

**WZA111****30 – 3000 MHz LOW NOISE WIDE BAND AMPLIFIER****REV C**
April 2019

Key Features



Applications

- 30 ~ 3000 MHz
- 1.0 dB Noise Figure
- 30.0 dBm Output IP₃
- 18.0 dB Gain
- 15.0 dBm P_{1dB}
- 1.35:1 VSWR
- Single Power Supply
- RoHS Compliant
- **MADE IN USA**

- Mobile Infrastructures
- VHF, GPS, PCS, 3G
- Security System
- Measurement
- Fixed Wireless



Absolute Maximum Ratings

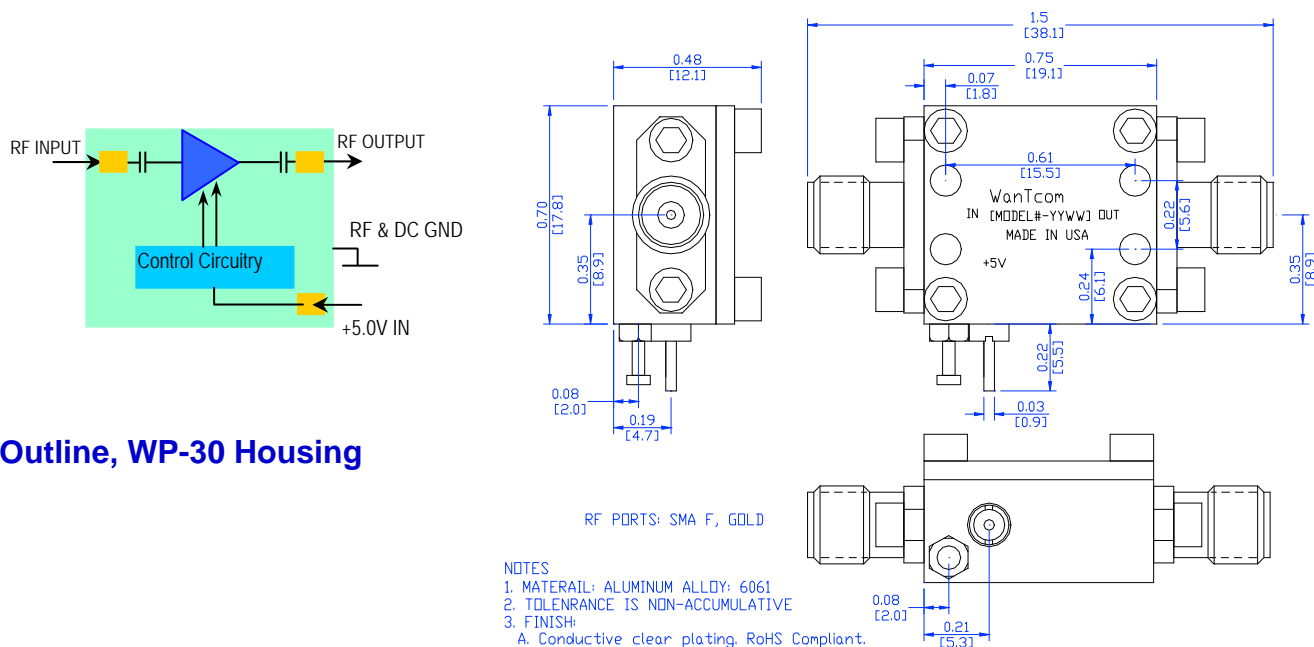
Parameters	Units	Rating
DC Power Supply Voltage	V	6.0
Drain Current	mA	70
Total Power Dissipation	mW	400
Input CW RF Power	dBm	15
Channel Temperature	°C	150
Storage Temperature	°C	-55~125
Operating Temperature	°C	-40~85
Thermal Resistance	°C/W	220

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

Specifications

Summary of the electrical specifications WZA111 at room temperature

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S ₂₁	30 – 3000 MHz	16	18	20	dB
2	Gain Variation	ΔG	30 – 3000 MHz		+/- 0.7	+/-1.0	dB
3	Input VSWR	SWR ₁	30 – 3000 MHz		1.35:1	1.5:1	Ratio
4	Output VSWR	SWR ₂	30 – 3000 MHz		1.35:1	1.5:1	Ratio
5	Reverse Isolation	S ₁₂	30 – 3000 MHz		20		dB
6	Noise Figure	NF	30 – 50 MHz		1.2	1.8	dB
			50 – 3000 MHz		1.0	1.3	
7	Output Power 1dB Compression Point	P _{1dB}	30 – 3000 MHz	13	15		dBm
8	Output-Third-Order Interception Point	IP ₃	Two-Tone, P _{out} = 0 dBm each, 1 MHz separation		30		dBm
9	Current Consumption	I _{dd}	@ 21 °C		35		mA
10	Power Supply Voltage	V _{dd}		+4.7	+5.0	+5.3	V
11	Thermal Resistance	R _{th,c}	Junction to case			220	°C/W
12	Operating Temperature	T _o	Case temperature at the bottom of the housing	-40		+85	°C
13	Maximum Input CW RF Power	P _{IN, MAX}	DC – 13 GHz			15	dBm
14	Spurious	P _{spur}	DC – 13 GHz	-70			dBc



