

Features

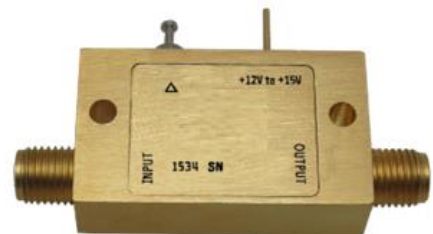
6 GHz to 18 GHz Frequency Range
Gain 24-28 dB @ 6 GHz
Gain 34-38 dB @ 18 GHz
Gain Window < ± 2 dB max
+19 dBm P1dB Typical, +17 dBm min
Internally Regulated
High EMI performance DC to RF leakage –90 dBc typ –70 dBc max
Operates from Single +12V Supply
Unconditionally Stable
State-of-the-Art GaAs Technology

Applications

Cable Loss Compensation
Test Equipment
Communications Systems
Microwave Radio Systems

General Description

LA10410 is a Broadband Low Noise amplifier with medium power, Positive Gain Slope and low EMI leakage over the full frequency range. The amplifier I/Os are Internally matched to 50 Ohms. The device is ideal for use in communication 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		6 to 18 GHz	
Small Signal Gain		24dB minimum	@ 6 GHz
Small Signal Gain		34dB minimum	@ 18GHz
Gain Window from slope ³		±2dB maximum	Variation from linear slope
Noise Figure		7dB maximum	
Input Power		+15dBm minimum	CW, without damage
Output Power (P1dB) ²		+19dBm typical	1dB compression point @ 12 GHz
RF Input Impedance		1.8:1	Reference to 50Ω VSWR
RF Output Impedance		1.8:1	Reference to 50Ω VSWR
EMI Leakage		-70dBc minimum	DC supply pin to RF out
Supply Voltage Positive		+12V	
Supply Current Positive		420mA maximum	

Maximum Ratings¹

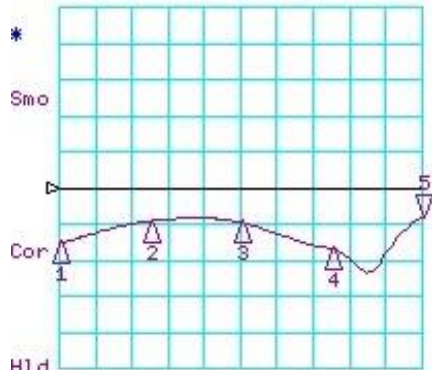
Parameter	Symbol	Min.	Typ.	Max.	Units	Conditions
Operating Temperature	OTR	-40		+85	°C	
Storage Temperature	STR	-54		+95	°C	
RF Input power (CW)				+15	dBm	
Die J _{unction}	T _j			+150	°C	
Positive Supply Voltage				+15	V	

Notes

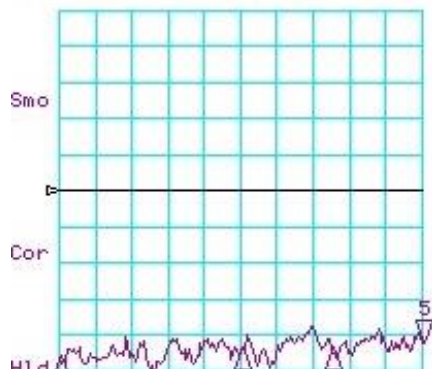
Note 1	Unconditional Stability
Note 2	P1dB 17 dBm minimum
Note 3	Slope may NOT be monotonic and may have flat or decreasing gain areas for BW<1GHz. Gain window within 4 dB (±2 dB)

Simulation Plots

CH1 LOG 10 dB/ REF 0 dB
S11 5: -8.1620 dB 18.000 000 000 GHz

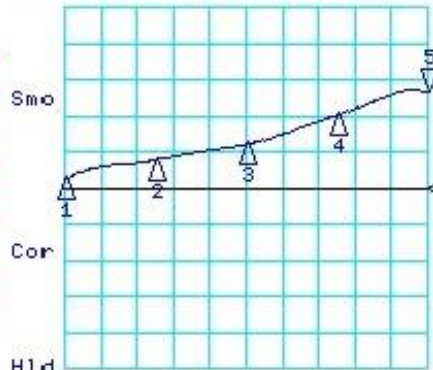


H1d
START 6000.000 MHz STOP 18000.000 MHz
CH3 LOG 10 dB/ REF -10 dB
S12 5: -52.011 dB 18.000 000 000 GHz

