

Broadband RF Amplifier 50kHz-100GHz

High Gain 13dB, P1dB 1dBm, 1.0mm Female to Male



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Features

- Frequency: 50kHz-100GHz
- Psat: +10dBm
- Small signal gain: 13dB
- Single Power Supply

Applications

- Optical System
- Test Equipment
- ROF (RF Over Fiber)



This broadband amplifier operates from 50 kHz to 100 GHz, delivering an output power of +10 dBm with a noise figure of 5 dB. It can be used as either a power amplifier or a low-noise amplifier. The DC power requirement is +5 V at 60 mA. The module features a 1.0 mm female input port and a 1.0 mm male output port. It offers high gain, high linearity, low input and output return loss, and a flat gain response. The input and output are AC coupled.

Specifications

Parameter		Min	Typical	Max	Unit
Lower Frequency (3dB Point)			50		kHz
Upper Frequency (3dB Point)			100		GHz
Small Signal Gain		11	13		dB
P1dB	0.1-70GHz		+8dBm /1.59Vpp		
	70-90GHz		+5dBm /1.12Vpp		
	90-100GHz		+1dBm /0.71Vpp		
Psat	0.1-70GHz		+10dBm /2Vpp		
	70-90GHz		+8dBm /1.59Vpp		
	90-100GHz		+5dBm /1.12Vpp		
Drain Supply			+5	+8	V
Current			120		mA
NF	0.1-50GHz		5		dB
	50-75GHz		7		
	75-100GHz		10		
Input VSWR			2:1		
Output VSWR			2:1		
Spec Temp			25		°C
Input Port			1.0mm Female		
Output Port			1.0mm Male		
Drain Supply			+13		V
RF Input Power			+4		dBm
Input Voltage			1.0		Vpp
Operating Temperature		-40		+85	°C
Storage Temperature		-55		+125	°C

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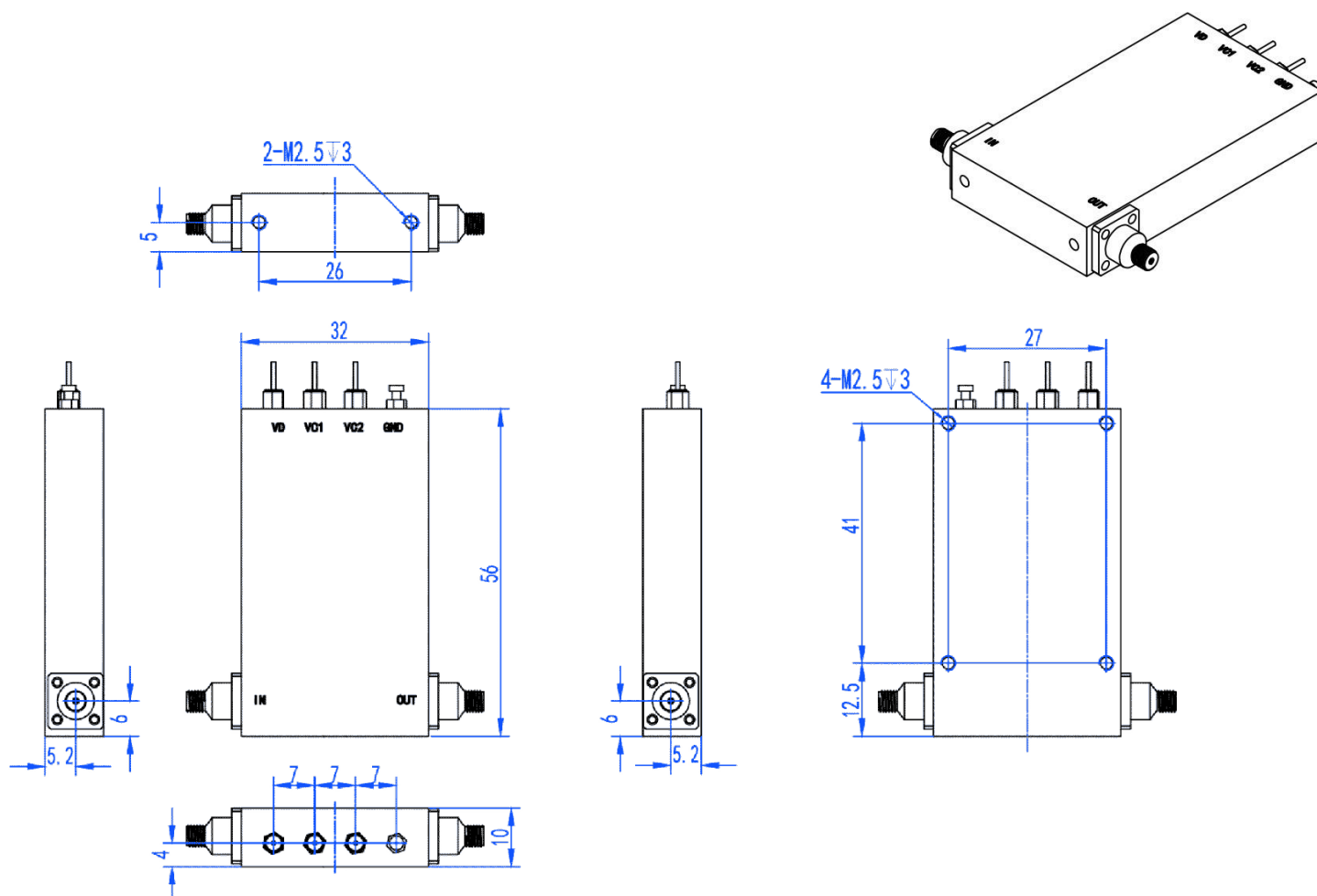
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Mechanical Dimensions (mm)



