

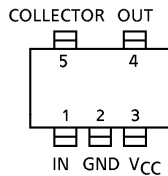
# TA4004F

## VHF~UHF WIDE BAND AMPLIFIER

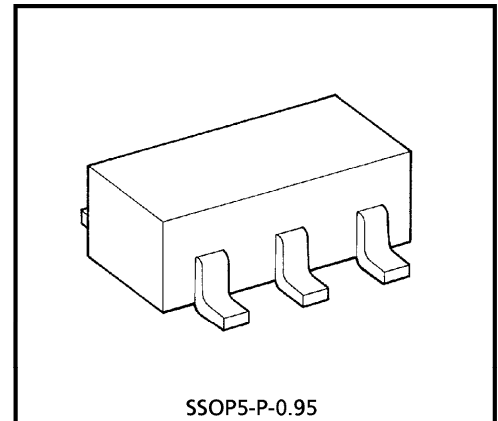
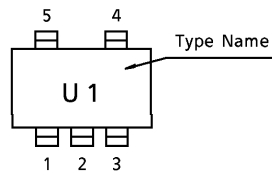
### FEATURES

- Band Width 1.2 GHz (Typ.) (3 dB down,  $V_{CC} = 2\text{ V}$ )
- High Gain :  $|S_{21}|^2 = 10.5\text{ dB}$  (Typ.) ( $f = 500\text{ MHz}$ ,  $V_{CC} = 2\text{ V}$ )
- Operating Supply Voltage :  $V_{CC} = 2\sim 5\text{ V}$
- Low Current Operation :  $I_{CC} = 3.1\text{ mA}$  (Typ.) ( $V_{CC} = 2\text{ V}$ )
- Small Package

### PIN ASSIGNMENT (TOP VIEW)



### MARKING



SSOP5-P-0.95

Weight : 0.014 g (Typ.)

### MAXIMUM RATINGS ( $T_a = 25^\circ\text{C}$ )

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	$V_{CC}$	6	V
Total Power Dissipation	$P_D$ (*)	300	mW
Operating Temperature	$T_{opr}$	-40~85	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55~125	$^\circ\text{C}$

(\*) : When mounted glass epoxy of  $2.5\text{ cm}^2 \times 1.6\text{ t}$

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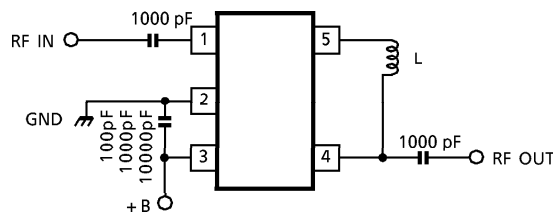
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**ELECTRICAL CHARACTERISTICS** (Ta = 25°C) (Note 1)

CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Circuit Current	I <sub>CC</sub>	—	V <sub>CC</sub> = 2 V, Non carrier	2.5	3.1	4	mA
			V <sub>CC</sub> = 5 V, Non carrier	10	12.5	16	
Insertion Gain	S <sub>21</sub>   <sup>2</sup>	1	V <sub>CC</sub> = 2 V, f = 500 MHz	8.5	10.5	13.5	dB
			V <sub>CC</sub> = 5 V, f = 500 MHz	13	15	18	
Band Width	BW	1	V <sub>CC</sub> = 2 V (Note 2)	0.9	1.2	—	GHz
			V <sub>CC</sub> = 5 V (Note 2)	0.7	1	—	
Noise Figure	NF	1	V <sub>CC</sub> = 2 V, f = 500 MHz	—	4.2	6	dB
			V <sub>CC</sub> = 5 V, f = 500 MHz	—	4.7	6.5	
Input Return Loss	S <sub>11</sub>   <sup>2</sup>	1	V <sub>CC</sub> = 2 V, f = 500 MHz	—	-7	—	dB
			V <sub>CC</sub> = 5 V, f = 500 MHz	—	-9	—	
Output Return Loss	S <sub>22</sub>   <sup>2</sup>	1	V <sub>CC</sub> = 2 V, f = 500 MHz	—	-7	—	dB
			V <sub>CC</sub> = 5 V, f = 500 MHz	—	-9	—	
Isolation	S <sub>12</sub>   <sup>2</sup>	1	V <sub>CC</sub> = 2 V, f = 500 MHz	—	-23	—	dB
			V <sub>CC</sub> = 5 V, f = 500 MHz	—	-24	—	
Maximum Output Level	P <sub>O</sub>	1	V <sub>CC</sub> = 2 V, f = 500 MHz, Pin = 0 dBmW	—	0	—	dBmW
			V <sub>CC</sub> = 5 V, f = 500MHz, Pin = 0dBmW	—	8	—	

