

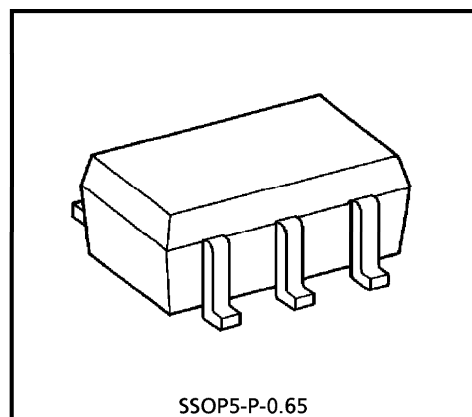
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA4013FU

## UHF WIDE BAND AMPLIFIER APPLICATIONS

### FEATURES

- High Power :  $P_{o1} \text{ dB} = 3 \text{ dBmW}$
- Wide Band :  $f = 1.7 \text{ GHz}$  (3 dB down)
- Operating Supply Voltage :  $V_{CC} = 1.5 \sim 3 \text{ V}$



SSOP5-P-0.65

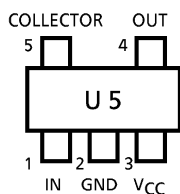
Weight : 0.006 g (Typ.)

### MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Supply Voltage	$V_{CC}$	4	V
Total Power Dissipation	$P_D$ (Note 1)	300	mW
Operating Temperature	$T_{opr}$	-40~85	°C
Storage Temperature	$T_{stg}$	-55~150	°C

(Note 1) : When mounted on the glass epoxy of 2.5 cm<sup>2</sup> × 1.6 t

### PIN ASSIGNMENT



### CAUTION

This device electrostatic sensitivity. Please handle with caution.

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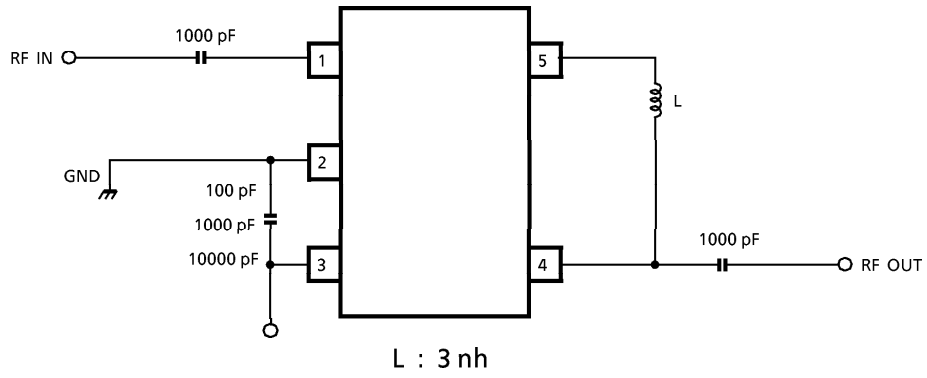
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## ELECTRICAL CHARACTERISTICS (Ta = 25°C, Zg = Zl = 50 Ω)

