

Features

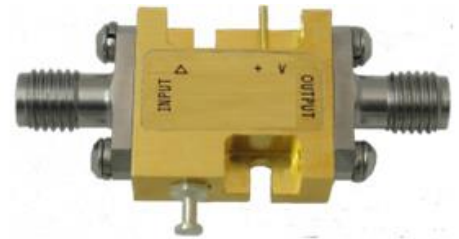
- 4 GHz to 8 GHz Frequency Range
- Typical P1dB power > +13dBm
- Gain 38 dB Typical
- Gain Flatness ± 1.2 dB Typical
- 0.7 dB Typical Noise Figure
- Internally Regulated
- Operates from Single +12V Supply
- Unconditionally Stable
- State-of-the-Art GaAs Technology

Applications

- Radar
- Test Equipment
- Communications Systems
- Receiver front end
- Microwave Radio Systems

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



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 Ratings¹

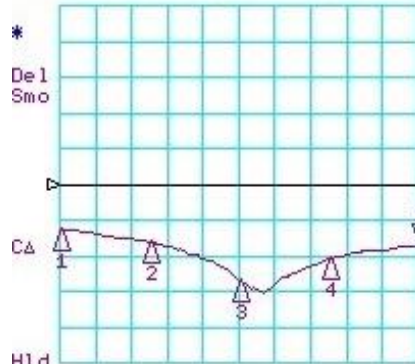
Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Operating Temperature	OTR	-40		+85	°C	
Storage Temperature	STR	-40		+125	°C	
RF Input power (CW)				+15	dBm	
Die Junction	T _J			+150	°C	
Positive Supply Voltage				+15	V	

Notes

Note 1	Unconditional Stability
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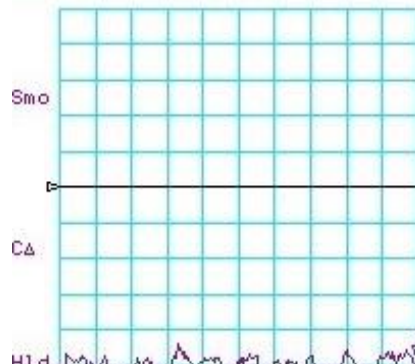
Simulation Plots

CH1 LOG 10 dB/ REF 0 dB
S11 5:-17.423 dB 8.000 000 000 GHz



START 4000.000 MHz STOP 8000.000 MHz

CH3 LOG 10 dB/ REF 0 dB
S12 5:-54.033 dB 8.000 000 000 GHz

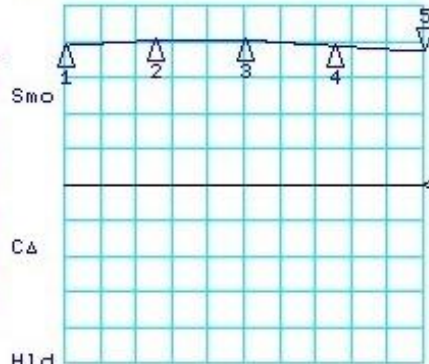


START 4000.000 MHz STOP 8000.000 MHz

CH1 Markers

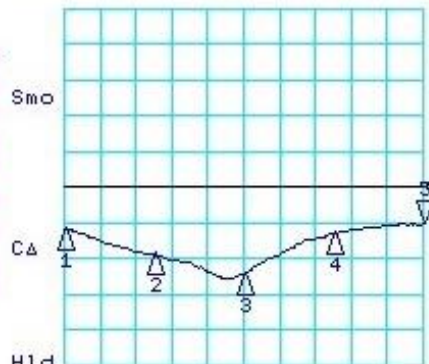
- 1:-12.408 dB
4.00000 GHz
- 2:-16.131 dB
5.00000 GHz
- 3:-26.780 dB
6.00000 GHz
- 4:-20.760 dB
7.00000 GHz

