

# 2SC2671F

## Silicon NPN epitaxial planar type

For UHF band low-noise amplification

### ■ Features

- Low noise figure NF
- High maximum unilateral power gain  $G_{UM}$
- High transition frequency  $f_T$

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

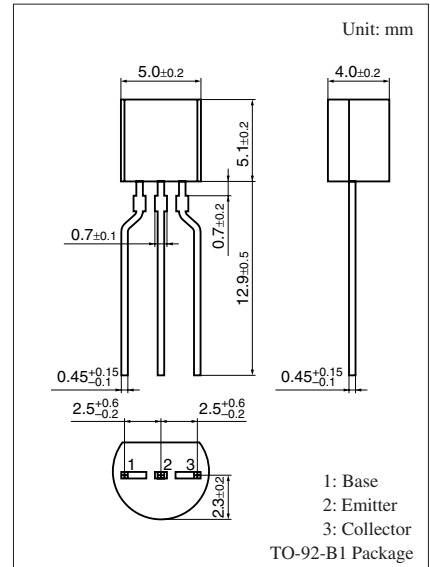
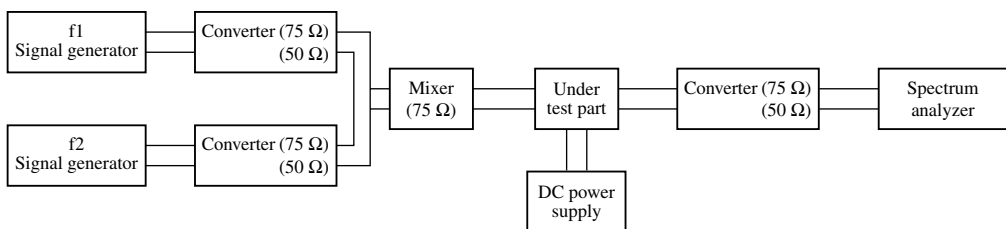
Parameter	Symbol	Rating	Unit
Collector-base voltage (Emitter open)	$V_{CBO}$	15	V
Collector-emitter voltage (Resistor between B and E) *	$V_{CER}$	14	V
Emitter-base voltage (Collector open)	$V_{EBO}$	2	V
Collector current	$I_C$	80	mA
Collector power dissipation	$P_C$	600	mW
Junction temperature	$T_j$	150	$^\circ\text{C}$
Storage temperature	$T_{stg}$	-55 to +150	$^\circ\text{C}$

