

# 2SC3931

## Silicon NPN epitaxial planar type

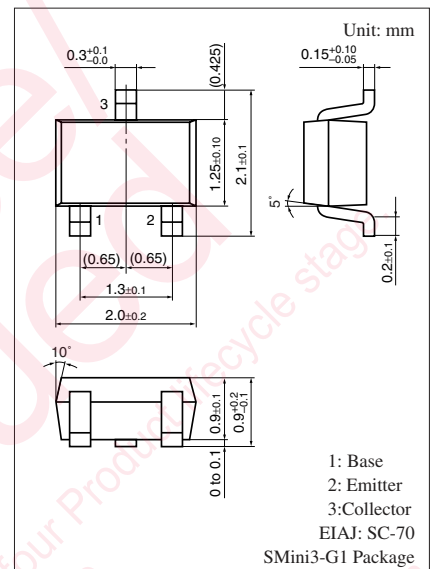
For high-frequency amplification

### ■ Features

- Optimum for RF amplification of FM/AM radios
- High transition frequency  $f_T$
- 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)	$V_{CBO}$	30	V
Collector-emitter voltage (Base open)	$V_{CEO}$	20	V
Emitter-base voltage (Collector open)	$V_{EBO}$	3	V
Collector current	$I_C$	15	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: U

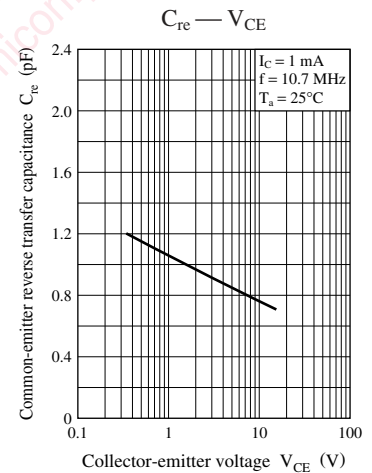
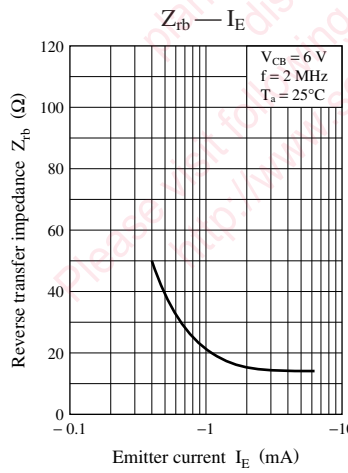
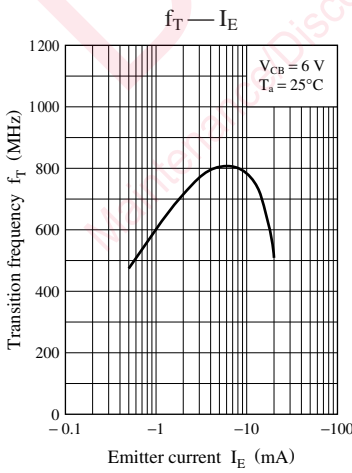
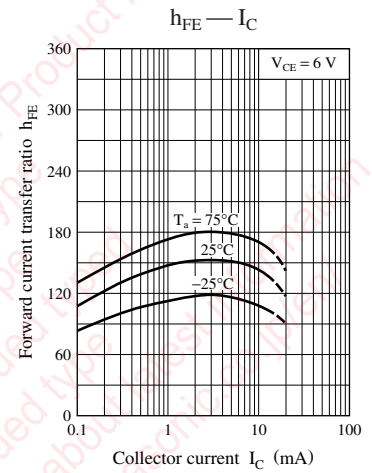
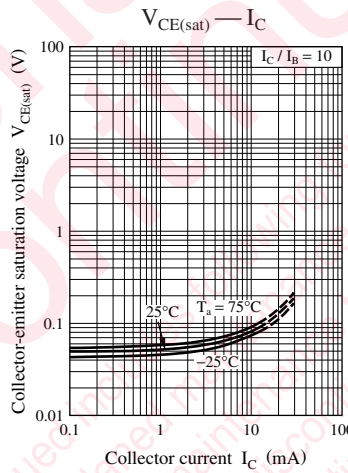
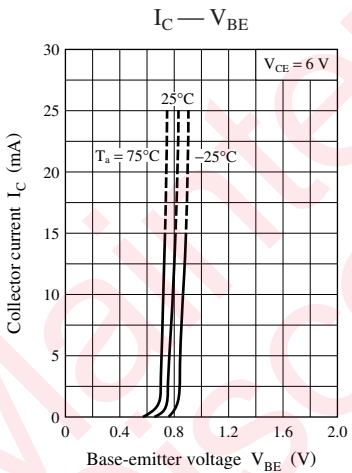
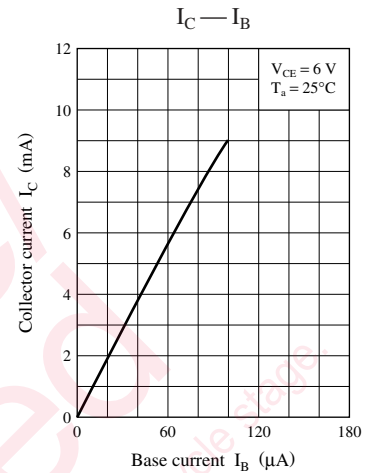
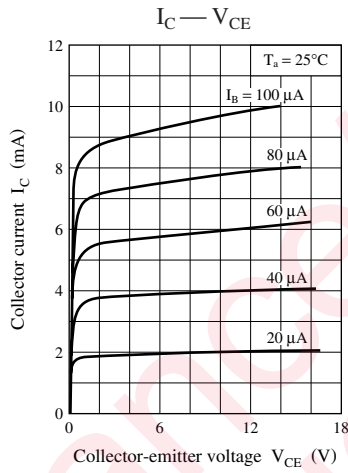
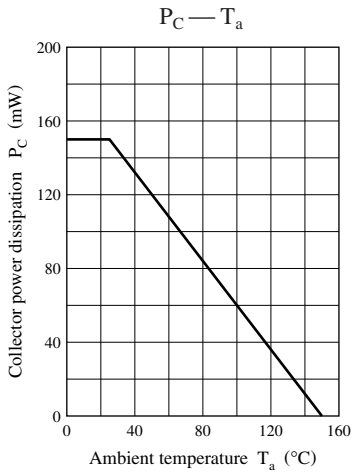
### ■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