(Note 1) : Have use for connect inductance between terminal 4 and 5      9 nH at V<sub>CC</sub> = 2 V  
 (Note 2) : BW is frequency of 3 dB down from |S<sub>21</sub>|<sup>2</sup> at 500 MHz.      10.5 nH at V<sub>CC</sub> = 5 V

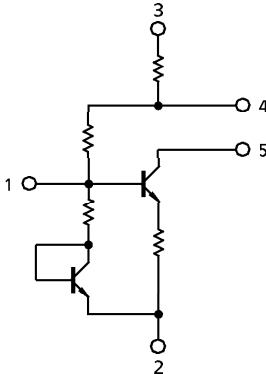
**TEST CIRCUIT 1 (TOP VIEW)**

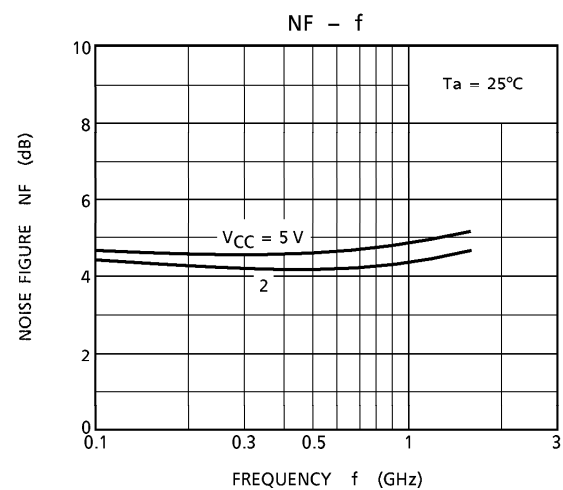
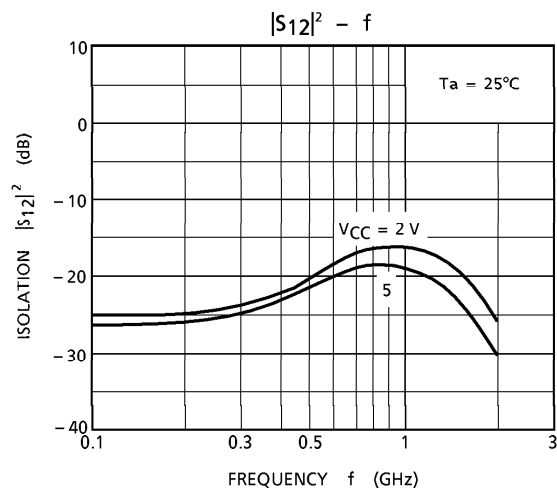
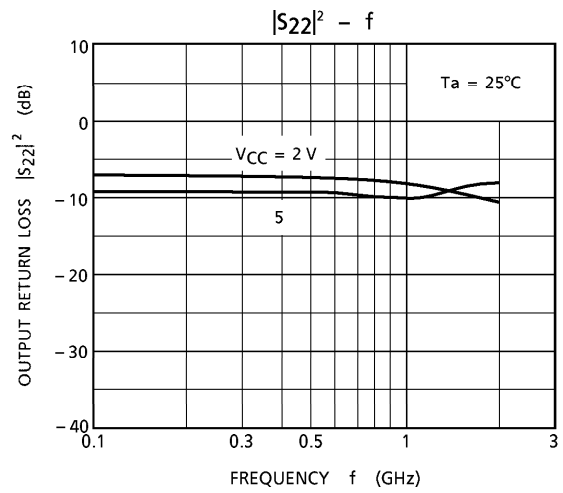
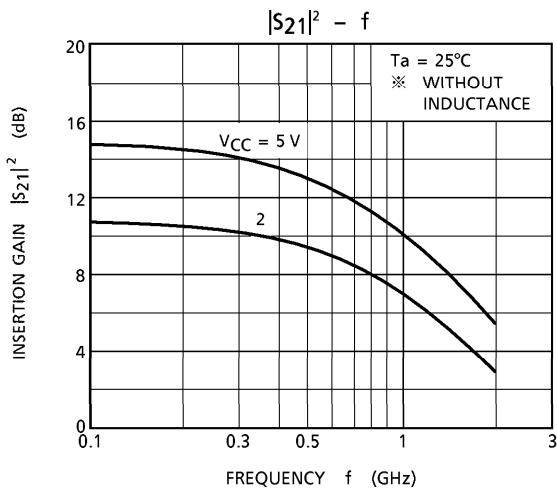
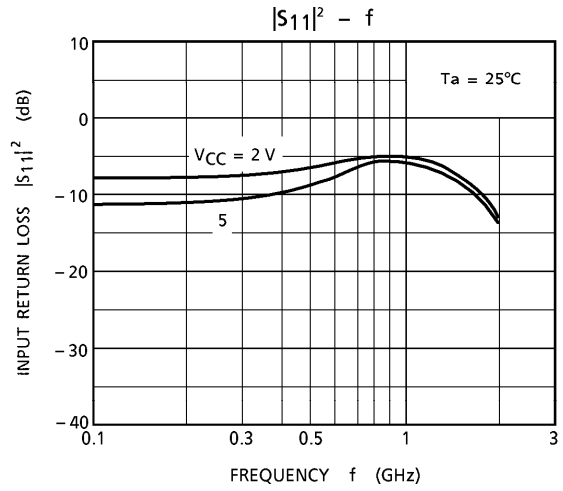
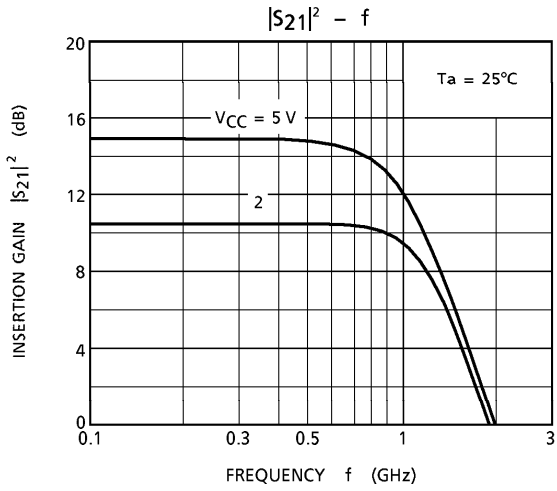


