

Low Noise Amplifier

4-12GHz/1.4dB NF/40dB Gain/15dBm P1dB

Model: TLLA4G12G-40-14

TLLA4G12G-40-14 is a low noise amplifier with a minimum small signal gain of 40 dB and a maximum noise figure of 1.4 dB across the frequency range of 4 to 12 GHz. The DC power requirement for the amplifier is +15 V DC/50 mA. The input and output port configuration offers coax adapter structure with SMA female.

Features:

- Frequency range: 4-12GHz
- Gain: 40dB Min
- Noise Figure: 1.4dB Max
- Good Power and Gain Flatness
- 50 Ohm Matched Input / Output

Applications:

- Communication systems

Electrical Characteristics:

Parameter	Min	Typ	Max	Units
Frequency range	4		12	GHz
Small Signal Gain	40			dB
Gain Flatness			±2.0	dB
Noise Figure			1.4	dB
Output P1dB	15	16		dBm
Input VSWR		1.8	2.2	:1
Output VSWR		1.8	2.2	:1
DC Voltage		15		V DC
DC Supply Current		50		mA
Impedance		50		Ohms

Mechanical Specifications:

Parameter	Value	Units
Input /Output Connector	SMA Female/SMA Female	
DC Bias	Solder Pin	
Size	44.8*29.2*11	mm

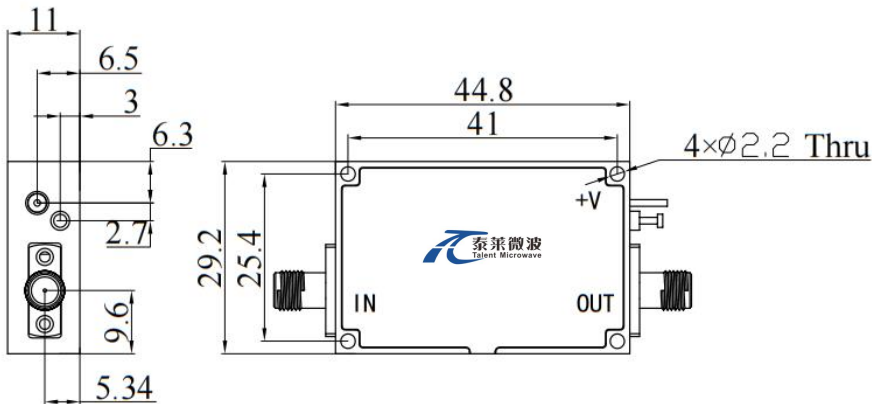
Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	±5%
RF Input Power	+10 dBm
ESD sensitivity (HBm)	Class 0, passed 150V



Outline Drawing:

Unit:mm; Tolerance:±0.1mm



***Heat Sink Required During Operation



ESD Protection: Strictly adhere to ESD precautions to prevent electrostatic damage.

Environmental Conditions:

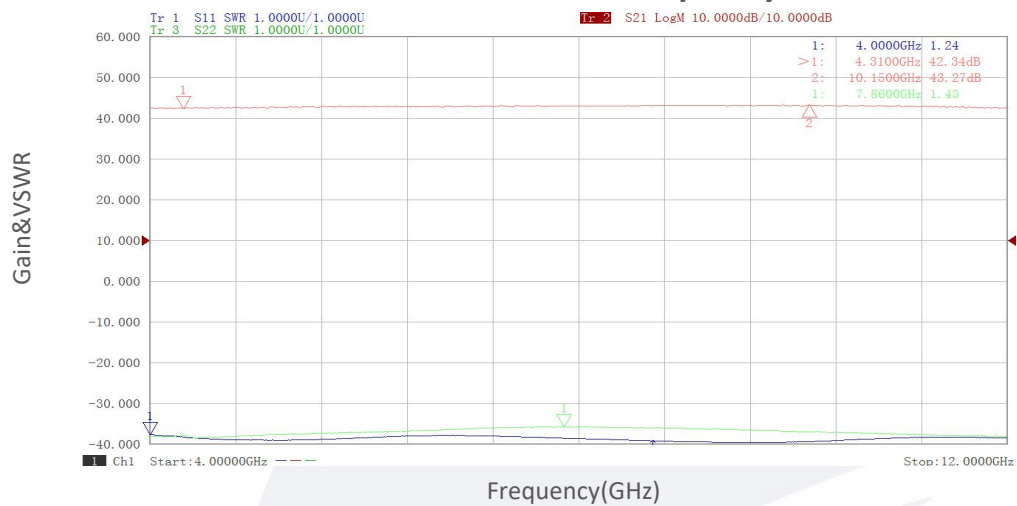
Parameter	Min	Typ	Max	Units
Operating Temperature	-45		+85	°C
Non-operating Temperature	-55		+125	°C
Relative humidity		95		%
Altitude		10,000		feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis			
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions			

