Low Noise Amplifier

Model: LNA50K40G-3855

50KHz-40GHz 38dB,Gain 5.5dB,NF

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

Features:

- Frequency range: 50KHz-40GHz
- Small Signal Gain: 38dB typ.
- Output P1dB: 14dBm typ.
- Noise Figure: 5.5dB typ.
- Operating voltage/current: +6 VDC/180mA.
- 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 LNA50K40G-3855 is a coaxial low noise operating in the 50KHz to 40 GHz frequency range. The amplifier offers a typical noise figure of 5.5 dB, 14 dBm typical of output P1dB and a typical small signal gain of 38 dB with the excellent gain flatness of ±2.5 dB nominal. The DC power requirement for the amplifier is +6 VDC/180 mA. The input and output port configuration offers coax adapter structure with 2.92mm female.

Electrical Specifications at 25℃:

Parameter	Min	Typ	Max	Units
Frequency range	50KHz		40GHz	
Small Signal Gain	36	38		dB
Small Signal Gain flatness		±2.5		dB
Output P1dB		14		dBm
Noise Figure		5.5		dB
Input VSWR		1.8		:1
Output VSWR		1.8		:1
DC Voltage		+6	+12	V DC
DC Supply Current		180		mA
Impedance		50		Ohms

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

Mechanical Specifications:

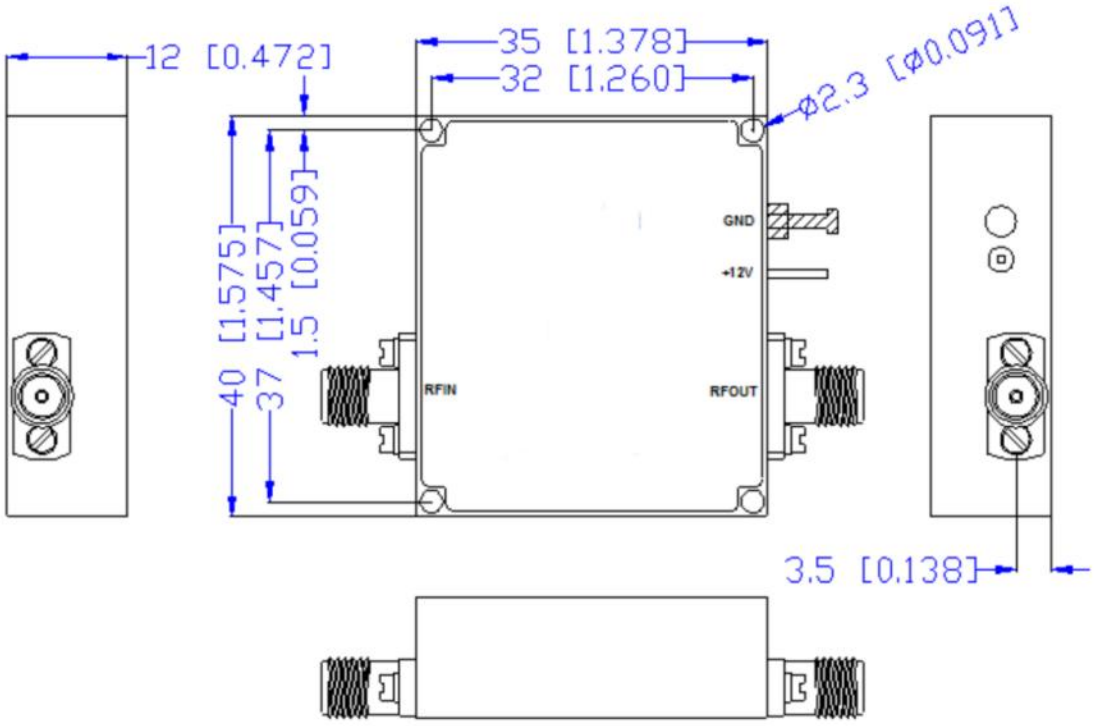
Parameter	Value	Notes
Operating Temerature	-40℃ to +70℃	
Non-operating Temperature	-55℃ to +85℃	
Relative humidity	95	%
RF Input/Output Connector	2.92mm Female/2.92mm Female	
DC Bias	Solder Pin	
Altitude	10,000	feet
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis	
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions	
Dimensions W x H x D	35 x 40 x 12	mm

