



# SBFP405B

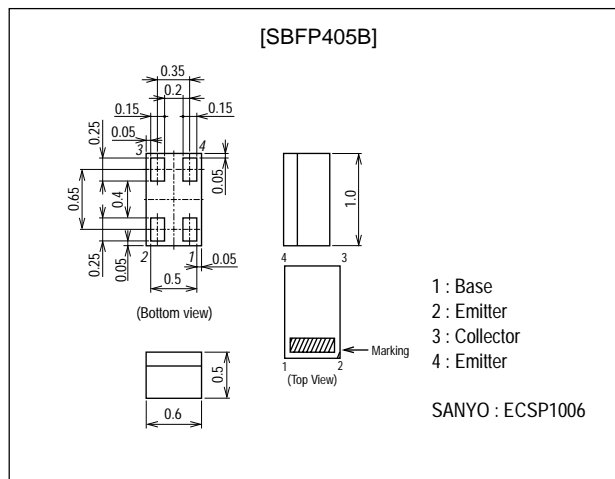
## UHF to C Band Low-Noise Amplifier Osc. Applications

### Features

- Low noise : NF=1.25dB typ (f=1.8GHz).
- High cut-off frequency :  $f_T=25\text{GHz}$  typ ( $V_{CE}=3\text{V}$ ).
- Low operating voltage.
- High gain :  $|S_{21e}|^2=18\text{dB}$  typ (f=1.8GHz).
- Ultraminiature (1006 size) and thin (0.5mm) leadless package.

### Package Dimensions

unit : mm  
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### Specifications

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

Parameter	Symbol	Conditions	Ratings	Unit
Collector-to- Base Voltage	$V_{CBO}$		15	V
Collector-to-Emitter Voltage	$V_{CEO}$		4.5	V
Emitter-to-Base Voltage	$V_{EBO}$		1.5	V
Collector Current	$I_C$		12	mA
Collector Dissipation	$P_C$		55	mW
Junction Temperature	$T_j$		150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$		-55 to +150	$^\circ\text{C}$

### Electrical Characteristics at $T_a=25^\circ\text{C}$

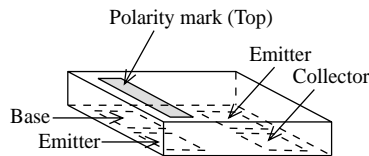
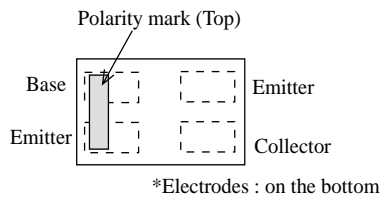
Parameter	Symbol	Conditions	Ratings			Unit
			min	typ	max	
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=5\text{V}, I_E=0$			150	nA
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=1.5\text{V}, I_C=0$			15	$\mu\text{A}$
DC Current Gain	$h_{FE}$	$V_{CE}=4\text{V}, I_C=5\text{mA}$	50		150	
Gain-Bandwidth Product	$f_T$	$V_{CE}=3\text{V}, I_C=10\text{mA}$		25		GHz
Reverse Transfer Capacitance	$C_{re}$	$V_{CB}=1\text{V}, f=1\text{MHz}$		0.13	0.23	pF
Forward Transfer Gain	$ S_{21e} ^2$	$V_{CE}=2\text{V}, I_C=5\text{mA}, f=1.8\text{GHz}$		18		dB
Noise Figure	NF	$V_{CE}=2\text{V}, I_C=2\text{mA}, f=1.8\text{GHz}$		1.25	1.65	dB

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**Type No. Indication** (Top view)

This product adopts a high-frequency process. Please be careful when handling it because it is susceptible to static electricity.

**Electrical Connection** (Top view)

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