

# 2SC4805

## Silicon NPN epitaxial planar type

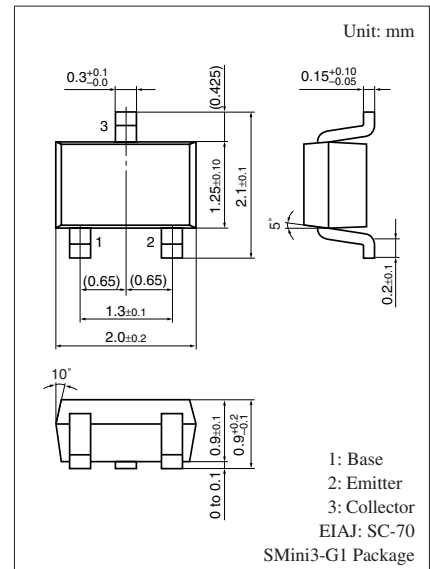
For 2 GHz band low-noise amplification

### ■ Features

- 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)	$V_{CBO}$	15	V
Collector-emitter voltage (Base open)	$V_{CEO}$	10	V
Emitter-base voltage (Collector open)	$V_{EBO}$	2	V
Collector current	$I_C$	65	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: 3S

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

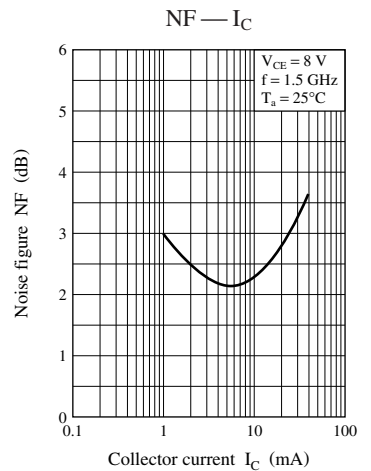
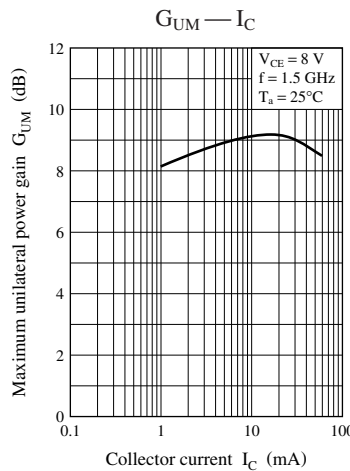
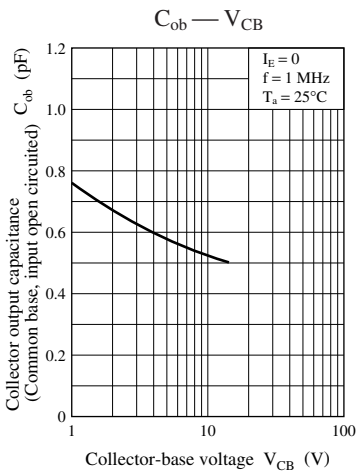
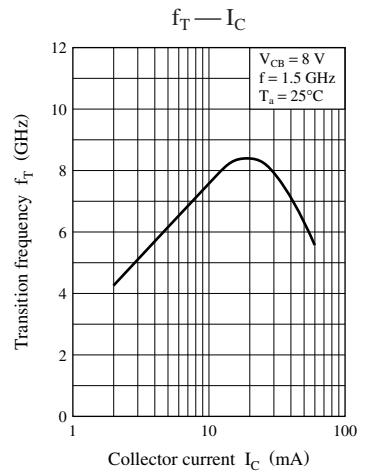
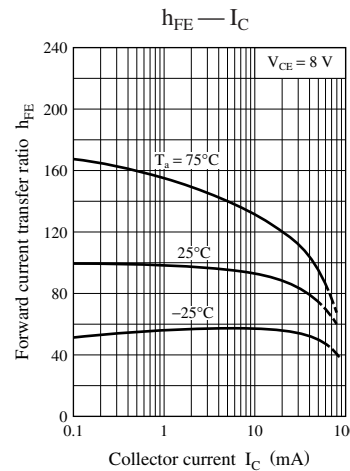
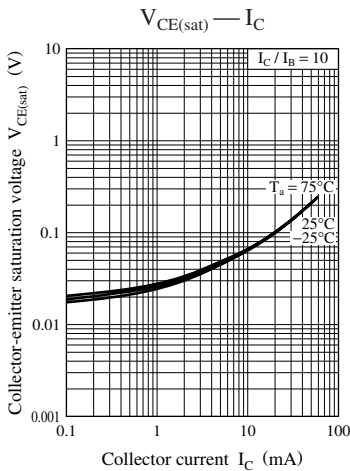
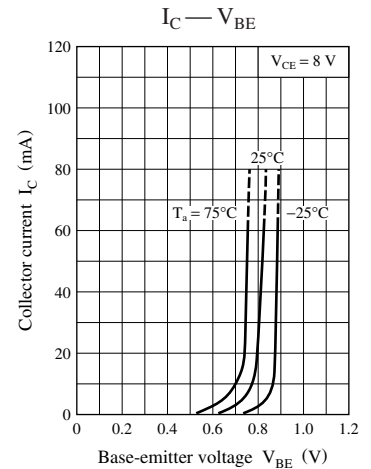
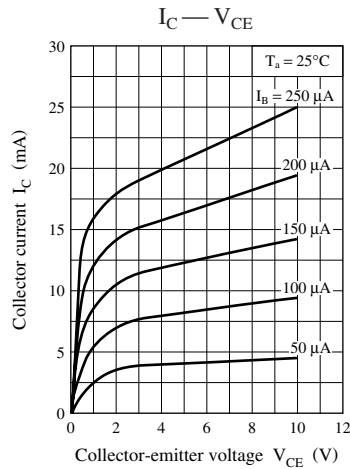
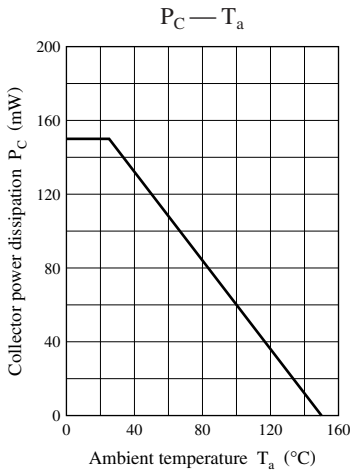
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Collector-base cutoff current (Emitter open)	$I_{CBO}$	$V_{CB} = 10\text{ V}, I_E = 0$			1	$\mu\text{A}$