*Product dimensions may change without notice. This is sometimes required for non-standard specifications.

Pin Description

PIN	Description
IN	RF Input, DC Block inside
OUT	RF Output, DC Block inside
VD	+5V
VC1	Reserved. No connection.
VC1	Reserved. No connection.
GND	GND

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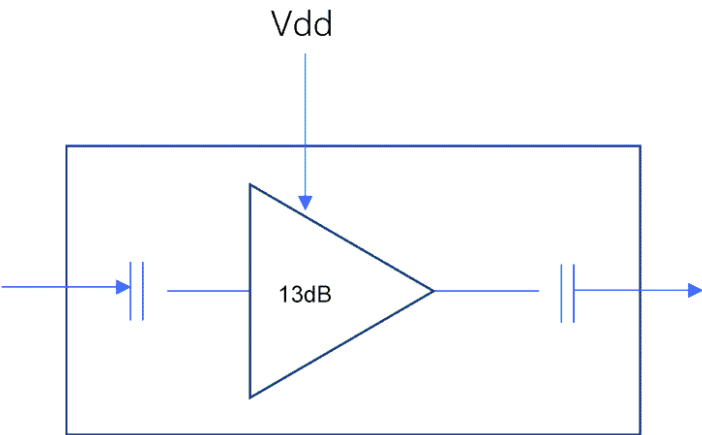
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Diagram Block



Ordering Information (Part Number)

	50	100	10	1	☐
Prefix	Low Frequency	High Frequency	P1dB	RF Connector	Module
BRFA-	50kHz = 50	100GHz = 100	1.0dBm = 10	1.0mm = 1	Non = 1 Box ^[1] = 2

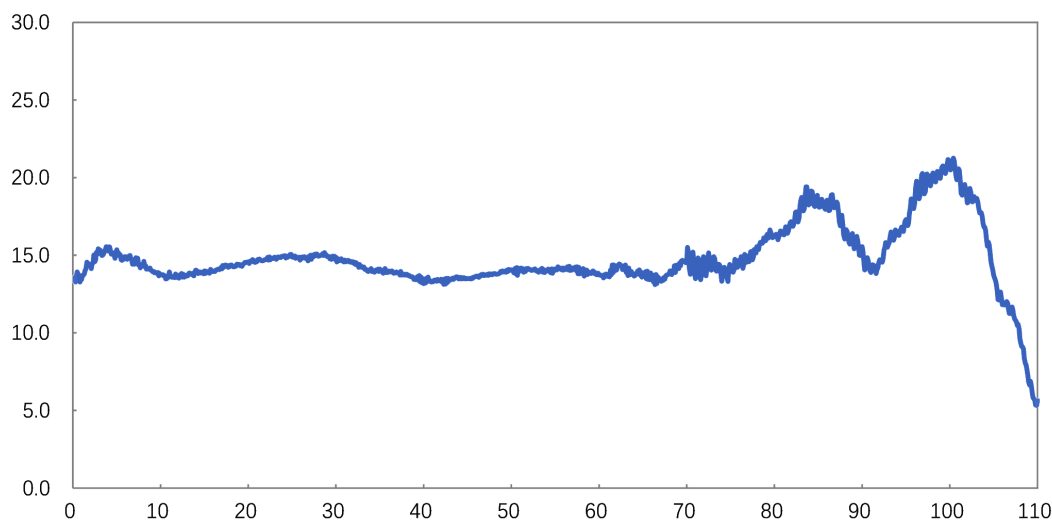
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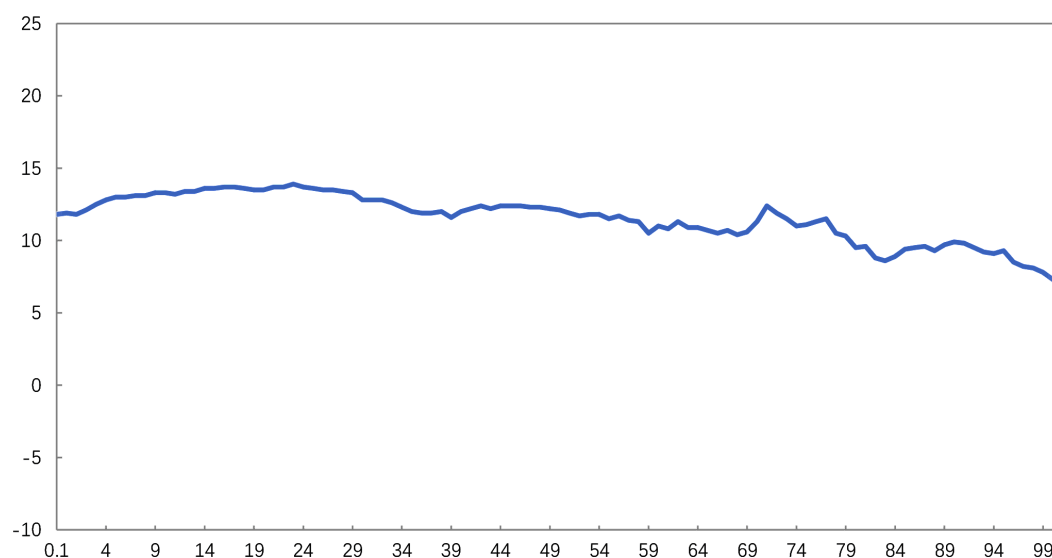


