

# Broadband Low Noise RF Amplifier (LNA)

50KHz-43GHz, 15dB Gain



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The LAND series broadband amplifiers offer high gain, high linearity, low input/output return loss, and a flat gain response, making them ideal for driving optical modulators. The 50kHz-43GHz broadband amplifier delivers an output power of +20dBm with a noise figure (NF) of 6dB, functioning both as a power amplifier and a low-noise amplifier. It requires +8V/200mA DC power and is equipped with a 2.92mm female connector.

## Features

- Frequency: **50KHz-43GHz**
- Psat: +20dBm
- Vout=6.3Vpp
- Small signal gain: 15dB
- Single Power Supply

## Applications

- Optical Modulator Driver
- 5G Communication
- Test Equipment
- ROF (RF Over Fiber)
- Radar Communication

## Specifications

Parameter	Min	Typical	Max	Unit
Frequency	0.000050		43	GHz
Small Signal Gain(10MHz-40GHz)	13	15		dB
Small Signal Gain (40-43GHz)	10	13		dB
P1dB		+18		dBm
Psat		+20		dBm
Drain Supply		+8	+12	V
Current		200		mA
NF(1-35GHz)		6		dB
AGC Function		NO		
Input Return Loss		-7		dB
Output Return Loss		-7		dB
Spec Temp		25		°C
Drain Supply		+15		V
RF Input Power		+12		dBm
Input Voltage		2.5		Vpp
Operating Temperature	-40		+85	°C
Storage Temperature	-55		+125	°C
Input Port		2.92mm Female		
Output Port		2.92mm Male		
Case Material		Copper		
Finish		Gold Plated		
Package Sealing		Epoxy Sealed		
Weight		80		g
Size		SEE OUTLINE		



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Rev 10/15/24

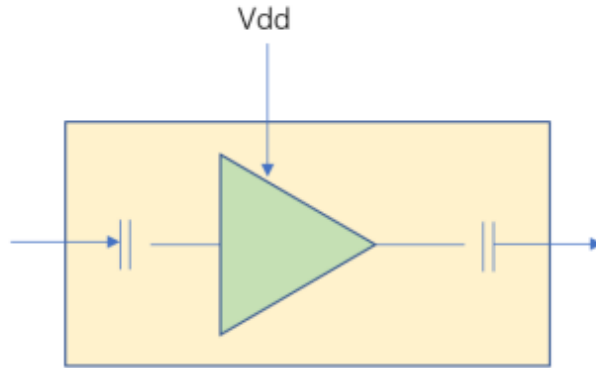
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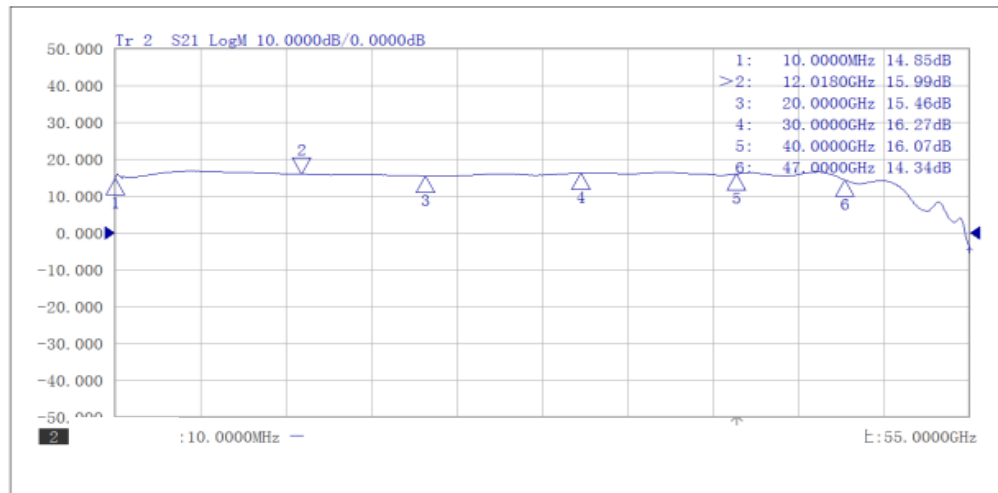
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### Diagram Block