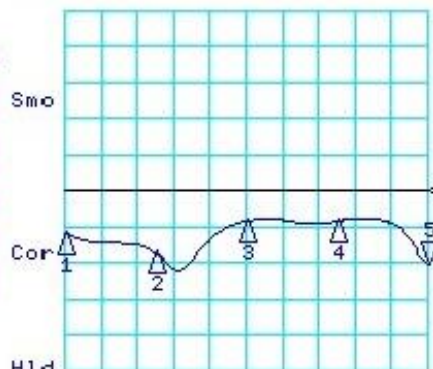


H1d
START 6000.000 MHz STOP 18000.000 MHz

CH2 LOG 5 dB/ REF 23 dB
S21 5: 36.340 dB 18.000 000 000 GHz

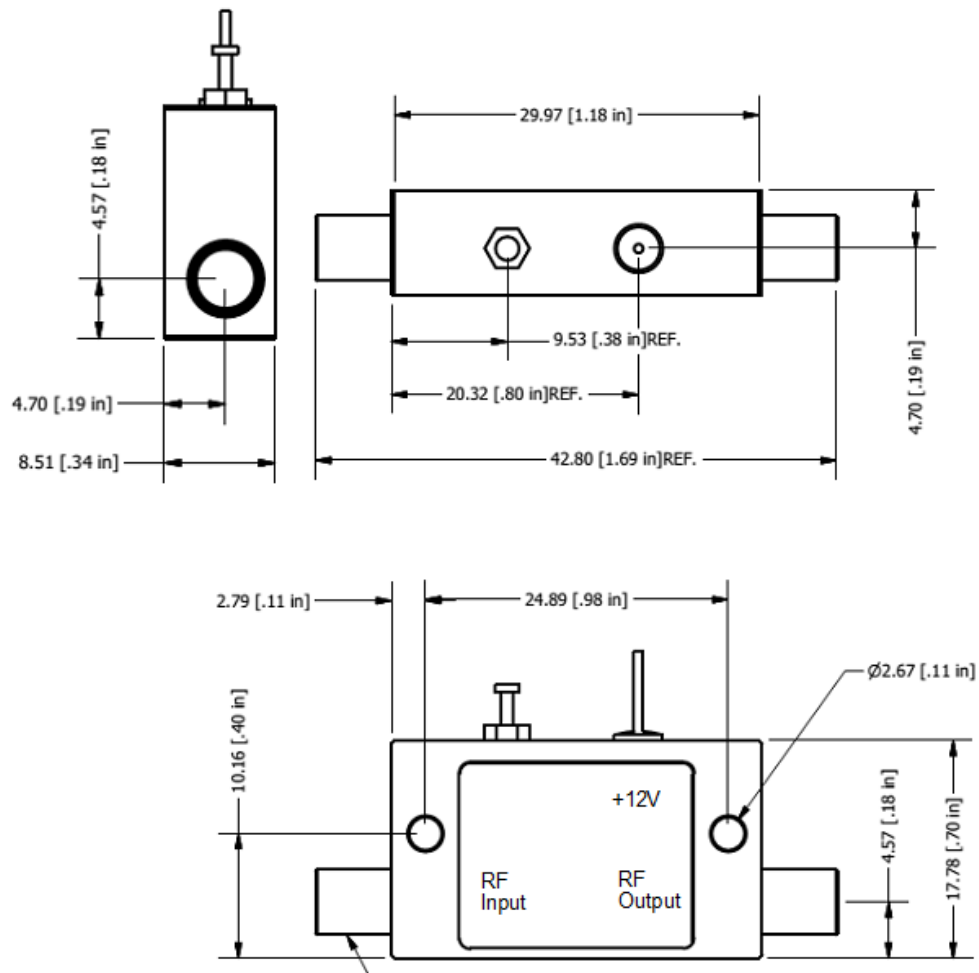


H1d
START 6000.000 MHz STOP 18000.000 MHz
CH4 LOG 10 dB/ REF 0 dB
S22 5: -20.526 dB 18.000 000 000 GHz



H1d
START 6000.000 MHz STOP 18000.000 MHz

Package Outline: SMA-F 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