Absolute Maximum Ratings:

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

Outline Drawing:

Unit:mm; Tolerance:±0.1mm

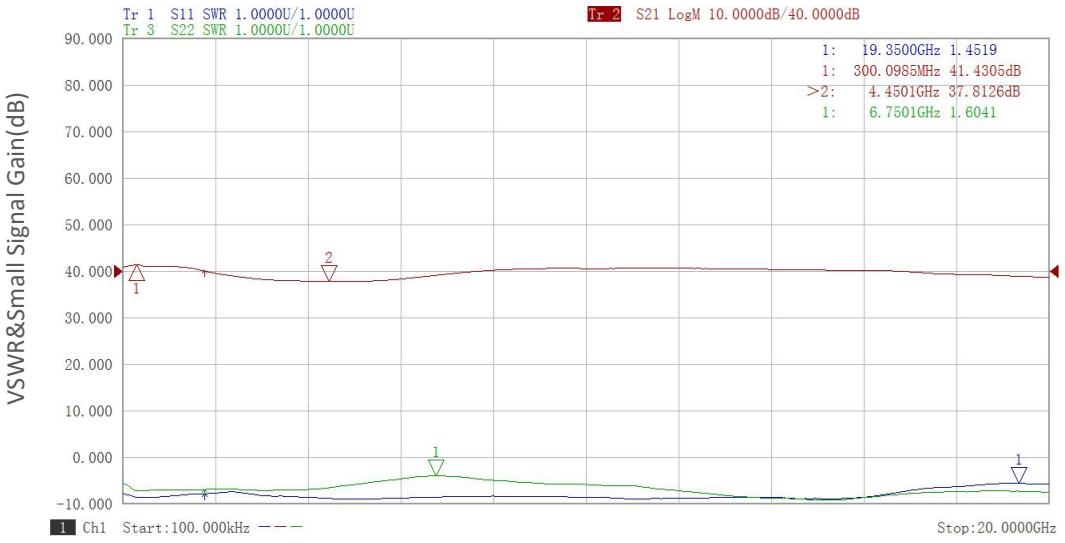


Ordering Information:

Base Number	Description	Optional
LNA50K40G-3855	Low Noise Amplifier, 50KHz-40GHz, Gain:38dB,Noise Figure:5.5dB,P1dB:14dBm,+6V DC	Without Heatsink
LNA50K40G-3855-HS	Low Noise Amplifier, 50KHz-40GHz, Gain:38dB,Noise Figure:5.5dB,P1dB:14dBm,+6V DC	With Heatsink

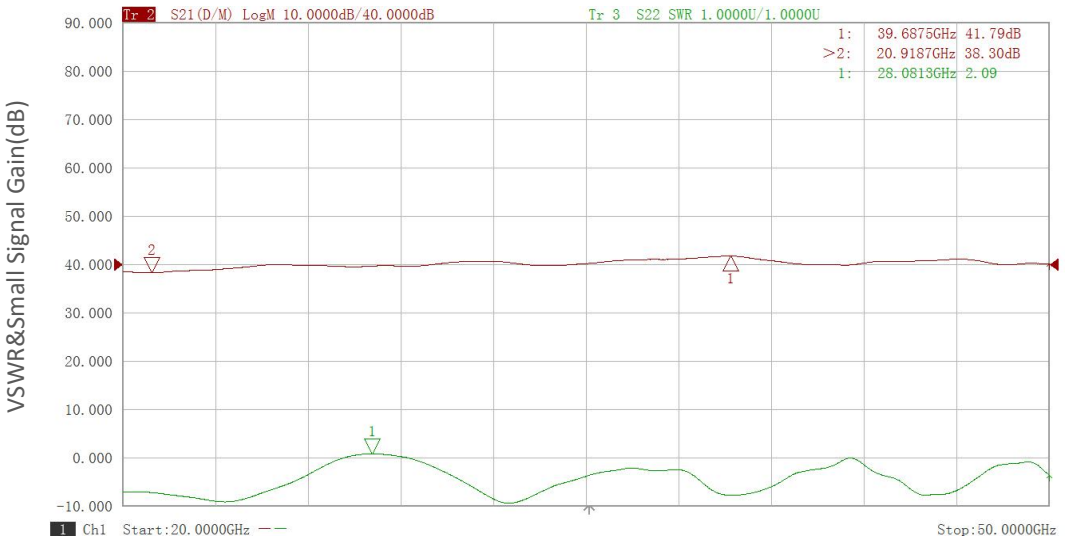
Typical Performance Data:

