



WBA0105A

100- 500 MHz 1 Watt WIDE BAND AMPLIFIER

REV B
December 2017

Key Features



- 50 Ohm Impedance
- 100 ~ 500 MHz
- 2.5 dB Noise Figure
- 48.0 dBm Output IP₃
- 18.0 dB Gain
- +/-0.5 dB Gain Flatness
- 30.0 dBm P_{1dB}
- 1.5:1 VSWR
- Single DC Power Supply
- >68 Years MTBF
- Unconditional Stable
- RoHS Compliant

Product Description

WBA0105A is integrated with WanTcom proprietary low noise amplifier technology, high frequency micro electronic assembly techniques, and high reliability design to realize optimum low noise figure, wide bandwidth, high linearity, and unconditional stable performances together. With single DC voltage operation, the amplifier has optimal input and output matching in the specified frequency range at 50-Ohm impedance system. The amplifier has standard SMA connectorized WP-5 Gold plated housing.

The amplifier is designed to meet the rugged standard of MIL-STD-202g.

CAUTION:



ELECTROSTATIC DISCHARGE SENSITIVE

Applications

- Mobile Infrastructures
- VHF & UHF
- Broadcast
- Defense
- Security System
- Measurement
- Fixed Wireless



Specifications

Heat sink required for continuous operation!

Summary of the electrical specifications WBA0105A at room temperature

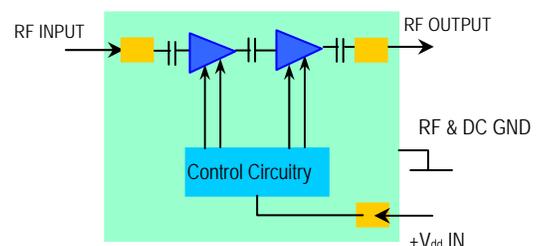
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S ₂₁	100 – 500 MHz	17	18	19	dB
2	Gain Variation	ΔG	100 – 500 MHz		+/- 0.5	+/-0.8	dB
3	Input VSWR	SWR ₁	100 – 500 MHz		1.5:1	1.8:1	Ratio
4	Output VSWR	SWR ₂	100 – 500 MHz		1.25:1	1.35:1	Ratio
5	Reverse Isolation	S ₁₂	100 – 500 MHz		28		dB
6	Noise Figure	NF	100 – 500 MHz	2.0	2.5	3.8	dB
7	Output 1dB Gain Compression Point	P _{1dB}	100 – 500 MHz	29	30		dBm
8	Output Third Order Interception Point	IP ₃	Two-tone, P _{out} =+15 dBm each, 1 MHz sep.	46	48		dBm
9	Current Consumption	I _{dd}	V _{dd}		235		mA
10	Power Supply Voltage	V _{dd}		+ 11	+ 12	+ 16	V
11	Thermal Resistance, Junction to Case	R _{th,c}	Last stage transistor V _{ds} = 9.0V, I _{ds} = 210 mA,			30	°C/W
12	Operating Temperature	T _o	Case temperature	-40		+85	°C
13	Maximum Input CW RF Power	P _{IN, MAX}	DC – 6 GHz			20	dBm

Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	-0.5, +16V
Drain Current	mA	400
Total Power Dissipation	W	5W
Input CW RF Power	dBm	20
Junction Temperature	°C	170
Storage Temperature	°C	-55 ~ 125
Operating Temperature	°C	-40 ~ 85
Thermal Resistance	°C/W	30

Operation of this device above any one of these parameters may cause permanent damage.

