

Broadband RF Amplifier 50kHz-100GHz

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



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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.

Features

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

Applications

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



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		
	50-75GHz	7		dB
	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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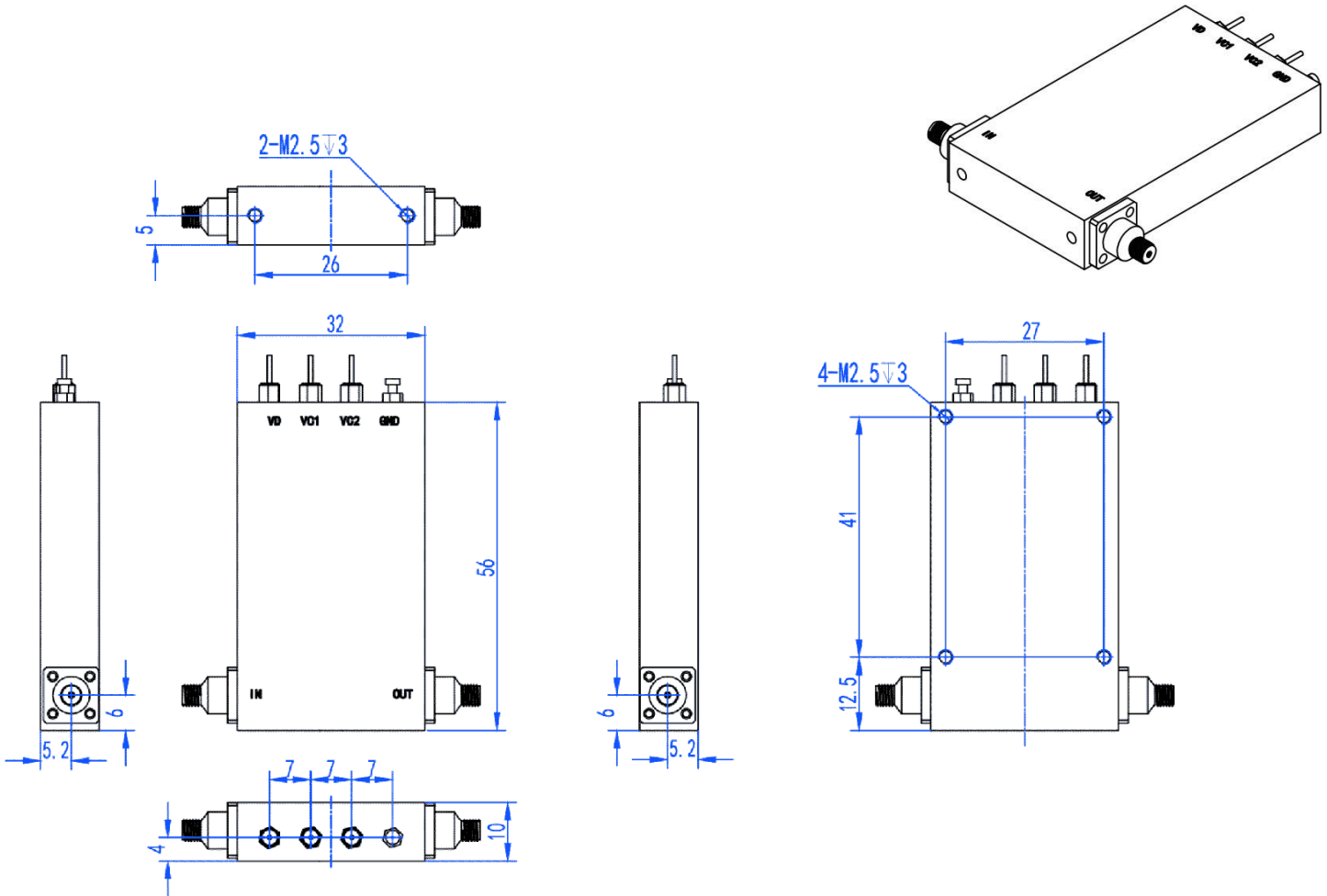
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Mechanical Dimensions (mm)



*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.
VC2	Reserved. No connection.
GND	GND

