

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

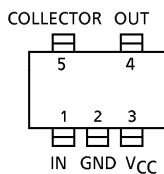
TA4004F

VHF~UHF WIDE BAND AMPLIFIER

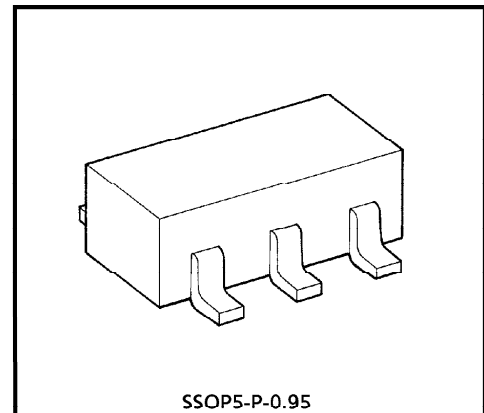
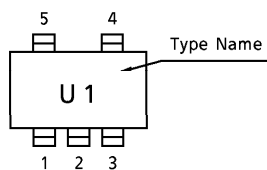
FEATURES

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

PIN ASSIGNMENT (TOP VIEW)



Marking



Weight : 0.014g (Typ.)

MAXIMUM RATINGS (Ta = 25°C)

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

* When mounted glass epoxy of 2.5cm² x 1.6t

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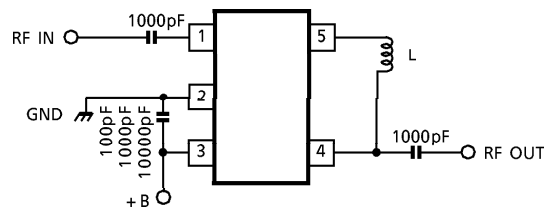
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ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Note 1)

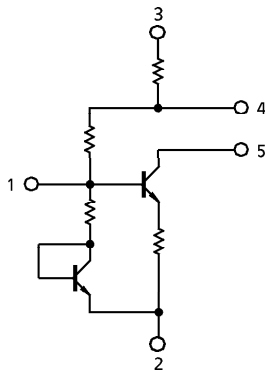
CHARACTERISTIC	SYMBOL	TEST CIR-CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Circuit Current	I _{CC}	—	V _{CC} = 2V, Non carrier	2.5	3.1	4	mA
			V _{CC} = 5V, Non carrier	10	12.5	16	
Insertion Gain	S ₂₁ ²	1	V _{CC} = 2V, f = 500MHz	8.5	10.5	13.5	dB
			V _{CC} = 5V, f = 500MHz	13	15	18	
Band Width	BW	1	V _{CC}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

