Low Noise Amplifier

Model: LNA10M40G-3030

10MHz-18GHz 30dB,Gain 3.0dB,NF
18-40GHz 29dB,Gain 5.5dB,NF
Ultrabroad frequency range, high small signal gain, low noise figure and good gain flatness

Features:

- Frequency range: 10MHz-18GHz@Band A;18-40GHz@Band B
- Small Signal Gain: 30dB typ@Band A;29dB typ@Band B.
- Output P1dB: 21dBm typ@Band A;19dBm typ@Band B.
- Noise Figure: 3.0dB typ@Band A;5.5dB typ@Band B.
- Operating voltage/current: +12 VDC/350mA.
- 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 LNA10M40G-3030 is a coaxial low noise operating in the 10MHz to 18GHz frequency range. The amplifier offers a typical noise figure of 3.0 dB, 21 dBm typical of output P1dB and a typical small signal gain of 30 dB with the excellent gain flatness of ±3.0 dB nominal. Within the frequency range of 18 to40 GHz, this amplifier exhibits a typical noise figure of 5.5 dB and a typical output P1dB level of 19 dBm; its typical small signal gain is 29 dB, and it features an excellent gain flatness of ±2.5 dB. The DC power requirement for the amplifier is +12 VDC/350 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	Band A	10MHz		18GHz	
	Band B	18		40	GHz
Small Signal Gain	@10MHz-18GHz	25	30		dB
	@18-40GHz	24	29		dB
Small Signal Gain Flatness	@10MHz-18GHz		±3		dB
	@18-40GHz		±2.5		dB
Noise Figure	@10MHz-18GHz		3		dB
	@18-40GHz		5.5		dB
Output P1dB	@10MHz-18GHz	18	21		dBm
	@18-40GHz	16	19		dBm
Output Psat	@10MHz-18GHz		23		dBm
	@18-40GHz		21		dBm
Output IP3	@10MHz-18GHz		31		dBm
	@18-40GHz		28		dBm
Input VSWR	@10MHz-18GHz		1.8		:1
	@18-40GHz		2		:1
Output VSWR	@10MHz-18GHz		1.8		:1
	@18-40GHz		2		:1
DC Voltage			+12		V DC
DC Supply Current			350	400	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

Mechanical Specifications:

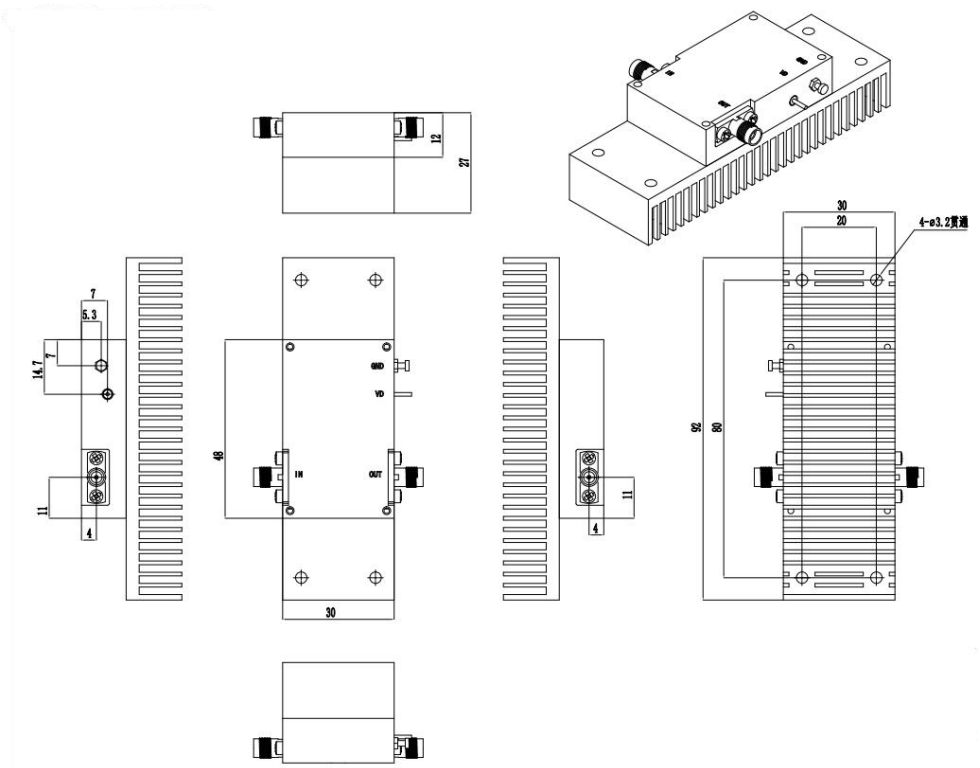
Parameter	Value	Notes
Shock / Vibration(MIL-STD-810F)	25g rms (15 degree 2KHz) endurance, 1 hour per axis	
Shock(non operating)	20G for 11msc half sin wave,3 axis both directions	
Dimensions W x H x D	30 x 48 x 12(Without Heatsink) 30 x 92 x 27(With Heatsink)	mm
Weight	40	g

Absolute Maximum Ratings:

Parameter	Value
Supply Bias Voltage	+15 V
RF Input Power	+2 dBm
ESD sensitivity (HBm)	Class 0, passed 150V

Outline Drawing:

