

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

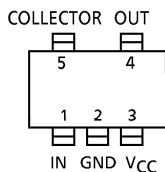
# TA4003F

## VHF~UHF WIDE BAND AMPLIFIER

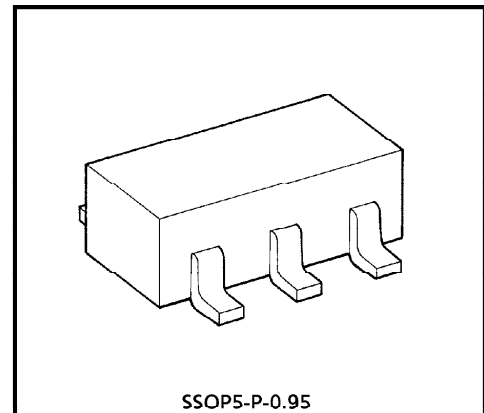
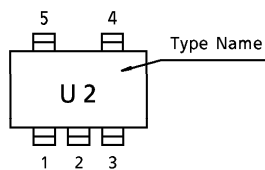
### FEATURES

- Band Width 1.5CHz (Typ.) (3dB down,  $V_{CC} = 2V$ )
- High Gain :  $|S_{21}|^2 = 11dB$  (Typ.), ( $f = 500MHz$ ,  $V_{CC} = 2V$ )
- Operating Supply Voltage :  $V_{CC} = 2\sim 3V$
- Low Current Operation :  $I_{CC} = 3.5mA$  (Typ.) ( $V_{CC} = 2V$ )
- Small Package

### PIN ASSIGNMENT (TOP VIEW)



### Marking



Weight : 0.014g (Typ.)

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

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	$V_{CC}$	4	V
Total Power Dissipation	$P_D^*$	300	mW
Operating Temperature	$T_{opr}$	- 40~85	$^\circ C$
Storage Temperature	$T_{stg}$	- 55~125	$^\circ C$

\* When mounted glass epoxy of  $2.5cm^2 \times 1.6t$

961001EBA2

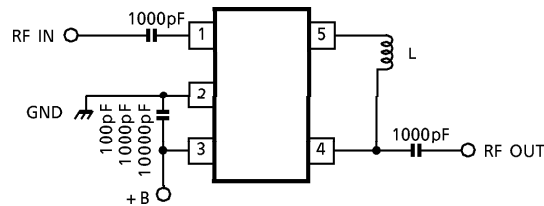
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**ELECTRICAL CHARACTERISTICS** (Ta = 25°C) (Note 1)

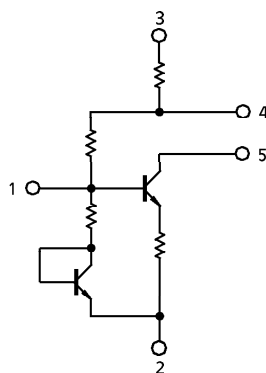
CHARACTERISTIC	SYMBOL	TEST CIRCUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Circuit Current	I <sub>CC</sub>	—	V <sub>CC</sub> = 2V, Non carrier	2.5	3.5	4.5	mA
Insertion Gain	S <sub>21</sub>   <sup>2</sup>	1	V <sub>CC</sub> = 2V, f = 500MHz	9	11	14	dB
Band Width	BW	1	V <sub>CC</sub> = 2V (Note 2)	1.2	1.5	—	GHz
Noise Figure	NF	1	V <sub>CC</sub> = 2V, f = 500MHz	—	5.2	7	dB
Input Return Loss	S <sub>11</sub>   <sup>2</sup>	1	V <sub>CC</sub> = 2V, f = 500MHz	—	-7.5	—	dB
Output Return Loss	S <sub>22</sub>   <sup>2</sup>	1	V <sub>CC</sub> = 2V, f = 500MHz	—	-7.5	—	dB
Isolation	S <sub>12</sub>   <sup>2</sup>	1	V <sub>CC</sub> = 2V, f = 500MHz	—	-24	—	dB
Maximum Output Level	P <sub>O</sub>	1	V <sub>CC</sub> = 2V, f = 500MHz, Pin = 0dBmW	—	0	—	dBmW