VSWR&Small Signal Gain vs Frequency



Frequency(GHz)

VSWR&Small Signal Gain vs Frequency

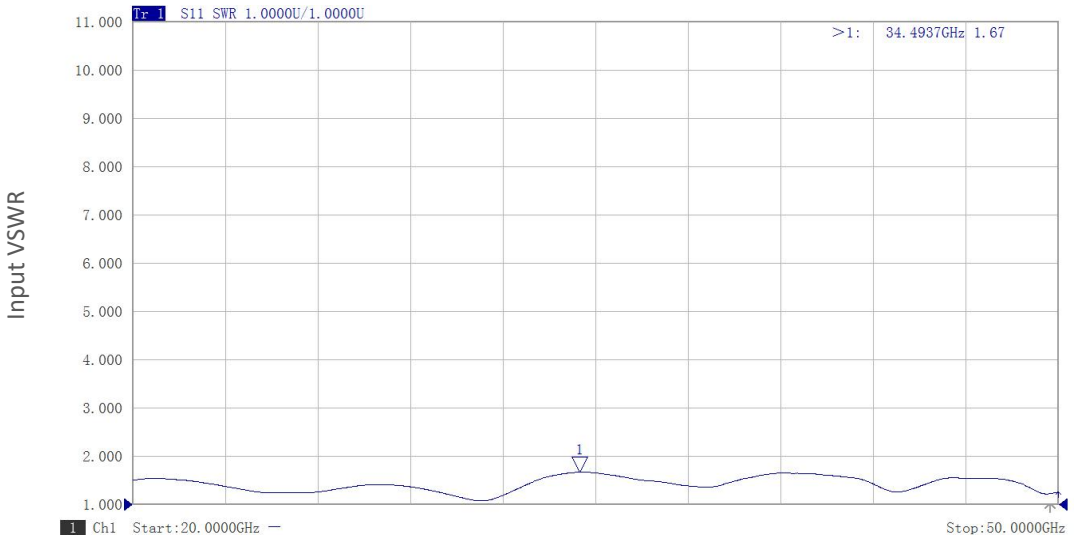


Frequency(GHz)

