

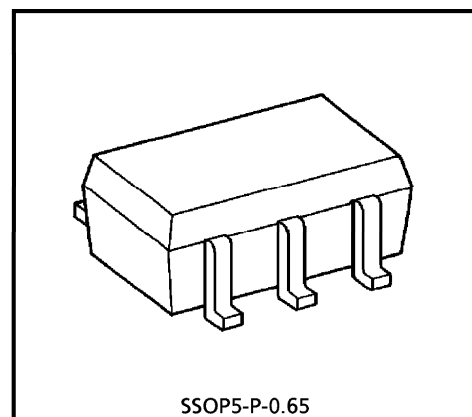
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA4012FU

## UHF WIDE BAND AMPLIFIER APPLICATIONS

### FEATURES

- Low Current :  $I_{CC} = 6.5 \text{ mA}$
- Wide Band :  $f = 2.0 \text{ GHz}$  (3 dB down)
- Operating Supply Voltage :  $V_{CC} = 1.5 \sim 3 \text{ V}$



SSOP5-P-0.65

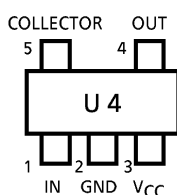
Weight : 0.006 g (Typ.)

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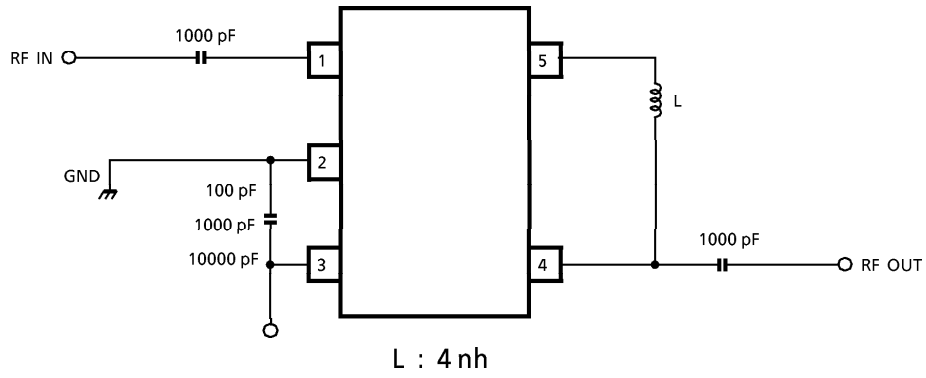
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## ELECTRICAL CHARACTERISTICS (Ta = 25°C, Zg = Zl = 50 Ω)

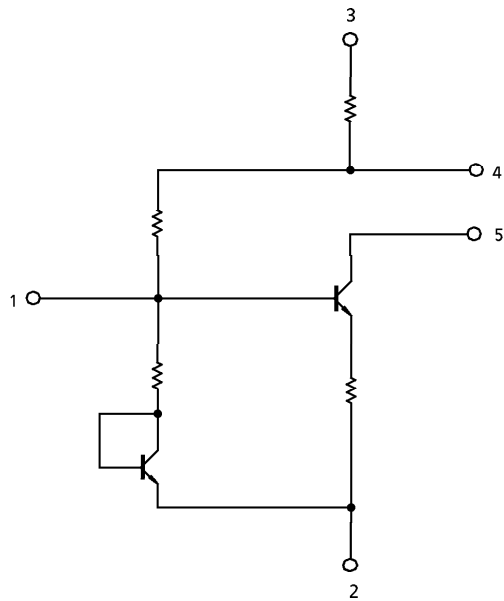
| CHARACTERISTIC                        | SYMBOL                         | TEST CONDITION                     | MIN. | TYP. | MAX. | UNIT |
|---------------------------------------|--------------------------------|------------------------------------|------|------|------|------|
| Circuit Current                       | I <sub>CC</sub>                | V <sub>CC</sub> = 2 V, Non carrier | 4.5  | 6.5  | 8.5  | mA   |
| Band Width                            | BW                             | V <sub>CC</sub> = 2 V (Note 2)     | 1.8  | 2.0  | —    | GHz  |
| Insertion Gain                        | S <sub>21</sub>   <sup>2</sup> | V <sub>CC</sub> = 2 V, f = 1.5 GHz | 10   | 12   | —    | dB   |
| Noise Figure                          | NF                             | V <sub>CC</sub> = 2 V, f = 1.5 GHz | —    | 6    | 7.5  | dB   |
| Isolation                             | S <sub>12</sub>   <sup>2</sup> | V <sub>CC</sub> = 2 V, f = 1.5 GHz | —    | -22  | —    | dB   |
| Input Return Loss                     | S <sub>11</sub>   <sup>2</sup> | V <sub>CC</sub> = 2 V, f = 1.5 GHz | —    | -6.5 | —    | dB   |
| Output Return Loss                    | S <sub>22</sub>   <sup>2</sup> | V <sub>CC</sub> = 2 V, f = 1.5 GHz | —    | -7.5 | —    | dB   |
| Output Power at 1 dB Gain Compression | Po1dB                          | V <sub>CC</sub> = 2 V, f = 1.5 GHz | —    | 0    | —    | dBmW |

(Note 2) : BW is the frequency of 3 dB down from |S<sub>21</sub>|<sup>2</sup> at 1.5 GHz.

**RF TEST CIRCUIT (TOP VIEW)**

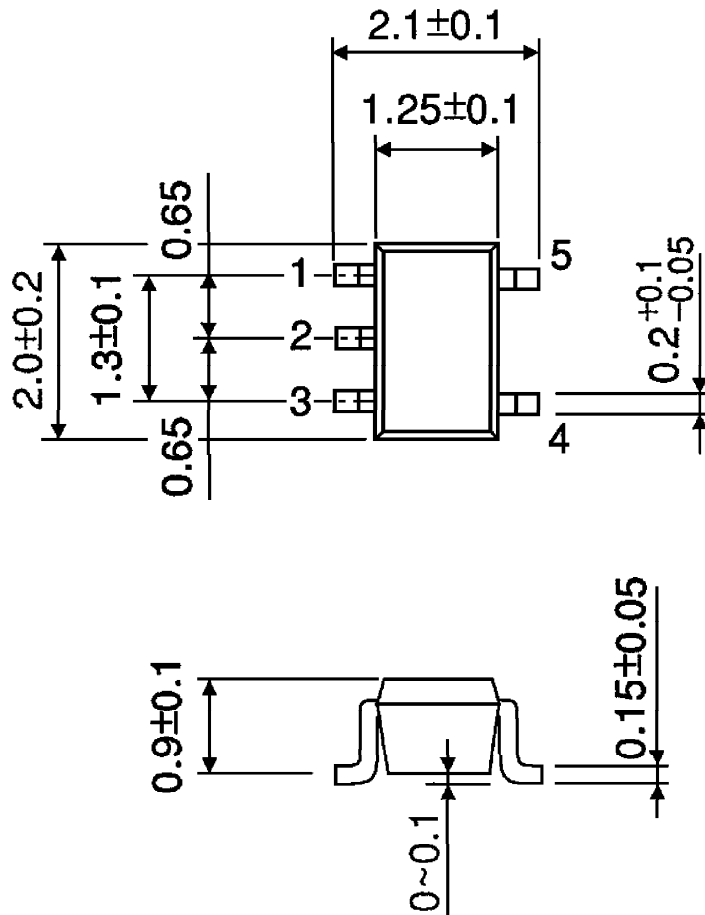


**EQUIVALENT CIRCUIT**



OUTLINE DRAWING  
SSOP5-P-0.65

Unit : mm



Weight : 0.006 g (Typ.)