Ordering Information:

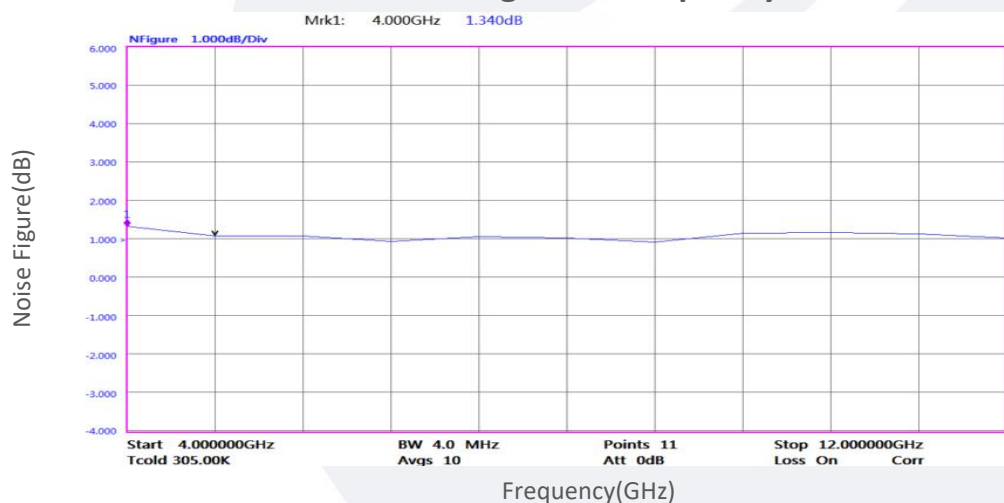
Base Number	Description	Revision
TLLA4G12G-40-14	Low Noise Amplifier, 4-12GHz, Noise Figure:1.4dB, Gain:40dB,P1dB:15dBm,+15V DC,Without Heatsink	Rev.1.0
TLLA4G12G-40-14-HS	Low Noise Amplifier, 4-12GHz, Noise Figure:1.4dB, Gain:40dB,P1dB:15dBm,+15V DC,With Heatsink	Rev.1.0

Typical Performance Data:

