WLA95-1035A

9.3 ~ 9.6 GHz LOW NOISE MEDIUM POWER AMPLIFIER

REV A
February 2015

Key Features

- 50 Ohm Impedance
- 9.3 ~ 9.6 GHz
- **2.0 dB Noise Figure**
- 21.0 dBm Output P_{1dB}
- 10.0 dB Gain
- **+/- 0.20 dB Gain Flatness**
- 1.5:1 VSWR
- Single Power Supply
- >34 Years MTBF
- RoHS Compliant
- Meet MIL-STD-202g

Product Description

CAUTION: ELECTROSTATIC DISCHARGE SENSITIVE

WLA95-1035A 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 exceptional gain flatness performances together. With single DC 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-11 Gold plated housing.

Preliminary

Applications

- X-Band Radar
- Fixed Wireless
- Measurement

Specifications

Summary of the electrical specifications WLA95-1035A at room temperature

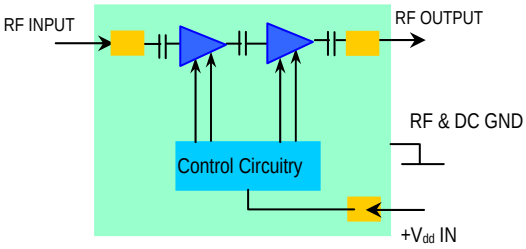
Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S_{21}	9.3 – 9.6 GHz	9	10	10.5	dB
2	Gain Variation	ΔG	9.3 – 9.6 GHz		**+/- 0.20**	+/-0.3	dB
3	Noise Figure	NF	9.3 – 9.6 GHz		2.0	2.5	dB
4	Input & Output VSWR	SWR_1	9.3 – 9.6 GHz		1.4:1	1.5:1	Ratio
5	Output VSWR	SWR_2	9.3 – 9.6 GHz		1.4:1	1.5:1	Ratio
6	Reverse Isolation	S_{12}	9.3 – 9.6 GHz		23		dB
7	Output Power 1dB Compression Point	P_{1dB}	9.3 – 9.6 GHz	18	21		dBm
8	Current Consumption	I_{dd}	V_{dd}		80		mA
9	Power Supply Voltage	V_{dd}	WLA95-1035A	+8.7	+9.0	+9.3	V
			WLA95-1035B	+12		+16	
10	Thermal Resistance	$R_{th,c}$	Junction to case			40	°C/W
11	Operating Temperature	T_o		-40		+85	°C
12	Maximum CW RF Input Power	$P_{IN, MAX}$	DC – 6 GHz			15	dBm

Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	-0.5, 10 (+16 V for WLA95-1035A)
Drain Current	mA	100
Total Power Dissipation	W	1.0
CW RF Input Power	dBm	15
Channel Temperature	°C	150
Storage Temperature	°C	-55 ~ 125
Operating Temperature	°C	-40 ~ 85
Thermal Resistance	°C/W	40

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

Functional Block Diagram



Ordering Information

Model Number	Vdd
WLA95-1035A	+9.0V
WLA95-1035B	+12 ~ +16V

Specifications and information are subject to change without notice.

