WLLA14-1930A
1.2 – 1.6 GHz LIMITER LOW NOISE AMPLIFIER

Key Features

RoHS

- 50 Ohm Impedance
- 1.2 ~ 1.6 GHz
- 1.0 dB Noise Figure
- 18.5 dB Gain
- +/-0.2 dB Gain Flatness
- 14.0 dBm P_{1dB}
- 1.35:1 VSWR
- Single Power Supply
- >34 Years MTBF
- RoHS Compliant

Product Description

CAUTION:
ELECTROSTATIC DISCHARGE SENSITIVE

WLLA14-1930A is integrated with 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 high input power protection performances together. With single DC voltage 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-5 Gold plated housing.

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

Applications

- Mobile Infrastructures
- GPS
- CATV/DBS
- Defense
- Security System
- Measurement
- Fixed Wireless

Specifications

Summary of the electrical specifications WLLA14-1930A at room temperature

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Gain	S_{21}	1.2 – 1.6 GHz	17	18.5	20	dB
2	Gain Variation	ΔG	1.2 – 1.6 GHz		+/- 0.2	+/-0.3	dB
3	Input VSWR	SWR_1	1.2 – 1.6 GHz		1.35:1	1.5:1	Ratio
4	Output VSWR	SWR_2	1.2 – 1.6 GHz		1.35:1	1.5:1	Ratio
5	Reverse Isolation	S_{12}	1.2 – 1.6 GHz	20	22		dB
6	Noise Figure	NF	1.2 – 1.6 GHz		1.0	1.2	dB
7	Output Power 1dB Compression Point	P_{1dB}	1.2 – 1.6 GHz	10	14		dBm
8	Output-Third-Order Interception Point	IP_3	Two-Tone, P_{out} +0 dBm each, 1 MHz separation	22	26		dBm
9	Current Consumption	I_{dd}	V_{dd} = +3 V ~ +12V		30		mA
10	Power Supply Voltage	V_{dd}		+3		+12	V
11	Thermal Resistance	$R_{th,c}$	Junction to case			220	^{o}C/W
12	Operating Temperature	T_o		-40		+85	^{o}C
13	Maximum CW RF Input Power	$P_{IN, MAX}$	DC – 6 GHz			30	dBm

Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	-0.5, 12
Drain Current	mA	45
Total Power Dissipation	mW	400
CW RF Input Power	dBm	30
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.

Functional Block Diagram
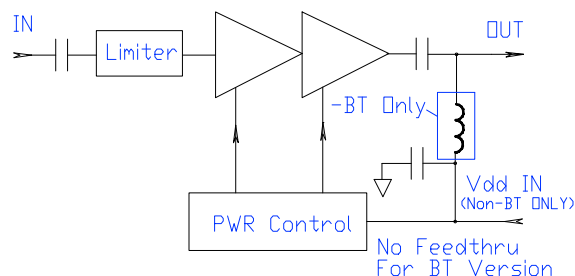
Ordering Information

Model Number	Feature
WLA14-1930A	Without Output Bias-T
WLA14-1930ABT	With Output Bias-T

