LA10412 Low Noise Amplifier

Features

6 GHz to 14 GHz Frequency Range

Gain 19 dB Typical, Gain window 17 to 20 dB

Gain Flatness ± 0.3 dB typical ± 1 dB max 2.5 dB Typical Noise Figure

VSWR 1.8:1 typical OIP3 +28 dBm minimum

Internally Regulated

Operates from Single +12V Supply 190 mA typ

Unconditionally Stable

Compact Housing

State-of-the-Art GaAs Technology

General Description

LA10412 is a medium power with low noise amplifier with flat gain, in a compact size and matched gain window. The amplifier I/Os are Internally matched to 50 Ohms and DC Blocked. The device is ideal for use as gain stage with low noise for test equipment, Communication systems or where ultra broadband amplification and medium power are required without adding significant noise in a Hi-Rel communications system for Commercial or Military applications

Applications

Test Equipment

Receiver

Lab Applications

Broadband Gain Block

Broadband Driver

Electrical Specifications

Parameter	Symbol	Specification	Conditions
Frequency Range		6 to 14 GHz	
Small Signal Gain[2]		17dB minimum	
Gain Flatness		±2dB maximum	
Noise Figure		3.5dB maximum	
Output Power (P1dB)		+23dBm typical	@ 10 GHz
OIP3		+28dB minimum	OIP3 @ 10 GHz Two tone F1-F2 = 10MHz
Spurs[3]		-70dBc minimum	Self-generated Spurs with Pout ~1 dBm
RF Input Impedance		1.8:1	Reference to 50Ω VSWR
RF Output Impedance		1.8:1	Reference to 50Ω VSWR
Supply Voltage Positive		+12V	Small Signal
Supply Current Positive		300mA maximum	

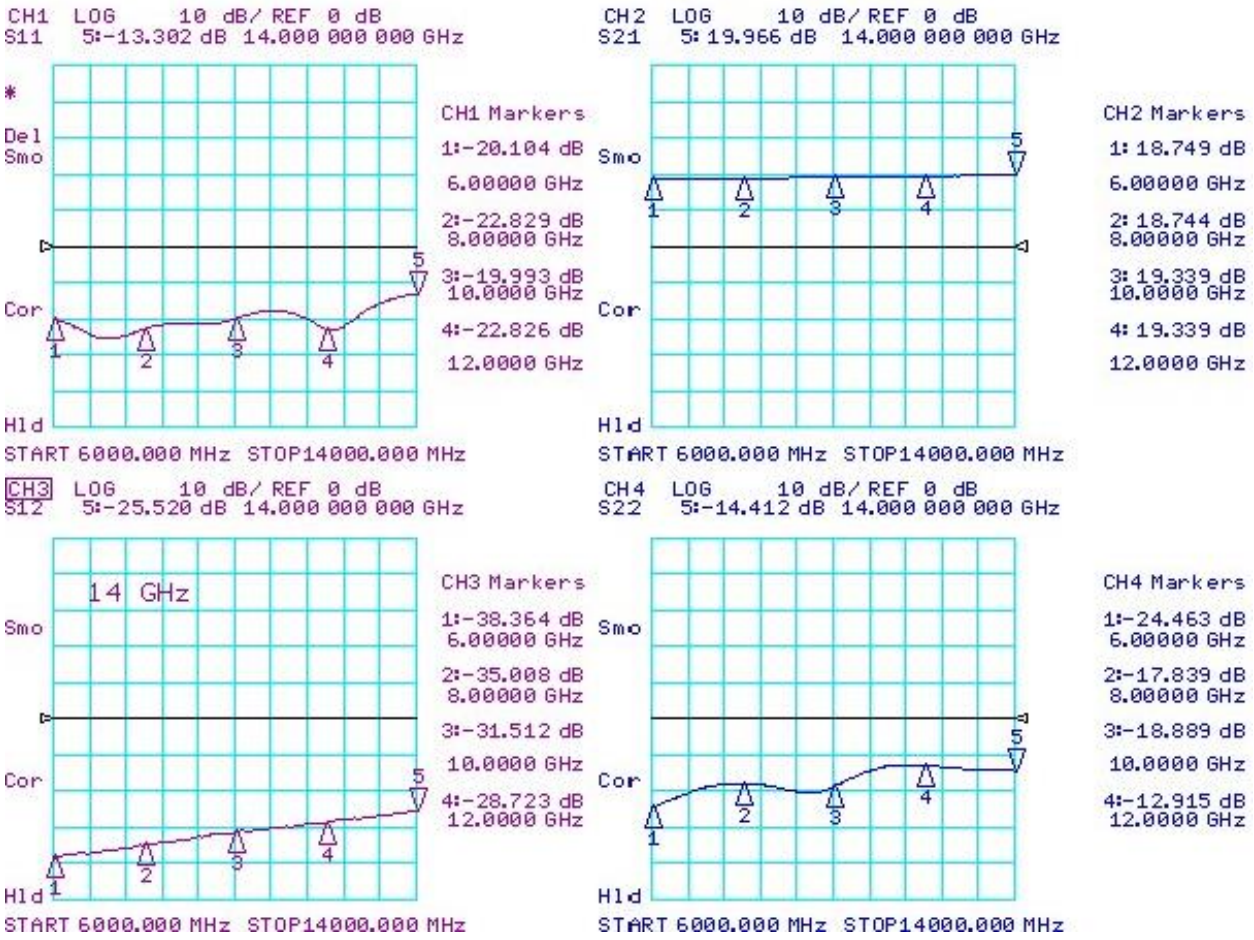
Maximum Ratings[1]

Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Operating Temperature	OTR	-40		+85	°C	
Storage Temperature	STR	-40		+125	°C	
RF Input power (CW)				+15	dBm	
Die $J_{unction}$	T_J			+150	°C	
Positive Supply Voltage				+13	V	

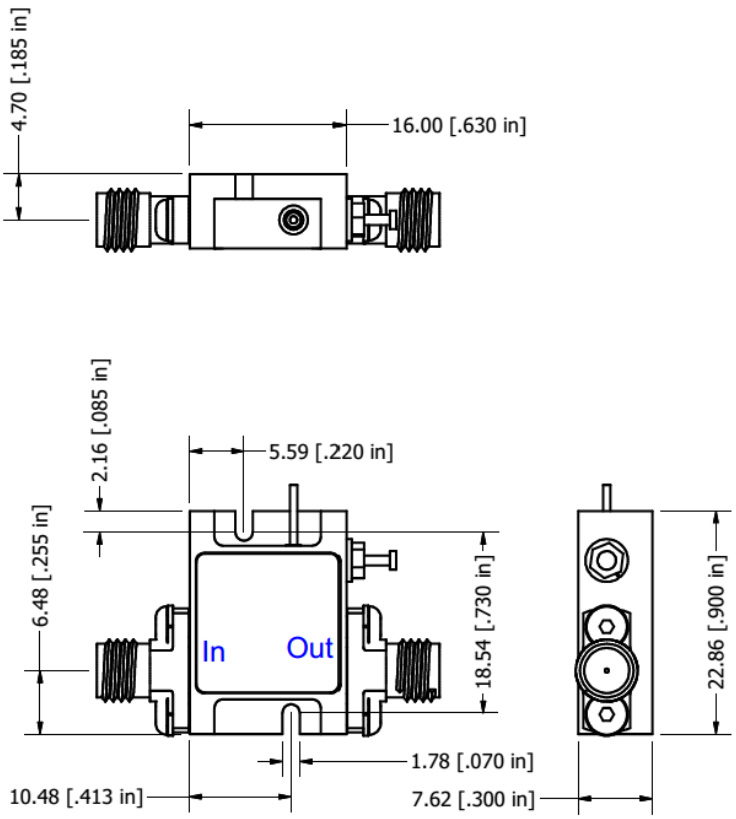
Notes

Note 1	Unconditional Stability
Note 2	Possibly up to 0.5dB higher at 14 GHz
Note 3	Excludes harmonics

Simulation Plots



Package Outline: SMA Female Connectors mm(inches)



Field replaceable SMA Connectors
Housing: Aluminum Gold over Nickel plated
Note: The unit must be attached to proper heat sink

Revision History

Date	Rev	Author	Details of Revision
04-23-25	0	AR	Initial Version