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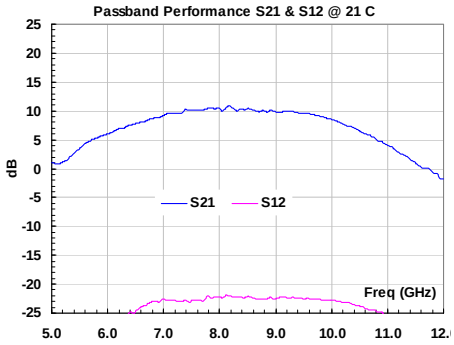
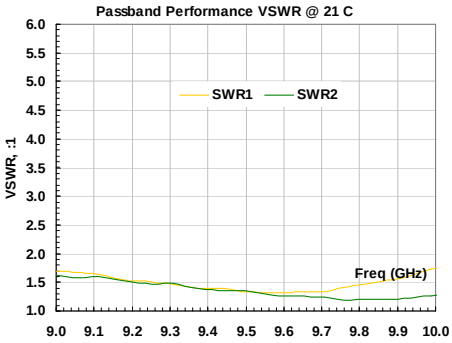
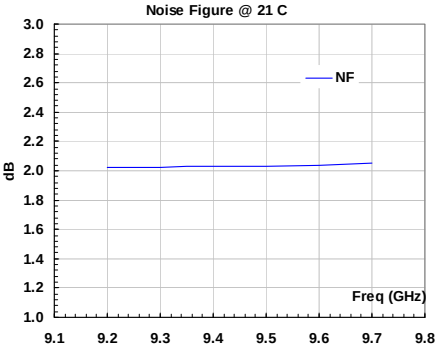
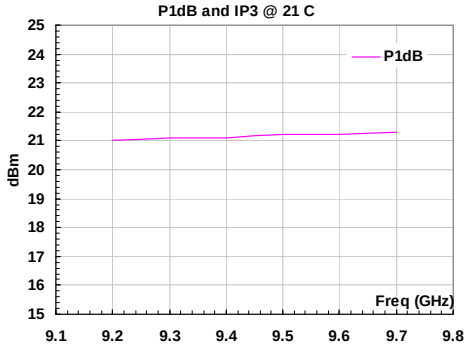
Typical Data:



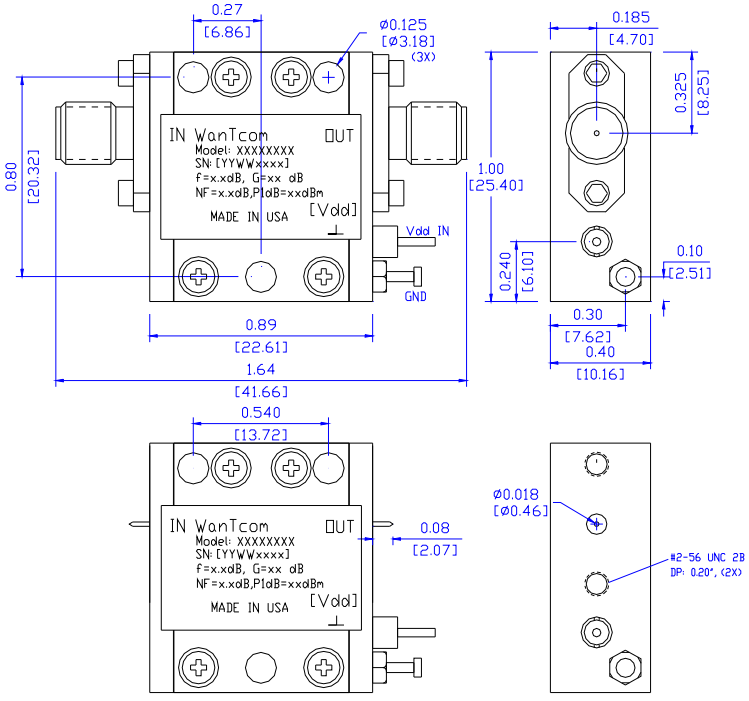






Outline, WP-11 Housing

UNITS:	INCH [mm]
BODY:	Brass
Finish:	Gold Plating
RF Connector:	SMA F Gold Field Replaceable
V_{dd} PWR:	Feed through



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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. DC Power Line Connection

Strip the insulation layer at the end of DC power supply wire. The stripped distance should be in the range of 0.100" to 0.200". The 24 ~ 26 American Wire Gauge wire is suitable. Wound the stripped terminal wire about 1 to 2 turns on the DC feed thru center pin. Solder the wounded wire and the center pin together. Clean the soldering area by Q-tip with alcohol to remove the flux and residue.

Repeat the process to solder the DC return wire on the ground turret.

C. Mounting the Amplifier

Use three pieces of #4-40 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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