

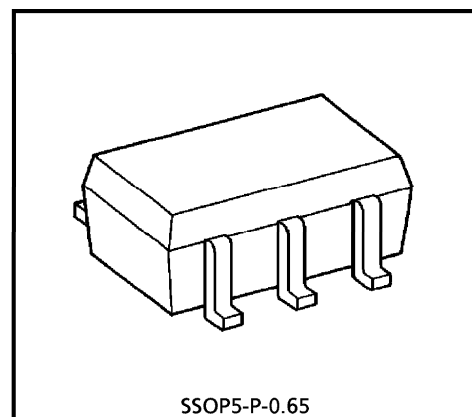
TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

# TA4011FU

## UHF WIDE BAND AMPLIFIER APPLICATIONS

### FEATURES

- Low Current :  $I_{CC} = 3.5 \text{ mA}$
- Wide Band :  $f = 2.4 \text{ GHz}$  (3 dB down)
- Operating Supply Voltage :  $V_{CC} = 1.5 \sim 3 \text{ V}$



SSOP5-P-0.65

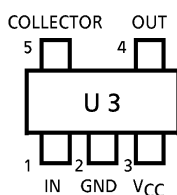
Weight : 0.006 g (Typ.)

### 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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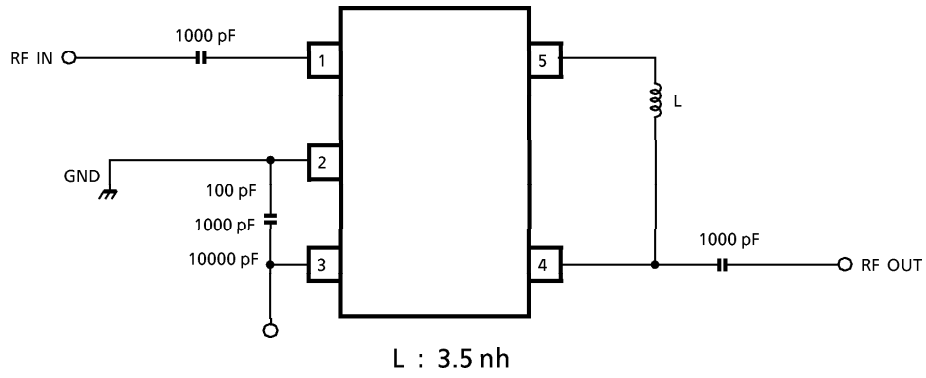
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ELECTRICAL CHARACTERISTICS ( $T_a = 25^\circ\text{C}$ ,  $Z_g = Z_l = 50 \Omega$ )