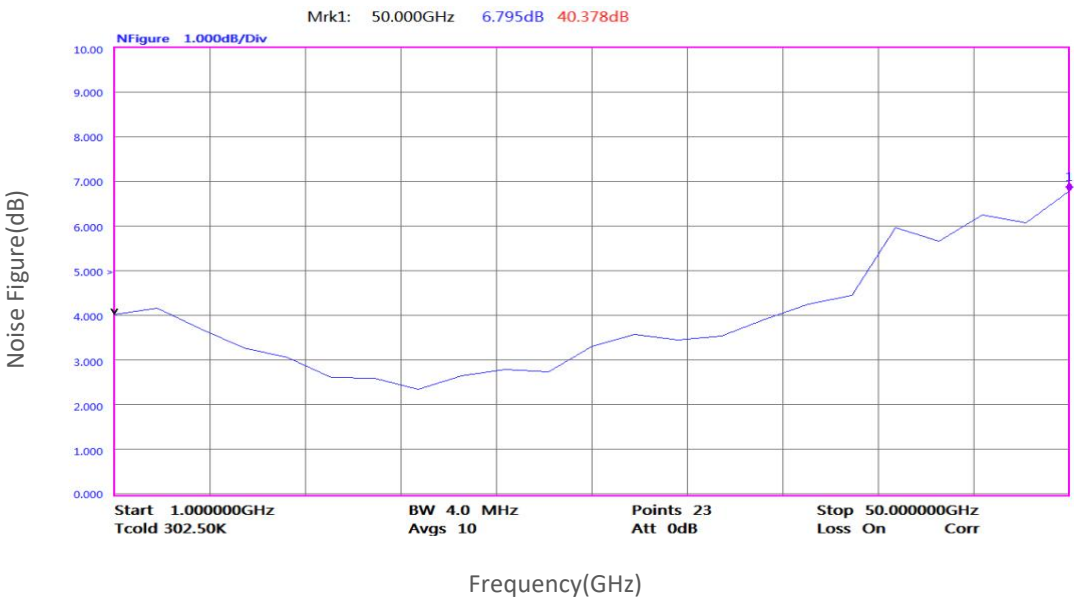
Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Input VSWR vs Frequency



Noise Figure vs Frequency



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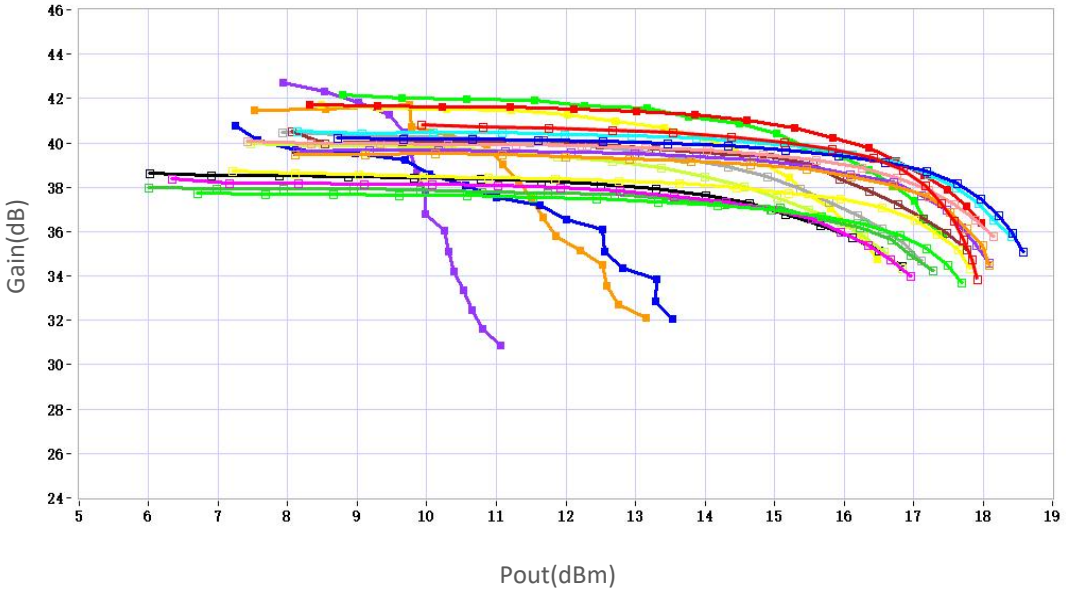
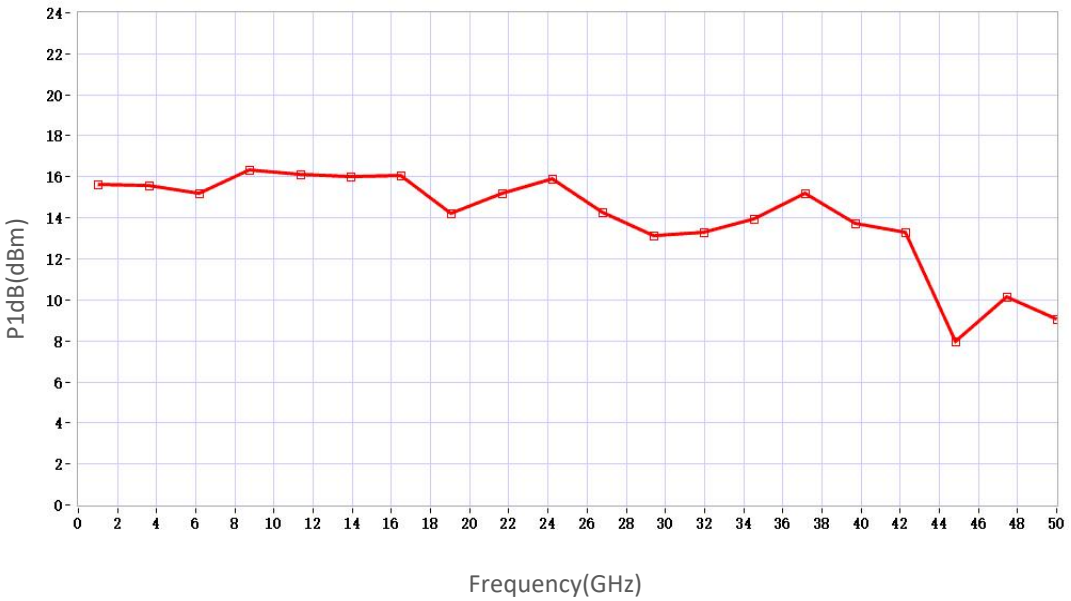
Typical Performance Data:

