

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

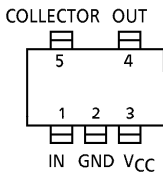
TA4003F

VHF~UHF WIDE BAND AMPLIFIER

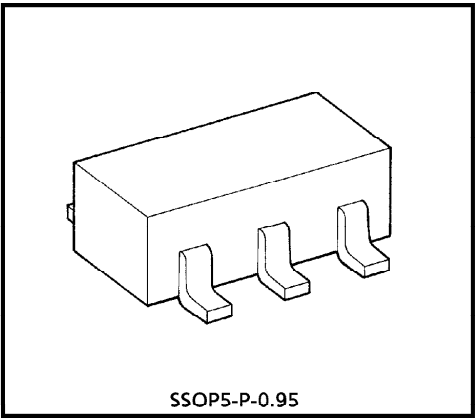
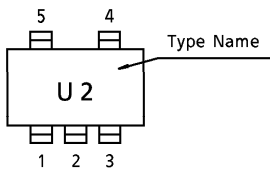
FEATURES

- 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	$T_{opr}$	$-40\sim 85$	$^\circ C$
Storage Temperature	$T_{stg}$	$-55\sim 125$	$^\circ C$

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

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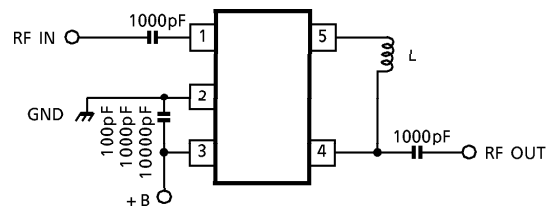
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ELECTRICAL CHARACTERISTICS (Ta = 25°C) (Note 1)

CHARACTERISTIC	SYMBOL	TEST CIR- CUIT	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Circuit Current	$I_{CC}$	—	$V_{CC} = 2V$ , Non carrier	2.5	3.5	4.5	mA
Insertion Gain	$ S_{21} ^2$	1	$V_{CC} = 2V$ , $f = 500MHz$	9	11	14	dB
Band Width	BW	1	$V_{CC} = 2V$ (Note 2)	1.2	1.5	—	GHz
Noise Figure	NF	1	$V_{CC} = 2V$ , $f = 500MHz$	—	5.2	7	dB
Input Return Loss	$ S_{11} ^2$	1	$V_{CC} = 2V$ , $f = 500MHz$	—	- 7.5	—	dB
Output Return Loss	$ S_{22} ^2$	1	$V_{CC} = 2V$ , $f = 500MHz$	—	- 7.5	—	dB
Isolation	$ S_{12} ^2$	1	$V_{CC} = 2V$ , $f = 500MHz$	—	- 24	—	dB
Maximum Output Level	$P_O$	1	$V_{CC} = 2V$ , $f = 500MHz$ , $P_{in} = 0dBmW$	—	0	—	dBmW

Note 1 : Have use for connect inductance between terminal 4 and 5      8nH at  $V_{CC} = 2V$   
Note 2 : BW is frequency of 3dB down from  $|S_{21}|^2$  at 500MHz.

TEST CIRCUIT 1. (TOP VIEW)



EQUIVALENT CIRCUIT