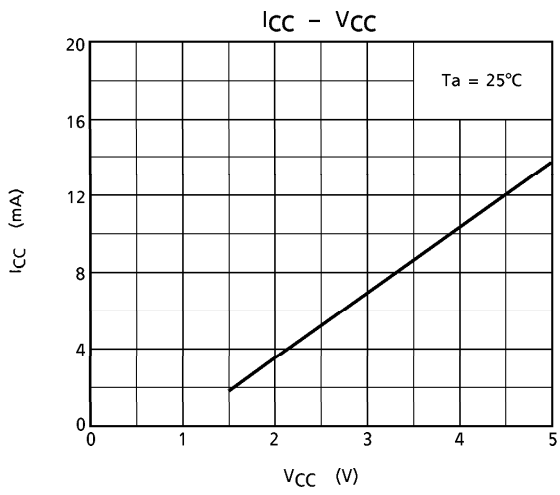
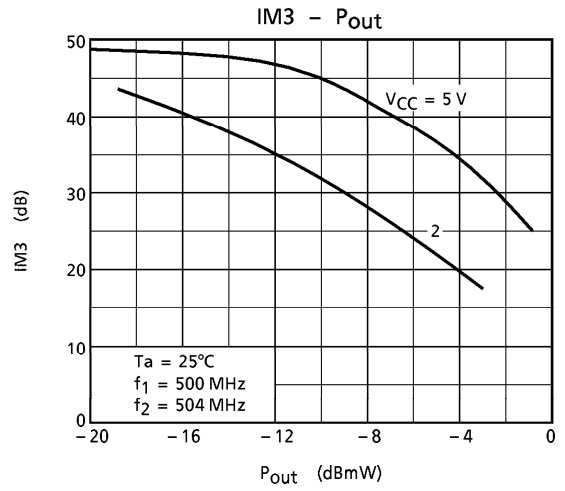
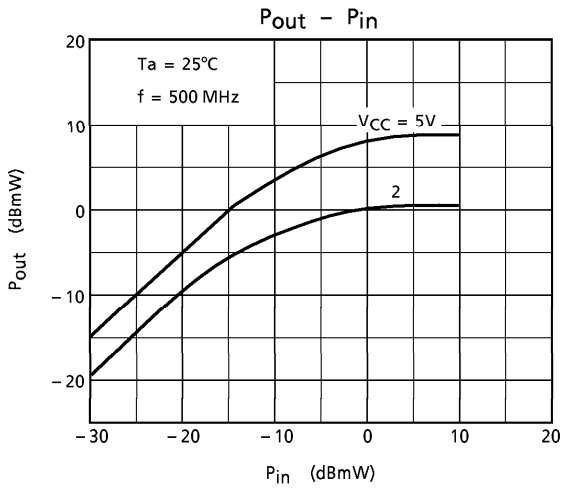
**NOTICE**

