



# WLA15-3525A

1.42 – 1.67 GHz QUASI SUPER CONDUCTOR LOW NOISE AMPLIFIER

REV B  
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## Key Features

- 50 Ohm Impedance
- 1.42 ~ 1.67 GHz
- **0.30 dB Noise Figure**
- 35.0 dB Gain
- 23.0 dBm Output IP<sub>3</sub>
- 10.0 dBm P<sub>1dB</sub>
- 1.5:1 VSWR
- Single Power Supply
- RoHS Compliant
- Unconditional Stable



## Applications

- **Radio Astronomy Telescope**
- GPS
- Measurement
- Fixed Wireless

CAUTION:



ELECTROSTATIC DISCHARGE SENSITIVE

## Absolute Maximum Ratings

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

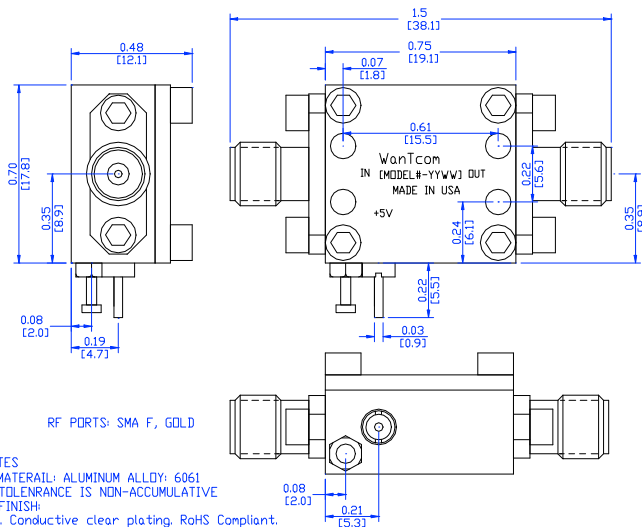
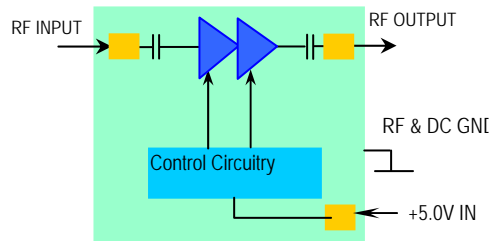
Operation of this device above any one of these parameters may cause permanent damage.



## Specifications

Summary of the electrical specifications WLA15-3525A at room temperature

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S <sub>21</sub>	1.42 – 1.67 GHz		35		dB
2	Gain Variation	ΔG	1.42 – 1.67 GHz		+/- 1.0	+/-1.25	dB
3	Input VSWR	SWR <sub>1</sub>	1.42 – 1.67 GHz		1.5:1	1.8:1	Ratio
4	Output VSWR	SWR <sub>2</sub>	1.42 – 1.67 GHz		1.5:1	1.8:1	Ratio
5	Reverse Isolation	S <sub>12</sub>	1.42 – 1.67 GHz		40		dB
6	<b>Noise Figure</b>	<b>NF</b>	1.42 – 1.67 GHz		<b>0.30</b>	<b>0.45</b>	<b>dB</b>
7	Output Gain 1dB Compression Point	P <sub>1dB</sub>	1.42 – 1.67 GHz	8	10		dBm
8	Output-Third-Order Interception Point	IP <sub>3</sub>	Two-Tone, P <sub>out</sub> = 0 dBm each, 1 MHz separation	20	23		dBm
9	Current Consumption	I <sub>dd</sub>	V <sub>dd</sub> = +5.0V		45		mA
10	Power Supply Voltage	V <sub>dd</sub>		+4.7	+5.0	+5.3	V
11	Thermal Resistance	R <sub>th,c</sub>	Junction to case			220	°C/W
12	Operating Temperature	T <sub>o</sub>	Case temperature at the bottom of the housing	-40		+85	°C
13	Maximum Input CW RF Power	P <sub>IN, MAX</sub>	DC – 6 GHz			10	dBm
14	<b>Spurious</b>	<b>P<sub>spur</sub></b>	<b>DC – 6 GHz</b>			<b>-130</b>	<b>dBm</b>



