



SBFP405B

UHF to C Band Low-Noise Amplifier Osc. Applications

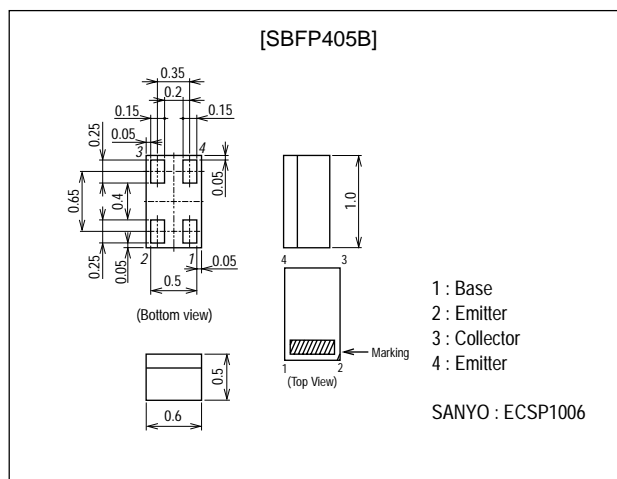
Features

- Low noise : $NF=1.25\text{dB}$ typ ($f=1.8\text{GHz}$).
- 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 ($f=1.8\text{GHz}$).
- 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	μA
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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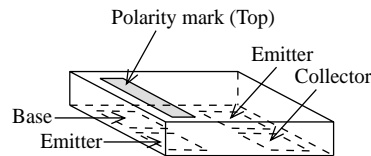
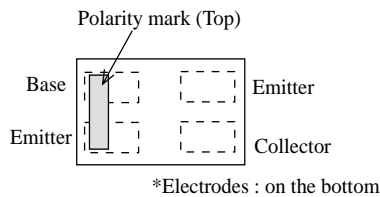
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Type No. Indication (Top view)



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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