



ILA002050B

20 - 500 MHz LOW NOISE AMPLIFIER

REV A
January 2015

Key Features



- 20 ~ 500 MHz, 50 Ohm Impedance
- 0.8 dB Noise Figure
- 21 dB Gain
- 1.45:1 VSWR
- 17 dBm P_{1dB}
- Precision Machined Housing
- Single DC Power Supply
- Meet MIL-STD-202g

Applications

- VHF & UHF
- Receiver Amplifiers
- RF Bench Tests
- Fixed Wireless Applications



Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	-0.5,32
RF Input CW Power	dBm	10
Storage Temperature	°C	-40 ~ +85
Operating Temperature	°C	-40 ~ +85

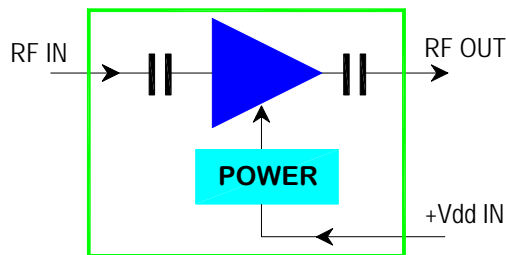
Operation of this device beyond any one of these parameters may cause permanent damage.

Specifications

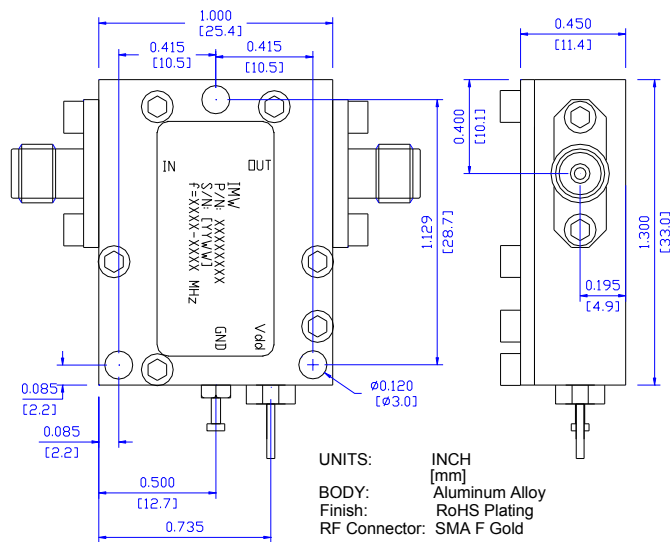
Summary of the key electrical specifications at 20°C

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Frequency Range	BW	50 Ohm Impedance	20		500	MHz
2	Gain	S ₂₁	20 – 500 MHz	19	21	23	dB
3	Gain Variation	ΔG	20 – 500 MHz		+/- 1.0		dB
4	VSWR	SWR _i	20 – 500 MHz all RF ports		1.45:1	1.7:1	Ratio
5	Reverse Isolation	S ₁₂	20 – 500 MHz	20	25		dB
6	Noise Figure	NF	20 – 500 MHz		0.8	1.5	dB
7	Output Power 1dB Compression Point	P _{1dB}	20 – 500 MHz	15	17		dBm
8	Output-Third-Order Interception Point	IP ₃	Two-Tone, P _{out} = 0 dBm each, 1 MHz Separation	27	30		dBm
9	Current Consumption	I _{dd}	V _{dd} = +12.0 V		50		mA
10	Power Supply Operating Voltage	V _{dd}		+8	+12	+16	V
11	Operating Temperature	T _o		-40		+85	°C
12	Thermal Resistance	R _{th,c}	Junction to case			215	°C/W

Functional Block Diagram



Outline, IP-3 Housing



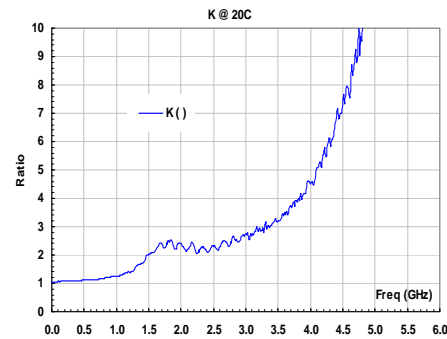
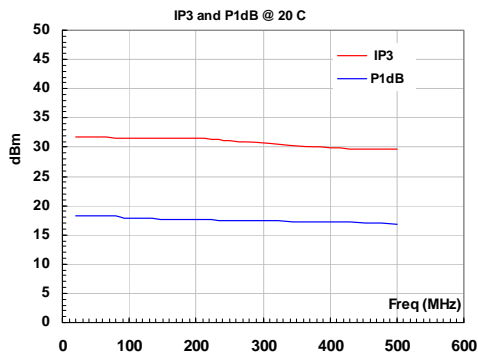
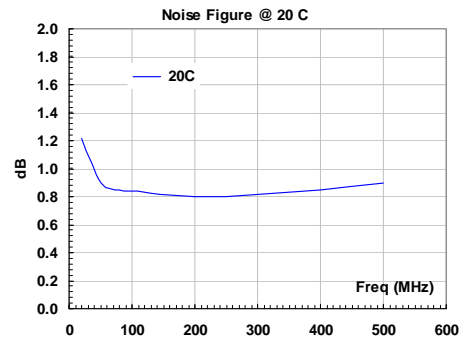
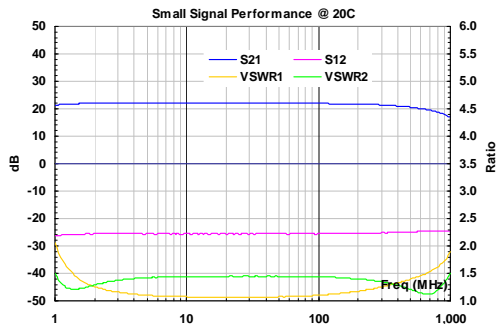
Ordering Information

Model Number	Connectors	
	IN	OUT
ILA002050A	SMA Female	SMA Female

Specifications and information are subject to change without notice.



Typical Data



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.
