

# 2SC3130

## Silicon NPN epitaxial planar type

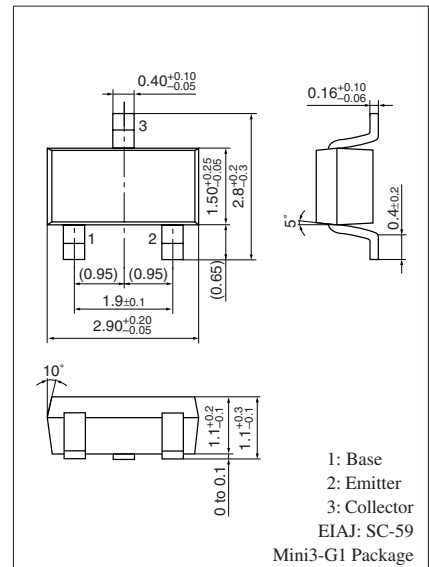
For high-frequency amplification/oscillation/mixing

### ■ Features

- High transition frequency  $f_T$
- Small collector output capacitance (Common base, input open circuited)  $C_{ob}$  and reverse transfer capacitance (Common emitter)  $C_{rb}$
- Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	15	V
Collector-emitter voltage (Base open)	$V_{CEO}$	10	V
Emitter-base voltage (Collector open)	$V_{EBO}$	3	V
Collector current	$I_C$	50	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$



Marking Symbol: 1S

### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

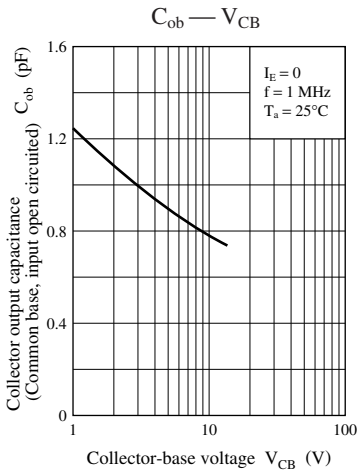
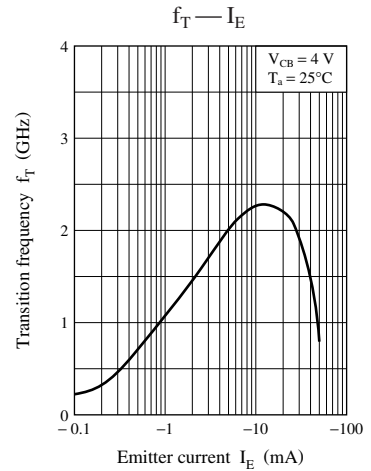
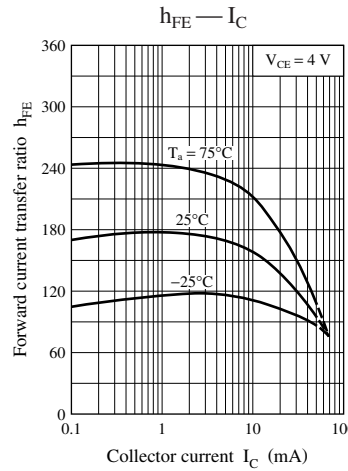
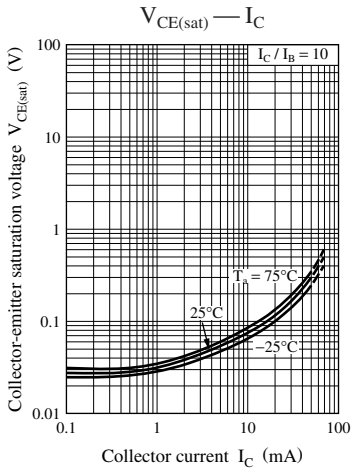
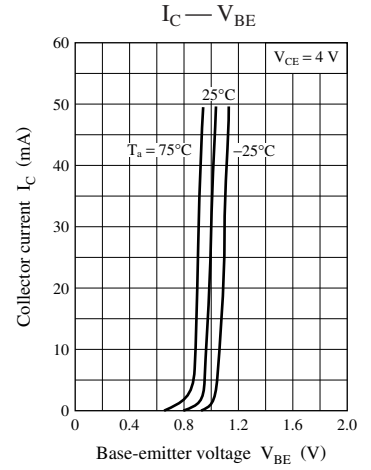
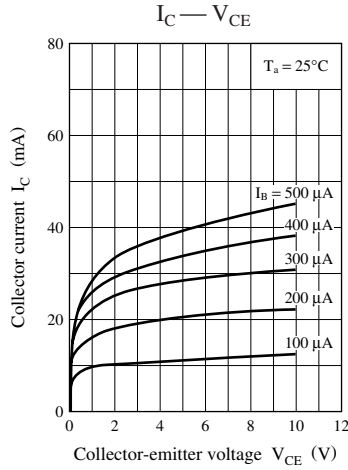
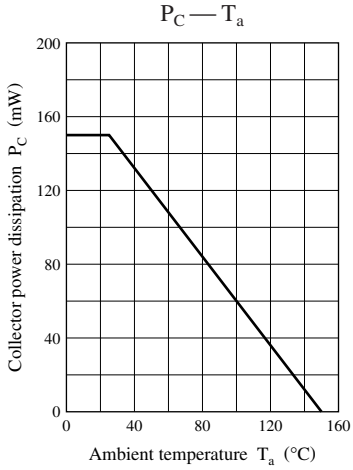
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	$V_{CEO}$	$I_C = 2 \text{ mA}, I_B = 0$	10			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 10 \mu\text{A}, I_C = 0$	3			V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 10 \text{ V}, I_E = 0$			1	$\mu\text{A}$
Forward current transfer ratio *1	$h_{FE}$	$V_{CE} = 4 \text{ V}, I_C = 5 \text{ mA}$	75		220	—
$h_{FE}$ ratio *2	$\Delta h_{FE}$	$h_{FE2}: V_{CE} = 4 \text{ V}, I_C = 100 \mu\text{A}$	0.75		1.60	—
		$h_{FE1}: V_{CE} = 4 \text{ V}, I_C = 5 \text{ mA}$				
Collector-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 (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 4 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		1.4		pF
Reverse transfer capacitance (Common emitter)	$C_{rb}$	$V_{CB} = 4 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		0.45		pF
Collector-base parameter	$f_{bb} \cdot C_C$	$V_{CB} = 4 \text{ V}, I_E = -5 \text{ mA}, f = 31.9 \text{ MHz}$		11		ps

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

2. \*1: Rank classification

Rank	P	Q
$h_{FE}$	75 to 130	110 to 220

\*2:  $\Delta h_{FE} = h_{FE2} / h_{FE1}$



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