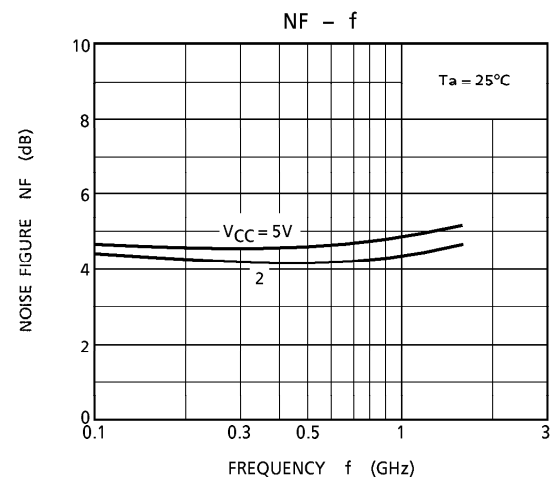
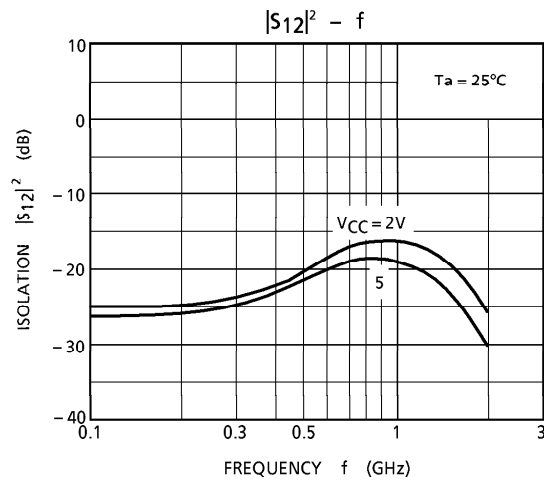
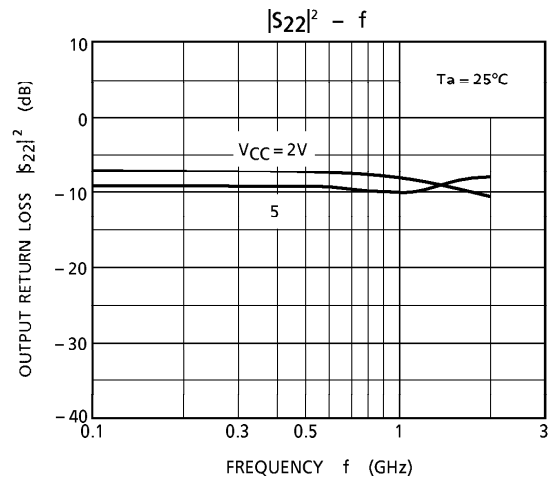
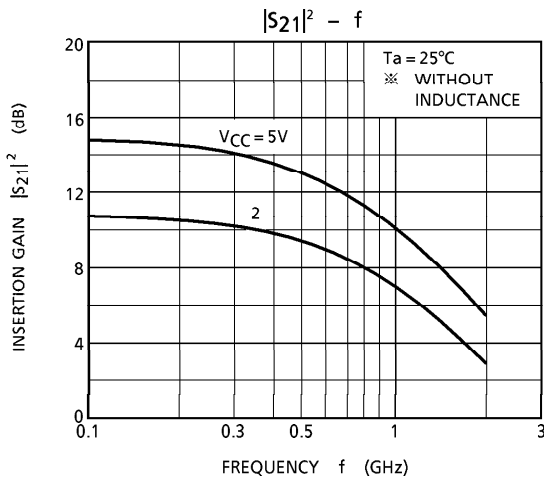
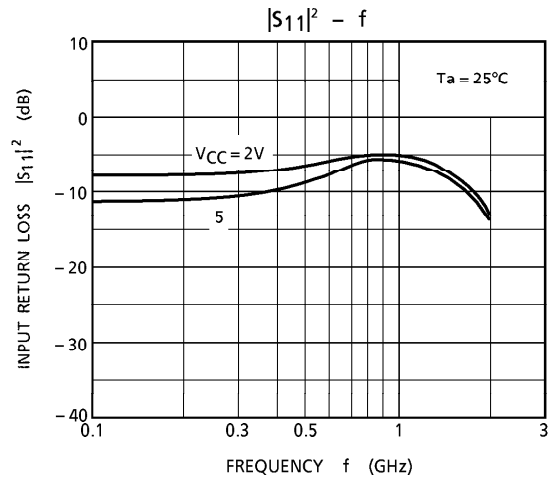
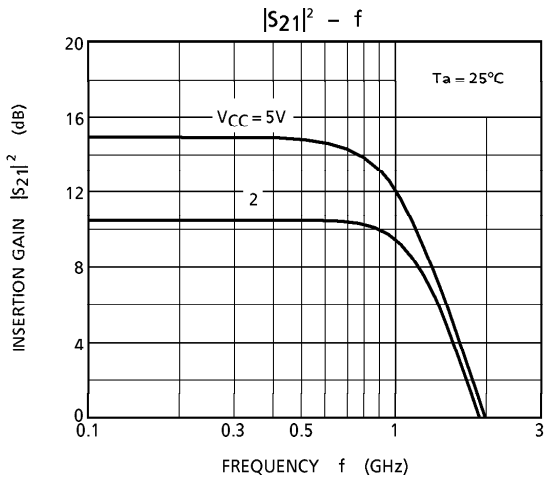
Note 1 : Have use for connect inductance between terminal 4 and 5 9nH at V_{CC} = 2V
 Note 2 : BW is frequency of 3dB down from |S₂₁|² at 500MHz. 10.5nH at V_{CC} = 5V