Test Data (25°C) Please note that test curves will vary slightly from unit to unit

### Gain vs Frequency



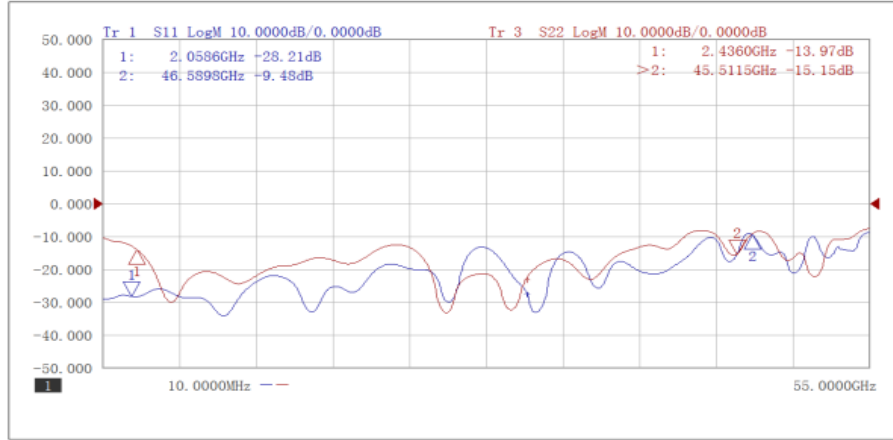
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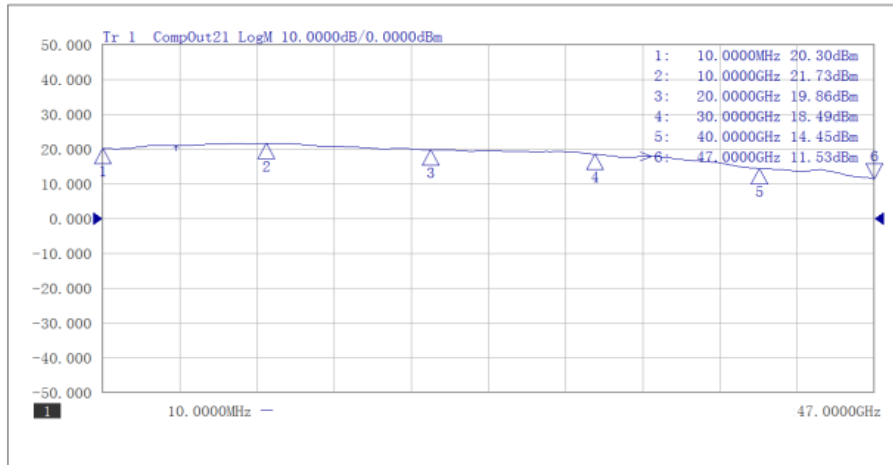


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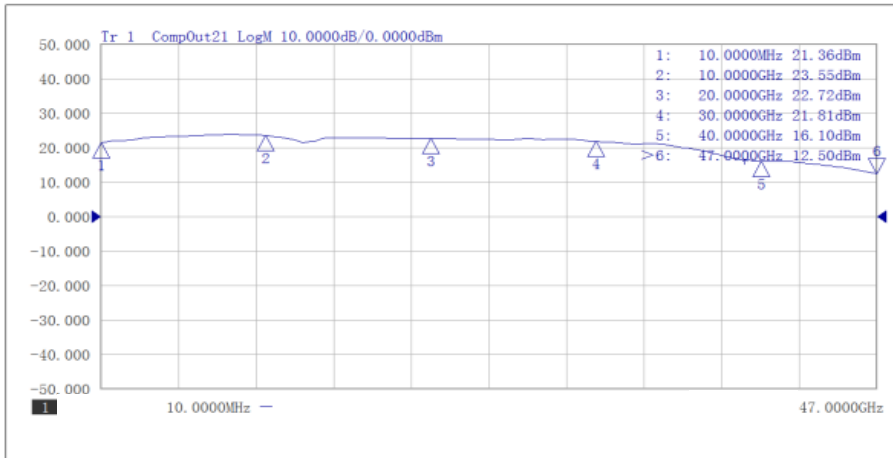
Return Loss vs Frequency