CH2 LOG 10 dB/ REF 0 dB
S21 5: 37.510 dB 8.000 000 000 GHz



START 4000.000 MHz STOP 8000.000 MHz

CH4 LOG 10 dB/ REF 0 dB
S22 5:-10.393 dB 8.000 000 000 GHz



START 4000.000 MHz STOP 8000.000 MHz

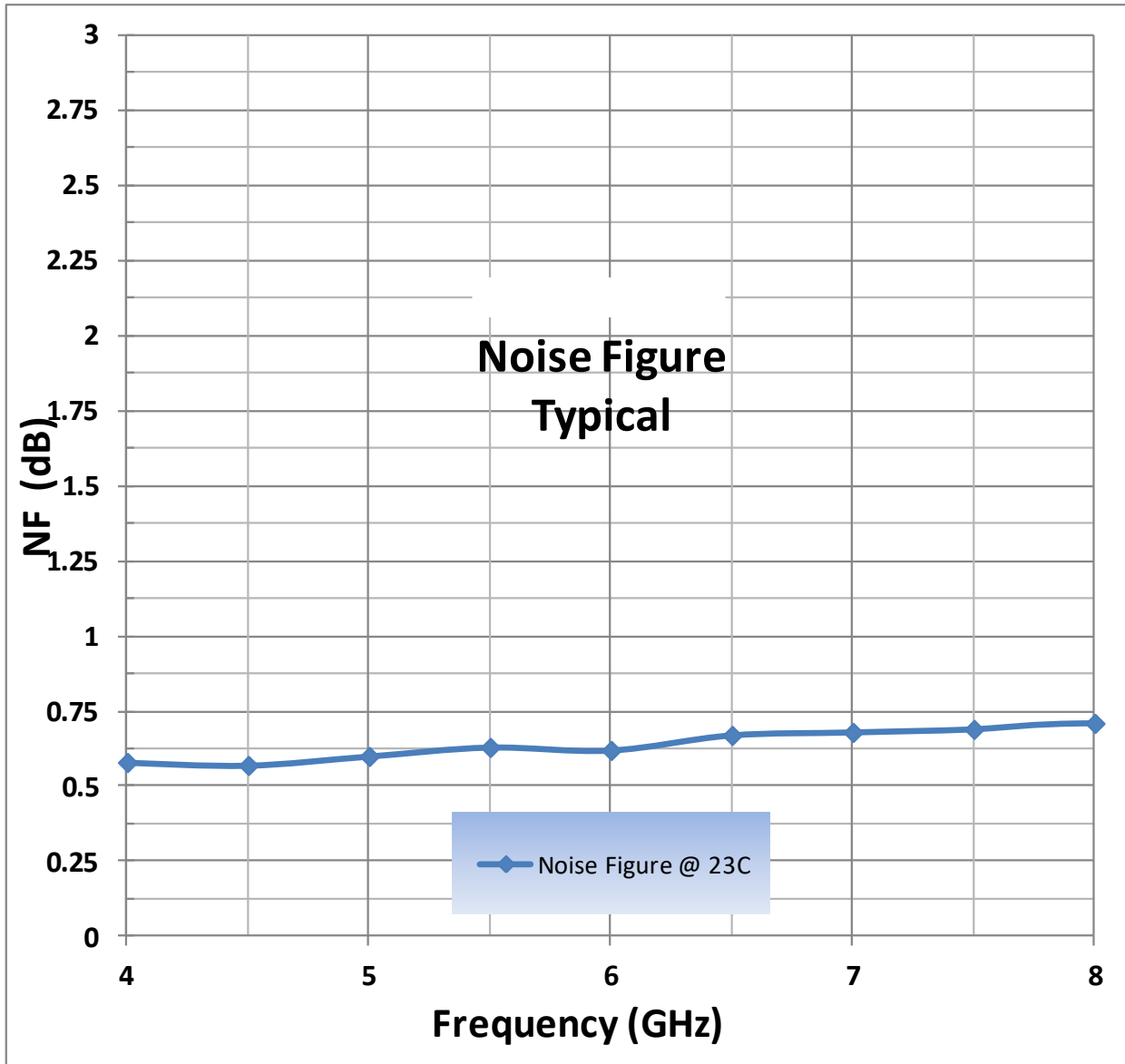
CH2 Markers

- 1: 38.777 dB
4.00000 GHz
- 2: 40.254 dB
5.00000 GHz
- 3: 40.469 dB
6.00000 GHz
- 4: 38.773 dB
7.00000 GHz

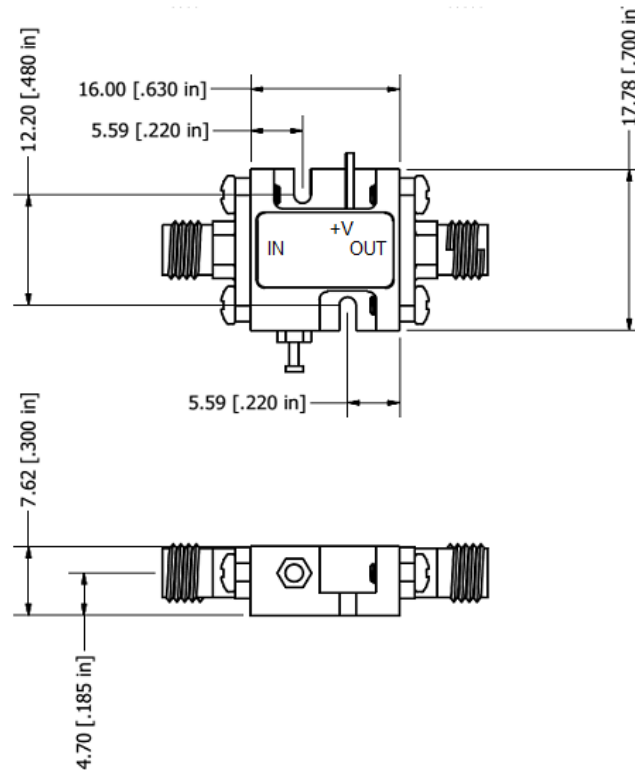
CH4 Markers

- 1:-11.556 dB
4.00000 GHz
- 2:-18.929 dB
5.00000 GHz
- 3:-24.306 dB
6.00000 GHz
- 4:-12.909 dB
7.00000 GHz

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