



Low Noise Amplifier

Model: LNA50K53G-1250

50KHz-53GHz 12dB, Gain 5.0dB, NF

Ultrabroad frequency range, high small signal gain, low noise figure and good gain flatness

Features:

- Frequency range: 50KHz-53GHz
- Small Signal Gain: 12dB typ.
- Output P1dB: 15dBm typ.
- Noise Figure: 5.0dB typ.
- Operating voltage/current: +8 VDC/160mA.
- Simple 220V system available SAC option.
- 50 Ohm Matched Input / Output.

Applications:

- Laboratory Applications
- R&D Labs
- Radar Systems
- ISM
- Test Instrumentation

Product Overview:

The LNA50K53G-1250 is a coaxial low noise operating in the 50 KHz to 53 GHz frequency range. The amplifier offers a typical noise figure of 5.0 dB, 15 dBm typical of output P1dB and a typical small signal gain of 12 dB with the excellent gain flatness of ± 4 dB nominal. The DC power requirement for the amplifier is +8 VDC/160 mA. The input and output port configuration offers coax adapter structure with 2.4mm female.



Electrical Specifications at 25°C:

Parameter	Min	Typ	Max	Units
Frequency range	50KHz		53GHz	
Small Signal Gain		12		dB
Small Signal Gain flatness		±4.0		dB
Noise Figure*		5.0		dB
Output P1dB		15		dBm
Output IP3		20		dBm
Input VSWR		2		:1
Output VSWR*		2		:1
DC Voltage	+5	+8		V DC
DC Supply Current		160		mA
Impedance		50		Ohms

*Performance may degrade below 300 MHz. Please refer to below typical test plots

Mechanical Specifications:

Parameter	Value	Notes
Operating Temperature	-40°C to +70°C	
Non-operating Temperature	-55°C to +85°C	
Relative humidity	95	%
RF Input/Output Connector	2.4mm Female/2.4mm Female	
DC Bias	Solder Pin	
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	
Dimensions W x H x D	44.8 x 29.2 x 11	mm

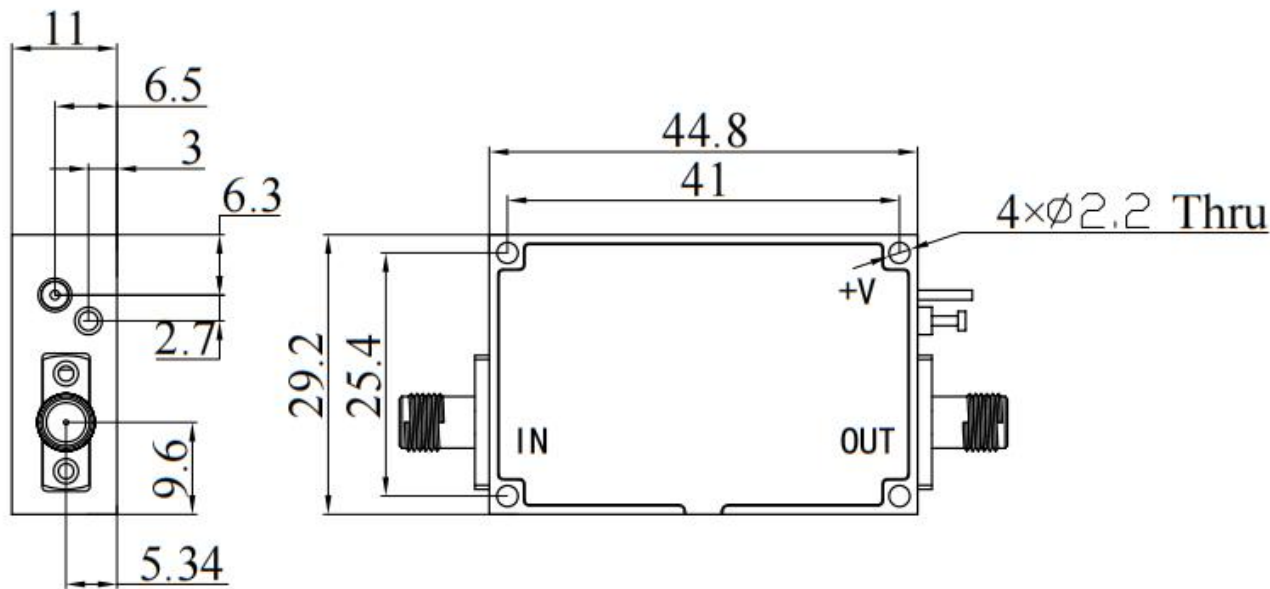
Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	+12 V
RF Input Power	+10 dBm
ESD sensitivity (HBm)	Class 0, passed 150V



