



WBA1030A

1.0- 3.0 GHz LOW NOISE WIDE BAND AMPLIFIER

REV C
January 2018

Key Features



- 50 Ohm Impedance
- 1.0 ~ 3.0 GHz
- 1.1 dB Noise Figure
- 35.0 dBm Output IP₃
- 32.0 dB Gain
- +/-0.5 dB Gain Flatness
- 22.0 dBm P_{1dB}
- 1.5:1 VSWR
- Single DC Power Supply
- >34 Years MTBF
- Unconditional Stable
- RoHS Compliant

Product Description

WBA1030A 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
- GPS
- Astronomy
- Defense
- Security System
- Measurement
- Fixed Wireless



Specifications

Summary of the electrical specifications WBA1030A at room temperature

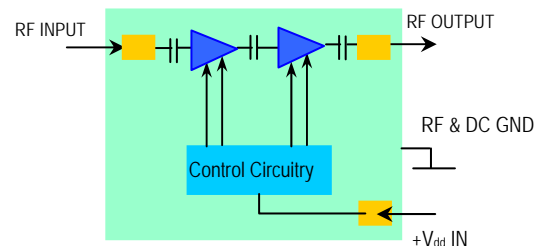
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S ₂₁	1.0 – 3.0 GHz	31	32		dB
2	Gain Variation	ΔG	1.0 – 3.0 GHz		+/- 0.5	+/-0.7	dB
3	Input VSWR	VSWR ₁	1.0 – 3.0 GHz		1.22:1	1.5:1	Ratio
4	Output VSWR	VSWR ₂	1.0 – 3.0 GHz		1.5:1	1.8:1	Ratio
5	Reverse Isolation	S ₁₂	1.0 – 3.0 GHz	35	40		dB
6	Noise Figure	NF	1.0 – 3.0 GHz		1.1	1.3	dB
7	Output 1dB Gain Compression Point	P _{1dB}	1.0 – 3.0 GHz	20	22		dBm
8	Output Third Order Interception Point	IP ₃	Two-tone, P _{out} =+0 dBm each, 1 MHz sep.	30	35		dBm
9	Current Consumption	I _{dd}	V _{dd}		160		mA
10	DC Power Supply Voltage	V _{dd}		+4.7	+5	+5.3	V
11	Thermal Resistance, Junction to Case	R _{th,c}	Last stage transistor V _{ds} = 4.5V, I _{ds} = 110 mA,			125	°C/W
12	Operating Temperature	T _o	--	-40		+85	°C
13	Maximum Input CW RF Power	P _{IN, MAX}	DC – 6 GHz			10	dBm

Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	-0.5, +6V
Drain Current	A	0.2
Total Power Dissipation	W	0.7
Input CW RF Power	dBm	10
Junction Temperature	°C	170
Storage Temperature	°C	-55 ~ 125
Operating Temperature	°C	-40 ~ 85
Thermal Resistance	°C/W	125

