

2SC3130

Silicon NPN epitaxial planer type

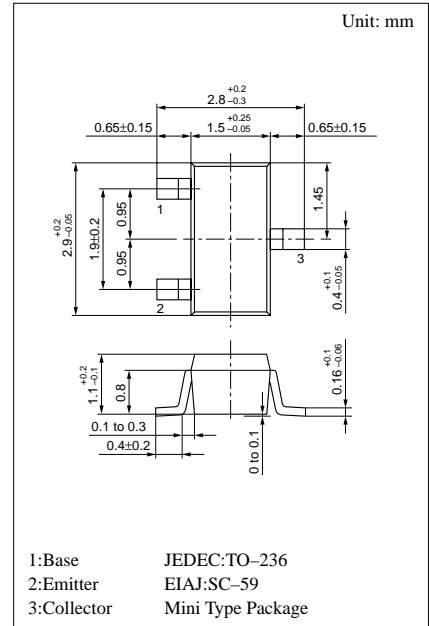
For high-frequency amplification/oscillation/mixing

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



Marking symbol : 1S

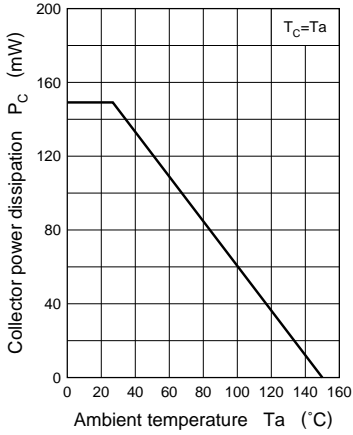
Electrical Characteristics (Ta=25°C)

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}	$I_E = 10\mu A, I_C = 0$	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}	$V_{CE} = 4V, I_C = 100\mu A$	0.75		1.6	
		$V_{CE} = 4V, I_C = 5mA$				

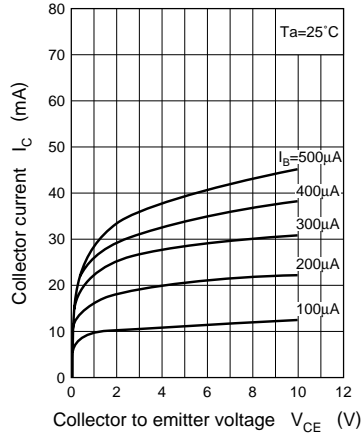
* h_{FE} Rank classification

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

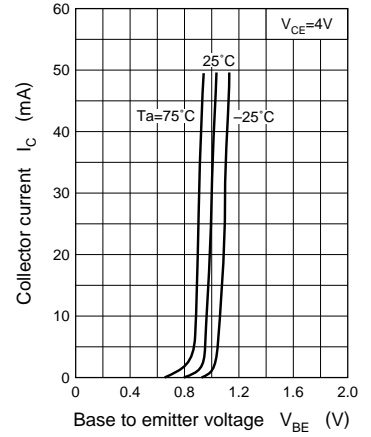
$P_C - T_a$



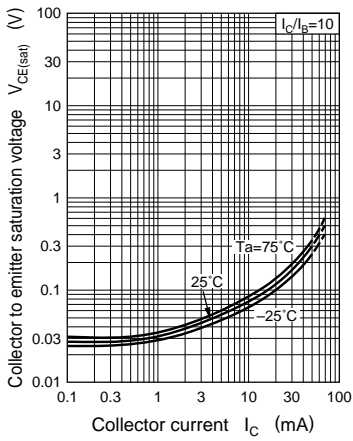
$I_C - V_{CE}$



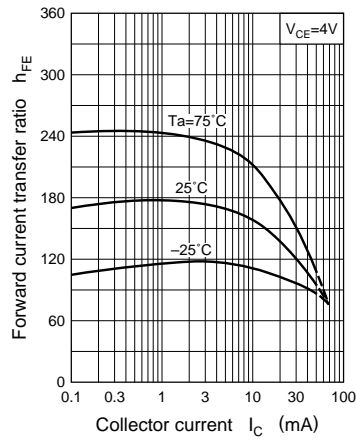
$I_C - V_{BE}$



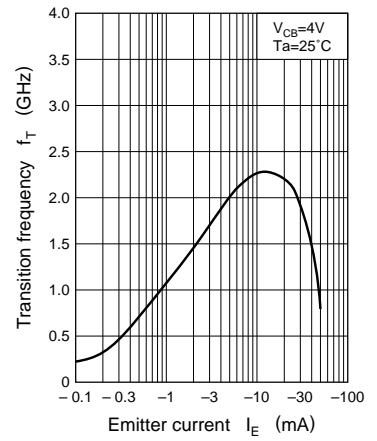
$V_{CE(sat)} - I_C$



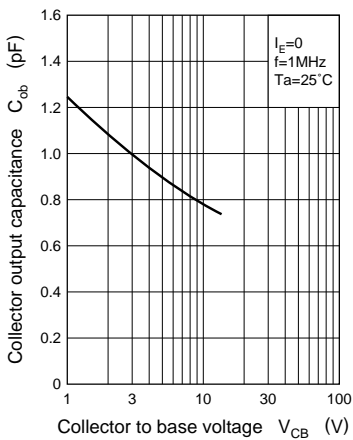
$h_{FE} - I_C$



$f_T - I_E$



$C_{ob} - V_{CB}$



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