Outline, WP-30 Housing

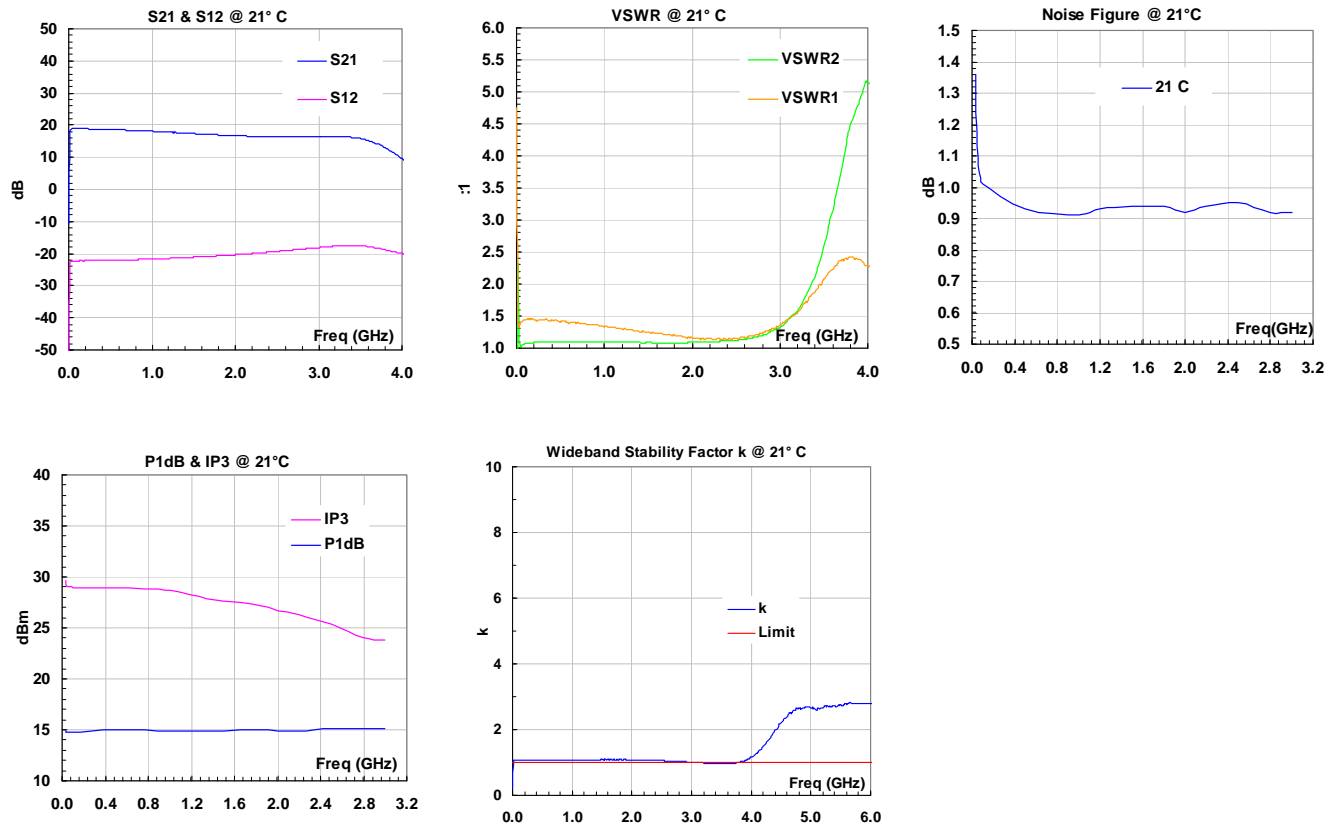
Specifications and information are subject to change without notice.



Ordering Information

Model Number	WZA111
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Typical Performance



Application Notes

A. SMA Torque Wrench Selection

Always use a torque wrench with 5 ~ 6 inch-lb coupling torque setting for mating the SMA cables to the amplifier. Never use torque more than 8 inch-lb wrench for tightening the mating cable connector to the amplifier connector. Otherwise, the permanent damage will occur to the SMA connectors of the amplifier. 8710-1582 (5 inch-lb) is one of the ideal torque wrench choice from Agilent Technology.

B. Mounting the Amplifier

Use three pieces of #2-56 with longer than 9/16" screws for mounting the amplifier on a metal-based chase. Flat and spring washers are needed to prevent the screw loosening after any shock and vibration. Always use the appropriate torque setting of the power screwdriver to mount the screws.

C. Soldering DC Power Supply Wires

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Always turn off the DC power supply of +5.0V when connect the DC cables to the amplifier. Only turn on the power supply after the correct connections are confirmed. Any accidentally short the live +5.0V to the ground while applying DC cable to the DC feed thru pin may damage the amplifier.

The AWG of 18 ~ 24 insulated wires are recommended for the DC cables. Red and Black color wires are recommended for +5.0V and its return for easier identification of the polarity to avoid the wrong DC bias. Only ¾ to 1 turn wrap around the feed thru pin and ground turret per the IPC standard. The soldering iron tip size between 0.010" to 0.020" is recommended. The temperature of the tip shall be set around 700 °F in order to avoid too high temperature. The DC Pin will be damaged if it is exposed too high temperature for too long.
