

TOSHIBA BIPOLAR LINEAR INTEGRATED CIRCUIT SILICON MONOLITHIC

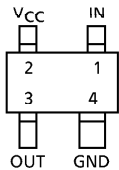
TA4002F

VHF~UHF WIDE BAND AMPLIFIER

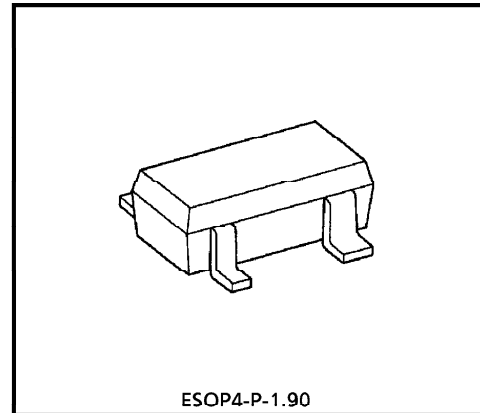
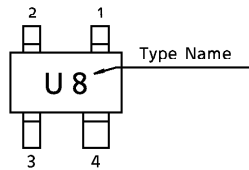
FEATURES

- Band Width 1.3GHz (Typ.) (3dB down)
- High Gain : $|S_{21}|^2 = 23\text{dB}$ (Typ.) ($f = 500\text{MHz}$)
- 50Ω Input and Output Impedance
- Small Package

PIN ASSIGNMENT (TOP VIEW)



Marking



Weight : 0.013g (Typ.)

MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

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

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

ELECTRICAL CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

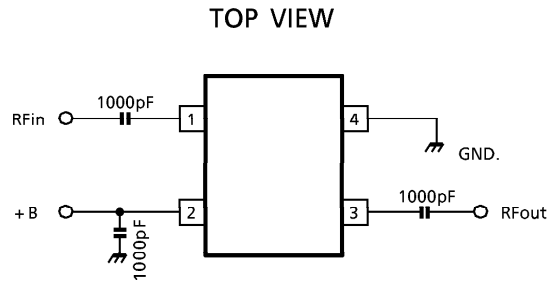
| CHARACTERISTIC | SYMBOL | TEST CIR-CUIT | TEST CONDITION | MIN. | TYP. | MAX. | UNIT |
|----------------------|--------------|---------------|--|------|------|------|------|
| Circuit Current | I_{CC} | — | $V_{CC} = 5\text{V}$, Non carrier | 10 | 14 | 20 | mA |
| Insertion Gain | $ S_{21} ^2$ | 1 | $V_{CC} = 5\text{V}$, $f = 500\text{MHz}$ | 20 | 23 | 26 | dB |
| Band Width | BW | 1 | $V_{CC} = 5\text{V}$ (Note 1) | 0.8 | 1.3 | — | GHz |
| Noise Figure | NF | 1 | $V_{CC} = 5\text{V}$, $f = 500\text{MHz}$ | — | 4.7 | 7 | dB |
| Input Return Loss | $ S_{11} ^2$ | 1 | $V_{CC} = 5\text{V}$, $f = 500\text{MHz}$ | — | -8 | — | dB |
| Output Return Loss | $ S_{22} ^2$ | 1 | $V_{CC} = 5\text{V}$, $f = 500\text{MHz}$ | — | -15 | — | dB |
| Isolation | $ S_{12} ^2$ | 1 | $V_{CC} = 5\text{V}$, $f = 500\text{MHz}$ | — | -33 | — | dB |
| Maximum Output Level | P_O | 1 | $V_{CC} = 5\text{V}$, $f = 500\text{MHz}$, $P_{in} = 0\text{dBmW}$ | — | 5 | — | dBmW |

