

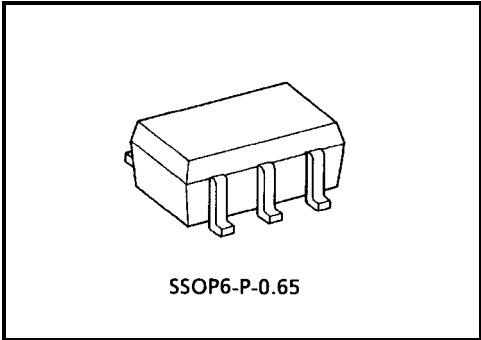
TOSHIBA Bipolar Linear Integrated Circuit Silicon Monolithic

TA4017FT

VHF Wide Band Amplifier Applications

Features

- High gain: $|S_{21}|_2 = 13\text{dB}$ (@45 MHz)
- Low distortion: $\text{IM3} = 42\text{dB}$ (@45 MHz)
- Operating supply voltage: $V_{CC} = 4.75\text{ V} \sim 5.25\text{ V}$



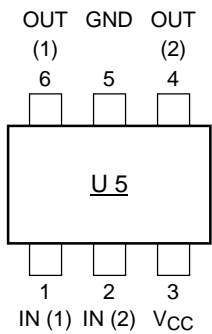
Weight: 0.008g (typ.)

Maximum Ratings (Ta = 25°C)

Characteristics	Symbol	Rating	Unit
Supply voltage	V_{CC}	5.5	V
Total power dissipation	P_D (Note 1)	300	mW
Operating temperature	T_{opr}	-40 to 85	°C
Storage temperature	T_{stg}	-55 to 150	°C

Note 1: When mounted on the glass epoxy of $2.5\text{ cm}^2 \times 1.6\text{ t}$

Pin Assignment



Electrical Characteristics (Ta = 25°C, V_{CC} = 5 V, Z_g = Z_l = 50 Ω)

Characteristics	Symbol	Test Circuit	Test Condition	Min	Typ.	Max	Unit
Circuit current	I _{CC}	Fig1	Non Carrier	15	19	25	mA
Band width	BW		(Note 2)	0.7	1	—	GHz
Input return loss	S11 ²		f = 45 MHz	—	−0.8	—	dB
Insertion gain	S21 ²		f = 45 MHz	10	13	16	dB
			f = 400 MHz	—	12.5	—	
Isolation	S12 ²		f = 45 MHz	—	−40	—	dB
Output return loss	S22 ²		f = 45 MHz	—	−3.5	—	dB
Noise figure	NF		f = 45 MHz	—	3	4.5	dB
			f = 400 MHz	—	3	—	
Output power at 1dB gain compression	Po1dB		f = 45 MHz	0	2	—	dBmW
			f = 400 MHz	—	2	—	
3 rd order inter modulation	IM3		f1 = 45 MHz, f2 = 44 MHz, Pin = −20dBmW	34	42	—	dB
		f1 = 400 MHz, f2 = 399 MHz, Pin = −20dBmW	—	42	—		

Note 2: BW is the frequency of 3dB down from |S₂₁|² at 45 MHz.

CAUTION: This device electrostatic sensitivity. Please handle with caution.

