

**TOSHIBA**

**TA4002F**

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

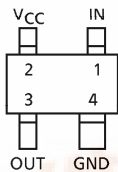
# TA4002F

## VHF~UHF WIDE BAND AMPLIFIER

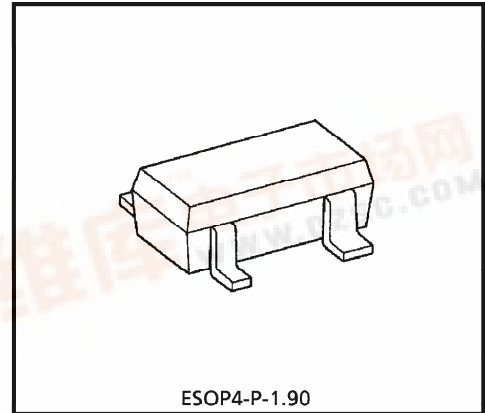
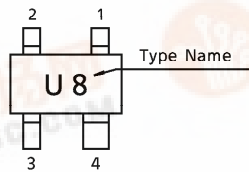
### FEATURES

- Band Width 1.3GHz (Typ.) (3dB down)
- High Gain :  $|S_{21}|^2 = 23\text{dB}$  (Typ.) ( $f = 500\text{MHz}$ )
- $50\Omega$  Input and Output Impedance
- Small Package

### PIN ASSIGNMENT (TOP VIEW)



### Marking



ESOP4-P-1.90

Weight : 0.013g (Typ.)

### MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	V <sub>CC</sub>	6	V
Total Power Dissipation	P <sub>D</sub> *	300	mW
Operating Temperature	T <sub>opr</sub>	-40~85	°C
Storage Temperature	T <sub>stg</sub>	-55~125	°C

\* When mounted glass epoxy of 2.5cm<sup>2</sup> × 1.6t

### ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Circuit Current	I <sub>CC</sub>	—	V <sub>CC</sub> = 5V, Non carrier	10	14	20	mA
Insertion Gain	$ S_{21} ^2$	1	V <sub>CC</sub> = 5V, f = 500MHz	20	23	26	dB
Band Width	BW	1	V <sub>CC</sub> = 5V (Note 1)	0.8	1.3	—	GHz
Noise Figure	NF	1	V <sub>CC</sub> = 5V, f = 500MHz	—	4.7	7	dB
Input Return Loss	$ S_{11} ^2$	1	V <sub>CC</sub> = 5V, f = 500MHz	—	-8	—	dB
Output Return Loss	$ S_{22} ^2$	1	V <sub>CC</sub> = 5V, f = 500MHz	—	-15	—	dB
Isolation	$ S_{12} ^2$	1	V <sub>CC</sub> = 5V, f = 500MHz	—	-33	—	dB
Maximum Output Level	P <sub>o</sub>	1	V <sub>CC</sub> = 5V, f = 500MHz, Pin = 0dBmW	—	5	—	dBmW

Note 1 : BW is frequency of 3dB down from  $|S_{21}|^2$  at 500MHz.

961001EBA2

● TOSHIBA is continually working to improve the quality and the reliability of its products. Nevertheless, semiconductor devices in general can malfunction or fail due to their inherent electrical sensitivity and vulnerability to physical stress. It is the responsibility of the buyer, when utilizing TOSHIBA products, to observe standards of safety, and to avoid situations in which a malfunction or failure of a TOSHIBA product could cause loss of human life, bodily injury or damage to property. In developing your designs, please ensure that TOSHIBA products are used within specified operating ranges as set forth in the most recent products specifications. Also, please keep in mind the precautions and conditions set forth in the TOSHIBA Semiconductor Reliability Handbook.

● The products described in this document are subject to foreign exchange and foreign trade control laws.

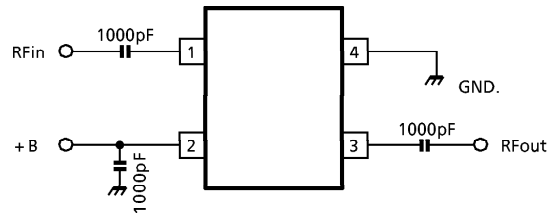
● The information contained herein is presented only as a guide for the applications of our products. No responsibility is assumed by TOSHIBA CORPORATION for any infringements of intellectual property or other rights of the third parties which may result from its use. No license is granted by implication or otherwise under any intellectual property or other rights of TOSHIBA CORPORATION or others.