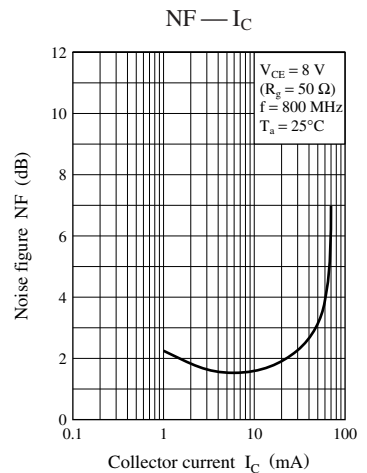
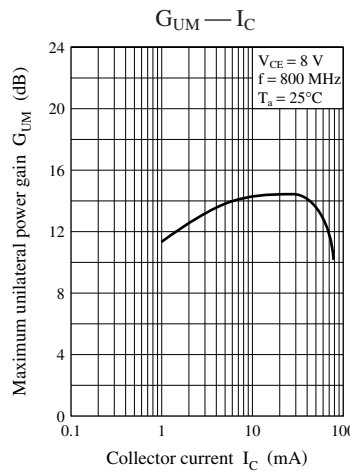
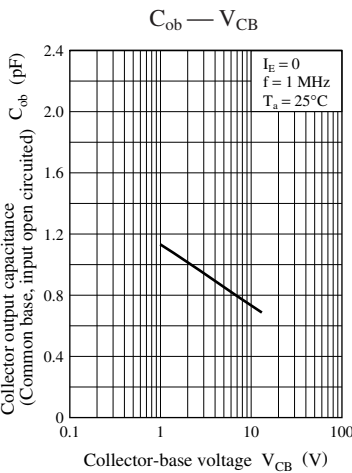
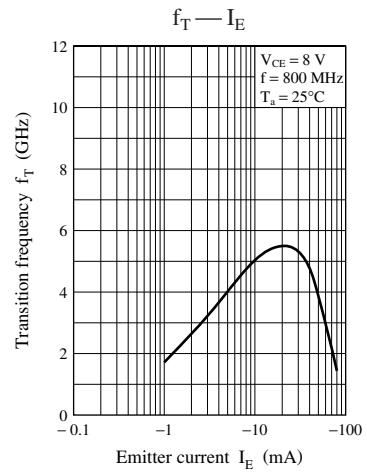
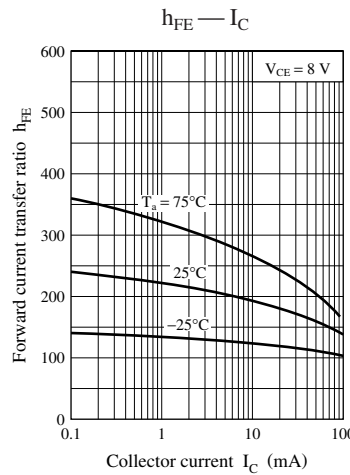
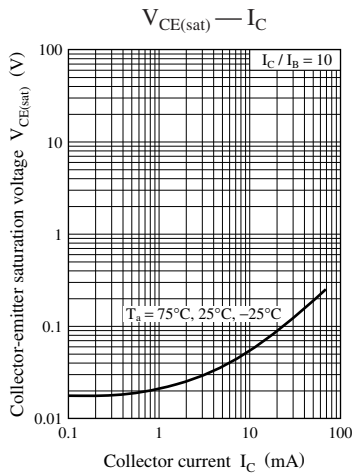
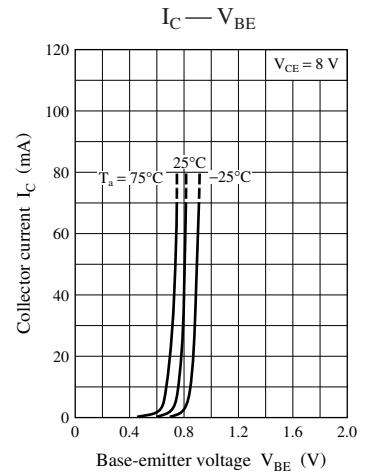
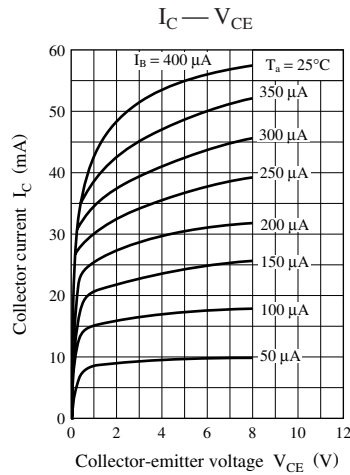
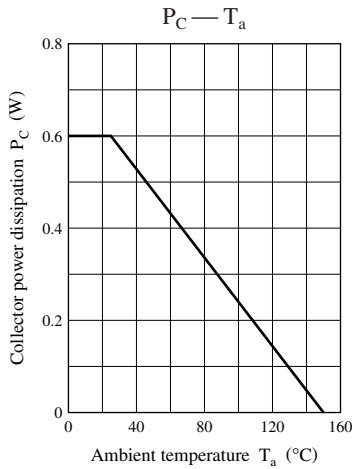
Note) \*:  $R_{BE} = 1 \text{ k}\Omega$

### ■ 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)	$I_{CBO}$	$V_{CB} = 10 \text{ V}, I_E = 0$			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	$h_{FE}$	$V_{CE} = 8 \text{ V}, I_C = 40 \text{ mA}$	50	150	300	—
Transition frequency	$f_T$	$V_{CE} = 8 \text{ V}, I_C = 40 \text{ mA}, f = 0.8 \text{ GHz}$	3.5	5.5		GHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10 \text{ V}, I_E = 0, f = 1 \text{ MHz}$		0.8	1.5	pF
Forward transfer gain	$ S_{21e} ^2$	$V_{CE} = 8 \text{ V}, I_C = 40 \text{ mA}, f = 0.8 \text{ GHz}$	9	12		dB
Maximum unilateral power gain	$G_{UM}$	$V_{CE} = 8 \text{ V}, I_C = 40 \text{ mA}, f = 0.8 \text{ GHz}$	10	13	15	dB
Noise figure	NF	$V_{CE} = 8 \text{ V}, I_C = 40 \text{ mA}, f = 0.8 \text{ GHz}$		2.0	3.2	dB
Second inter modulation distortion *	$IM_2$	$V_{CE} = 8 \text{ V}, I_C = 40 \text{ mA}, f_1 = 200 \text{ MHz}$ $f_2 = 500 \text{ MHz}, V_O = 100 \text{ dB}\mu/75 \Omega$	50	60		dB
Third inter modulation distortion *	$IM_3$	$V_{CE} = 8 \text{ V}, I_C = 40 \text{ mA}, f_1 = 600 \text{ MHz}$ $f_2 = 500 \text{ MHz}, V_O = 100 \text{ dB}\mu/75 \Omega$	75	86		dB

Note) 1. Measuring methods are based on JAPANESE INDUSTRIAL STANDARD JIS C 7030 measuring methods for transistors.  
2. \*: See measurement circuit





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