WZA112

1 – 500 MHz LOW NOISE WIDE BAND AMPLIFIER

REV A
May 2011

Key Features

- 1 ~ 500 MHz
- 0.80 dB noise figure
- 25.0 dBm output IP_3
- 20.0 dB Gain
- 12.0 dBm P_{1dB}
- 1.5:1 VSWR
- Single Power Supply
- RoHS Compliant
- **MADE IN USA**

Applications

- Mobile Infrastructures
- VHF
- Security System
- Measurement
- Fixed Wireless

Absolute Maximum Ratings

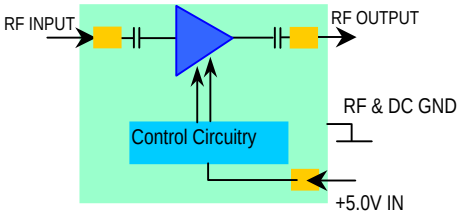
Parameters	Units	Rating
DC Power Supply Voltage	V	6.0
Drain Current	mA	70
Total Power Dissipation	mW	400
RF Input Power	dBm	10
Channel Temperature	°C	150
Storage Temperature	°C	-55~125
Operating Temperature	°C	-40~85
Thermal Resistance	°C/W	220

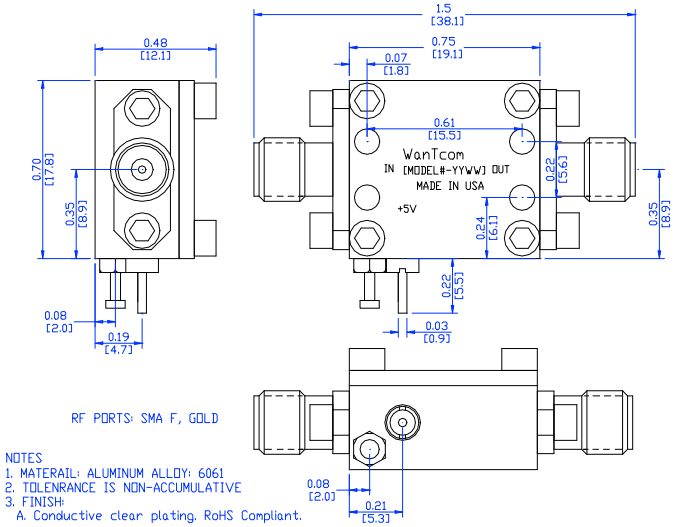
Operation of this device above any one of these parameters may cause permanent damage.

Specifications

Summary of the electrical specifications WZA112 at room temperature

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S_{21}	1 – 500 MHz	18	21		dB
2	Gain Variation	ΔG	1 – 500 MHz		+/- 1.0	+/-1.5	dB
3	Input VSWR	SWR_1	1 – 500 MHz		1.5:1	1.8:1	Ratio
4	Output VSWR	SWR_2	1 – 500 MHz		1.35:1	1.6:1	Ratio
5	Reverse Isolation	S_{12}	1 – 500 MHz		25		dB
6	Noise figure	NF	50 – 500 MHz		0.8	1.2	dB
			10 ~ 50 MHz		1.4	1.8	
7	Output Power 1dB compression Point	P_{1dB}	1 – 500 MHz	10	12		dBm
8	Output-Third-Order Interception point	IP_3	Two-Tone, P_{out} = 0 dBm each, 1 MHz separation	20	23		dBm
9	Current Consumption	I_{dd}	@ 25 °C		25		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 Average RF Input Power	$P_{IN, MAX}$	DC – 13 GHz			10	dBm
14	Spurious	P_{spur}	DC – 13 GHz	-70			dBc





Ordering Information

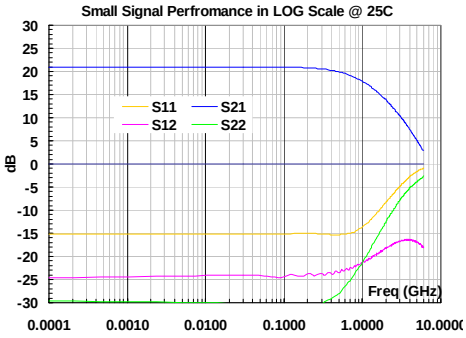
Model Number	WZA112

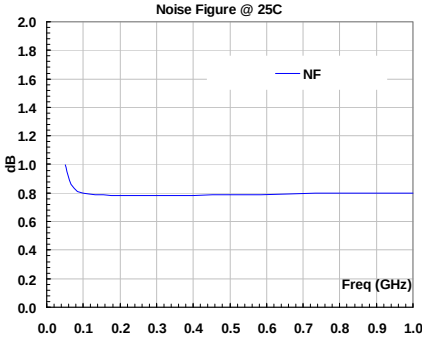
Outline, WP-30 Housing

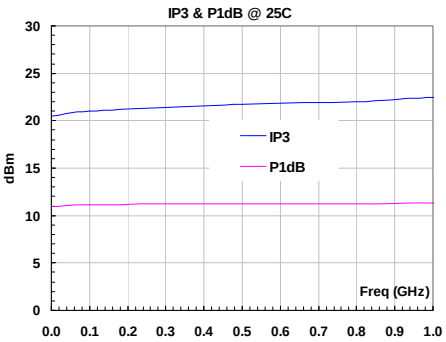
Specifications and information are subject to change without notice.

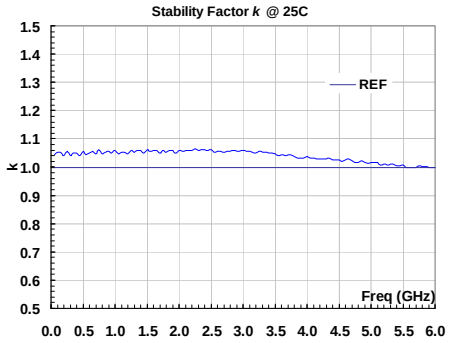
WanTcom, Inc ∗ Phone 01 952 448 6088 ∗ FAX: 01 952 448 7188 ∗ e-mail: sales@wantcominc.com ∗ Web site: www.wantcominc.com

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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