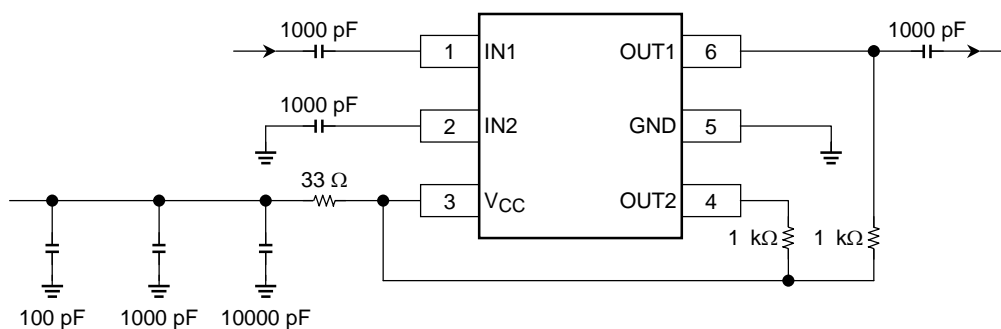


Figure 1 Measurement circuit

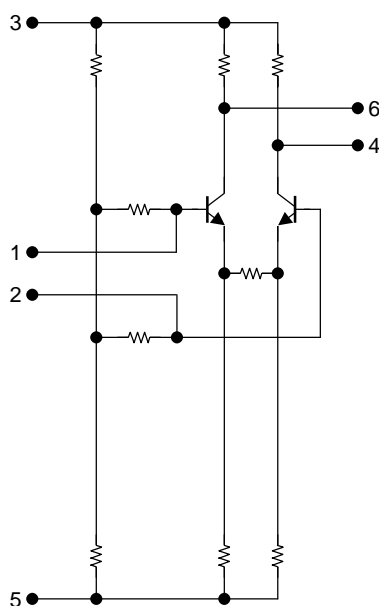


Figure 2 Equivalent circuit

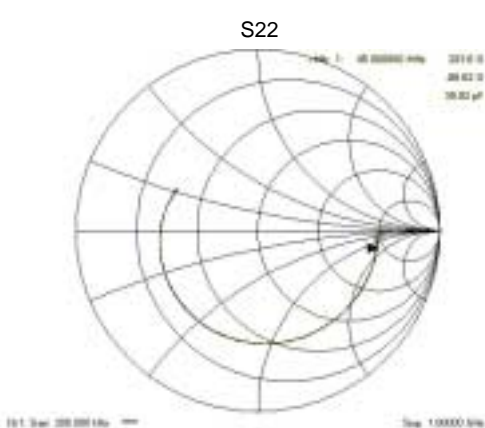
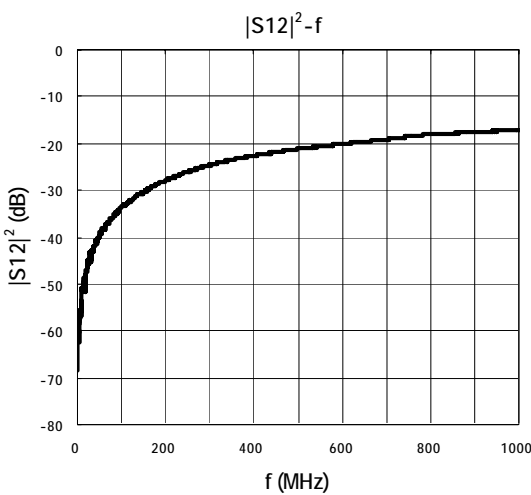
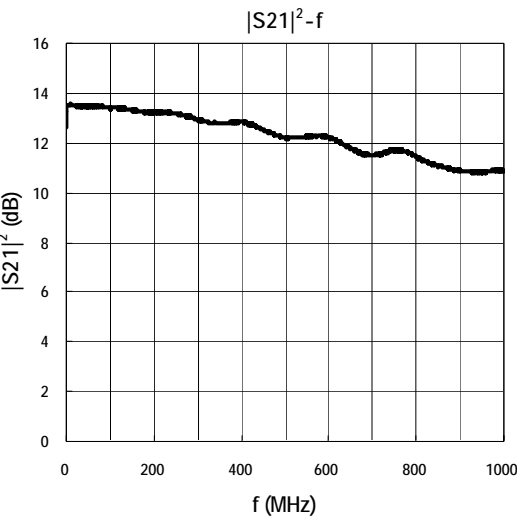
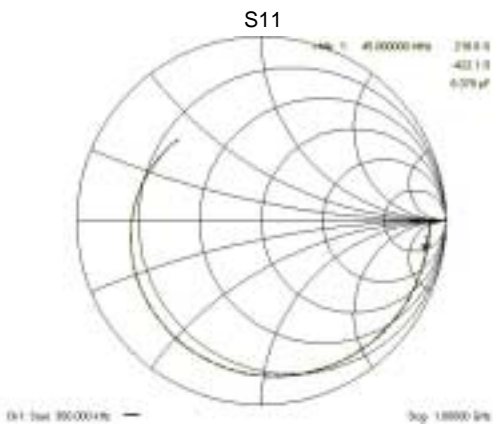
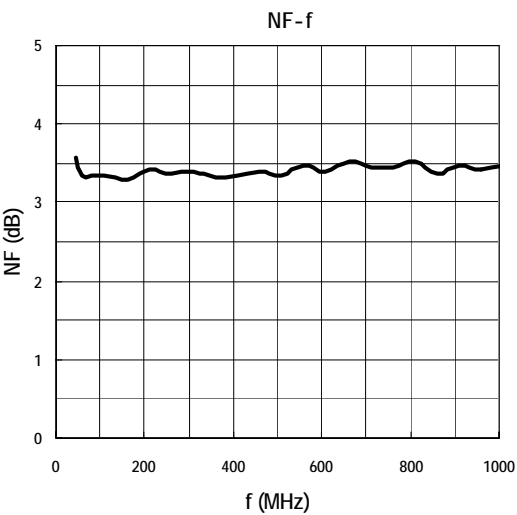
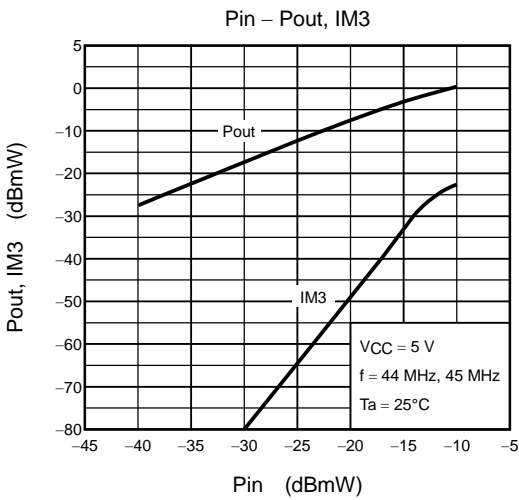
Notice