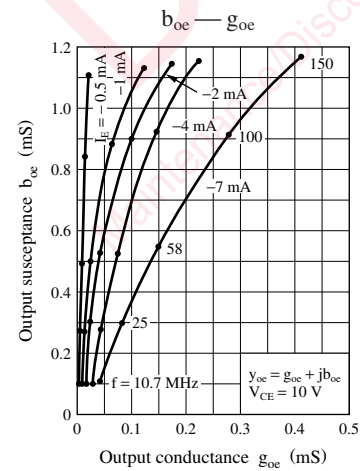
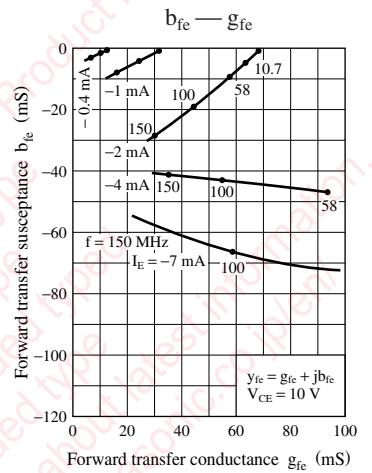
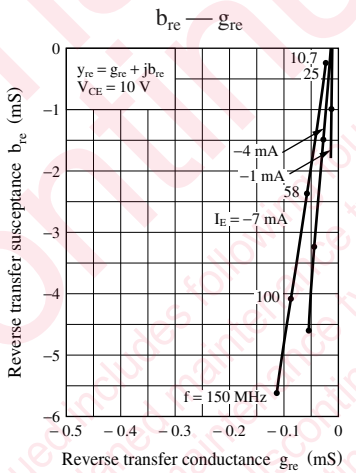
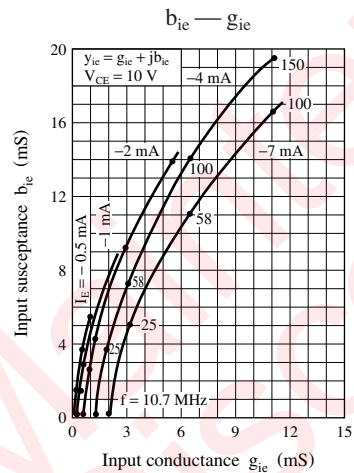
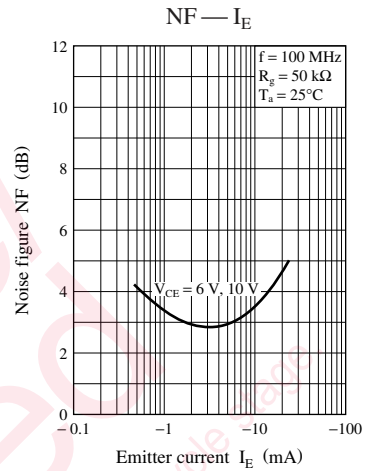
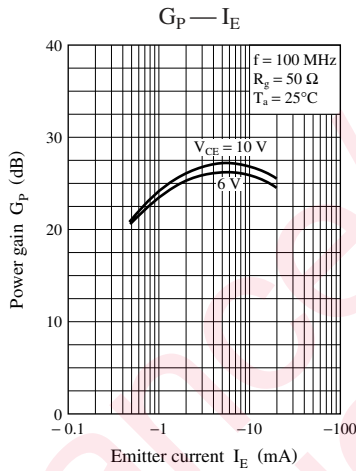
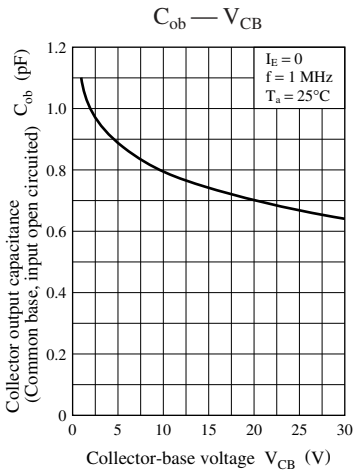
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	$I_C = 10 \mu\text{A}$ , $I_E = 0$	30			V
Emitter-base voltage (Collector open)	$V_{EBO}$	$I_E = 10 \mu\text{A}$ , $I_C = 0$	3			V
Base-emitter voltage	$V_{BE}$	$V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$		720		mV
Forward current transfer ratio *	$h_{FE}$	$V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$	65		260	—
Transition frequency	$f_T$	$V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$ , $f = 200 \text{ MHz}$	450	650		MHz
Common-emitter reverse transfer capacitance	$C_{re}$	$V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$ , $f = 10.7 \text{ MHz}$		0.8	1.0	pF
Power gain	$G_P$	$V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$ , $f = 100 \text{ MHz}$		24		dB
Noise figure	NF	$V_{CB} = 6 \text{ V}$ , $I_E = -1 \text{ mA}$ , $f = 100 \text{ MHz}$		3.3		dB

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

2. \*: Rank classification

Rank	C	D
$h_{FE}$	65 to 160	100 to 260





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