

XN05531 (XN5531)

Silicon NPN epitaxial planar type

For high-frequency/oscillation/mixing

■ Features

- Two elements incorporated into one package
- Reduction of the mounting area and assembly cost by one half

■ Basic Part Number

- 2SC3130 × 2

■ 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
Total power dissipation	P_{T}	200	mW
Junction temperature	T_{j}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$

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

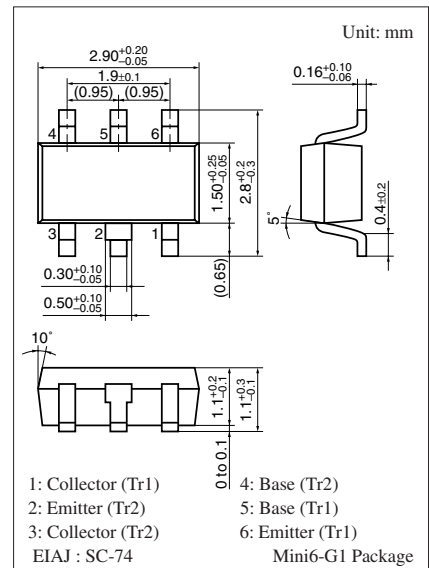
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_{\text{C}} = 2 \text{ mA}, I_{\text{B}} = 0$	10			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_{\text{E}} = 10 \mu\text{A}, I_{\text{C}} = 0$	3			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{\text{CB}} = 10 \text{ V}, I_{\text{E}} = 0$			1	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{\text{CE}} = 10 \text{ V}, I_{\text{B}} = 0$			10	μA
Forward current transfer ratio	h_{FE}	$V_{\text{CE}} = 4 \text{ V}, I_{\text{C}} = 5 \text{ mA}$	75	200	400	—
h_{FE} ratio	$h_{\text{FE}}(\text{Small}/\text{Large})^{*1}$	$V_{\text{CE}} = 4 \text{ V}, I_{\text{C}} = 5 \text{ mA}$	0.50	0.99		—
		$h_{\text{FE2}}: V_{\text{CE}} = 4 \text{ V}, I_{\text{C}} = 100 \mu\text{A}$ $h_{\text{FE1}}: V_{\text{CE}} = 4 \text{ V}, I_{\text{C}} = 5 \text{ mA}$	0.75		1.60	
Collector-emitter saturation voltage	$V_{\text{CE(sat)}}$	$I_{\text{C}} = 20 \text{ mA}, I_{\text{B}} = 4 \text{ mA}$			0.5	V
Transition frequency	f_{T}	$V_{\text{CB}} = 4 \text{ V}, I_{\text{E}} = -5 \text{ mA}, f = 200 \text{ MHz}$	1.4	1.9	2.5	GHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{\text{CB}} = 4 \text{ V}, I_{\text{E}} = 0, f = 1 \text{ MHz}$		0.9	1.1	pF
Reverse transfer capacitance (Common base)	C_{rb}	$V_{\text{CB}} = 4 \text{ V}, I_{\text{E}} = 0, f = 1 \text{ MHz}$		0.25	0.35	pF
Collector-base parameter	$f_{\text{bb}}' \cdot C_{\text{C}}$	$V_{\text{CB}} = 4 \text{ V}, I_{\text{E}} = -5 \text{ mA}, f = 30 \text{ MHz}$		11.8	13.5	ps

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

2. *1: Ratio between 2 elements

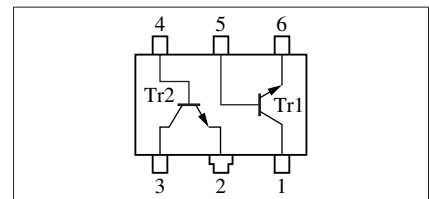
*2: $\Delta h_{\text{FE}} = h_{\text{FE2}}/h_{\text{FE1}}$