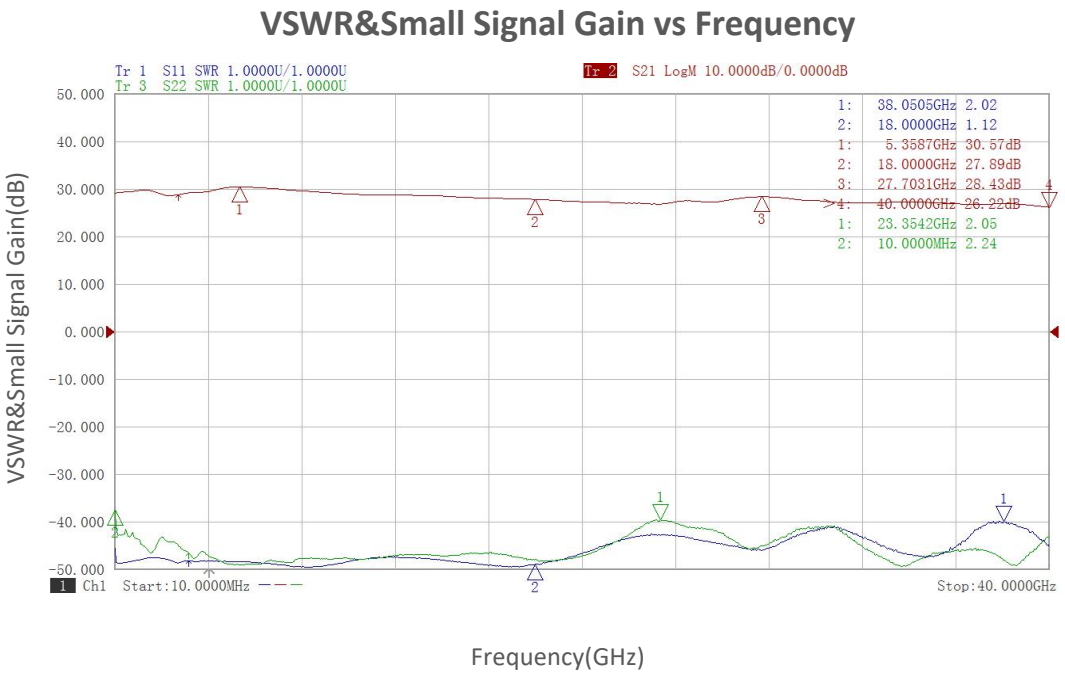
Unit:mm; Tolerance:±0.1mm



Ordering Information:

Base Number	Description	Optional
LNA10M40G-3030	Band A:Low Noise Amplifier, 10MHz-18GHz, Gain:30dB,Noise Figure:3.0dB,P1dB:21dBm,+12V DC Band B:Low Noise Amplifier, 18-40GHz, Gain:29dB,Noise Figure:5.5dB,P1dB:19dBm,+12V DC	Without Heatsink
LNA10M40G-3030-HS	Band A:Low Noise Amplifier, 10MHz-18GHz, Gain:30dB,Noise Figure:3.0dB,P1dB:21dBm,+12V DC Band B:Low Noise Amplifier, 18-40GHz, Gain:29dB,Noise Figure:5.5dB,P1dB:19dBm,+12V DC	With Heatsink

Typical Performance Data:

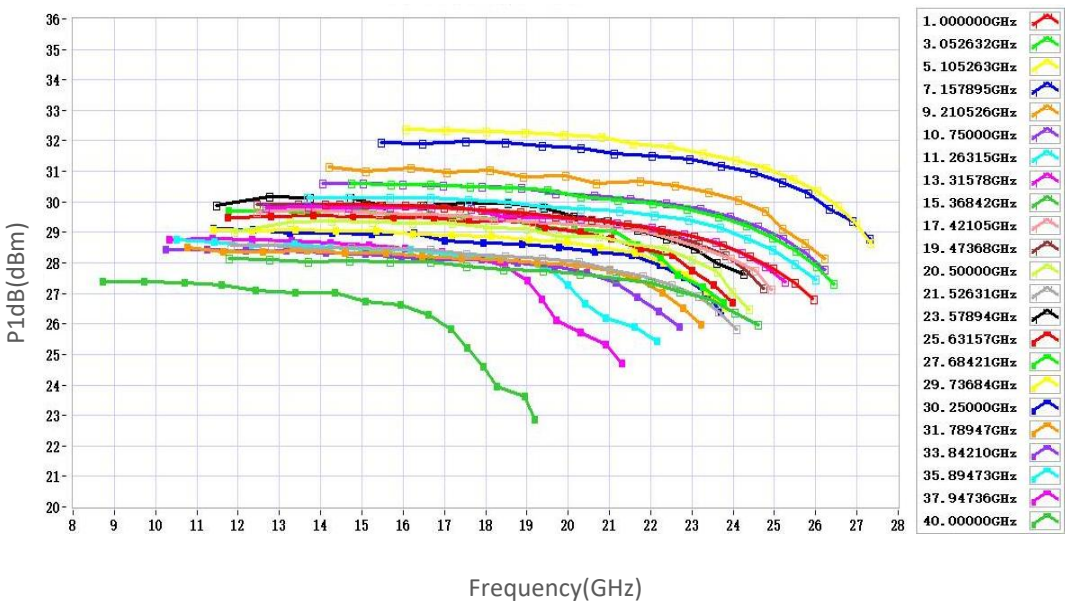


Note: Above data is for ref only, actual data may vary from unit to unit depending on operating environment and other factors like material lots etc.

Typical Performance Data:

Gain vs Output Power

P1dB vs Frequency



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