Outline Drawing:

Unit:mm; Tolerance:±0.1mm



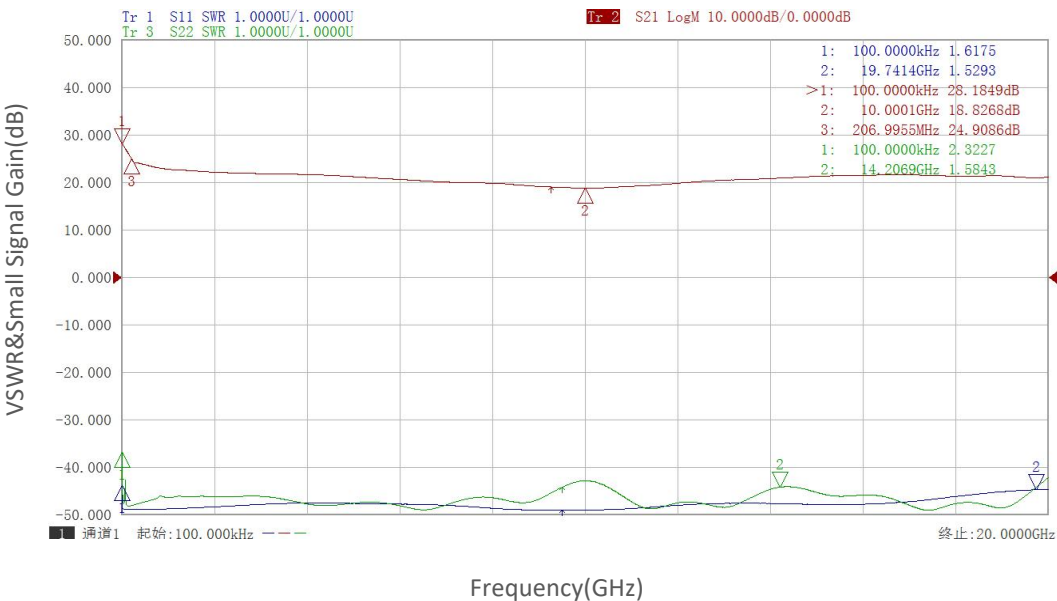
Ordering Information:

Base Number	Description	Optional
LNA50K53G-1250	Low Noise Amplifier, 50KHz-53GHz, Gain:12dB,Noise Figure:5.0dB,P1dB:15dBm,+8V DC	Without Heatsink
LNA50K53G-1250-HS	Low Noise Amplifier, 50KHz-53GHz, Gain:12dB,Noise Figure:5.0dB,P1dB:15dBm,+8V DC	With Heatsink

