

0.38 ~ 3.8 GHz Low Noise Amplifier

Key Features:

Broad Frequency Range: 0.38 ~ 3.8 GHz
 High Gain: 45 dB
 Low NF: 1.2 dB (typical)
 High OIP3: 40 dBm (typical)
 Single DC Supply: +11V to +16V @ 180mA
 Connectors: SMA Female
 Built-in Function: Limiter, DC blocks at input and output ports, temperature compensation circuitry

Photo not available

Electrical Specifications¹: (at +25°C)

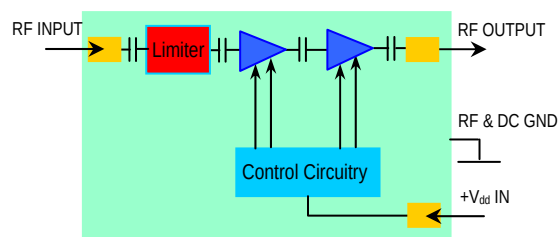
Testing Item	Symbol	Test Conditions	Min	Nom	Max	Unit
Frequency Range	BW		0.38		3.8	GHz
Gain	S21	0.38 ~ 3.8 GHz	43	45	47	dB
Gain Flatness		0.38 ~ 3.8 GHz, per every 20MHz			+/-0.2	dB
Gain Vs. Temperature		0.38 ~ 3.8 GHz			0.02	dB/°C
Noise Figure	NF	0.38 ~ 3.8 GHz		1.2	1.5	dB
VSWR		0.38 ~ 3.8 GHz		1.5:1	1.8:1	
Power at 1dB Gain Compress	P1dB	0.38 ~ 3.8 GHz	22	24		dBm
Third Order Intercept Point	OIP3	0.38 ~ 3.8 GHz	36	40		dBm
Second Order Intercept Point	OIP2	0.38 ~ 3.8 GHz	45	47		dBm
DC Voltage			+11		+16	Volt
DC Current				230		mA
Thermal Resistance	R _{th,c}	Junction to case, last stage transistor			100	°C/W
Alarm Output Open Collector Load		Open Collector Type, 40V max		700	1000	mA
Operating Temperature			-40		+70	°C
Maximum Pulsed RF Input Power	P _{IN,MAX}	0.38 ~ 3.8 GHz, 50ms duration			40	dBm
Limiter Recover Time	T _t	0.38 ~ 3.8 GHz, after 50ms duration			100	uS
Impedance				50		ohm

Absolute Maximum Ratings

Parameters	Units	Ratings
DC Power Supply Voltage	V	16
Drain Current	mA	250
Total Power Dissipation	W	3.75
RF Input Power	dBm	40
Channel Temperature	°C	150
Storage Temperature	°C	-55 ~ 125
Operating Temperature	°C	-40 ~ 85

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

Functional Block Diagram



Ordering Information

Model Number	RLAC0438L
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¹ Specifications are subject to change without notice.

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Internal Richardson Document #	Origination Date: September 2010	Rev: 2B Date: October 2011	Page 1/3
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Frequency Response

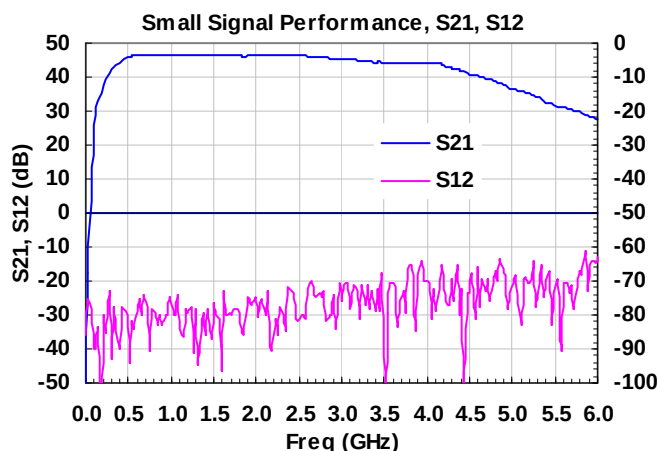


FIG. 1 Small signal performance (S21, S12).

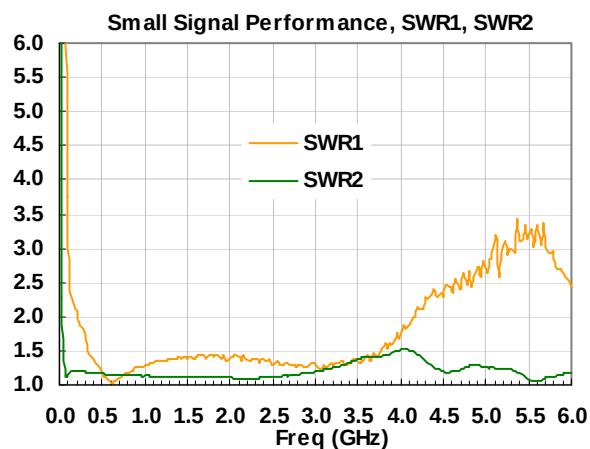


FIG. 2 Small signal performance (S11, S22).

