



# ILA050100A

## 500 - 1000 MHz SUPER LOW NOISE AMPLIFIER

REV A  
August 2016

### Key Features



- 50 Ohm Impedance
- 0.5 ~ 1.0 GHz
- 0.5 dB Noise Figure
- 38 dB Gain
- 1.25:1 VSWR
- 19.0 dBm P<sub>1dB</sub>
- Precision Machined Housing
- Single DC Power Supply

### Applications

- UHF, Cellular, and GSM
- Receiver Amplifiers
- RF Bench Tests
- Mobile Base Station



### Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	-0.5,+20
RF Input CW Power	dBm	10
Storage Temperature	°C	-40 ~ +85
Operating Temperature	°C	-40 ~ +85

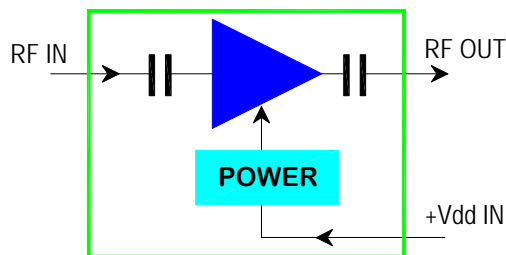
Operation of this device beyond any one of these parameters may cause permanent damage.

### Specifications

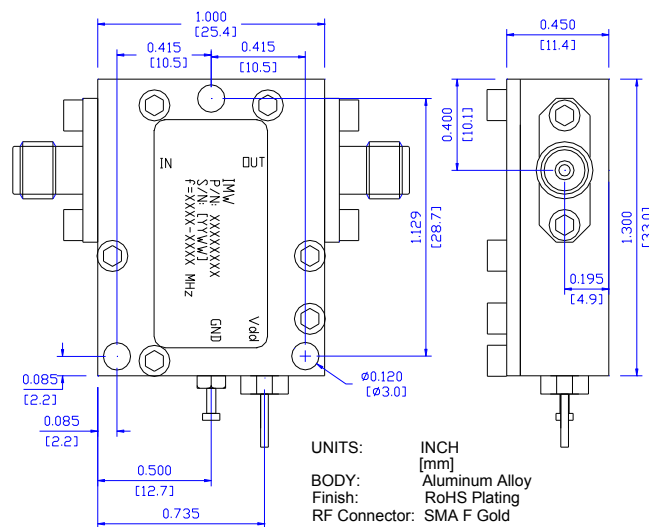
Summary of the key electrical specifications at 25°C

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Frequency Range	BW	50 Ohm Impedance	500		1000	MHz
2	Gain	S <sub>21</sub>	500 – 1000 MHz	36	38	40	dB
3	Gain Variation	ΔG	500 – 1000 MHz		+/- 1.0	+/- 1.5	dB
4	VSWR	SWR <sub>i</sub>	500 – 1000 MHz all RF ports		1.25:1	1.5:1	Ratio
5	Reverse Isolation	S <sub>12</sub>	500 – 1000 MHz	40	45		dB
6	Noise Figure	NF	500 – 1000 MHz		0.5	0.7	dB
7	Output Power 1dB Compression Point	P <sub>1dB</sub>	500 – 1000 MHz		19		dBm
8	Output-Third-Order Interception Point	IP <sub>3</sub>	Two-Tone, P <sub>out</sub> = 0 dBm each, 1 MHz Separation		30		dBm
9	Current Consumption	I <sub>dd</sub>	V <sub>dd</sub> = +12.0 V		100		mA
10	Power Supply Operating Voltage	V <sub>dd</sub>		+7	+12	+16	V
11	Operating Temperature	T <sub>o</sub>		-40		+85	°C
12	Thermal Resistance	R <sub>th,c</sub>	Junction to case			215	°C/W

### Functional Block Diagram



### Outline, IP-3 Housing



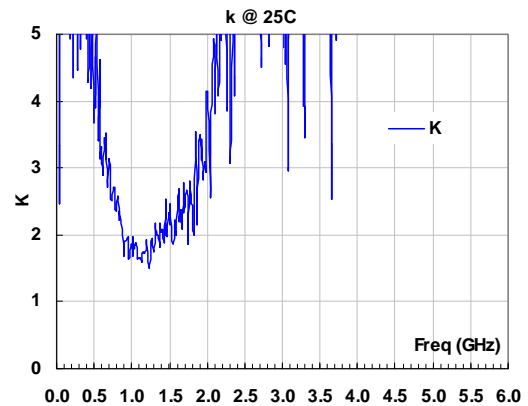
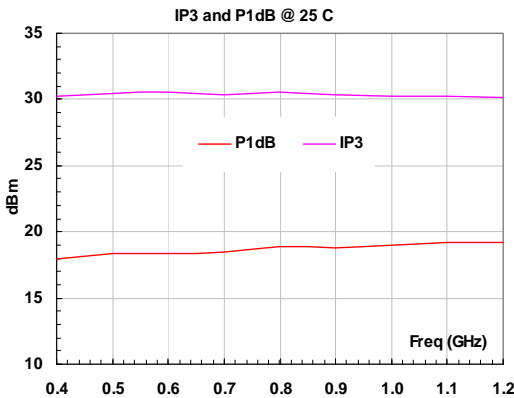
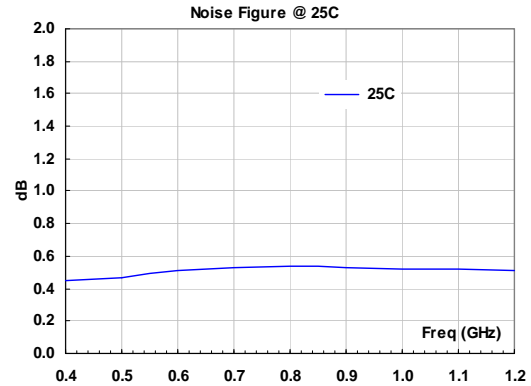
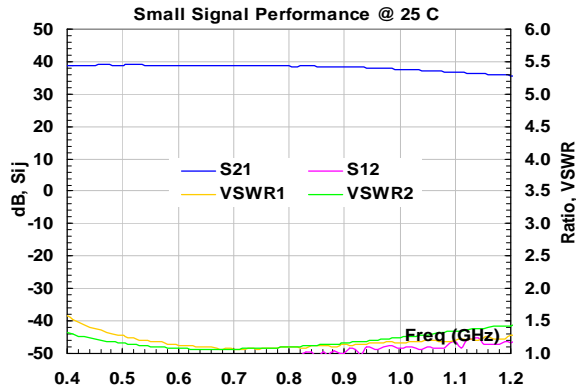
### Ordering Information

Model Number	Connectors	
	IN	OUT
ILA050100A	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.

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