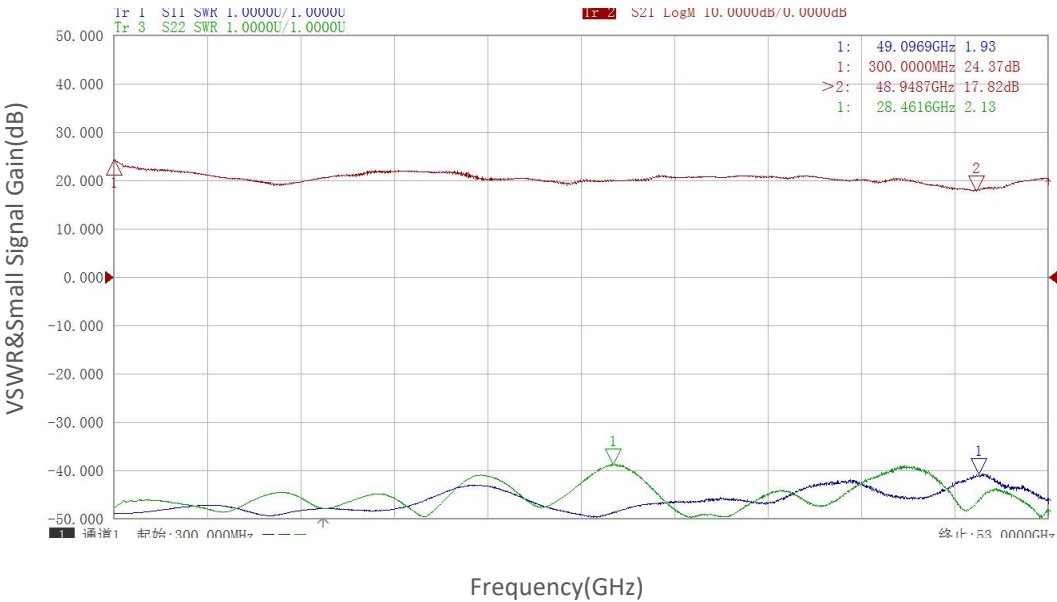


Typical Performance Data:

