

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	$^\circ\text{C}$

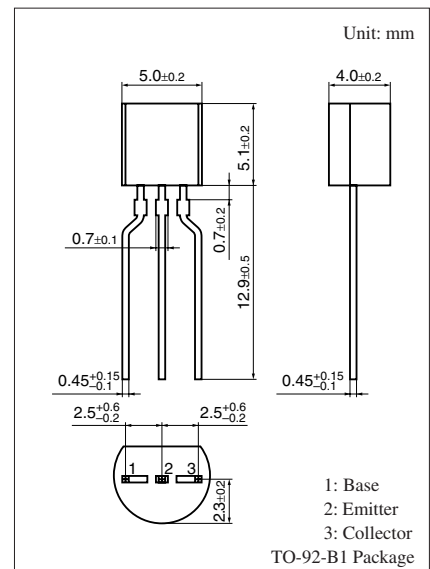
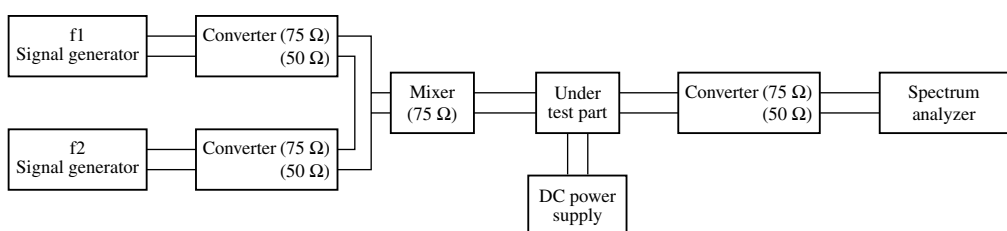
Note) *: $R_{BE} = 1\text{ k}\Omega$

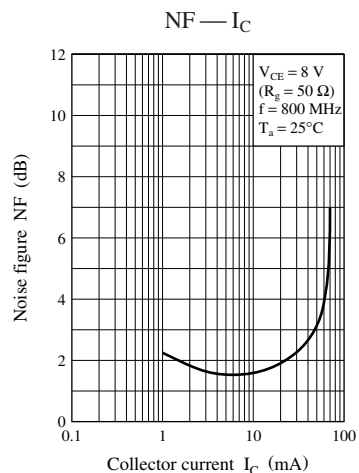
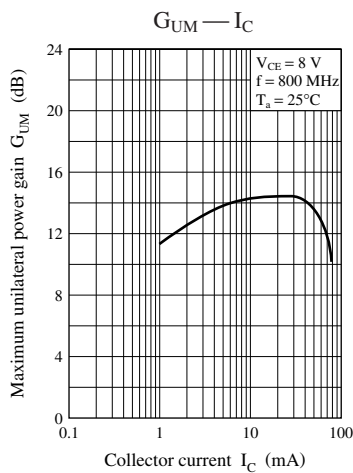
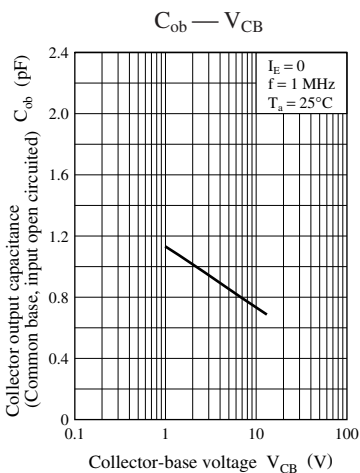
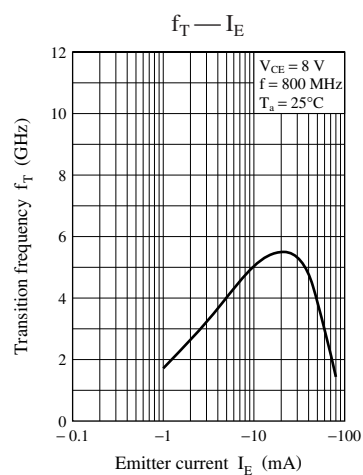
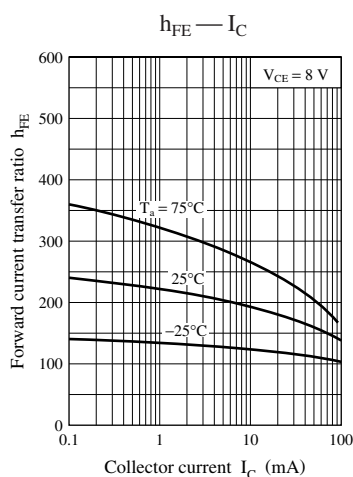
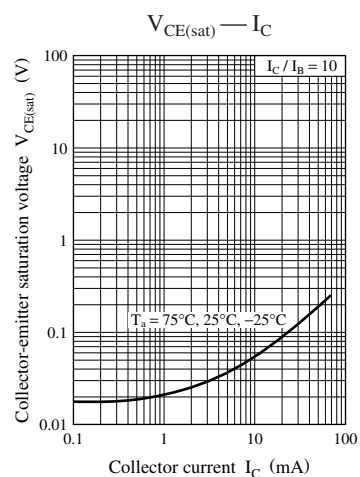
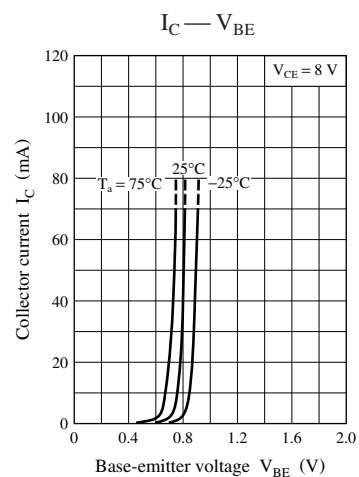
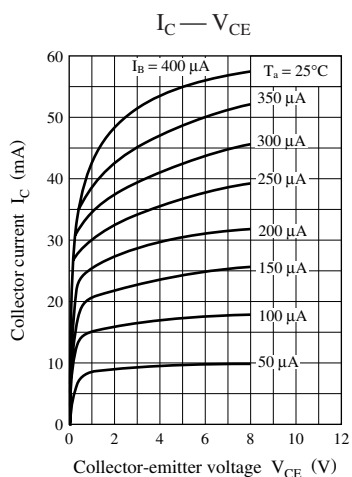
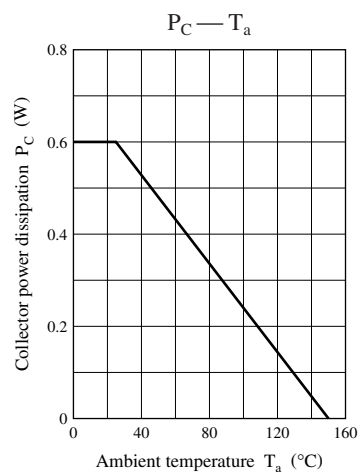
■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	I_{CBO}	$V_{CB} = 10\text{ V}, I_E = 0$			1	μA
Emitter-base cutoff current (Collector open)	I_{EBO}	$V_{EB} = 1\text{ V}, I_C = 0$			1	μA
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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