

2SC3935

Silicon NPN epitaxial planar type

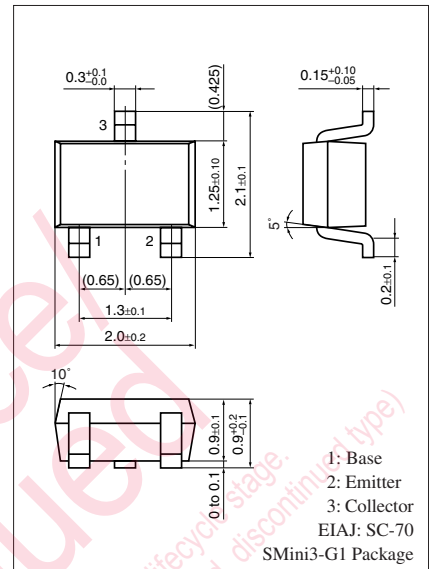
For high-frequency amplification/oscillation/mixing

■ Features

- High transition frequency f_T
- Small collector output capacitance (Common base, input open circuited) C_{ob} and reverse transfer capacitance (Common base) C_{rb}
- S-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape 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 $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

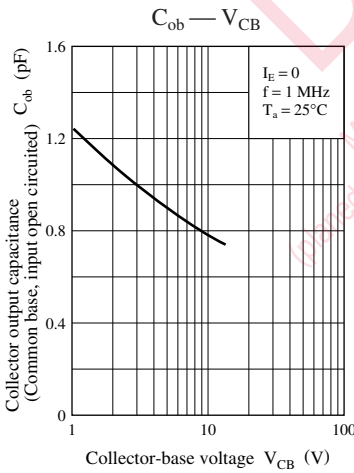
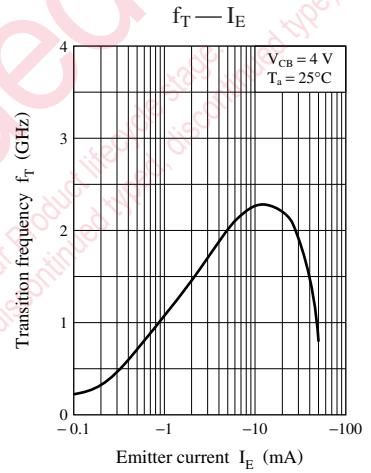
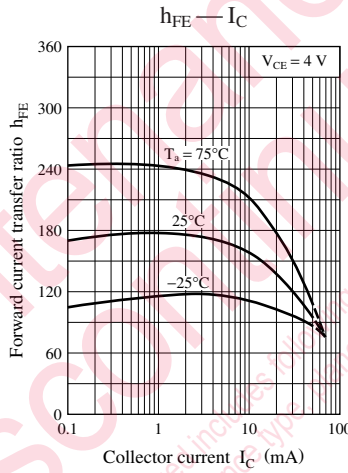
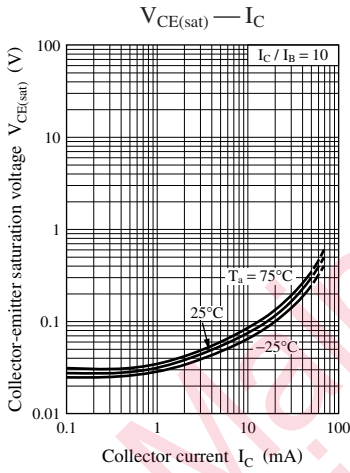
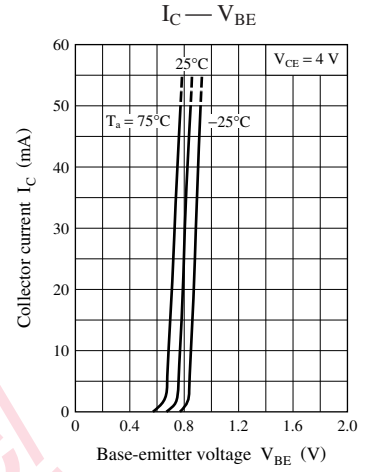
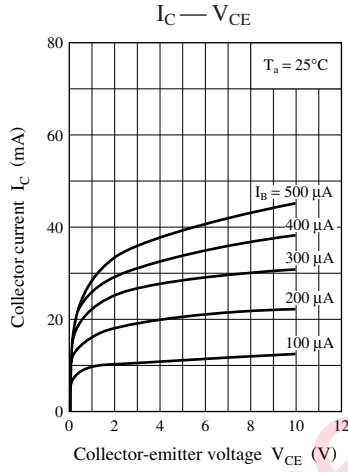
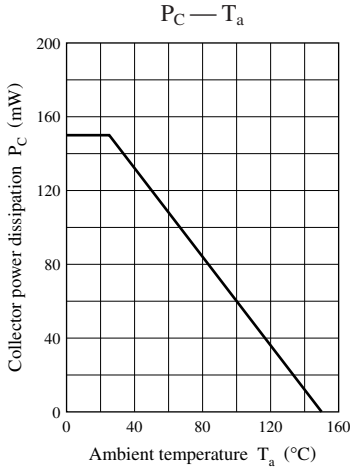
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-emitter voltage (Base open)	V_{CEO}	$I_C = 2 \text{ mA}, I_B = 0$	10			V
Emitter-base voltage (Collector open)	V_{EBO}	$I_E = 10 \mu\text{A}, I_C = 0$	3			V
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 10 \text{ V}, I_E = 0$			1	μA
Collector-emitter cutoff current (Base open)	I_{CEO}	$V_{CE} = 10 \text{ V}, I_B = 0$			10	μA
Forward current transfer ratio	h_{FE1}^{*1}	$V_{CE} = 2.4 \text{ V}, I_C = 7.2 \text{ mA}$	75		220	—
	h_{FE2}	$V_{CE} = 2.4 \text{ V}, I_C = 100 \mu\text{A}$	75			
h_{FE} ratio	Δh_{FE}^{*2}	$h_{FE2}: V_{CE} = 2.4 \text{ V}, I_C = 100 \mu\text{A}$ $h_{FE1}: V_{CE} = 2.4 \text{ V}, I_C = 7.2 \text{ mA}$	0.75		1.60	—
Collector-emitter saturation voltage	$V_{CE(sat)}$	$I_C = 20 \text{ mA}, I_B = 4 \text{ mA}$			0.5	V
Transition frequency	f_T	$V_{CB} = 4 \text{ V}, I_E = -7.2 \text{ mA}, f = 200 \text{ MHz}$	1.4	1.9	2.5	GHz
Collector output capacitance (Common base, input open circuited)	C_{ob}	$V_{CB} = 4 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		0.9	1.1	pF
Reverse transfer capacitance (Common base)	C_{rb}	$V_{CB} = 4 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		0.25	0.35	pF
Collector-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

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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