

TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

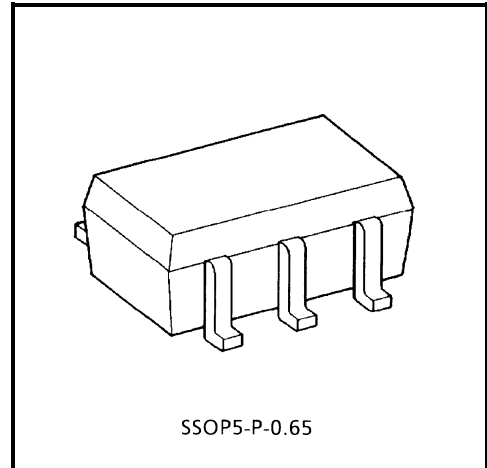
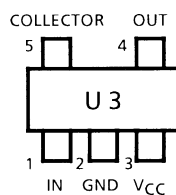
TA4011FU

UHF Wide Band Amplifier Applications

Features

- Low current: $I_{CC} = 3.5 \text{ mA}$
- Wide band: $f = 2.4 \text{ GHz}$ (3dB down)
- Operatin supply voltage: $V_{CC} = 1.5\sim 3 \text{ V}$

Pin Assignment



Weight: 0.006 g (typ.)

Maximum Ratings ($T_a = 25^\circ\text{C}$)

Characteristic	Symbol	Rating	Unit
Supply voltage 1	V_{CC1}	3.2	V
Supply voltage 2	V_{CC2} (Note1)	4	V
Total power dissipation	P_D (Nore2)	300	mW
Operating temperature	T_{opr}	$-40\sim 85$	$^\circ\text{C}$
Storage temperature	T_{stg}	$-55\sim 150$	$^\circ\text{C}$

Note 1: When V_{CC} is operated at less than 1/4 duty cycle.

Note 2: When mounted on the glass epoxy of $2.5 \text{ cm}^2 \times 1.6 \text{ t}$

Caution

This device electrostatic sensitivity. Please handle with caution.

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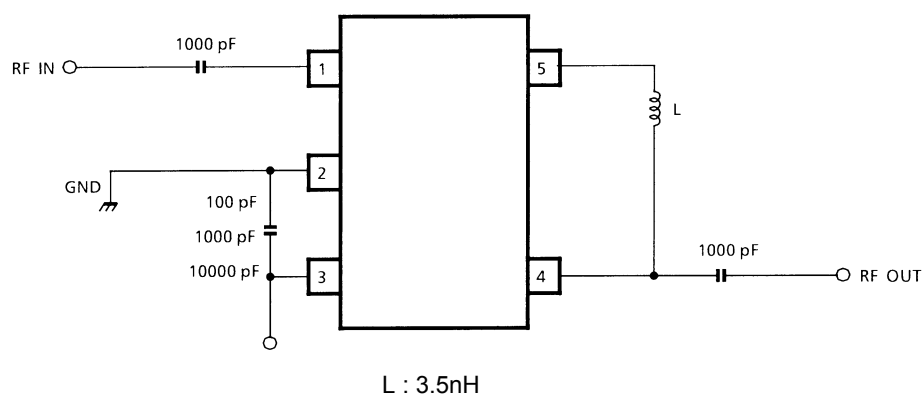
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Electrical Characteristics ($T_a = 25^\circ\text{C}$, $Z_g = Z_l = 50\ \Omega$)

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 3)	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 1dB gain compression	P_{o1dB}	$V_{CC} = 2\text{ V}$, $f = 1.5\text{ GHz}$	—	-6	—	dBmW

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

RF Test Circuit (top view)



Notice

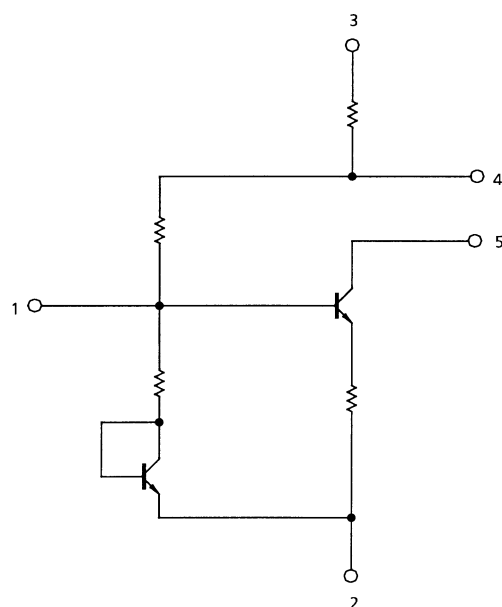
The circuits and measurements contained in this document are given only in the context of as examples of applications for these products.

Moreover, these example application circuits are not intended for mass production, since the high-frequency characteristics (the AC characteristics) of these devices will be affected by the external components which the customer uses, by the design of the circuit and by various other conditions.

It is the responsibility of the customer to design external circuits which correctly implement the intended application, and to check the characteristics of the design.

TOSHIBA assume no responsibility for the integrity of customer circuit designs or applications.

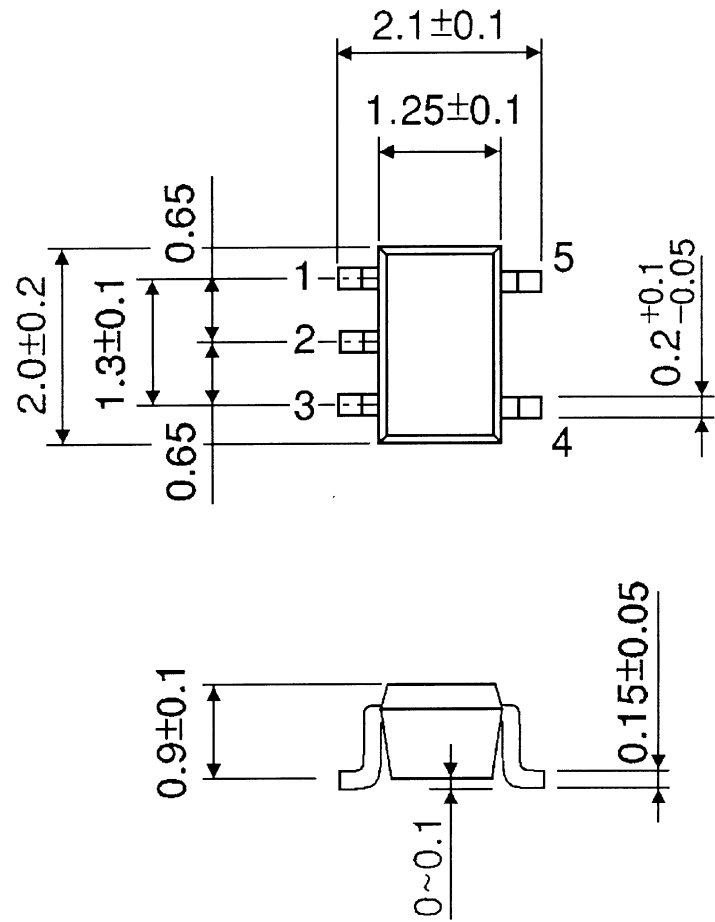
Equivalent Circuit



Package Dimensions

SSOP5-P-0.65

Unit : mm



Weight : 0.006 g (Typ.)