Functional Block Diagram



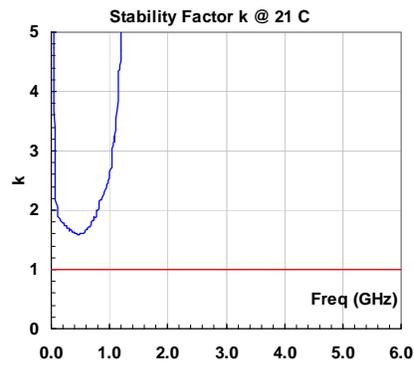
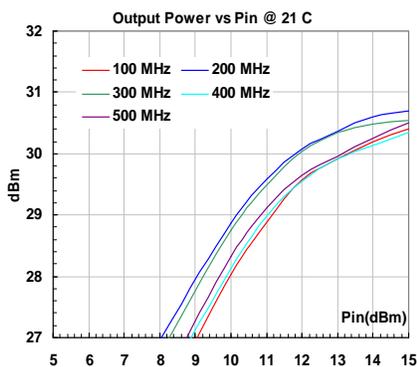
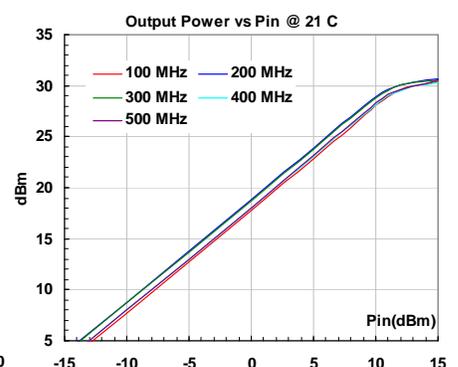
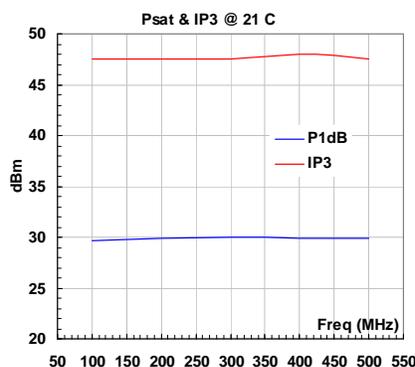
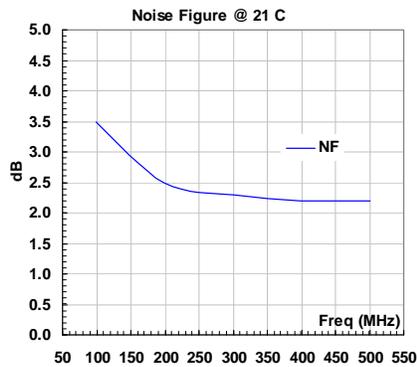
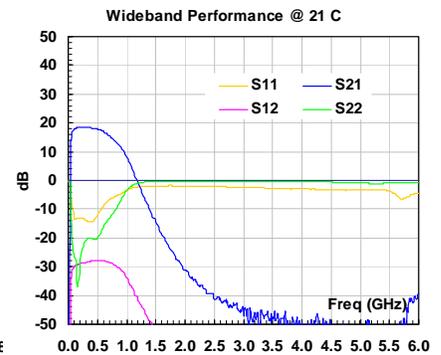
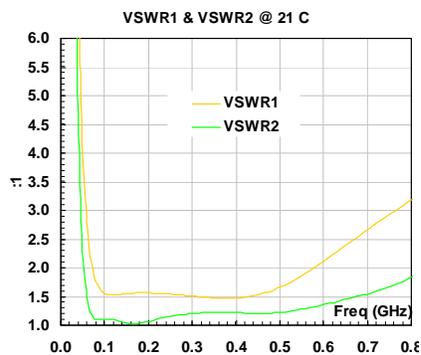
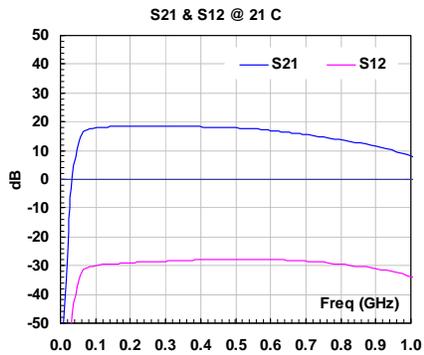
Ordering Information

Model	WBA0105A
-------	----------

Specifications and information are subject to change without notice.



Typical Data



Specifications and information are subject to change without notice.