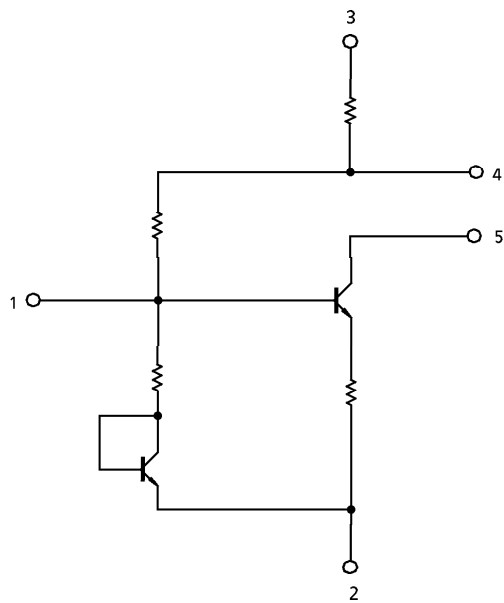
| CHARACTERISTIC                        | SYMBOL       | TEST CONDITION                                 | MIN. | TYP. | MAX. | UNIT |
|---------------------------------------|--------------|--|------|------|------|------|
| Circuit Current                       | $I_{CC}$     | $V_{CC} = 2 \text{ V}$ , Non carrier           | 2.5  | 3.5  | 4.5  | mA   |
| Band Width                            | BW           | $V_{CC} = 2 \text{ V}$ (Note 2)                | 2.2  | 2.4  | —    | GHz  |
| Insertion Gain                        | $ S_{21} ^2$ | $V_{CC} = 2 \text{ V}$ , $f = 1.5 \text{ GHz}$ | 8    | 10   | —    | dB   |
| Noise Figure                          | NF           | $V_{CC} = 2 \text{ V}$ , $f = 1.5 \text{ GHz}$ | —    | 6.5  | 8    | dB   |
| Isolation                             | $ S_{12} ^2$ | $V_{CC} = 2 \text{ V}$ , $f = 1.5 \text{ GHz}$ | —    | -22  | —    | dB   |
| Input Return Loss                     | $ S_{11} ^2$ | $V_{CC} = 2 \text{ V}$ , $f = 1.5 \text{ GHz}$ | —    | -6.5 | —    | dB   |
| Output Return Loss                    | $ S_{22} ^2$ | $V_{CC} = 2 \text{ V}$ , $f = 1.5 \text{ GHz}$ | —    | -5.5 | —    | dB   |
| Output Power at 1 dB Gain Compression | $P_{o1dB}$   | $V_{CC} = 2 \text{ V}$ , $f = 1.5 \text{ GHz}$ | —    | -6   | —    | dBmW |

(Note 2) : BW is the frequency of 3 dB down from  $|S_{21}|^2$  at 1.5 GHz.

**RF TEST CIRCUIT (TOP VIEW)**

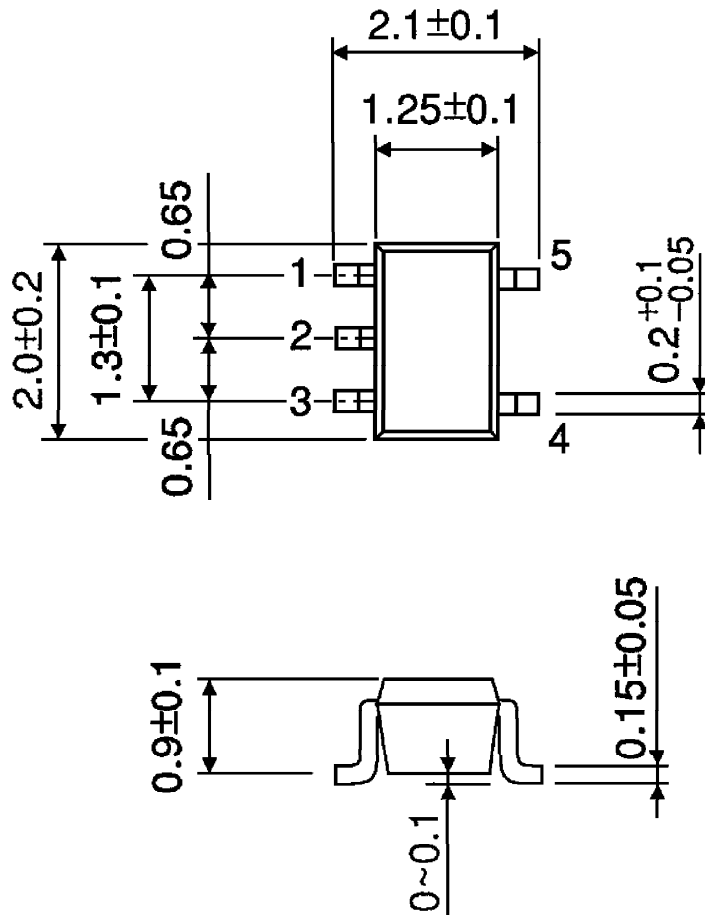


**EQUIVALENT CIRCUIT**



OUTLINE DRAWING  
SSOP5-P-0.65

Unit : mm



Weight : 0.006 g (Typ.)