



# WPA07-5055A

700 - 900 MHz 40W POWER AMPLIFIER

REV A  
July 2008

## Key Features



- 700 ~ 900 MHz
- 1.5 dB noise figure
- 55.0 dBm output  $IP_3$
- 50.0 dB Gain
- 46.0 dBm  $P_{1dB}$
- 1.22:1 VSWR
- Single power supply
- >34 years MTBF
- Unconditional stable
- Infinite Load VSWR Protection
- RoHS compliant

## Product Description

WPA07-5055A integrates WanTcom proprietary low noise amplifier technology, high frequency micro electronic assembly techniques, and high reliability design to realize optimum low noise figure, wideband, high linearity, and unconditional stable performances together. With single +28V operation, the amplifier has optimal input and output matching in the specified frequency range at 50-Ohm impedance system. The amplifier has standard SMA connectorized WP-1D clear plated housing.

The amplifier is designed to meet the rugged standard of MIL-STD-202.

## Applications

- Mobile Infrastructures
- Measurement
- Fixed Wireless

## Ordering Information

Model No.	WPA07-5055A
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## Specifications

Summary of the electrical specifications WPA07-5055A at room temperature

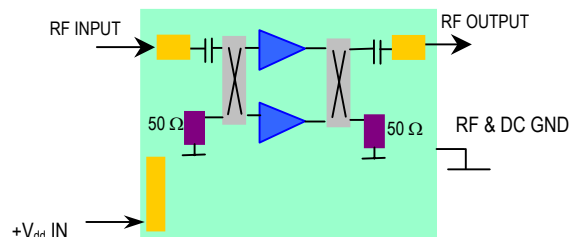
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	$S_{21}$	700 – 900 MHz		50		dB
2	Gain Variation	$\Delta G$	700 – 900 MHz		+/-1.0	+/- 1.3	dB
3	Input Return Loss	$S_{11}$	700 – 900 MHz	18	20		dB
4	Output Return Loss	$S_{22}$	700 – 900 MHz	18	20		dB
5	Reverse Isolation	$S_{12}$	700 – 900 MHz		70		dB
6	Noise figure	NF	700 – 900 MHz		1.5		dB
7	Output Power 1dB compression Point	$P_{1dB}$	700 – 900 MHz	45	46		dBm
8	Output-Third-Order Interception point	$IP_3$	Two-Tone, $P_{out}$ +34 dBm each, 1 MHz separation		55		dBm
9	Current Consumption	$I_{dd}$	$V_{dd}$ = +28 V, 0.75 A quiescent DC bias			3.0	A
10	Power Supply Voltage	$V_{dd}$	700 – 900 MHz	26	28	30	V
11	Thermal Resistance	$R_{th,c}$	Junction to case			1.3	°C/W
12	Operating Temperature	$T_o$	Base Plate	-40		+85	°C
13	Maximum Average RF Input Power	$P_{IN, MAX}$	700 – 900 MHz			10	dBm

## Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	+30V
Drain Current	mA	6A
Total Power Dissipation	W	170
RF Input Power	dBm	10
Channel Temperature	°C	150
Storage Temperature	°C	-55 ~ 150
Operating Temperature	°C	-40 ~ +85
Thermal Resistance	°C/W	1.2 °C/W*

Operation of this device above any one of these parameters may cause permanent damage.  
\*One of the last stage power transistor,  $V_{dd}$  = 28V,  $I_d$  = 2.5A Max.

## Functional Block Diagram

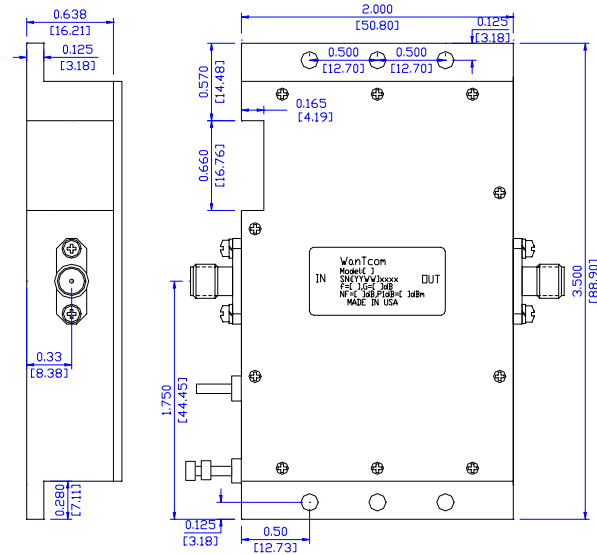


Specifications and information are subject to change without notice.



### Outline, WP-1D Housing

UNITS: INCH  
[mm]  
BODY: Aluminum Alloy  
Finish: Clear Plating  
RF Connector: SMA F Stainless  
+28V DC I/O: Feedthru



### 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 six pieces of #4-40 with longer than 3/8" 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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