## Outline, WP-30 Housing

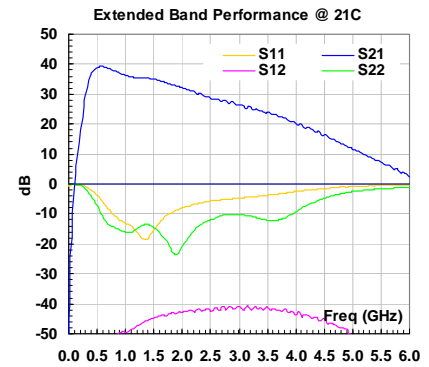
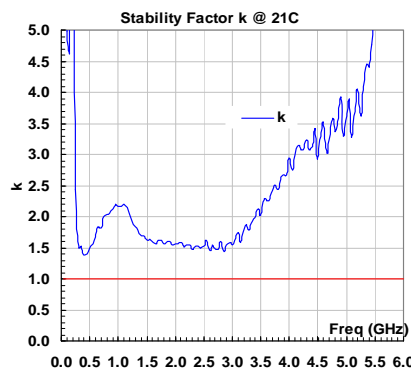
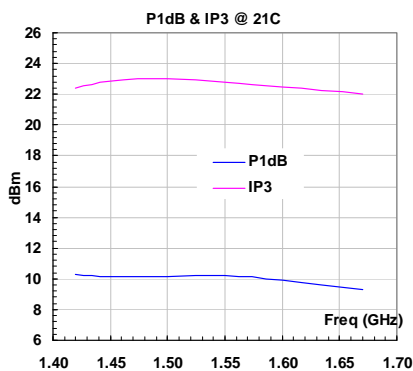
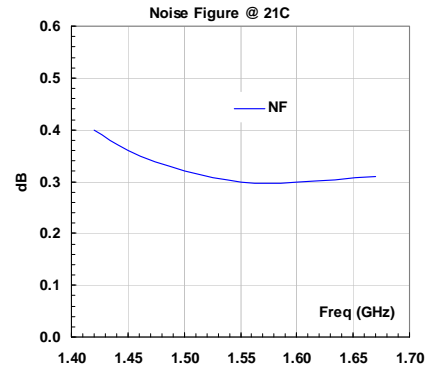
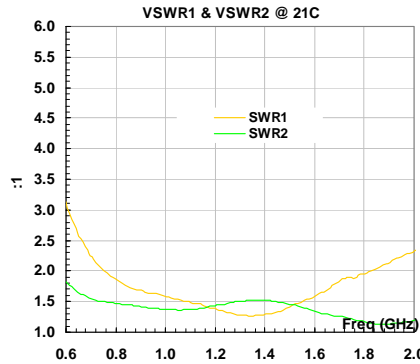
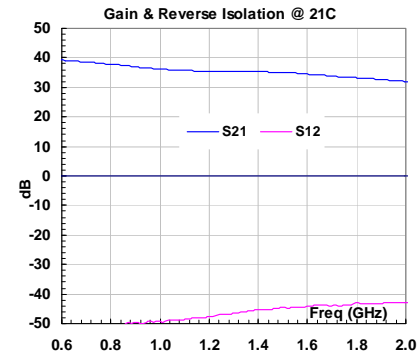
## Ordering Information

Function	Without Output Bias-T	With Output Bias-T
Model Number	WLA15-3525A	WLA15-3525ABT

Specifications and information are subject to change without notice.



### Typical Performance



### Application Notes:

#### A. The Noise Figure

The noise figure of 0.30 dB is measured at 21 °C with the input SMA connector, input internal 50V DC block capacitor. Thus, the external input DC block capacitor is not needed. For additional lower noise figure of 0.10 dB, cool the amplifier to - 40 °C.

The amplifier shall be mounted directly behind the feed of the telescope antenna to suppress the cable loss between the antenna and the ground receiver. The DC voltage of +5V can be fed through the output cable from the ground receiver (WLA15-3525ABT) only.

#### B. 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 lb-Inch) is one of the ideal torque wrench choice from Agilent Technology.

#### C. 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.

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