ILA010160A

0.1 – 1.6 GHz LOW NOISE AMPLIFIER

REV A
March 2014

Key Features

- 0.1 ~ 1.6 GHz, 50 Ohm Impedance
- 1.0 dB Noise Figure
- 19 dB Gain
- 1.5:1 VSWR
- 10 dBm P_{1dB}
- Precision Machined Housing
- Single DC Power Supply
- Meet MIL-STD-202g

Applications

- VHF & UHF
- Receiver Amplifiers
- RF Bench Tests
- Mobile Base Station 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

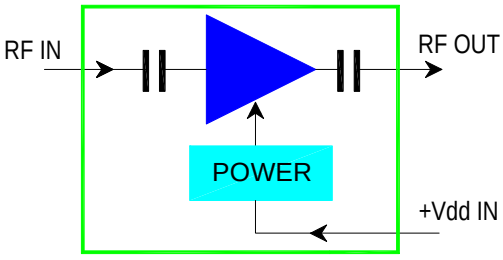
Operation of this device beyond any one of these parameters may cause permanent damage.

Specifications

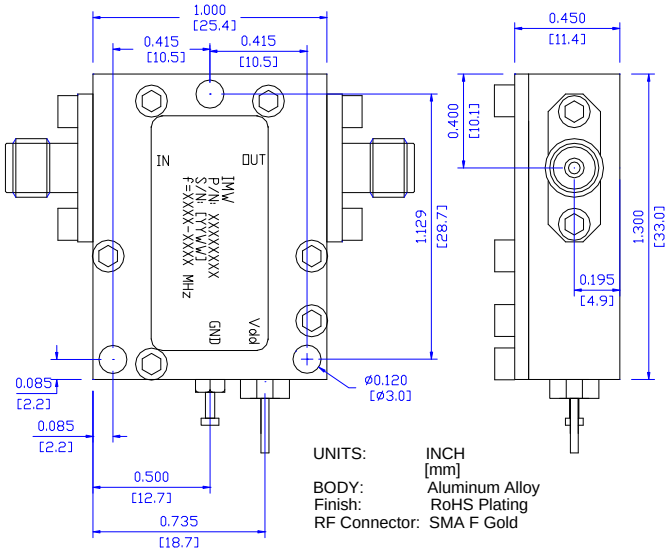
Summary of the key electrical specifications at 25°C

Index	Testing Item	Symbol	Test Constraints	Min	Nom	Max	Unit
1	Frequency Range	BW	50 Ohm Impedance	0.1		1.6	GHz
2	Gain	S_{21}	0.1 – 1.6 GHz	16	19	23	dB
3	Gain Variation	ΔG	0.1 – 1.6 GHz		+/- 1.5		dB
4	VSWR	SWR_i	0.1 – 1.6 GHz all RF ports		1.5:1	1.8:1	Ratio
5	Reverse Isolation	S_{12}	0.1 – 1.6 GHz		25		dB
6	Noise Figure	NF	0.1 – 1.6 GHz		1.0	1.4	dB
7	Output Power 1dB Compression Point	P_{1dB}	0.1 – 1.6 GHz	8	10		dBm
8	Output-Third-Order Interception Point	IP_3	Two-Tone, P_{out} = 0 dBm each, 1 MHz separation	20	22		dBm
9	Current Consumption	I_{dd}	V_{dd}= +12.0 V		25		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
ILA010160A	SMA Female	SMA Female

Specifications and information are subject to change without notice.

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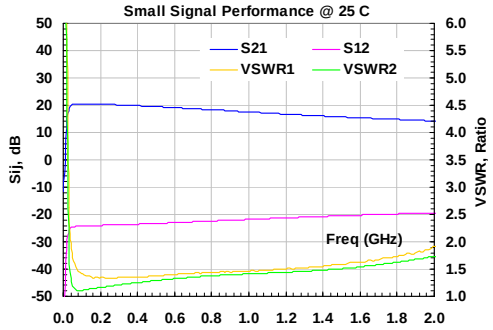
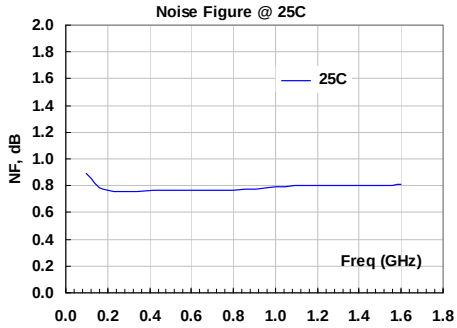
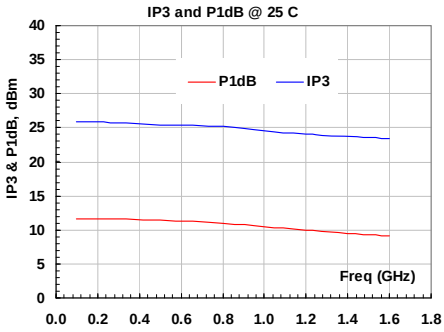
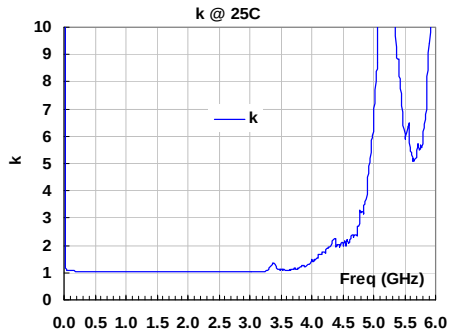
Typical Data









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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