Specifications and information are subject to change without notice.
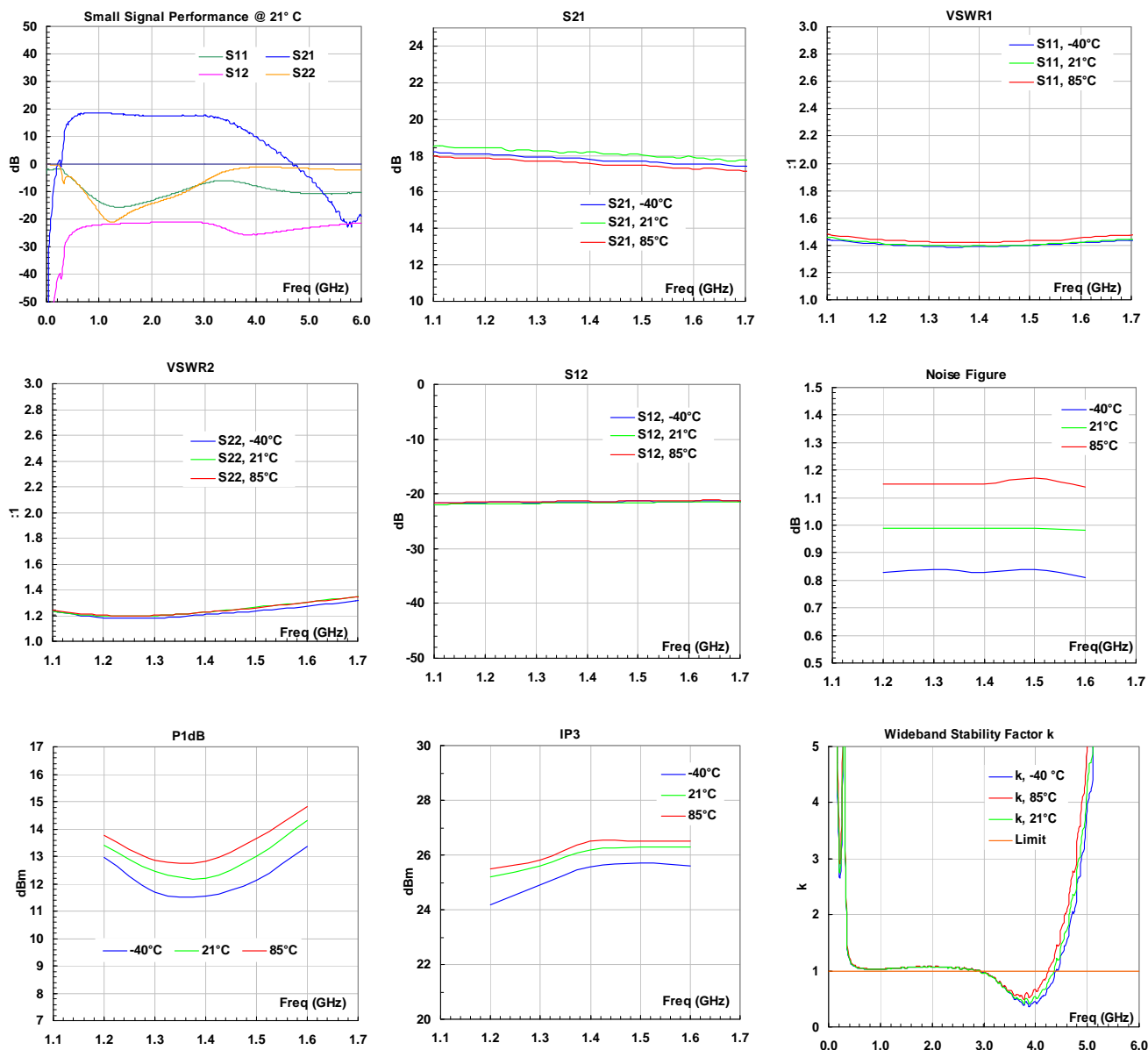
Typical Data

Small Signal Performance @ 21° C

S21

VSWR1

VSWR2

S12

Noise Figure

P1dB

IP3

Wideband Stability Factor k

Specifications and information are subject to change without notice.
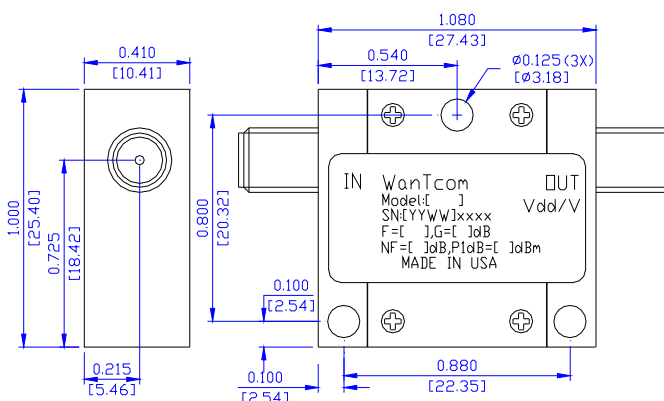
Outline, WP-5 Housing

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

WLLA14-3535C/D
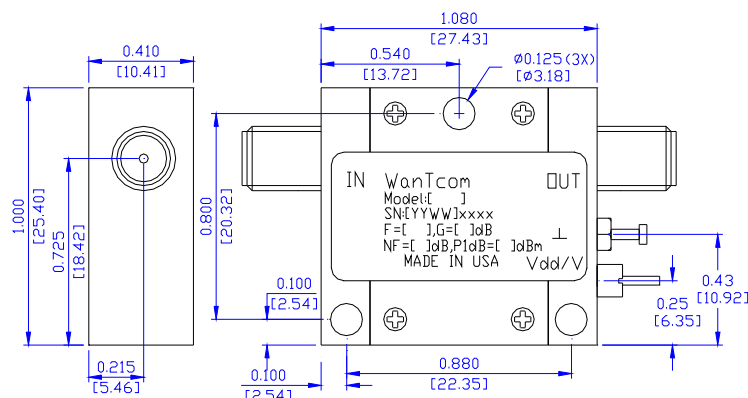
WLLA14-3535C/DBT

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 3/4 to 1 turn 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.

Do not use large soldering iron tip with more than 750 degree Fahrenheit to solder the wire and feed thru pin. Damage may occur to the feed thru.

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. Always use the appropriate torque setting of the power screwdriver to mount them.
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