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Typical Responses



Gain vs Frequency



Psat vs Frequency

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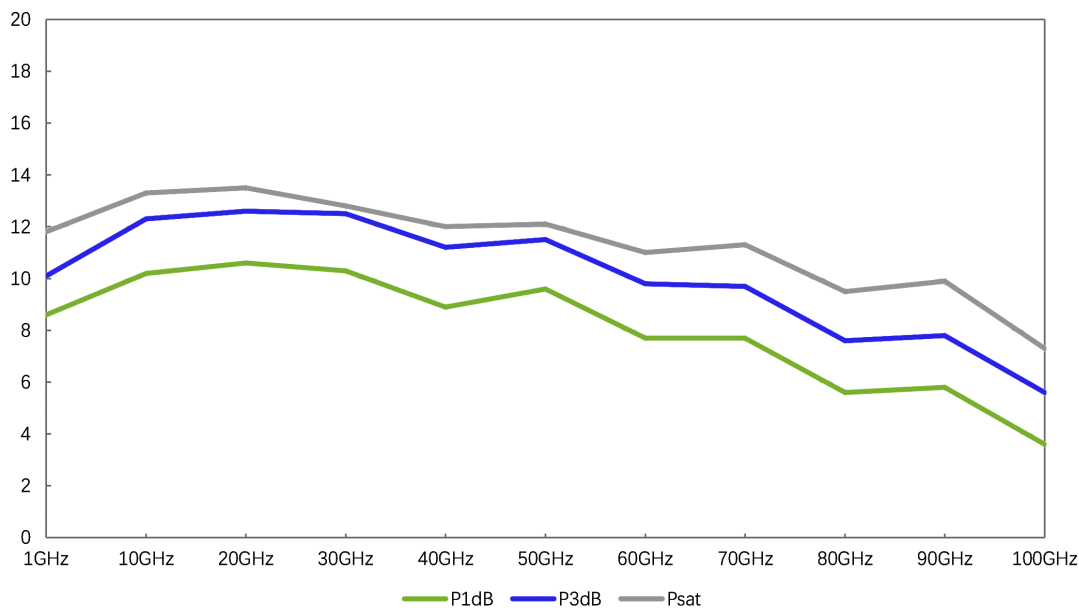
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Typical Responses



P1/P3/Psat vs Frequency

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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	178.27	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
47	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	112.47	39.76	31.62	9	1.78	0.63	7.94E-03
44	100.24	35.44	27.12	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	27.09	12.59	5	1.12	0.40	3.16E-03
40	63.27	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	0.27	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	0.27	6.31E-04
33	28.27	9.99	2.00	-3	0.45	0.16	5.01E-04
32	27.27	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	0.27	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
27	11.27	3.98	0.32	-11	0.27	6.30E-02	7.94E-05
24	10.02	3.54	0.27	-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
27	5.02	1.78	6.31E-02	-27	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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