AR7241A 2.4GHz ISM Band MMIC LNA

Features

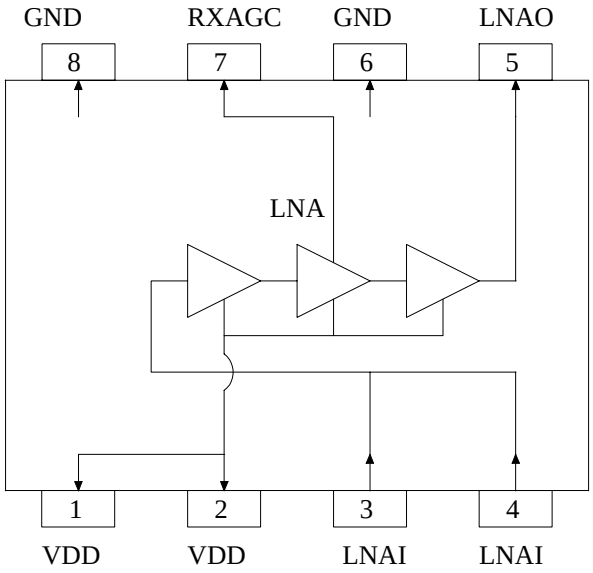
- 2.3 dB Noise Figure
- 24 dB Gain
- Single-Supply Bias
- 8L-SOP Plastic package with ground slug for low-inductance RF grounding
- Analog Gain Control with positive voltage
- Input /Output 50 Ω matched

Applications

- ISM-Band spread-spectrum wireless communications
- Wireless Local Area Networks
- Wireless Data Terminals
- Wireless Remote Monitoring

The AR7241A is a fully matched three-stage, single-supply monolithic LNA designed for wireless applications in the 2.4 - 2.5 GHz ISM band. Bias, DC blocking and matching circuitry is included on-chip allowing for easy implementation. Optional analog gain control pin is provided for AGC function. The small-sized 8-pin SOP package is ideal for PCMCIA card applications. AR7241A reduces development time and cost of developing 2.4 GHz RF subsystems.

AR7241A Block Diagram



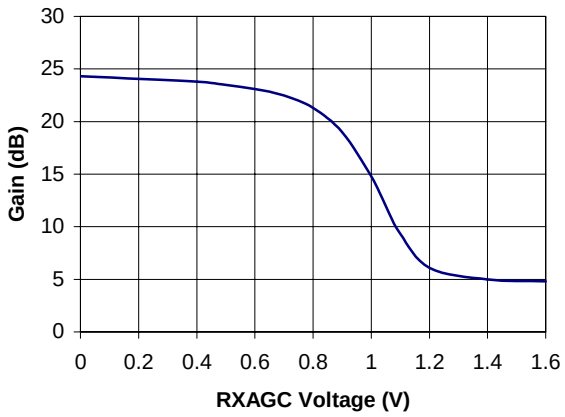
40990 Encyclopedia Circle, Fremont, CA. 94538, U.S.A.
Tel: (510) 580-2500 Ext 203 Fax: (510) 580-2508

Electrical Specifications:

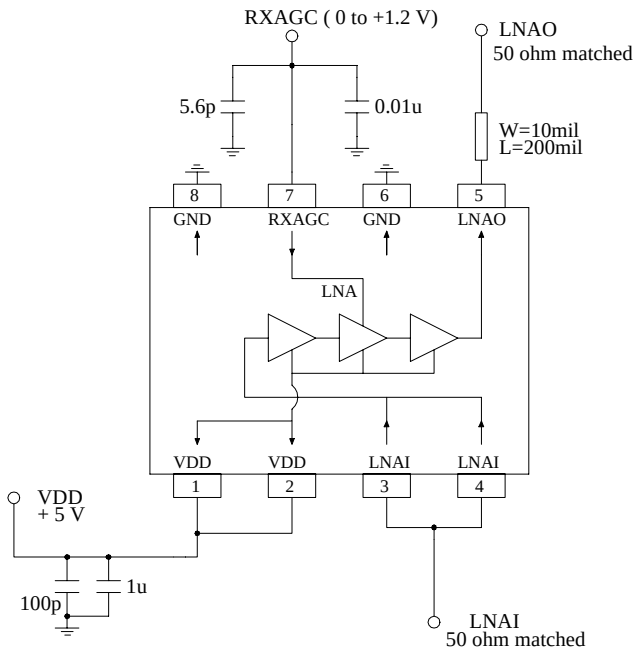
RF = 2.4 - 2.5 GHz, $T_{A=}$ 25° C, V_{DD} = +5 V RXAGC = 0V)

Parameter	Conditions	Min	Typ	Max	Units
Gain			24		dB
Gain Flatness			+/- 0.4		dB
Noise Figure			2.3		dB
Input 3rd Order Intercept	freq1= 2.45GHz, freq2= 2.452Ghz Pin = -33 dBm/tone		-10		dBm
Output Power Po-1dB	@ 2.45GHz		+3.5		dBm
Input Return Loss		10	18		dB
Output Return Loss		10	18		dB
Isolation			38		dB
Supply Voltage		4.5	5.0	5.5	V
Bias Current			28		mA

Gain Versus RXAGC Voltage
(T_A = 25 ^{0} C, VDD = 5 V, f = 2.45GHz)



AR7241A Application Circuit



NOTES:

1) PCB: FR-4, 28mil Thickness
2) Backside Package Slug Must be Connected to PCB RF Ground with several vias
3) All GND pins must be connected to PCB RF Ground with vias
4) Reference plane for Critical Transmission Lines is package lead end