The circuits and measurements contained in this document are given only in the context of as examples of applications for these products.  
 Moreover, these example application circuits are not intended for mass production, since the high-frequency characteristics (the AC characteristics) of these devices will be affected by the external components which the customer uses, by the design of the circuit and by various other conditions. It is the responsibility of the customer to design external circuits which correctly implement the intended application, and to check the characteristics of the design.  
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EQUIVALENT CIRCUIT

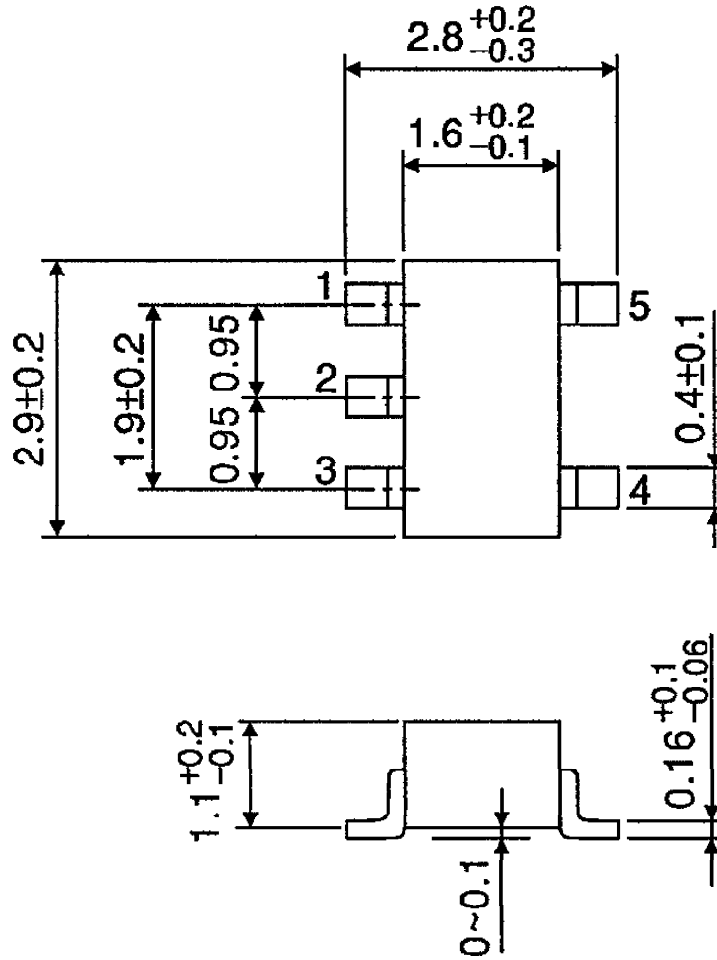






PACKAGE DIMENSIONS  
SSOP5-P-0.95

Unit : mm



Weight : 0.014 g (Typ.)