



WZA108

2.7 – 3.5 GHz LOW NOISE WIDE BAND AMPLIFIER

REV A
November 2008

Key Features

- 2.7 – 3.5 GHz
- 1.0 dB noise figure
- 26.0 dBm output IP₃
- 14.0 dB Gain
- 12.0 dBm P_{1dB}
- 1.5:1 VSWR
- Single Power Supply
- RoHS Compliant
- **MADE IN USA**



Applications

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



Absolute Maximum Ratings

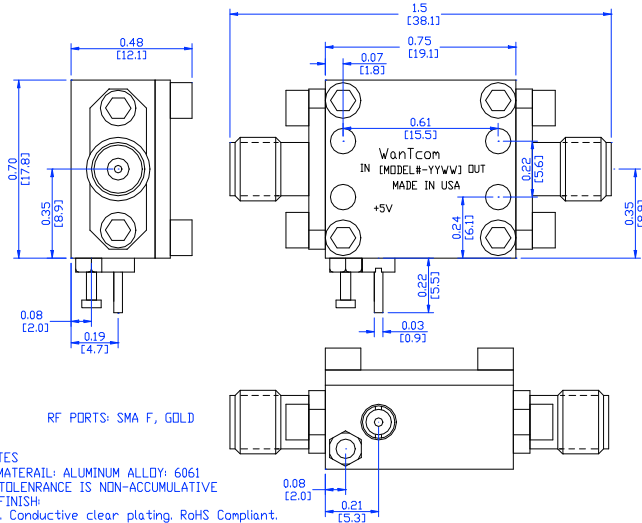
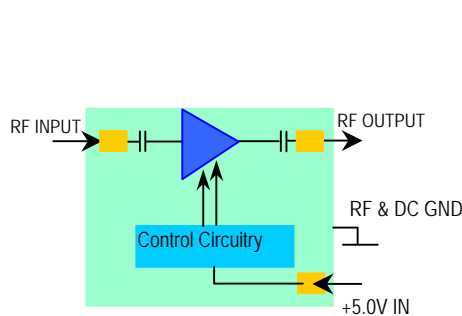
| Parameters | Units | Rating |
|-------------------------|-------|---------|
| DC Power Supply Voltage | V | 6.0 |
| Drain Current | mA | 70 |
| Total Power Dissipation | mW | 400 |
| RF Input Power | dBm | 10 |
| Channel Temperature | °C | 150 |
| Storage Temperature | °C | -55~125 |
| Operating Temperature | °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 WZA108 at room temperature

| Index | Testing Item | Symbol | Test Constraints | Min | Nom | Max | Unit |
|-------|---------------------------------------|---------------------|---|------|----------|--------|-------|
| 1 | Gain | S ₂₁ | 2.7 – 3.5 GHz | 13.5 | 14 | 15.5 | dB |
| 2 | Gain Variation | ΔG | 2.7 – 3.5 GHz | | +/- 0.25 | +/-0.5 | dB |
| 3 | Input VSWR | SWR ₁ | 2.7 – 3.5 GHz | | 1.5:1 | 1.8:1 | Ratio |
| 4 | Output VSWR | SWR ₂ | 2.7 – 3.5 GHz | | 1.35:1 | 1.8:1 | Ratio |
| 5 | Reverse Isolation | S ₁₂ | 2.7 – 3.5 GHz | | 25 | | dB |
| 6 | Noise figure | NF | 2.7 – 3.5 GHz | | 1.0 | 1.2 | dB |
| 7 | Output Power 1dB compression Point | P _{1dB} | 2.7 – 3.5 GHz | 10 | 12 | | dBm |
| 8 | Output-Third-Order Interception point | IP ₃ | Two-Tone, P _{out} = 0 dBm each, 1 MHz separation | 23 | 26 | | dBm |
| 9 | Current Consumption | I _{dd} | @ 25 °C | | 30 | | mA |
| 10 | Power Supply Voltage | V _{dd} | WZA108 | +4.7 | +5.0 | +5.3 | V |
| 11 | Thermal Resistance | R _{th,jc} | 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

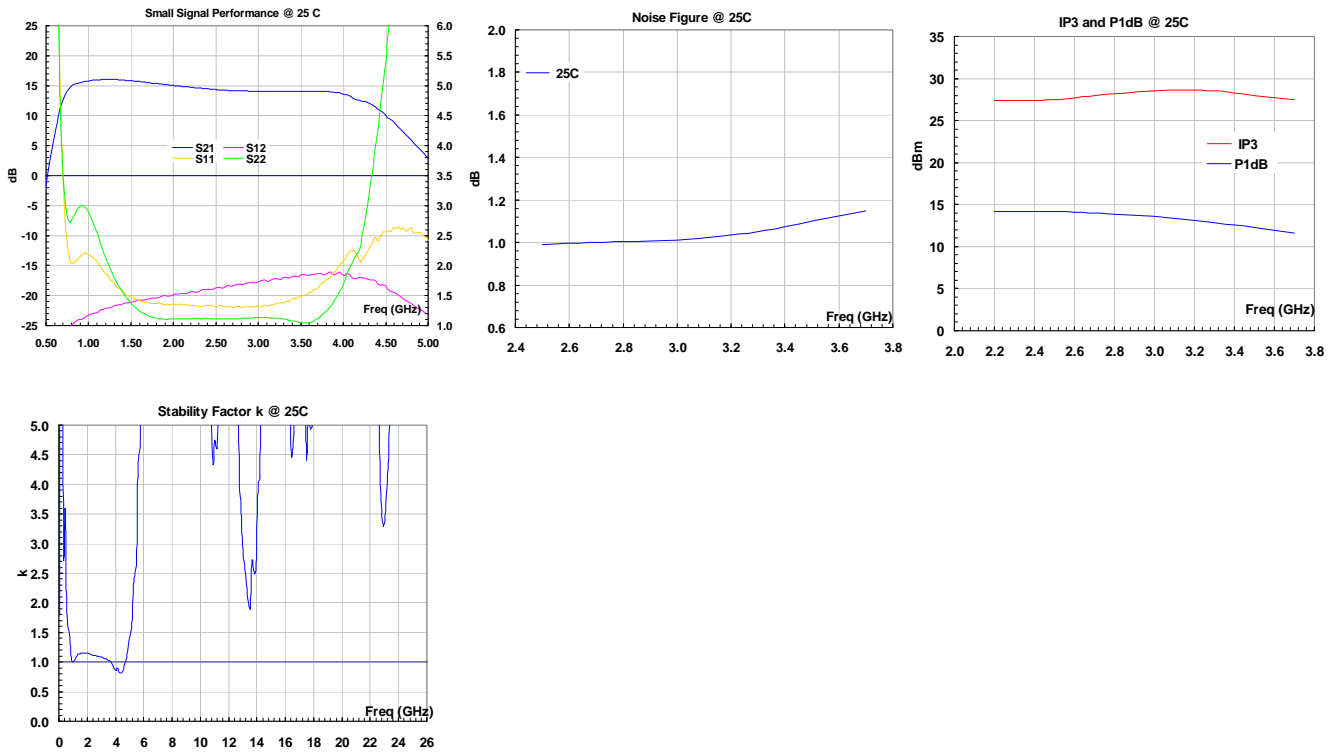
| Model Number | WZA108 |
|--------------|--------|
| | |

Outline, WP-30 Housing

Specifications and information are subject to change without notice.



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.

Specifications and information are subject to change without notice.