Gain&VSWR vs Frequency



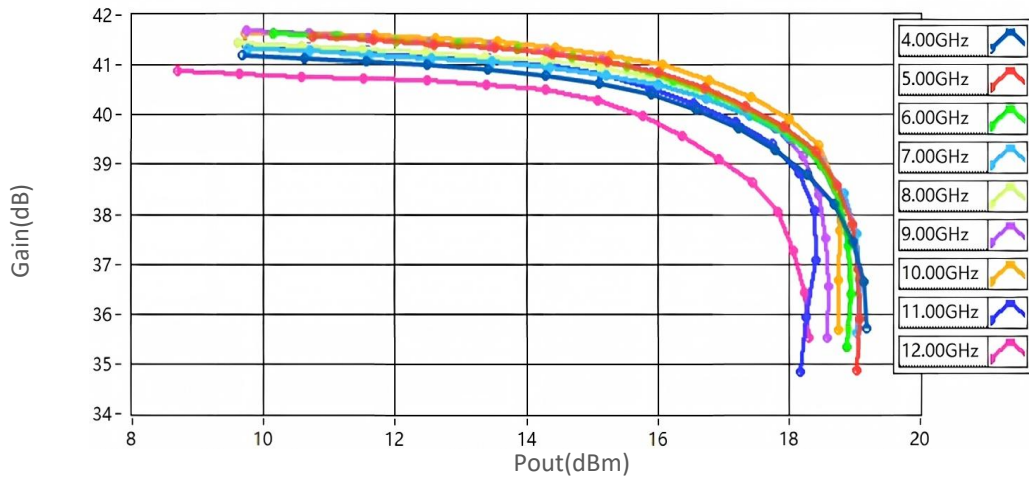
Noise Figure vs Frequency



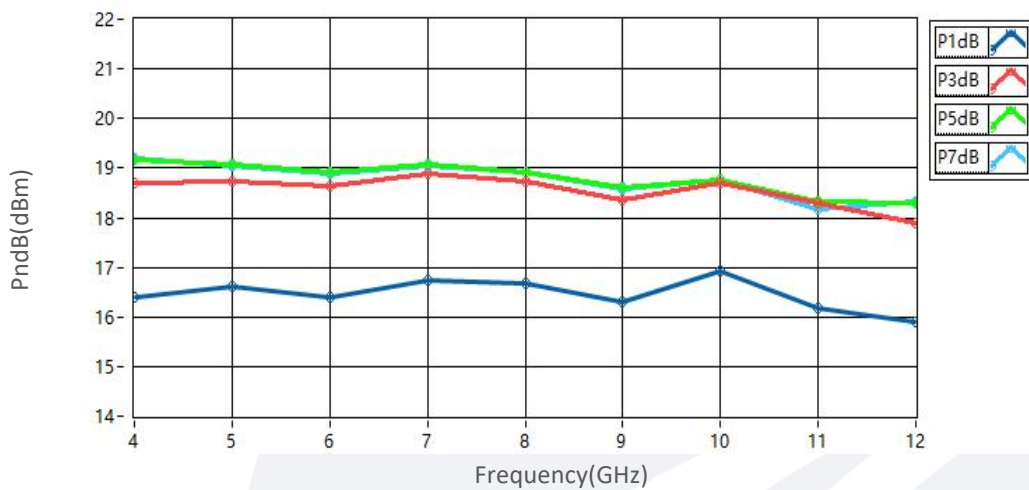
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