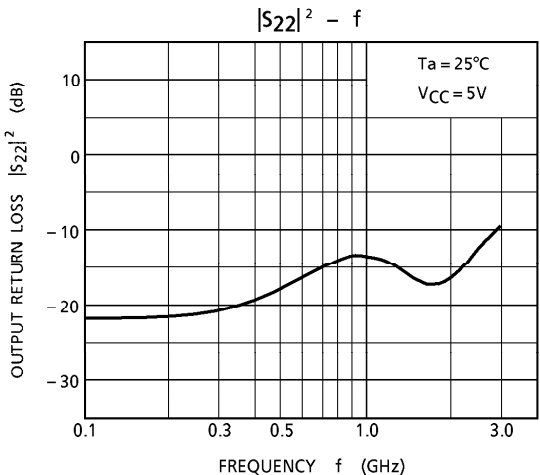
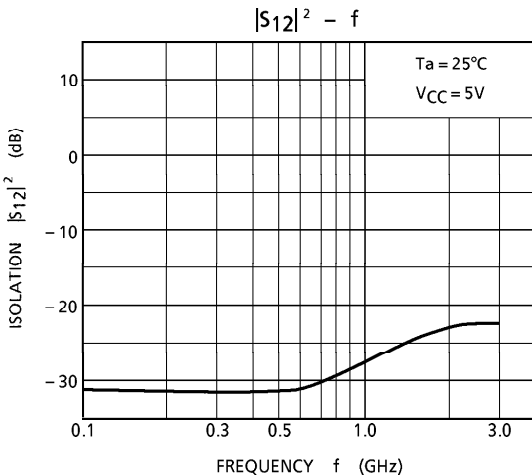
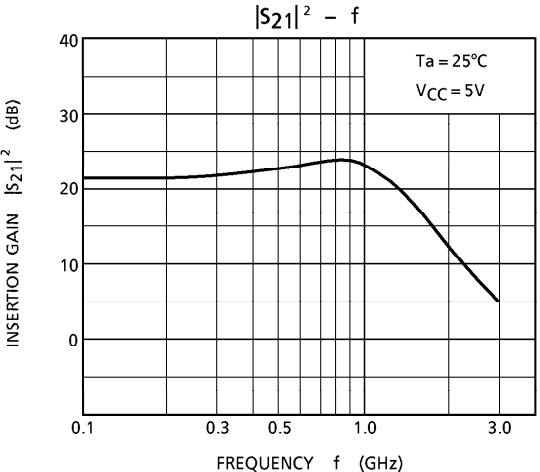
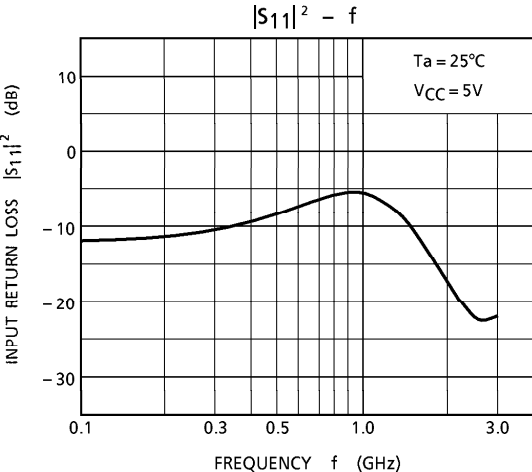
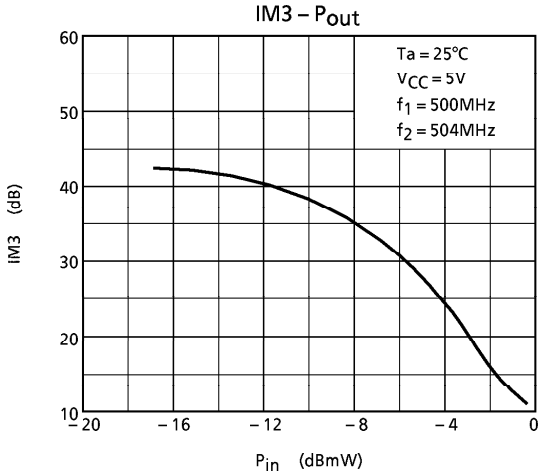
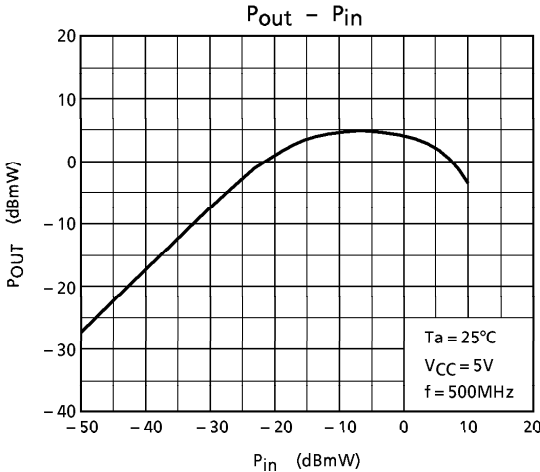
Note 1 : BW is frequency of 3dB down from $|S_{21}|^2$ at 500MHz.

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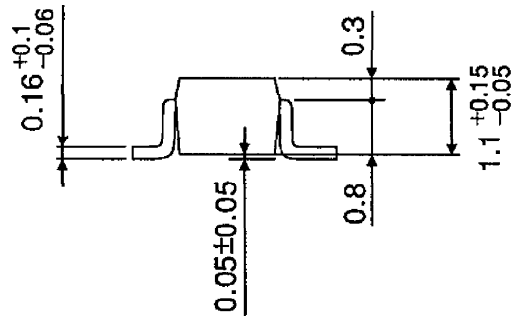
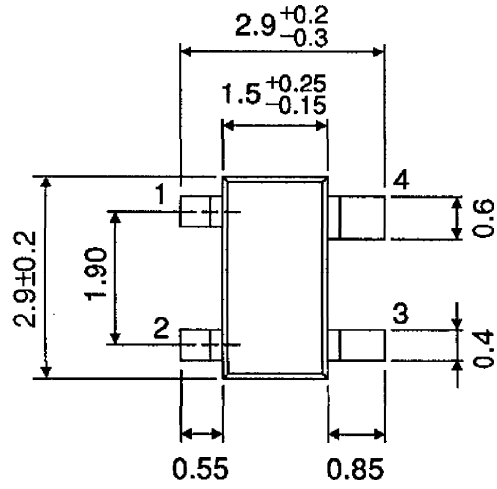
TEST CIRCUIT 1





OUTLINE DRAWING
ESOP4-P-1.90

Unit : mm



Weight : 0.013g (Typ.)