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

Functional Block Diagram



Ordering Information

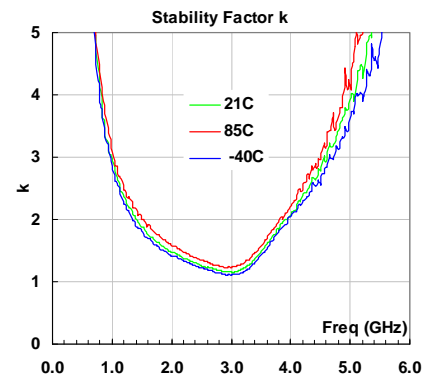
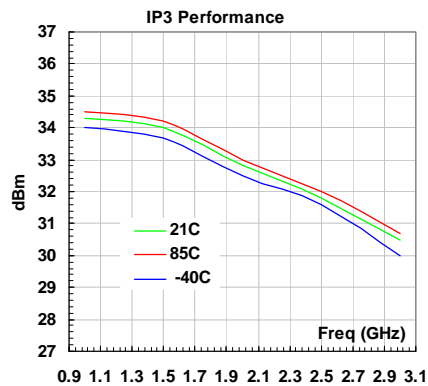
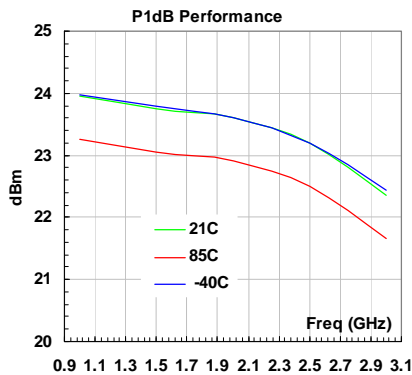
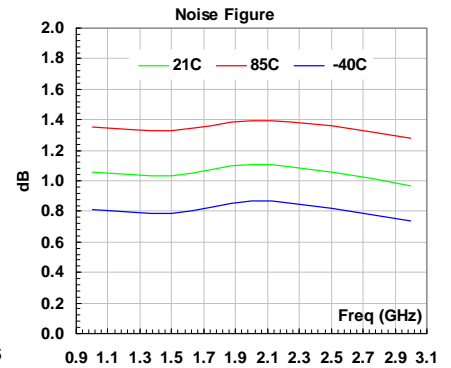
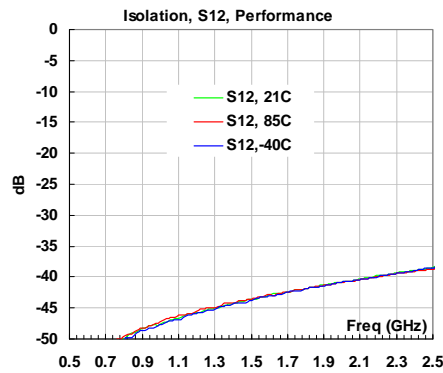
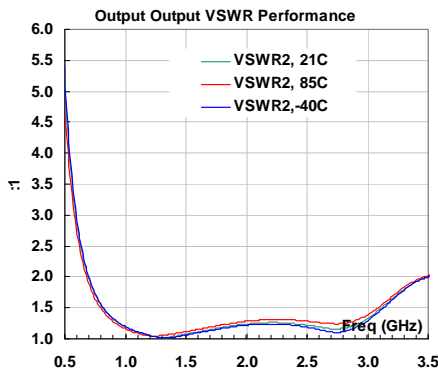
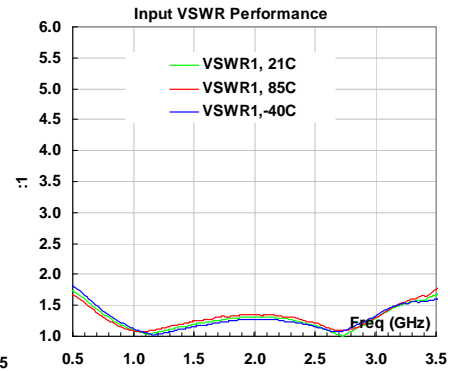
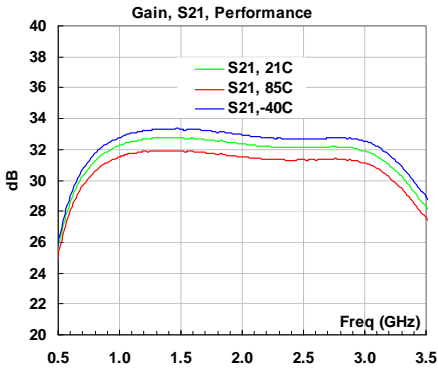
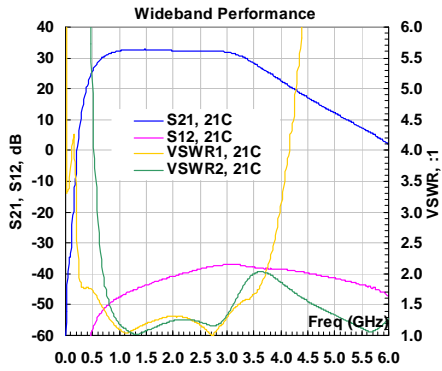
Model	WBA1030A
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Additional heat sink is required for continuous operation!

Specifications and information are subject to change without notice.



Typical Data



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