# 2SC3937

### Silicon NPN epitaxial planar type

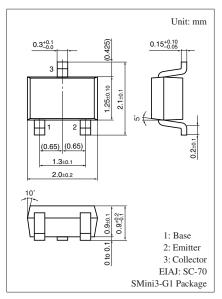
#### For UHF band low-noise amplification

#### ■ Features

- Low noise figure NF
- High forward transfer gain  $|S_{21e}|^2$
- ullet High transition frequency  $f_T$
- S-Mini type package, allowing downsizing of the equipment and automatic insertion through the tape packing and the magazine packing

#### ■ Absolute Maximum Ratings $T_a = 25$ °C

Parameter	Symbol	Rating	Unit	
Collector-base voltage (Emitter open)	V <sub>CBO</sub>	15	V	
Collector-emitter voltage (Base open)	V <sub>CEO</sub>	10	V	
Emitter-base voltage (Collector open)	$V_{EBO}$	2	V	
Collector current	$I_C$	80	mA	
Collector power dissipation	P <sub>C</sub>	150	mW	
Junction temperature	$T_{j}$	150	°C	
Storage temperature	$T_{stg}$	-55 to +150	°C	

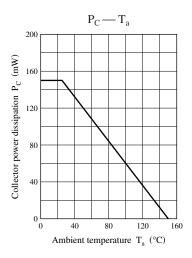


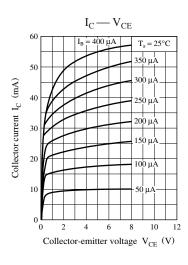
Marking Symbol: 2W

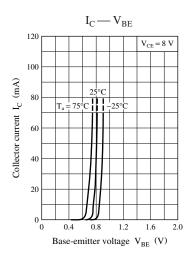
### ■ Electrical Characteristics $T_a = 25$ °C $\pm 3$ °C

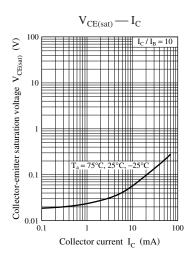
Parameter	Symbol	Conditions	Min	Тур	Max	Unit
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 15 \text{ V}, I_{E} = 0$			1	μΑ
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 1 \text{ V}, I_C = 0$			1	μΑ
Forward current transfer ratio	h <sub>FE1</sub>	$V_{CE} = 8 \text{ V}, I_{C} = 20 \text{ mA}$	50		300	_
	h <sub>FE2</sub>	$V_{CE} = 1 \text{ V}, I_C = 3 \text{ mA}$	80		280	
Transition frequency	$f_T$	$V_{CE} = 8 \text{ V}, I_{C} = 20 \text{ mA}, f = 0.8 \text{ GHz}$		6		GHz
Collector output capacitance	C <sub>ob</sub>	$V_{CB} = 10 \text{ V}, I_{E} = 0, f = 1 \text{ MHz}$		0.7	1.2	pF
(Common base, input open circuited)						
Forward transfer gain	S <sub>21e</sub>   2	$V_{CE} = 8 \text{ V}, I_{C} = 20 \text{ mA}, f = 0.8 \text{ GHz}$		13		dB
Maximum unilateral power gain	$G_{UM}$	$V_{CE} = 8 \text{ V}, I_{C} = 20 \text{ mA}, f = 0.8 \text{ GHz}$		14		dB
Noise figure	NF	$V_{CE} = 8 \text{ V}, I_{C} = 7 \text{ mA}, f = 0.8 \text{ GHz}$		1.0	1.7	dB

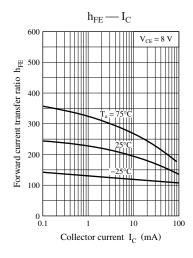
Note) Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.

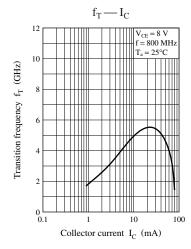


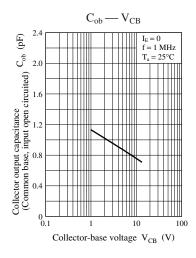


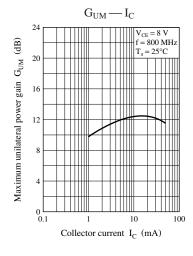


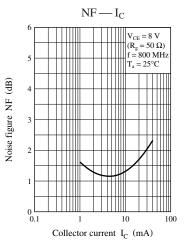












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