LA10408 Ultra Low Noise Amplifier

Features

4 GHz to 8 GHz Frequency Range

Typical P1dB power > +13dBm

Gain 38 dB Typical

Gain Flatness ± 1.2 dB Typical

0.7 dB Typical Noise Figure

Internally Regulated

Operates from Single +12V Supply

Unconditionally Stable

State-of-the-Art GaAs Technology

General Description

LA10408 is an Ultra Low Noise amplifier with very Low Noise Figure over the full frequency range. The amplifier I/Os are Internally matched to 50 Ohms and are DC blocked. The amplifier is ideal for use as Front End of receiver system, or where amplification is required without adding excessive noise in a Hi-Rel communications system for Commercial or Military applications

Applications

Radar

Test Equipment

Communications Systems

Receiver front end

Microwave Radio Systems

Electrical Specifications

Parameter	Symbol	Specification	Conditions
Frequency Range		4 to 8 GHz	
Small Signal Gain		36dB minimum	
Gain Flatness		±2dB maximum	
Noise Figure		0.8dB maximum	
Input Power		+15dBm minimum	CW, without damage
Output Power (P1dB)		+14dBm typical	1dB compression point @ 6 GHz
OIP3		20dBm typical	@ 15GHz Two tone F1-F2 = 10MHz
RF Input Impedance		1.8:1	Reference to 50Ω VSWR
RF Output Impedance		1.5:1	Reference to 50Ω VSWR
Supply Voltage Positive		+12V	
Supply Current Positive		150mA maximum	

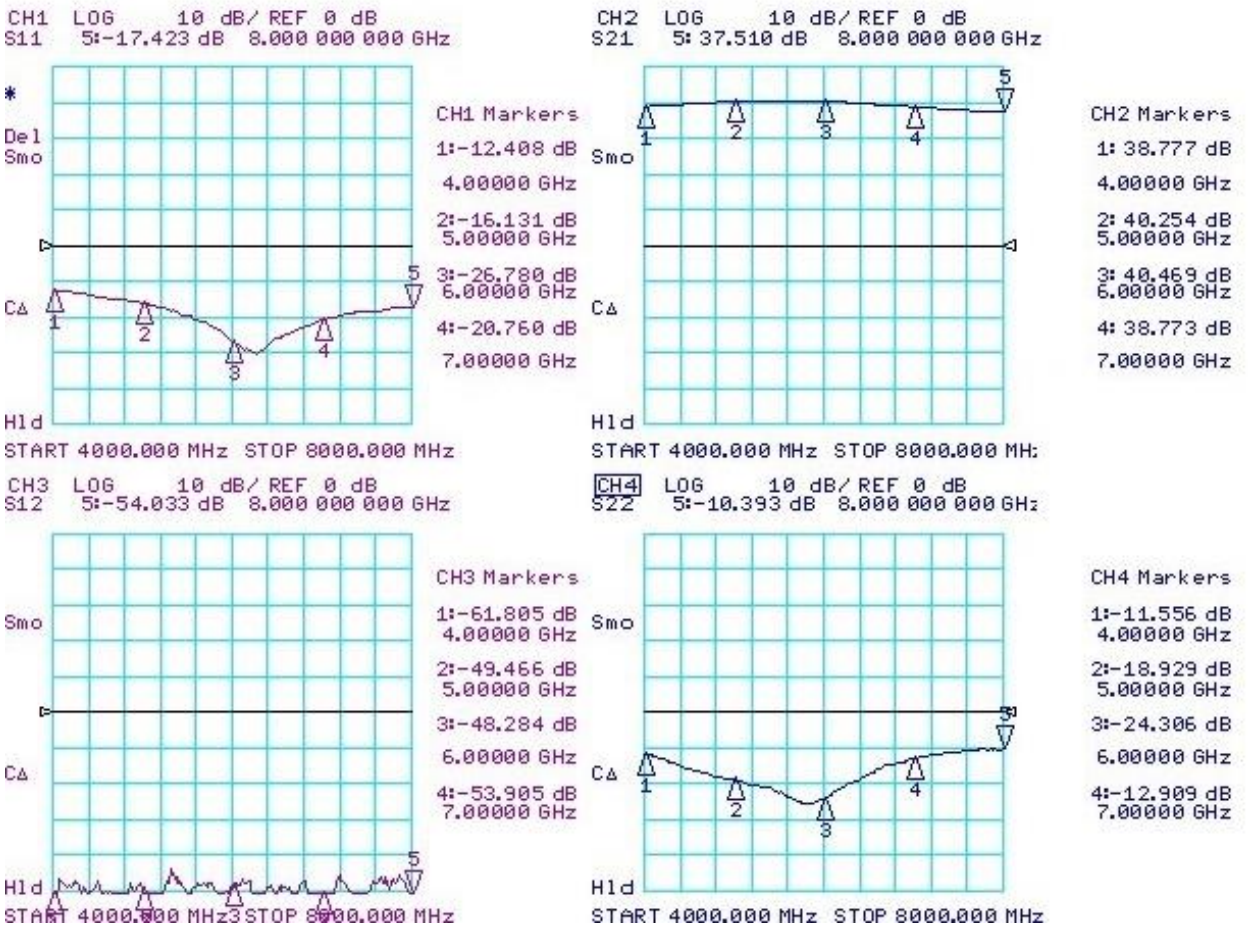
Maximum Ratings[1]