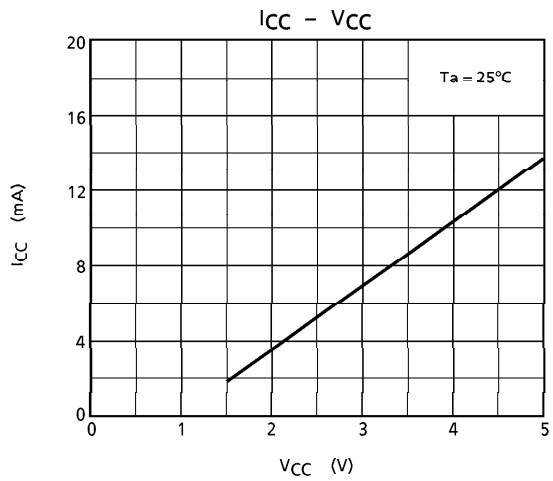
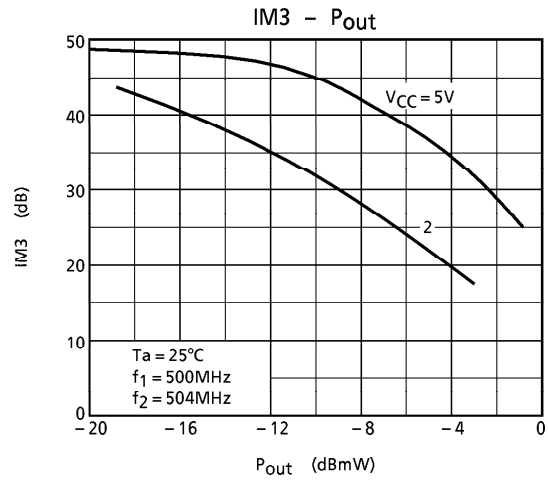
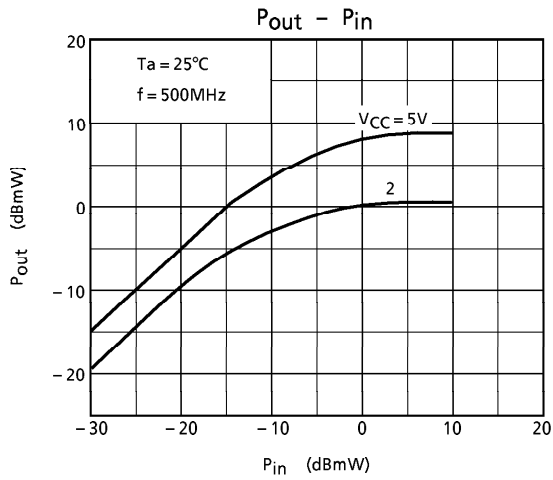
TEST CIRCUIT 1. (TOP VIEW)



EQUIVALENT CIRCUIT

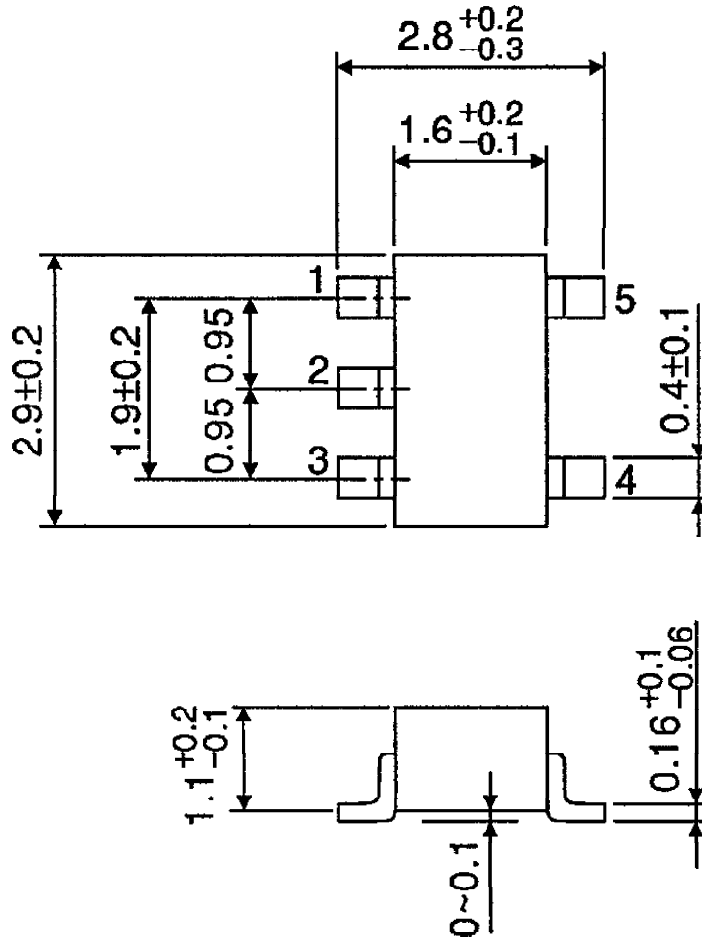






OUTLINE DRAWING
SSOP5-P-0.95

Unit : mm



Weight : 0.014g (Typ.)