P1 vs Frequency 10MHz-43GHz



P3 vs Frequency 10MHz-43GHz



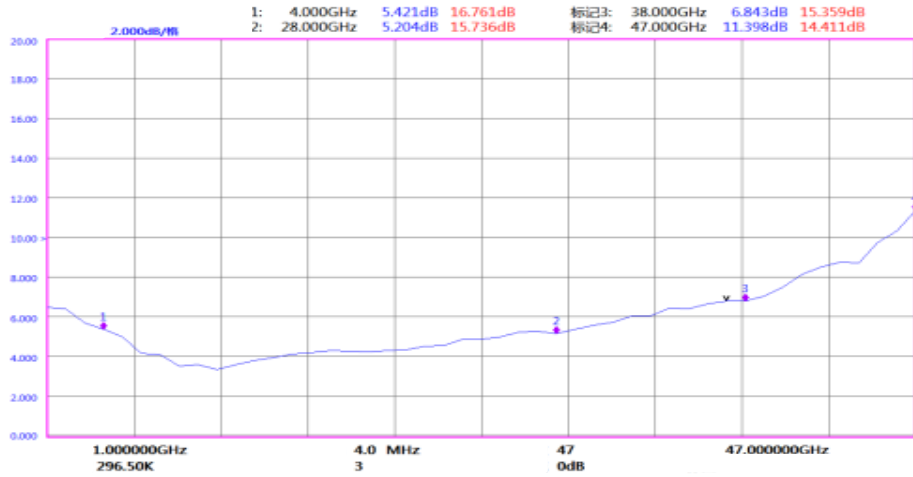
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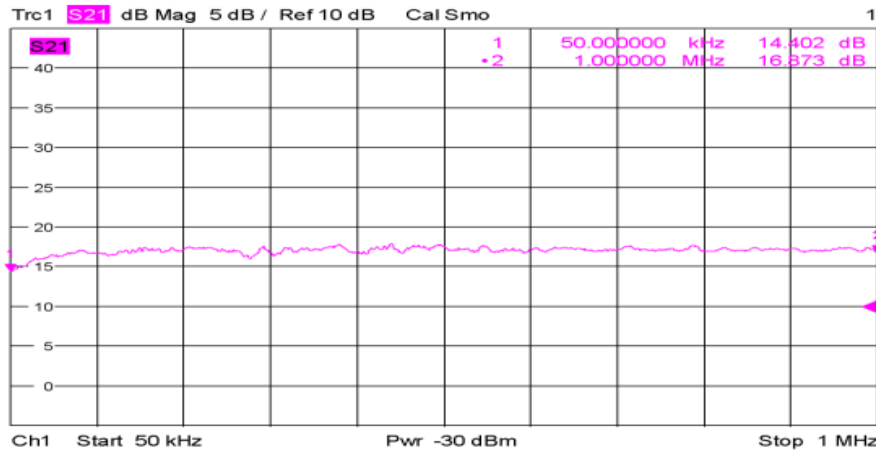