Gain vs Output Power



P1dB vs Frequency



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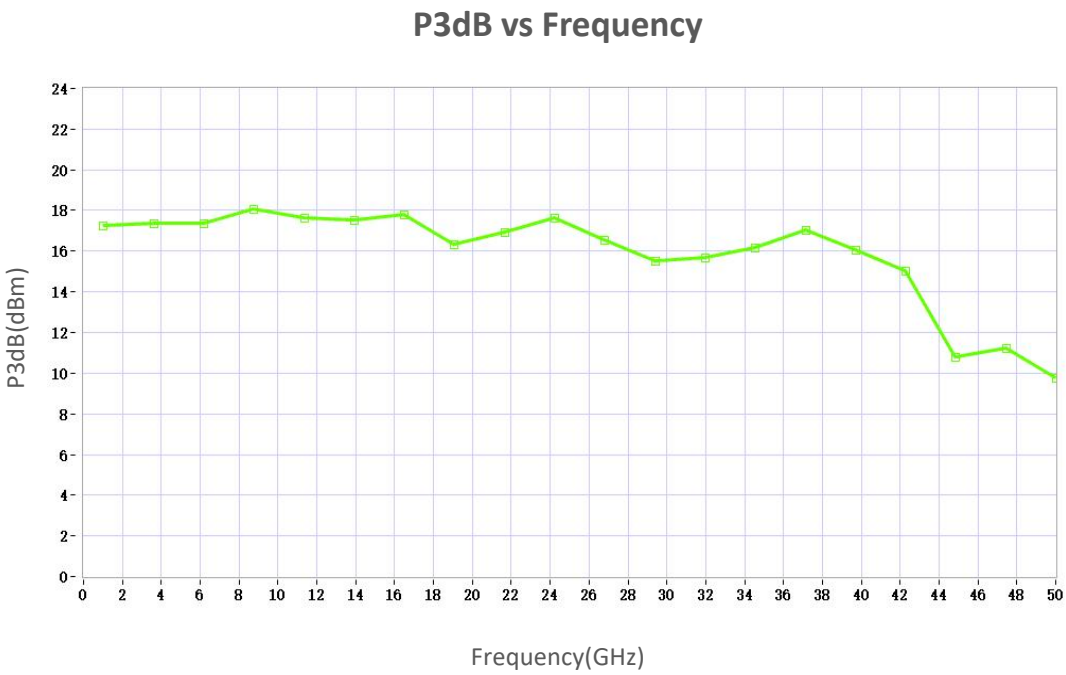

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