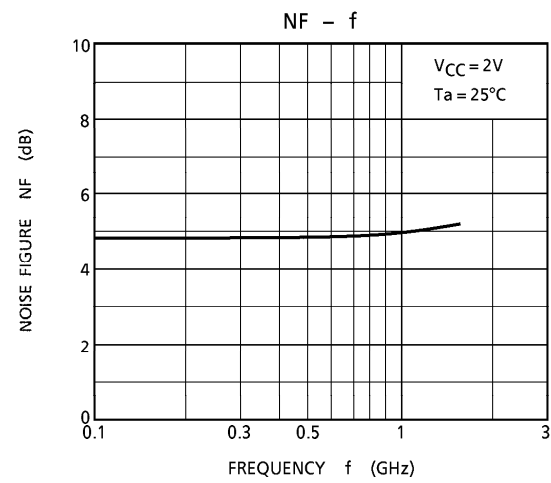
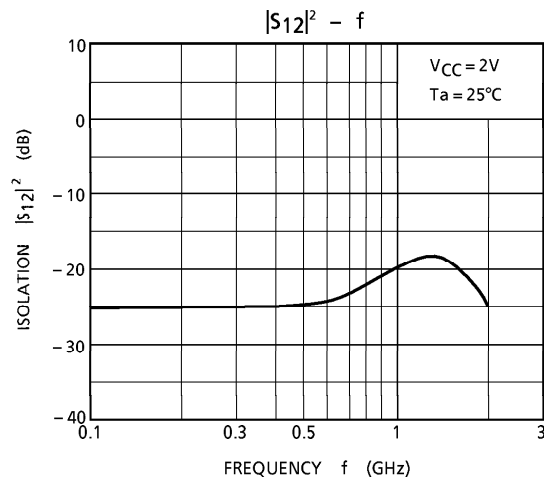
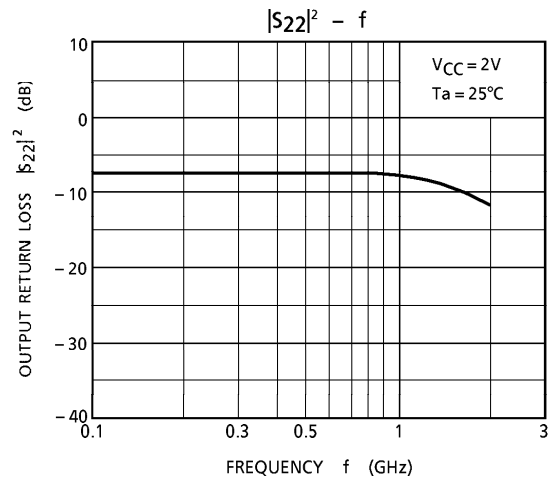
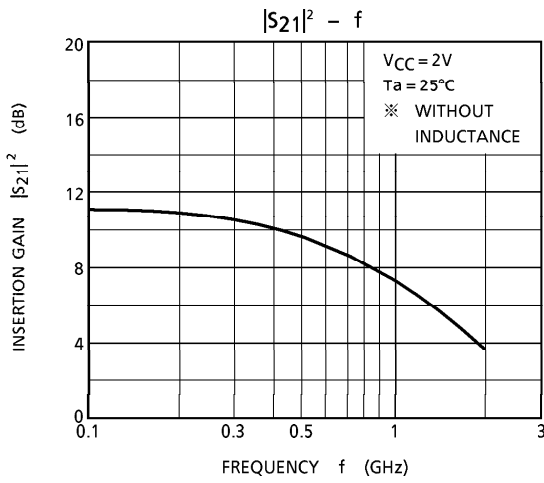
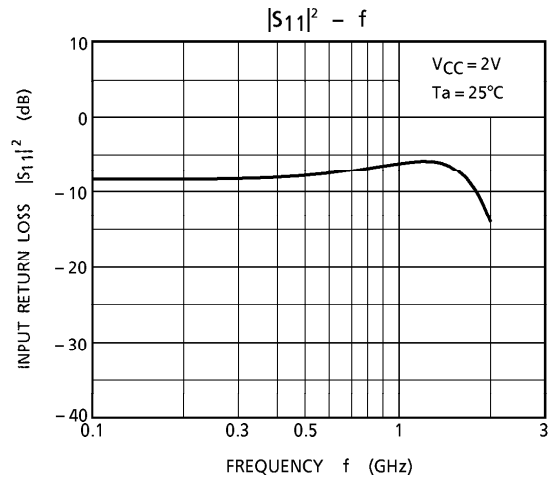
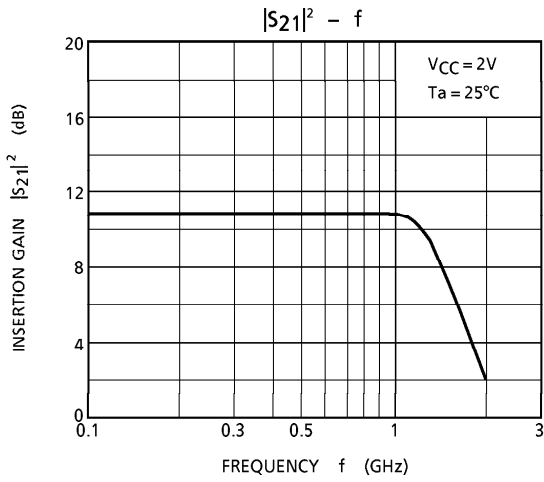
Note 1 : Have use for connect inductance between terminal 4 and 5    8nH at V<sub>CC</sub> = 2V  
 Note 2 : BW is frequency of 3dB down from |S<sub>21</sub>|<sup>2</sup> at 500MHz.