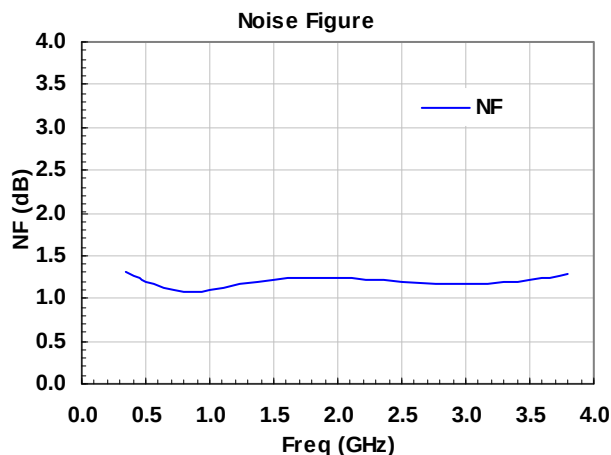


FIG. 3 Noise figure performance

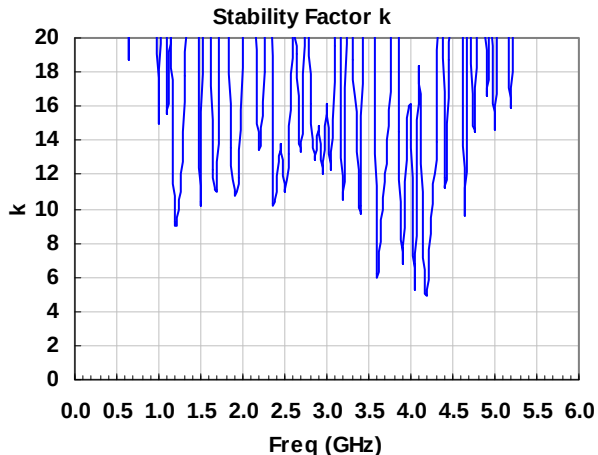


FIG. 4 Stability factor k

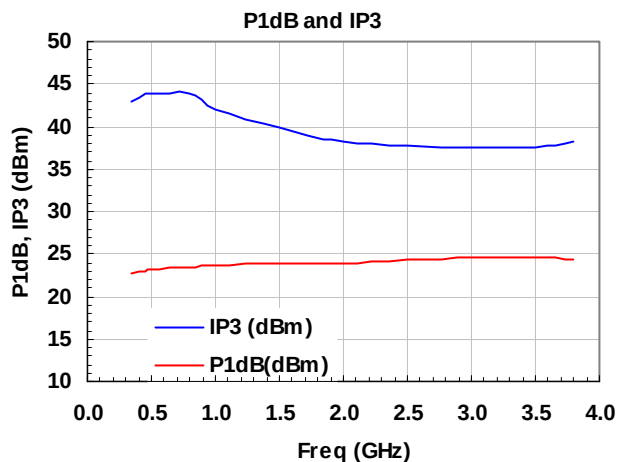


FIG. 5 P_{1dB} and IP3 Performance

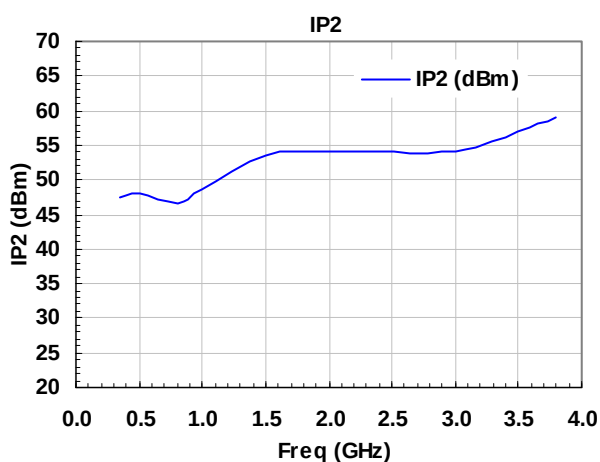
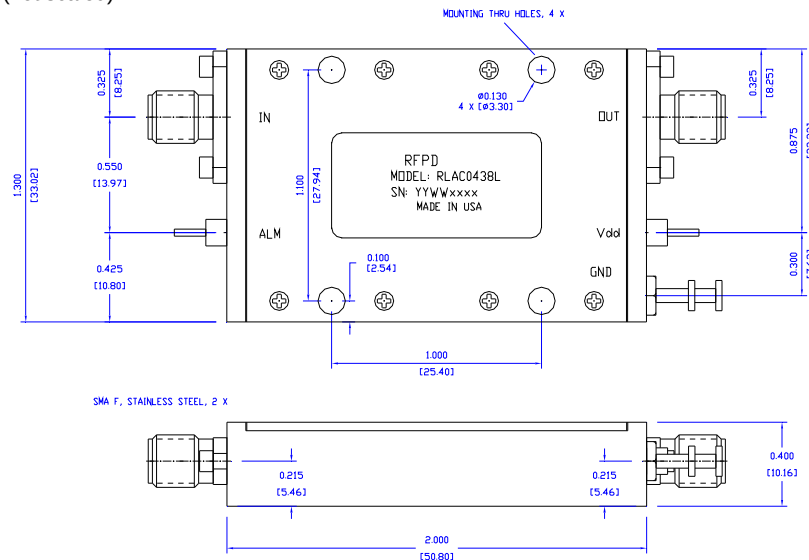


FIG. 6 IP2 Performance

Outline Drawing (not scaled)



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