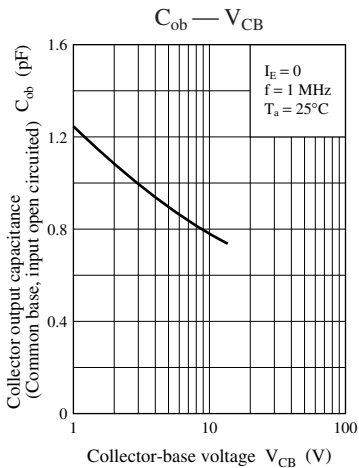
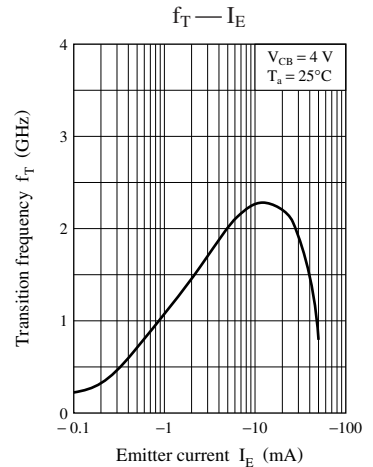
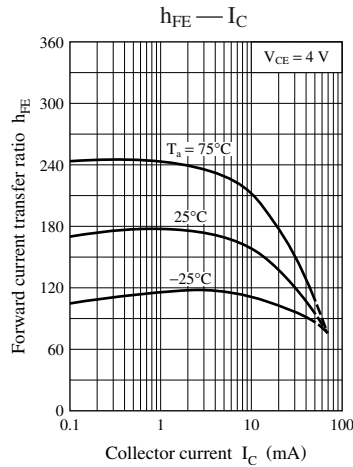
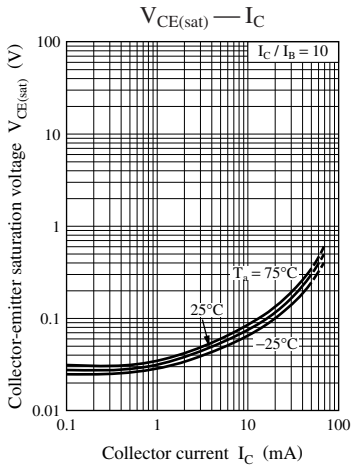
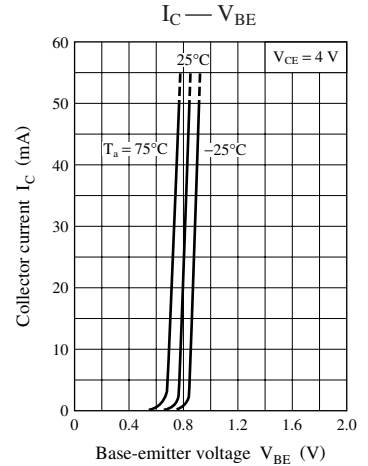
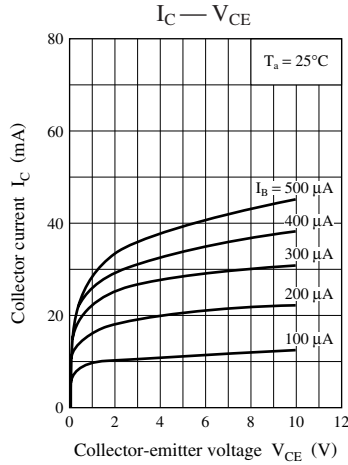
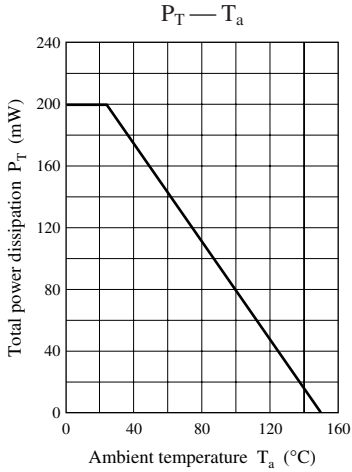
Note) The part number in the parenthesis shows conventional part number.



Marking Symbol: 5M

Internal Connection





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