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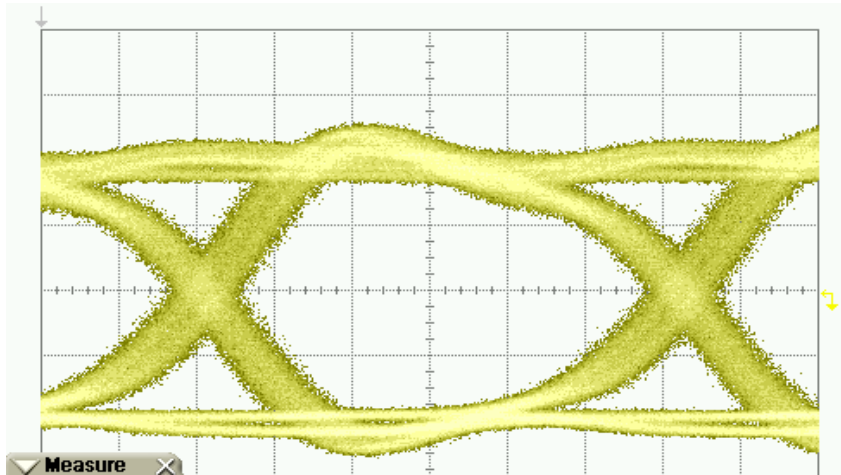
NF vs Frequency



Low End Frequency



Typical Eye Diagram (Output Signal @28Gbps, Input=1.6Vpp)



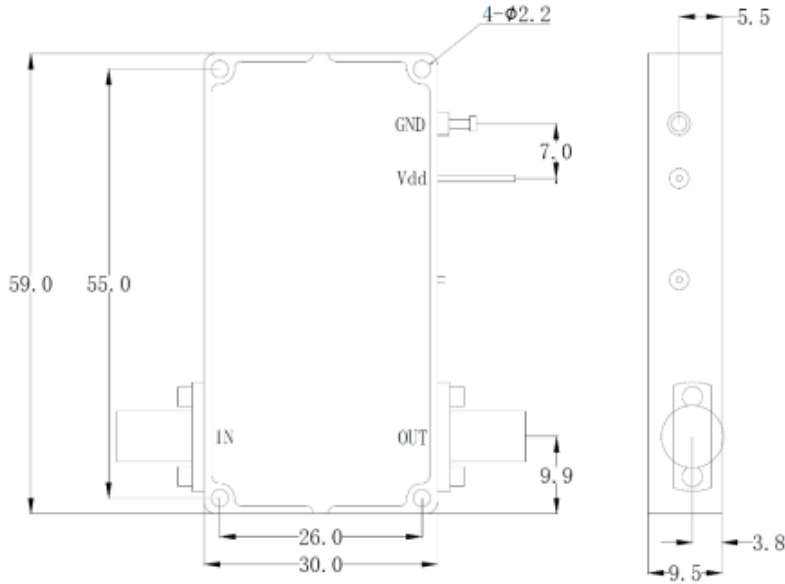
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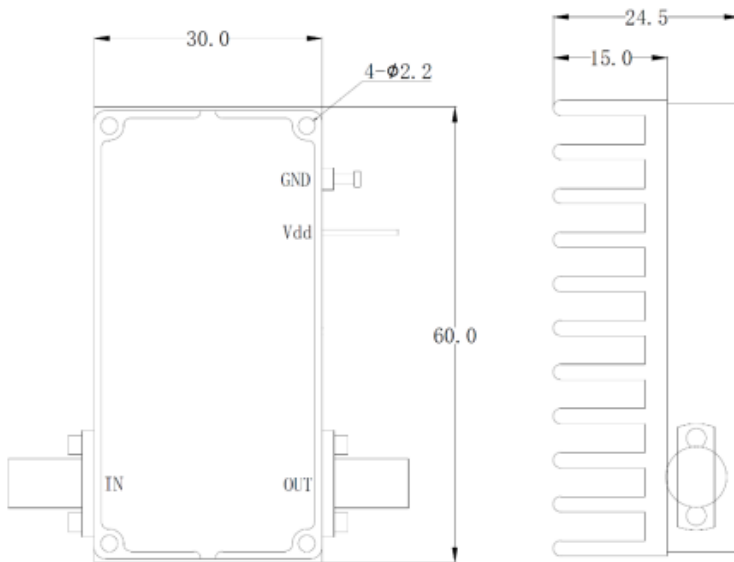