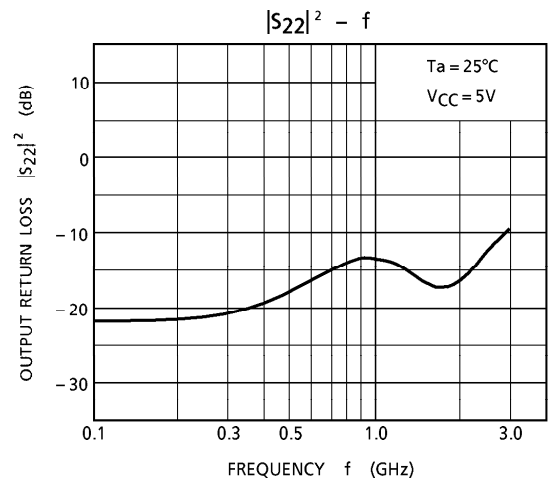
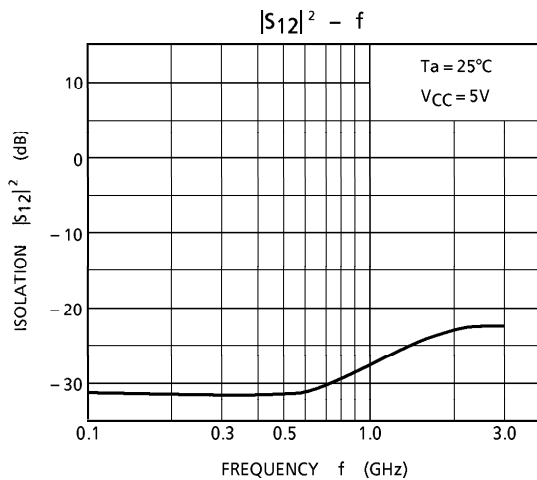
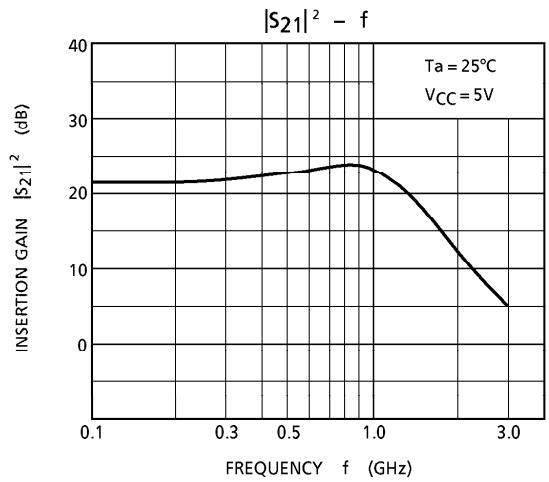
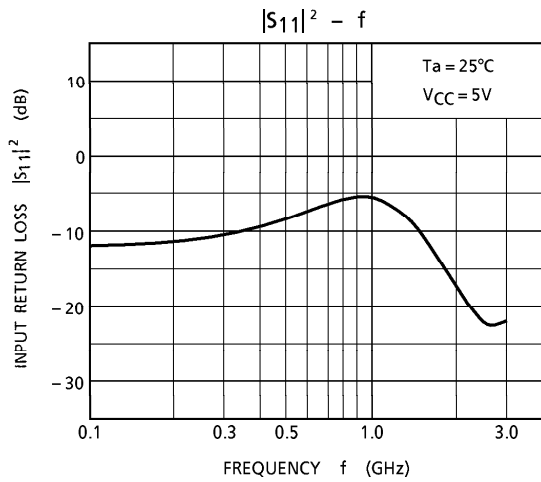
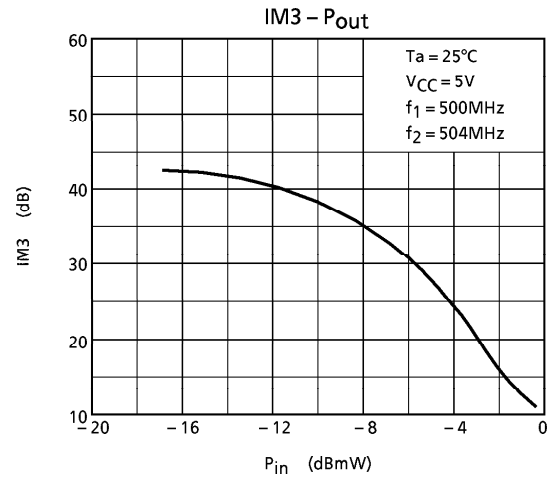
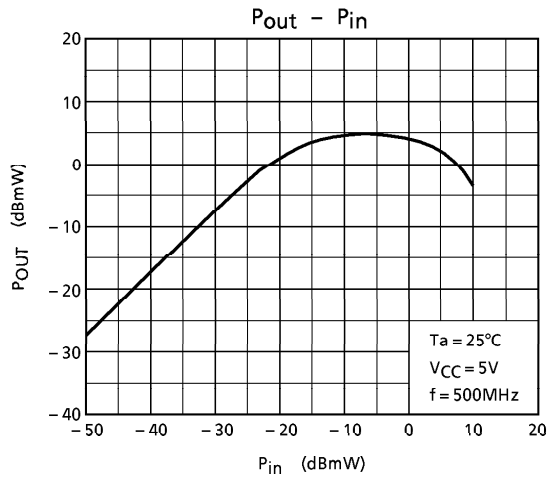
● The information contained herein is subject to change without notice.



**TEST CIRCUIT 1**

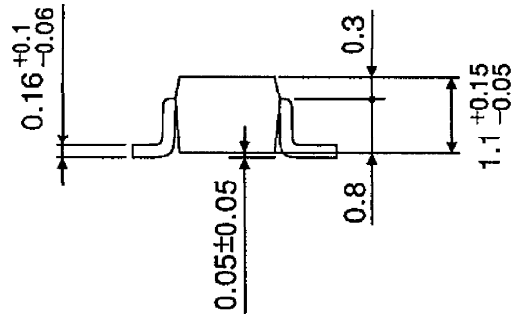
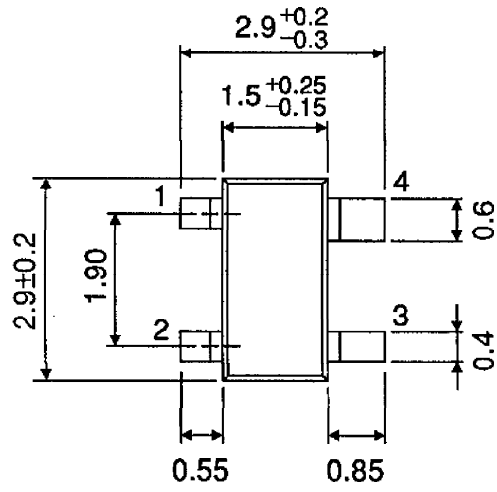
**TOP VIEW**





OUTLINE DRAWING  
ESOP4-P-1.90

Unit : mm



Weight : 0.013g (Typ.)