# 2SC3935

### Silicon NPN epitaxial planar type

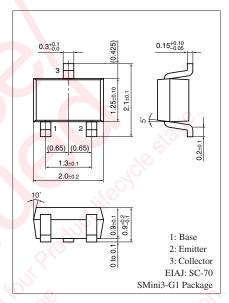
For high-frequency amplification/oscillation/mixing

#### ■ Features

- High transition frequency f<sub>T</sub>
- Small collector output capacitance (Common base, input open circuited) C<sub>ob</sub> and reverse transfer capacitance (Common base) C<sub>rb</sub>
- S-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing

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

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	15	V	
Collector-emitter voltage (Base open)	$V_{CEO}$	10	V	
Emitter-base voltage (Collector open)	V <sub>EBO</sub>	3	V	
Collector current	$I_{C}$	50	mA	
Collector power dissipation	$P_{C}$	150	mW	
Junction temperature	T <sub>j</sub>	150	°C	
Storage temperature	T <sub>stg</sub>	-55 to +150	°C	



Marking Symbol: 1S

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

Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	$I_C = 2 \text{ mA}, I_B = 0$	10			V
Emitter-base voltage (Collector open)	V <sub>EBO</sub>	$I_E = 10 \mu\text{A},  I_C = 0$	3	cO),		V
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 10 \text{ V}, I_{E} = 0$	9.	9-	1	μΑ
Collector-emitter cutoff current (Base open)	$I_{CEO}$	$V_{CE} = 10 \text{ V}, I_{B} = 0$	00,		10	μΑ
Forward current transfer ratio	h <sub>FE1</sub> *1	$V_{CE} = 2.4 \text{ V}, I_{C} = 7.2 \text{ mA}$	75		220	_
	h <sub>FE2</sub>	$V_{CE} = 2.4 \text{ V}, I_{C} = 100 \mu\text{A}$	75			
h <sub>FE</sub> ratio	$\Delta h_{FE}^{*2}$	$h_{FE2}$ : $V_{CE} = 2.4 \text{ V}$ , $I_{C} = 100 \mu A$	0.75		1.60	_
		$h_{FE1}$ : $V_{CE} = 2.4 \text{ V}$ , $I_{C} = 7.2 \text{ mA}$				
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	$I_C = 20 \text{ mA}, I_B = 4 \text{ mA}$			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 <sub>ob</sub>	$V_{CB} = 4 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		0.9	1.1	pF
	C	V - 4 V I - 0 f - 1 MHz		0.25	0.35	ωE
Reverse transfer capacitance (Common base)	C <sub>rb</sub>	$V_{CB} = 4 \text{ V}, I_{E} = 0, f = 1 \text{ MHz}$		0.23	0.33	pF
Collector-base parameter	r <sub>bb</sub> ' • C <sub>C</sub>	$V_{CB} = 4 \text{ V}, I_E = -5 \text{ mA}, f = 31.9 \text{ MHz}$		11.8	13.5	ps

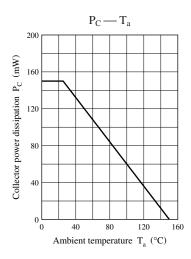
Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

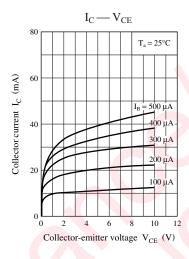
#### 2. \*1: Rank classification

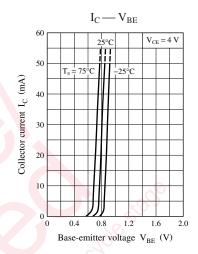
Rank	Р	Q
h <sub>FE</sub>	75 to 130	110 to 220

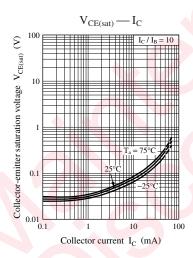
<sup>\*2:</sup>  $\Delta h_{FE} = h_{FE2} / h_{FE1}$ 

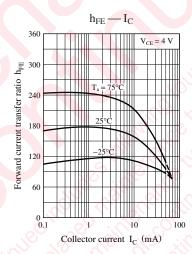
## **Panasonic**

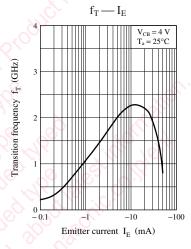


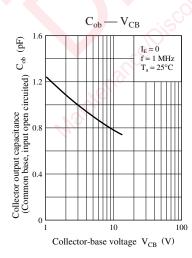












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