VSWR&Small Signal Gain vs Frequency



VSWR&Small Signal Gain vs Frequency

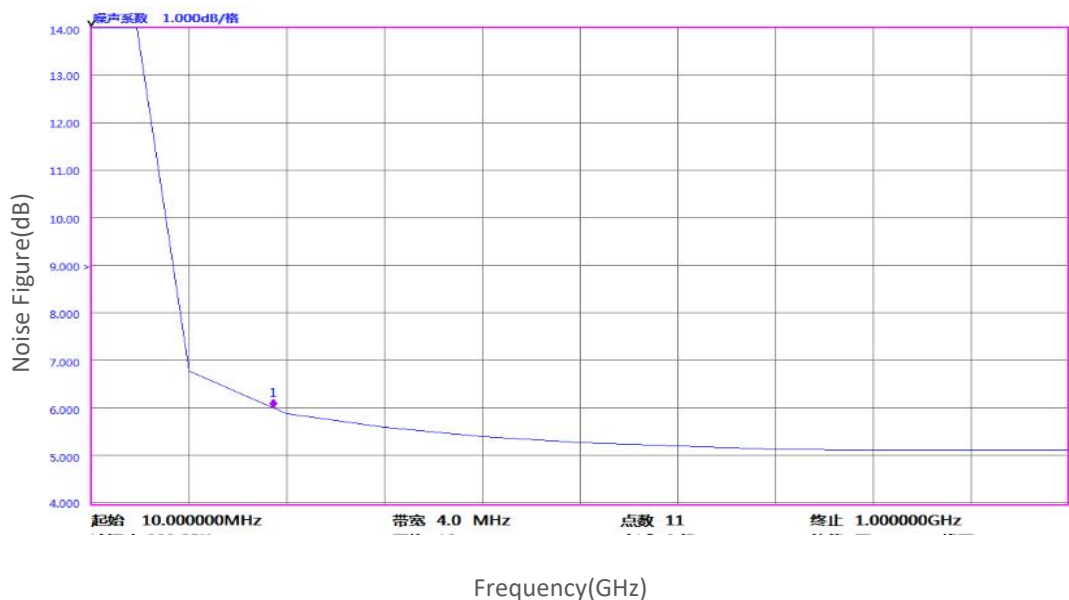


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

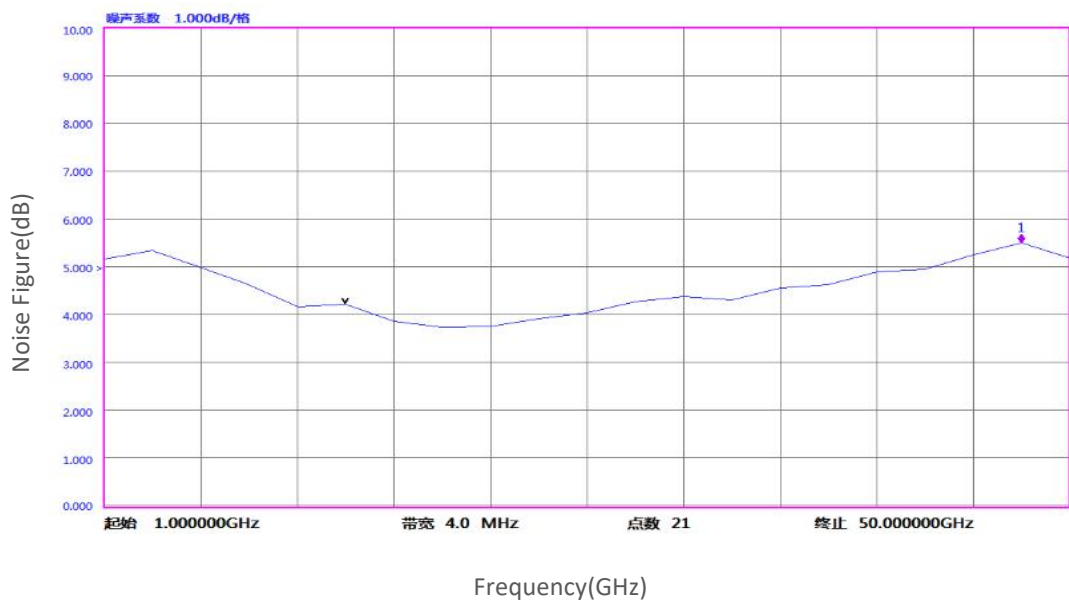


Typical Performance Data:

Noise Figure vs Frequency



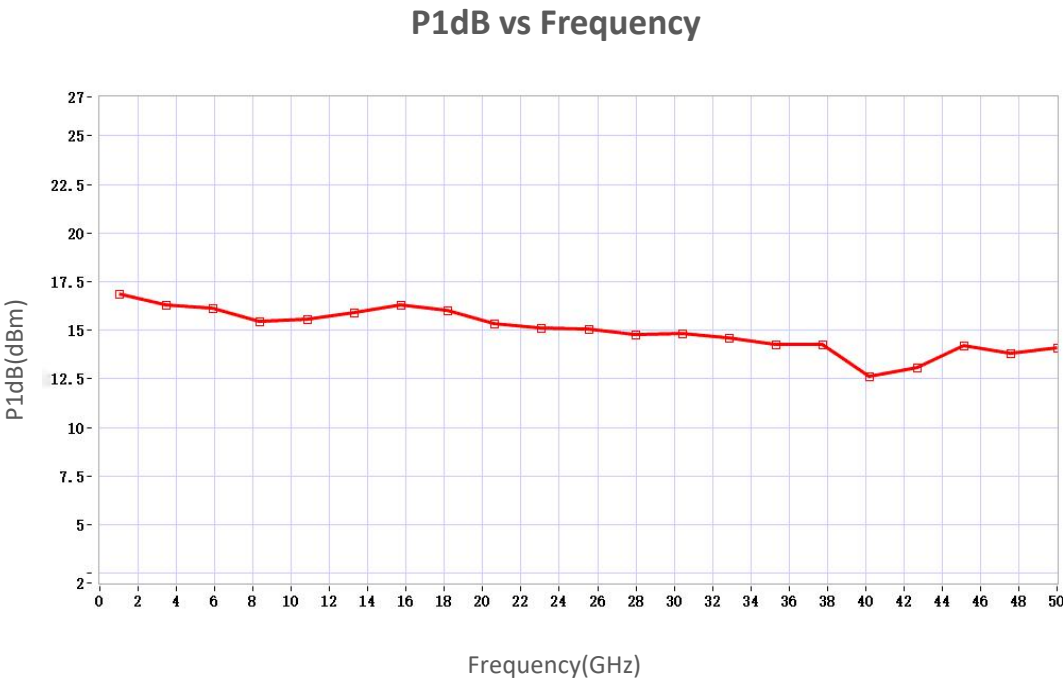
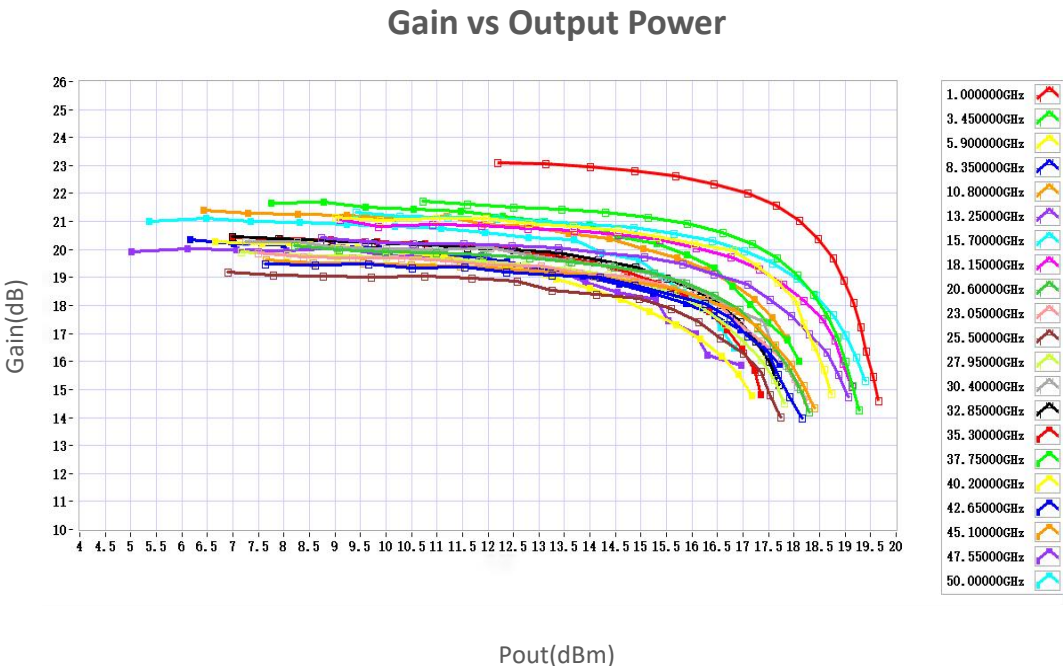
Noise Figure vs Frequency