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				+15	V	

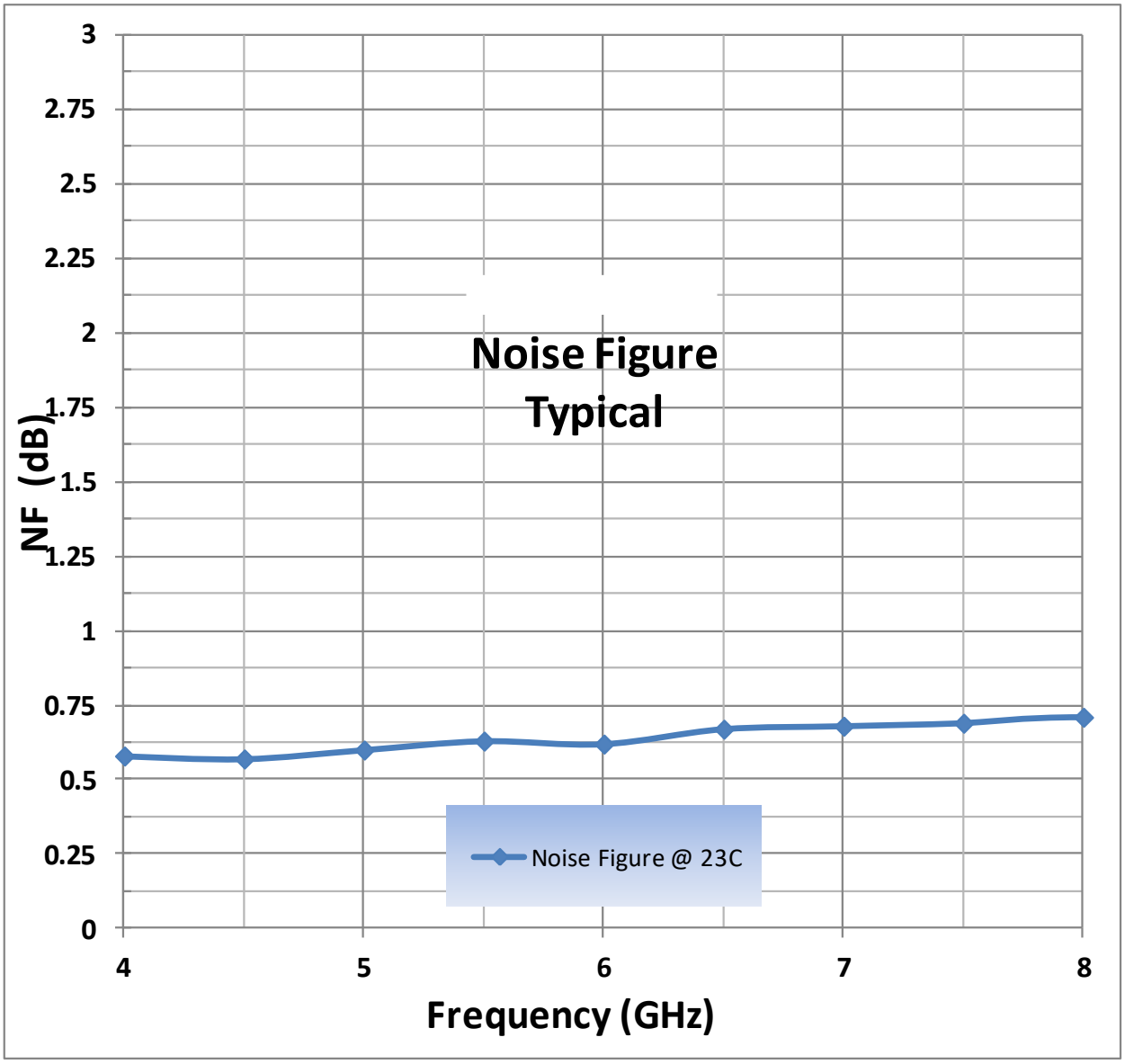
Notes

Note 1	Unconditional Stability

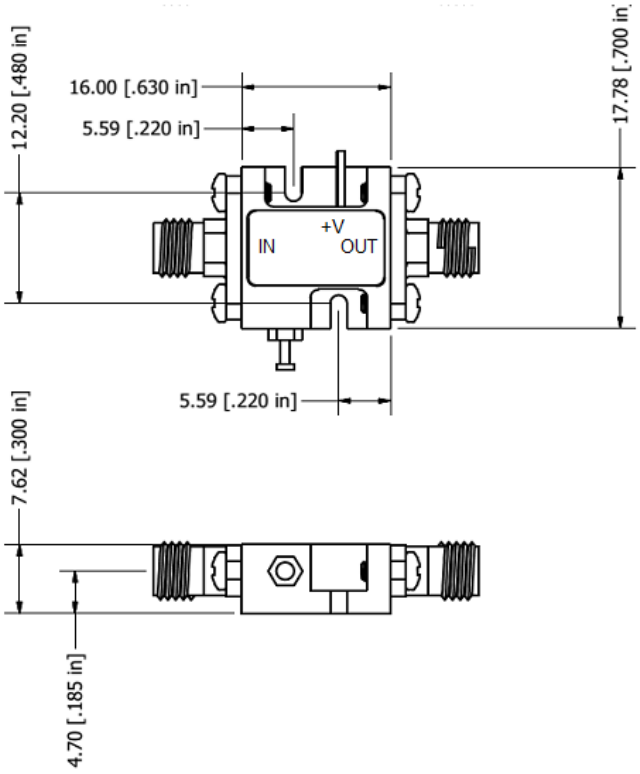
Simulation Plots



Typical Noise Figure



Package Outline: SMA Connectorized mm(inches)



Housing: Aluminum Gold over Nickel plated
Removable SMA and Ground Slug

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