

# 2SC3937

## Silicon NPN epitaxial planar type

For UHF band low-noise amplification

### ■ Features

- Low noise figure NF
- High forward transfer gain  $|S_{21e}|^2$
- 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

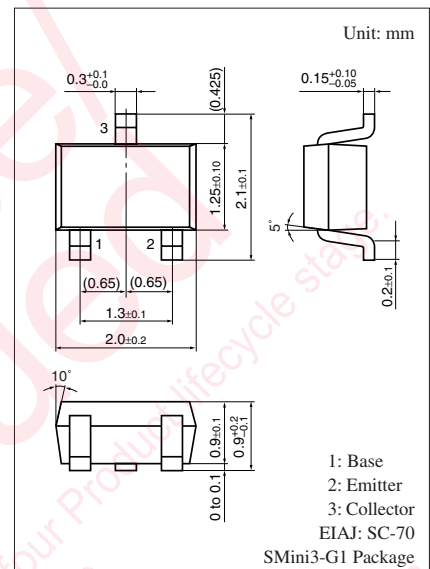
### ■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CB0}$	15	V
Collector-emitter voltage (Base open)	$V_{CEO}$	10	V
Emitter-base voltage (Collector open)	$V_{EBO}$	2	V
Collector current	$I_C$	80	mA
Collector power dissipation	$P_C$	150	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

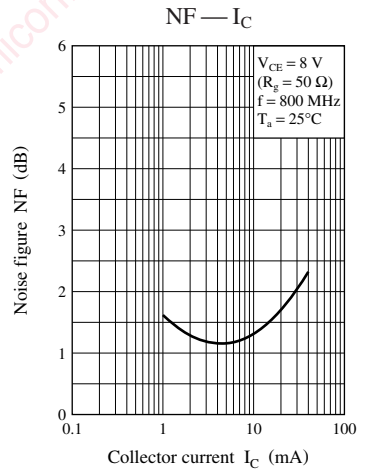
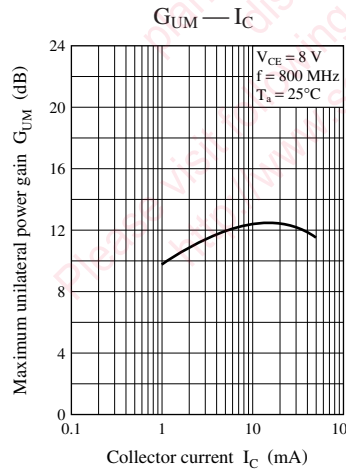
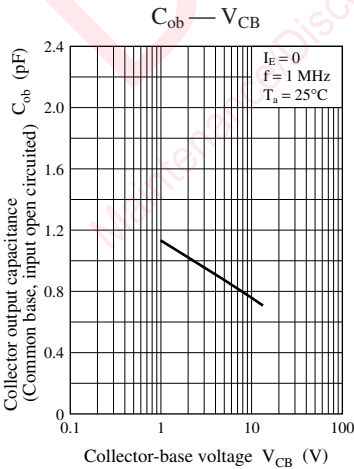
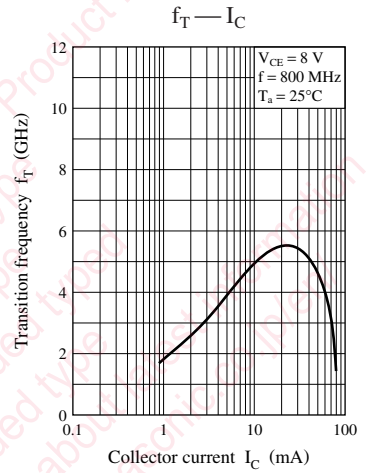
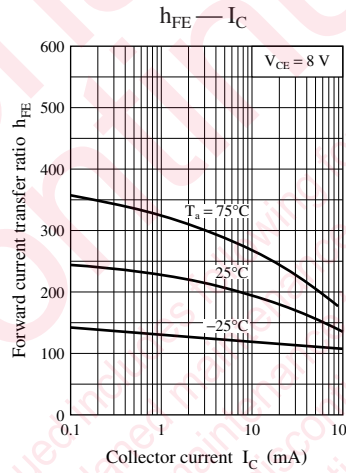
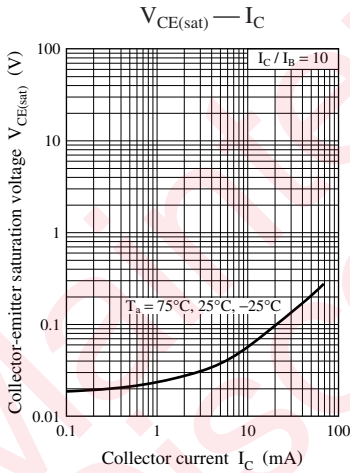
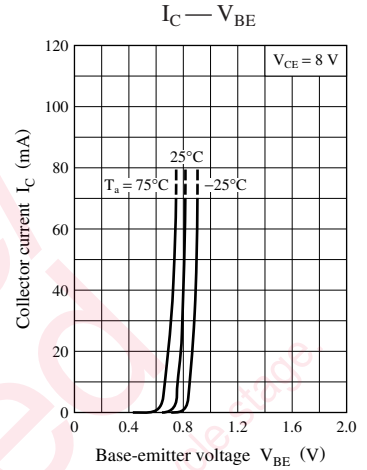
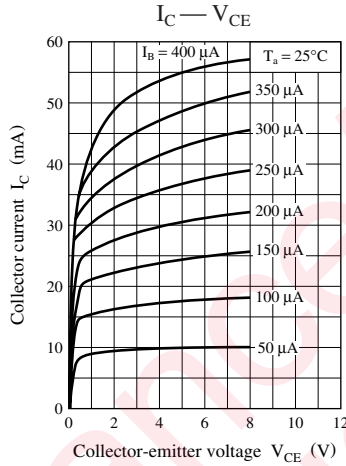
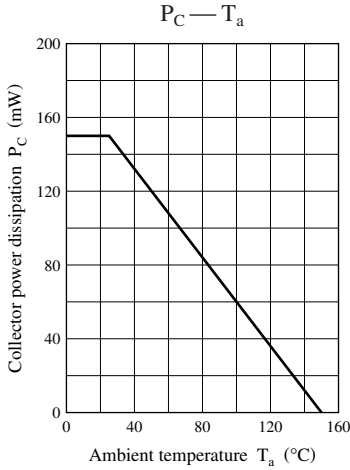
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	$I_{CB0}$	$V_{CB} = 15\text{ V}, I_E = 0$			1	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 1\text{ V}, I_C = 0$			1	$\mu\text{A}$
Forward current transfer ratio	$h_{FE1}$	$V_{CE} = 8\text{ V}, I_C = 20\text{ mA}$	50		300	—
	$h_{FE2}$	$V_{CE} = 1\text{ V}, I_C = 3\text{ mA}$	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 (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		0.7	1.2	pF
Forward transfer gain	$ S_{21e} ^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.



Marking Symbol: 2W



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