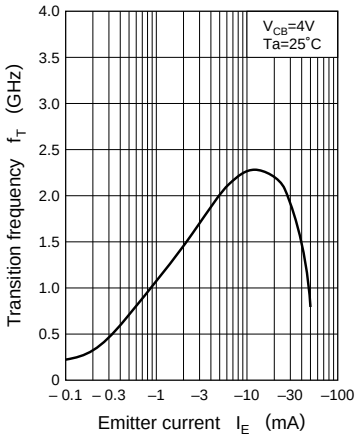
$V_{CE(sat)}$ — I_C



h_{FE} — I_C



f_T — I_E



C_{ob} — V_{CB}