WZA312

30 – 500 MHz LOW NOISE WIDE BAND AMPLIFIER

REV A
September 2020

Key Features

- 30 ~ 500 MHz
- 0.8 dB noise figure
- 38.0 dBm output IP_3
- 24.0 dB Gain
- 24.0 dBm P_{1dB}
- 1.5:1 VSWR
- Single Power Supply
- RoHS Compliant
- **MADE IN USA**

Applications

- Mobile Infrastructures
- VHF, UHF, Cellular
- Security System
- Measurement
- Fixed Wireless

Absolute Maximum Ratings

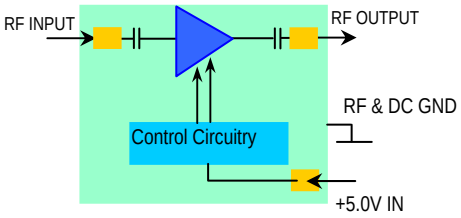
Parameters	Units	Rating
DC Power Supply Voltage	V	6.0
Drain Current	mA	180
Total Power Dissipation	mW	500
Input CW RF Power	dBm	13
Junction Temperature	°C	150
Storage Temperature	°C	-55~125
Operating Temperature	°C	-40~85
Thermal Resistance	°C/W	110

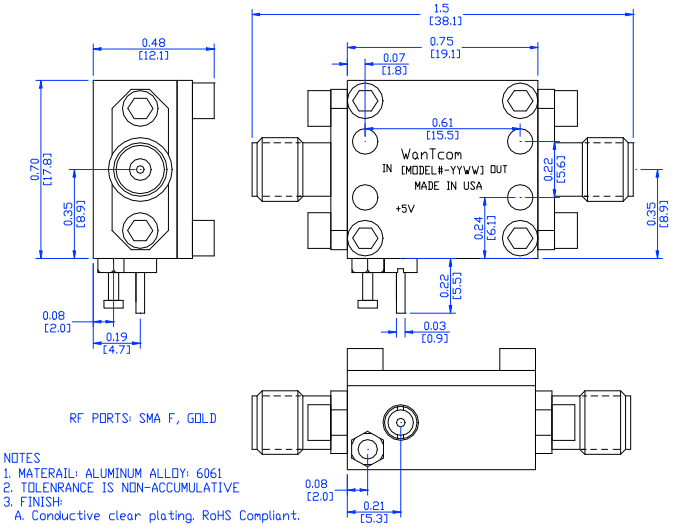
Operation of this device above any one of these parameters may cause permanent damage.

Specifications

Summary of the electrical specifications WZA312 at room temperature

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S_{21}	30 – 500 MHz		24		dB
2	Gain Variation	ΔG	30 – 500 MHz		+/- 1.0	+/- 1.3	dB
3	Input VSWR	SWR_1	30 – 500 MHz		1.35:1	1.5:1	Ratio
4	Output VSWR	SWR_2	30 – 500 MHz		1.6:1	2:1	Ratio
5	Reverse Isolation	S_{12}	30 – 500 MHz		20		dB
6	Noise Figure	NF	100 – 500 MHz		0.75	1.0	dB
			30 – 100 MHz		1.0	1.4	
7	Output Power 1dB Compression Point	P_{1dB}	30 – 500 MHz	22	24		dBm
8	Output-Third-Order Interception point	IP_3	Two-Tone, P_{out} = 0 dBm each, 1 MHz separation	34	38		dBm
9	Current Consumption	I_{dd}	V_{dd}= +5.0 V		140		mA
10	Power Supply Operating Voltage	V_{dd}		+4.7	+5	+5.3	V
11	Thermal Resistance	$R_{th,c}$	Junction to case			110	°C/W
12	Operating Temperature	T_o		-40		+85	°C
13	Maximum Input CW RF Power	$P_{IN, MAX}$	DC – 6.0 GHz			13	dBm





Ordering Information

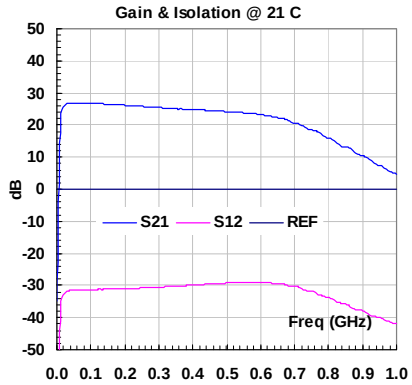
Model Number	WZA312

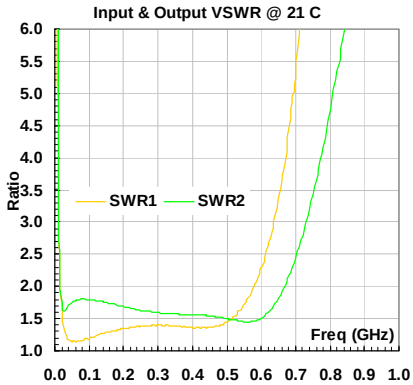
Outline, WP-30 Housing

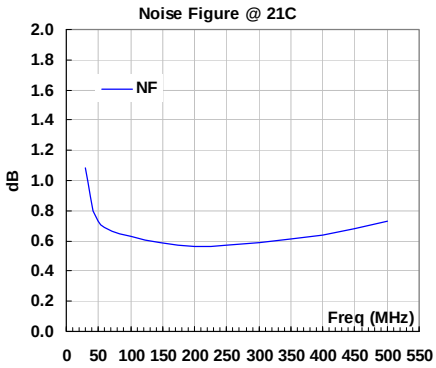
Specifications and information are subject to change without notice.

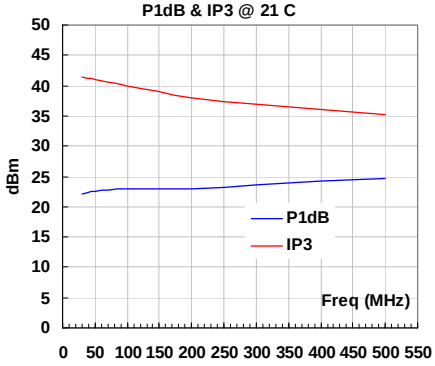
WanTcom, Inc ∗ Phone 01 952 448 6088 ∗ FAX: 01 952 448 7188 ∗ e-mail: sales@wantcominc.com ∗ Web site: www.wantcominc.com

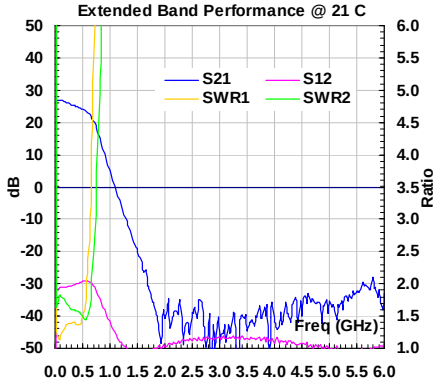
Typical Performance

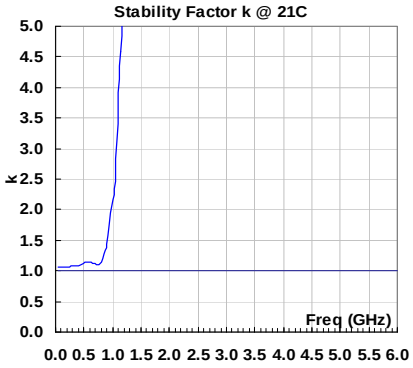












Application Notes:

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 to the 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 during the shock and vibration. Always use the appropriate torque setting of the power screwdriver to mount them.

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