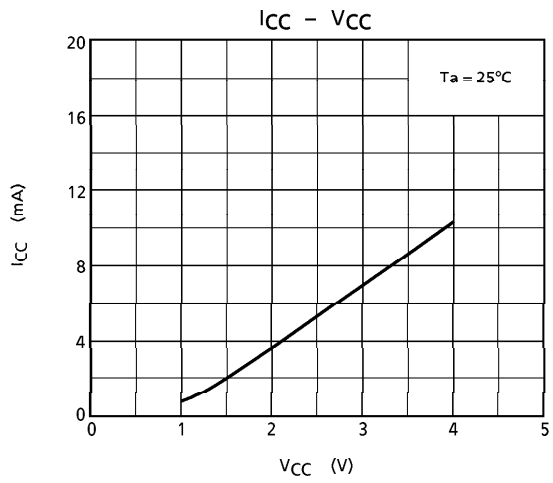
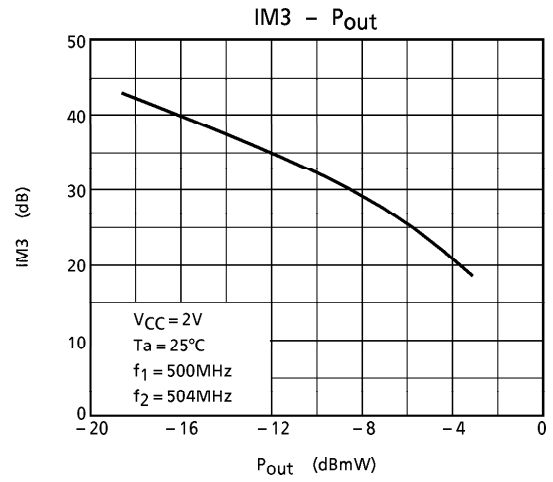
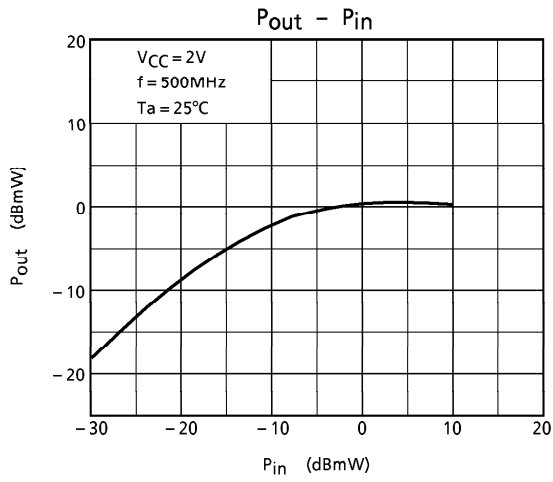
**TEST CIRCUIT 1. (TOP VIEW)**



**EQUIVALENT CIRCUIT**

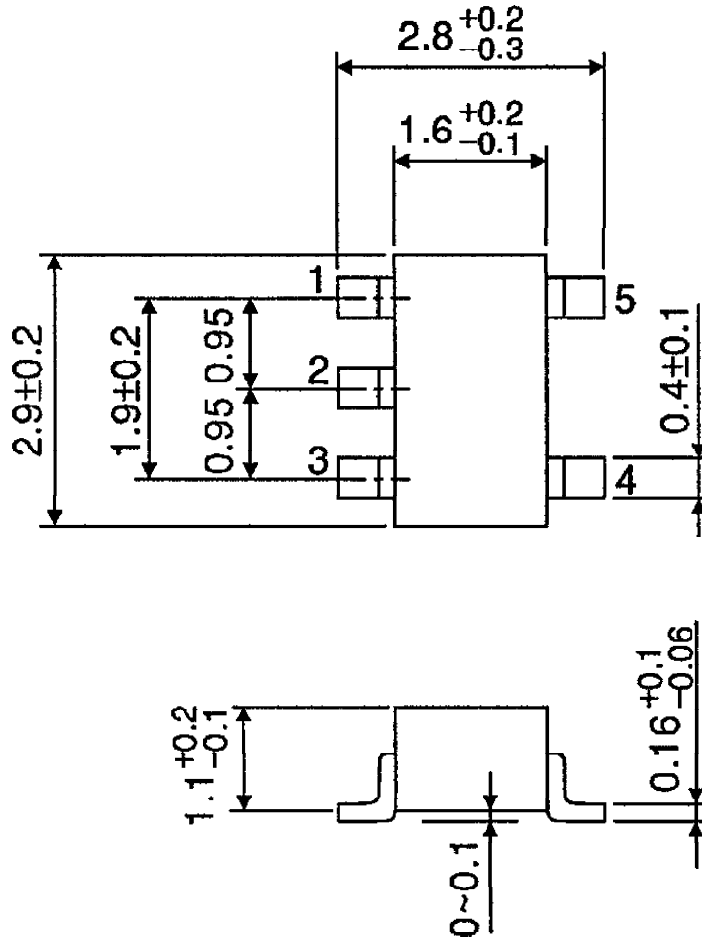






OUTLINE DRAWING  
SSOP5-P-0.95

Unit : mm



Weight : 0.014g (Typ.)