

0.8- 2.1 GHz LOW NOISE POWER AMPLIFIER WBPA0921A¹

WBPA0921A is a wideband and high linearity amplifier. The amplifier offers typical +/- 0.50 dB exceptional gain flatness, 32.0 dB output P_{1dB} , and 43.0 dBm output IP₃ at the frequency range from 0.80 GHz to 2.10 GHz of UHF, Cellular, GPS, DCS, PCS, and 3G bands.

WBPA0921A is most suitable for cellular base stations, wireless data communications, tower top receiver amplifiers, last-mile wireless communication systems, and wireless measurement applications.

WBPA0921A is designed to meet the rugged standards of MIL-STD-202, and MIL-STD-883.

Key Features:

Impedance:	50 Ohm
MTBF ² :	>300,000 hrs (34 years)
Unconditional Stable:	k>1
Low Noise:	2.0 dB
Output IP ₃ :	43 dBm
Gain:	20.0 dB
P _{1dB} :	32.0 dBm
Single power supply:	500 mA @ +10V
Wide Bandwidth:	0.8 ~ 2.1 GHz
Operating Temperature:	$-40 \sim +85 \text{ °C}$
Input & Output Return Losses:	16.0 dB
Small size:	SMA Female, 1.00" x 1.08" x 0.41" (25.4 mm x 27.4 mm x 10.4 mm)
	gold plated housing.
Built-in Functions:	DC blocks at input and output, temperature compensation
	circuits, and auto DC biases.

Absolute Maximum Ratings³:

Symbol	Parameters	Units	Absolute Maximum		
V _{dd}	DC Power Supply Voltage	V	10.5		
l _{dd}	Drain Current	mA	600		
P _{diss}	Total Power Dissipation	W	7		
P _{In,Max}	RF Input Power	dBm	18		
T _{ch}	Channel Temperature	°C	165		
T _{STG}	Storage Temperature	°C	-55 ~ 125		
T _{O,MAX}	Maximum Operating Temperature	°C	-40 ~ 85		
R _{th,c}	Thermal Resistance	°C/W	18		

¹ Specifications are subject to change without notice.

² MTBF: Mean Time Between Failure, Per TR-NWT-000332, ISSUE 3, SEPTEMBER, 1990, T=40°C

³ Operation of this device above any one of these parameters may cause permanent damage.



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Specifications:

a) Table 1 Summary of the electrical specifications WBPA0921A at room temperature

Index	Testing Item	Symbol	Test Constraints	Nom (RT)	Min	Max	Unit
1	Gain	S ₂₁	0.8 – 2.1 GHz	20	18	21	dB
2	Gain Variation	ΔG	0.8 – 2.1 GHz	+/- 0.5		+/-0.75	dB
3	Input Return Loss	S ₁₁	0.8 – 2.1 GHz	16	14		dB
4	Output Return Loss	S ₂₂	0.8 – 2.1 GHz	16	14		dB
5	Reverse Isolation	S ₁₂	0.8 – 2.1 GHz	45	40		dB
6	Noise figure	NF	0.8 – 2.1 GHz	2.0		3.0	dB
7	Output Power 1dB compression Point	P _{1dB}	0.8 – 2.1 GHz	32	30		dBm
8	Output-Third-Order Interception point	IP ₃	Two-Tone, P _{out} +20 dBm each, 1 MHz separation	43	40		dBm
9	Current Consumption	l _{dd}	V _{dd} = +10 V	500			mA
10	Power Supply Voltage	V _{dd}		+10			V
11	Thermal Resistance	R _{th,c}	Junction to case			18	°C/W
12	Operating Temperature	To			-40	+85	°C
13	Maximum Average RF Input Power	P _{IN, MAX}	0.8 – 2.1 GHz			10	dBm





WBPA0921A LNA Mechanical Outline, WP-5:

Figure 7 shows the mechanical outline sample of WBPA0921A. It is a WanTcom's standard WP-5 housing with gold plating finish. Both RF input and output ports are equipped with SMA female connectors and the DC port connector is an EMI filtered feed thru pin.

Ordering Information

Model Number: WBPA0921A