Emitter-base cutoff current (Collector open)	$I_{EBO}$	$V_{EB} = 1\text{ V}, I_C = 0$			1	$\mu\text{A}$
Forward current transfer ratio *	$h_{FE}$	$V_{CE} = 8\text{ V}, I_C = 20\text{ mA}$	50		300	—
Transition frequency	$f_T$	$V_{CE} = 8\text{ V}, I_C = 15\text{ mA}, f = 1.5\text{ GHz}$	7.0	8.5		GHz
Collector output capacitance (Common base, input open circuited)	$C_{ob}$	$V_{CB} = 10\text{ V}, I_E = 0, f = 1\text{ MHz}$		0.6	1.0	pF
Forward transfer gain	$ S_{21e} ^2$	$V_{CE} = 8\text{ V}, I_C = 15\text{ mA}, f = 1.5\text{ GHz}$	7	9		dB
Maximum unilateral power gain	$G_{UM}$	$V_{CE} = 8\text{ V}, I_C = 15\text{ mA}, f = 1.5\text{ GHz}$		10		dB
Noise figure	NF	$V_{CE} = 8\text{ V}, I_C = 7\text{ mA}, f = 1.5\text{ GHz}$		2.2	3.0	dB

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

2. \*: Rank classification

Rank	Q	R	S	No-rank
$h_{FE}$	50 to 120	100 to 170	150 to 300	50 to 300
Marking symbol	3SQ	3SR	3SS	3S

Product of no-rank is not classified and have no indication for rank.



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