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### Dimensions (mm)



Outline without heatsink  
Heatsink required during Operation



Outline with heatsink  
A small removable heatsink is provided in default

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## Vpp vs dBm at 50 Ohms System

dBm	Vpp	Vrms	Power ( W )	dBm	Vpp	Vrms	Power ( W )
50	200.00	70.71	100.00	14	3.17	1.12	2.51E-02
49	178.25	63.02	79.43	13	2.83	1.00	2.00E-02
48	158.87	56.17	63.10	12	2.52	0.89	1.58E-02
43	141.59	50.06	50.12	11	2.24	0.79	1.26E-02
46	126.19	44.62	39.81	10	2.00	0.71	1.00E-02
45	112.43	39.76	31.62	9	1.78	0.63	7.94E-03
44	100.24	35.44	25.12	8	1.59	0.56	6.31E-03
43	89.34	31.59	19.95	7	1.42	0.50	5.01E-03
42	79.62	28.15	15.85	6	1.26	0.45	3.98E-03
41	70.96	25.09	12.59	5	1.12	0.40	3.16E-03
40	63.25	22.36	10.00	4	1.00	0.35	2.51E-03
39	56.37	19.93	7.94	3	0.89	0.32	2.00E-03
38	50.24	17.76	6.31	2	0.80	0.28	1.58E-03
37	44.77	15.83	5.01	1	0.71	0.25	1.26E-03
36	39.91	14.11	3.98	0	0.63	0.22	1.00E-03
35	35.57	12.57	3.16	-1	0.56	0.20	7.94E-04
34	31.70	11.21	2.51	-2	0.50	0.18	6.31E-04
33	28.25	9.99	2.00	-3	0.45	0.16	5.01E-04
32	25.18	8.90	1.58	-4	0.40	0.14	3.98E-04
31	22.44	7.93	1.26	-5	0.36	0.13	3.16E-04
30	20.00	7.07	1.00	-6	0.32	0.11	2.51E-04
29	17.83	6.30	0.79	-7	0.28	9.99E-02	2.00E-04
28	15.89	5.62	0.63	-8	0.25	8.90E-02	1.58E-04
27	14.16	5.01	0.50	-9	0.22	7.93E-02	1.26E-04
26	12.62	4.46	0.40	-10	0.20	7.07E-02	1.00E-04
25	11.25	3.98	0.32	-11	0.18	6.30E-02	7.94E-05
24	10.02	3.54	0.25	-12	0.16	5.62E-02	6.31E-05
23	8.93	3.16	0.20	-13	0.14	5.01E-02	5.01E-05
22	7.96	2.82	0.16	-14	0.13	4.46E-02	3.98E-05
21	7.10	2.51	0.13	-15	0.11	3.98E-02	3.16E-05
20	6.32	2.24	0.10	-16	0.10	3.54E-02	2.51E-05
19	5.64	1.99	7.94E-02	-17	8.93E-02	3.16E-02	2.00E-05
18	5.02	1.78	6.31E-02	-18	7.96E-02	2.82E-02	1.58E-05
17	4.48	1.58	5.01E-02	-19	7.10E-02	2.51E-02	1.26E-05
16	3.99	1.41	3.98E-02	-20	6.32E-02	2.24E-02	1.00E-05
15	3.56	1.26	3.16E-02	-21	5.64E-02	1.99E-02	7.94E-06

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## Ordering Information \*

	0005	43	15	6	7	<input type="checkbox"/>
Prefix	Low Frequency	High Frequency	Gain	NF	P1dB	Module*
<b>LNAD-</b>	50KHz = 0005	20GHz = 43	15dB =15	6dB = 6	17dBm =7	No = 0 Yes = 1