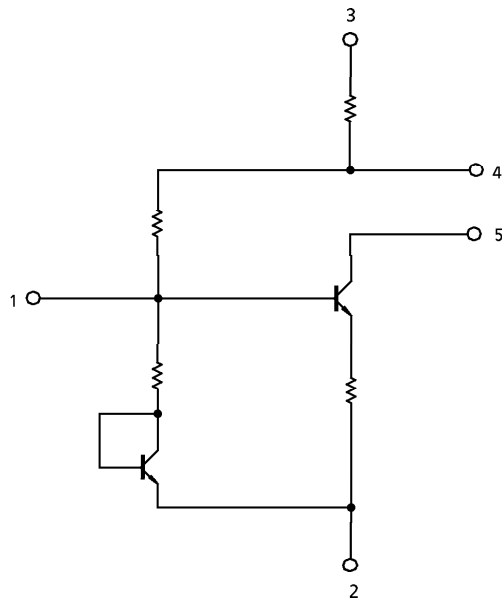
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Circuit Current	I <sub>CC</sub>	V <sub>CC</sub> = 2 V, Non carrier	7	10.5	14	mA
Band Width	BW	V <sub>CC</sub> = 2 V (Note 2)	1.5	1.7	—	GHz
Insertion Gain	S <sub>21</sub>   <sup>2</sup>	V <sub>CC</sub> = 2 V, f = 1 GHz	12	14	—	dB
Noise Figure	NF	V <sub>CC</sub> = 2 V, f = 1 GHz	—	4.5	6	dB
Isolation	S <sub>12</sub>   <sup>2</sup>	V <sub>CC</sub> = 2 V, f = 1 GHz	—	-26	—	dB
Input Return Loss	S <sub>11</sub>   <sup>2</sup>	V <sub>CC</sub> = 2 V, f = 1 GHz	—	-5.5	—	dB
Output Return Loss	S <sub>22</sub>   <sup>2</sup>	V <sub>CC</sub> = 2 V, f = 1 GHz	—	-15	—	dB
Output Power at 1 dB Gain Compression	Po1dB	V <sub>CC</sub> = 2 V, f = 1 GHz	—	3	—	dBmW

(Note 2) : BW is the frequency of 3 dB down from |S<sub>21</sub>|<sup>2</sup> at 1 GHz.

**RF TEST CIRCUIT (TOP VIEW)**

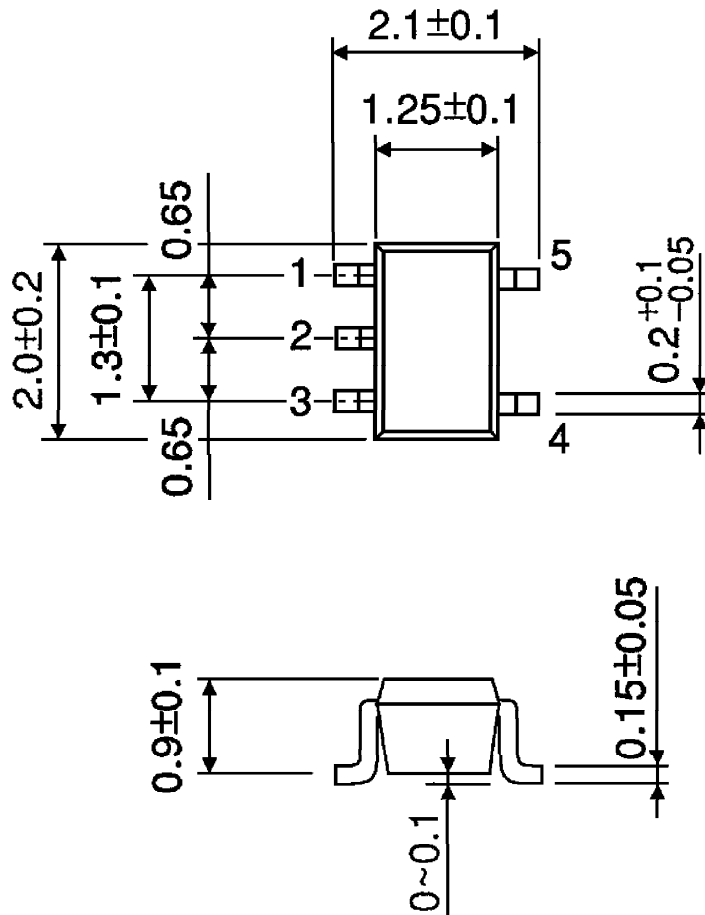


**EQUIVALENT CIRCUIT**



OUTLINE DRAWING  
SSOP5-P-0.65

Unit : mm



Weight : 0.006 g (Typ.)