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.

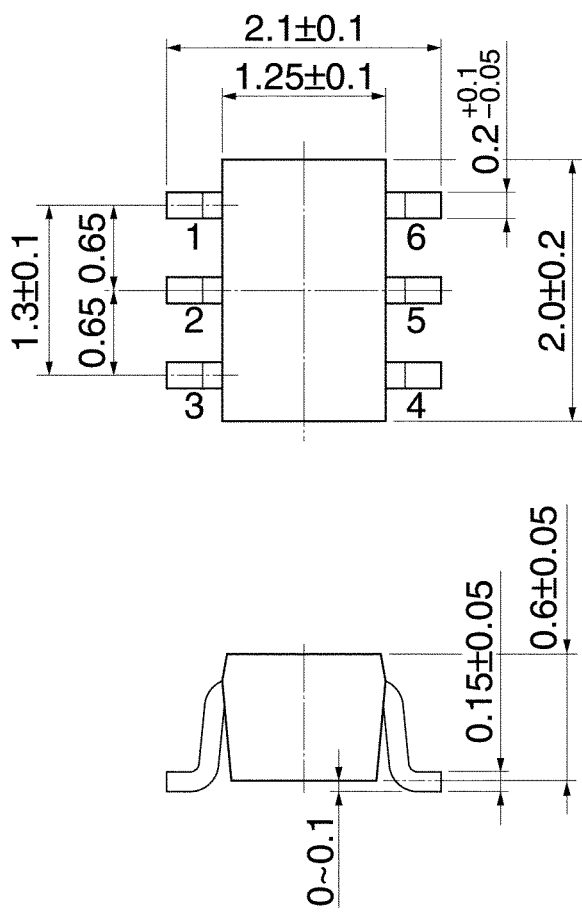
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Package Dimensions

SSOP6-P-0.65

Unit: mm



Weight: 0.008g (typ.)

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000707EBA

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