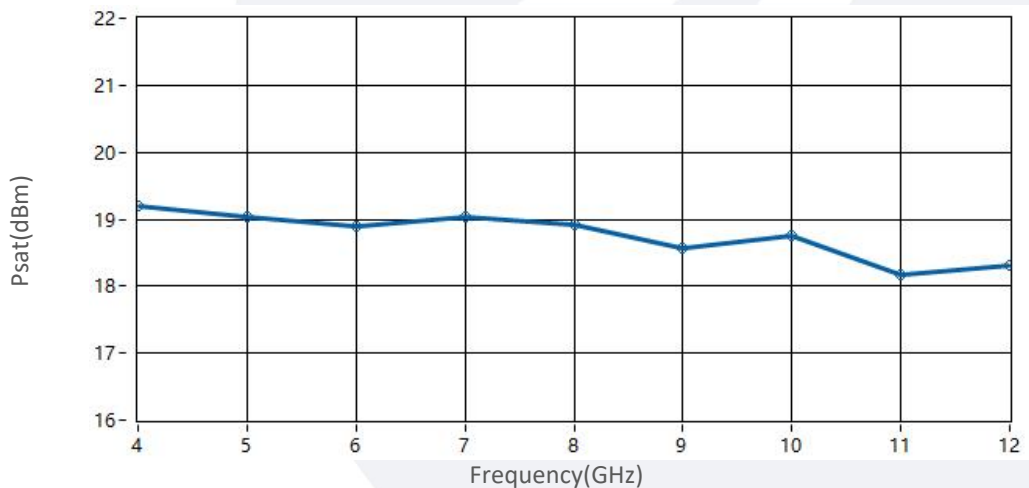
Gain vs Output Power



PndB vs Frequency



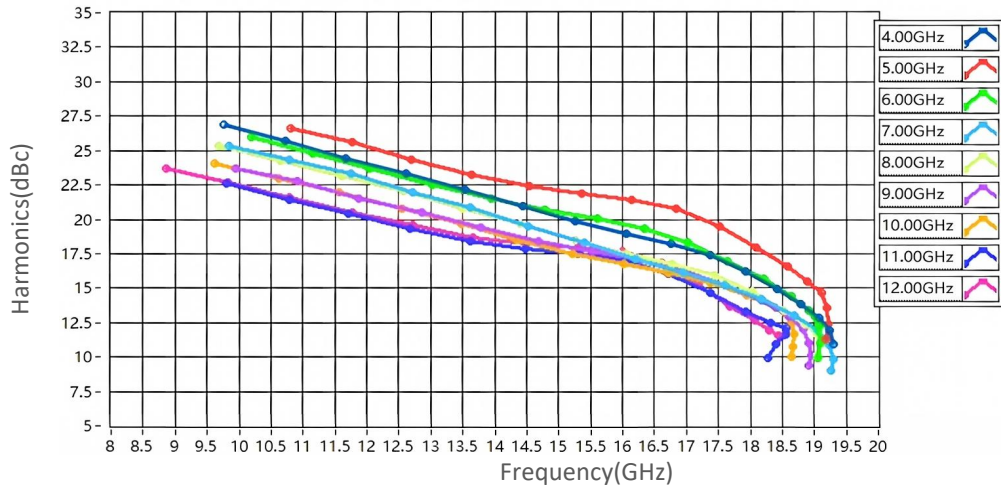
Psat vs Frequency



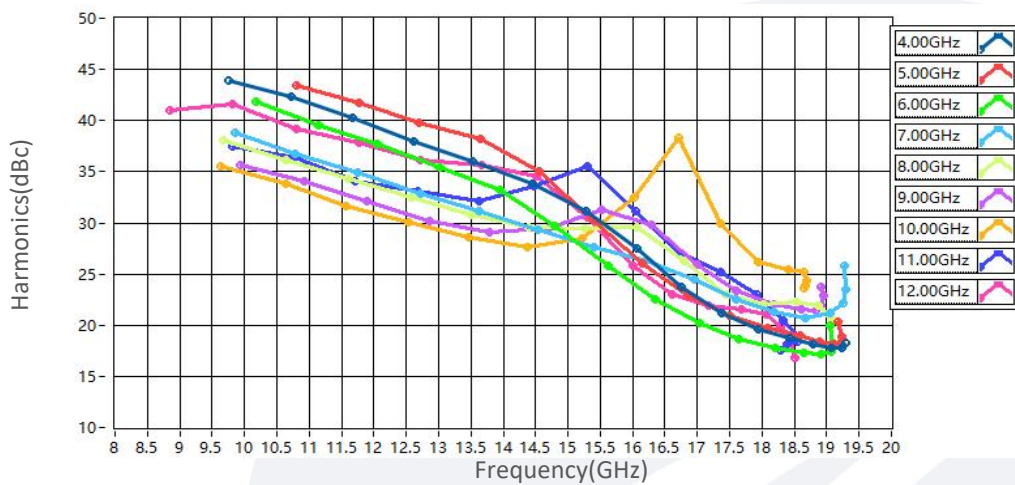
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Typical Performance Data:

2nd Harmonics vs Frequency



3rd Harmonics vs Frequency



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