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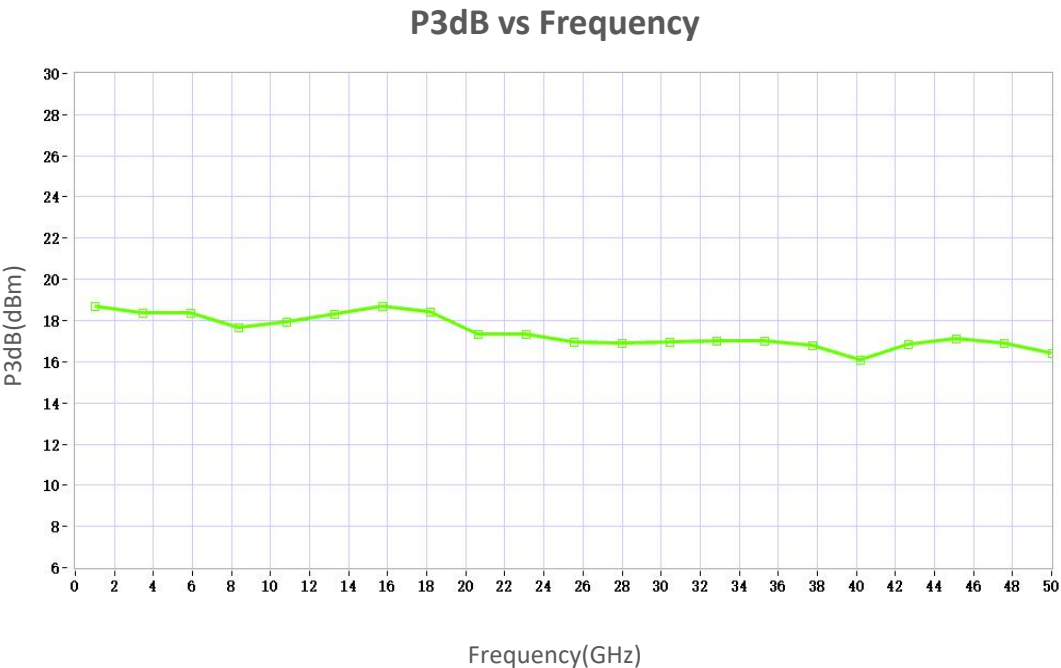
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