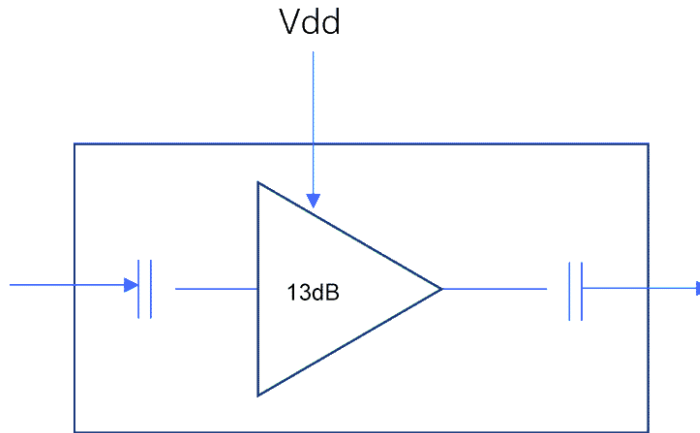
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Diagram Block



Ordering Information (Part Number)

Prefix	50	100	10	1	<input type="checkbox"/>
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

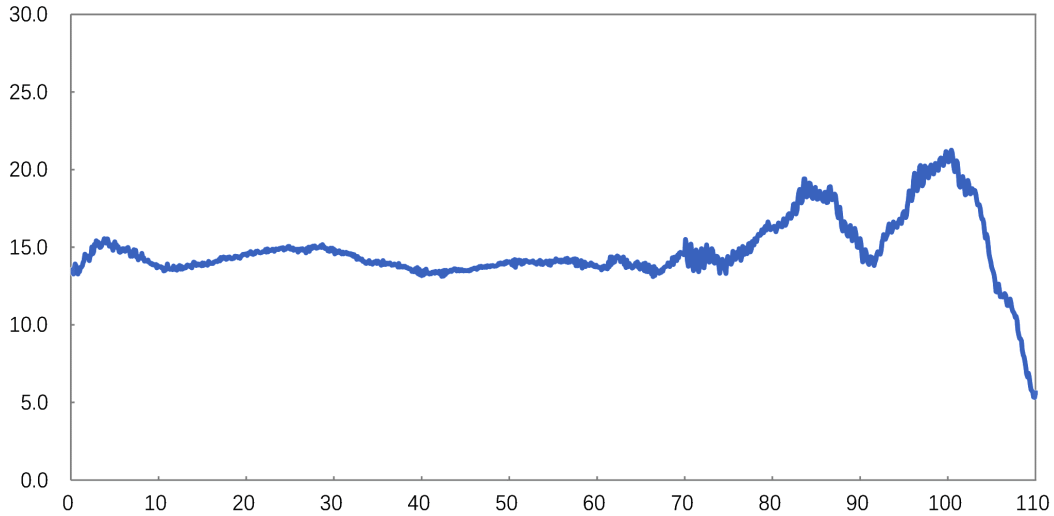
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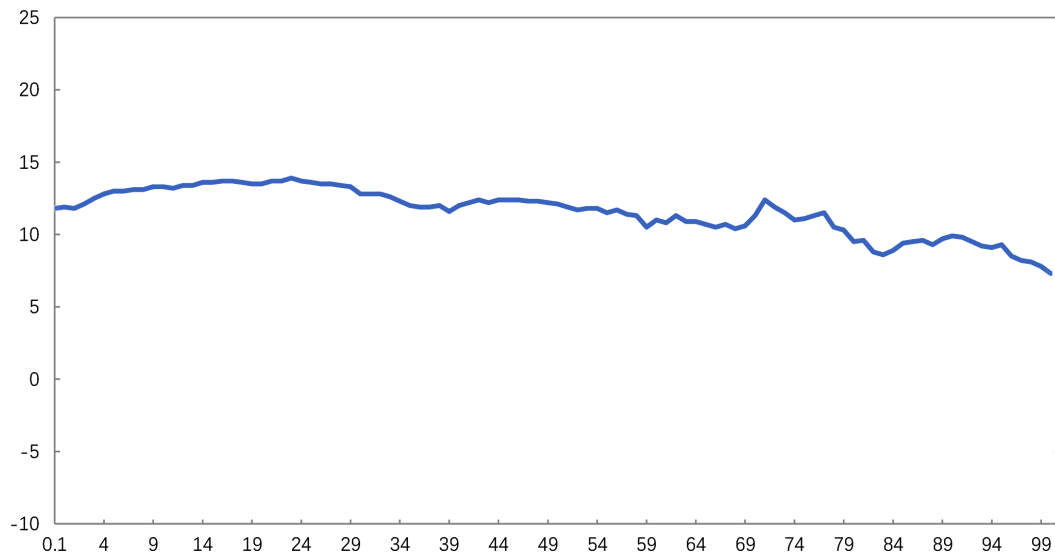


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Typical Responses



Gain vs Frequency



Psat vs Frequency

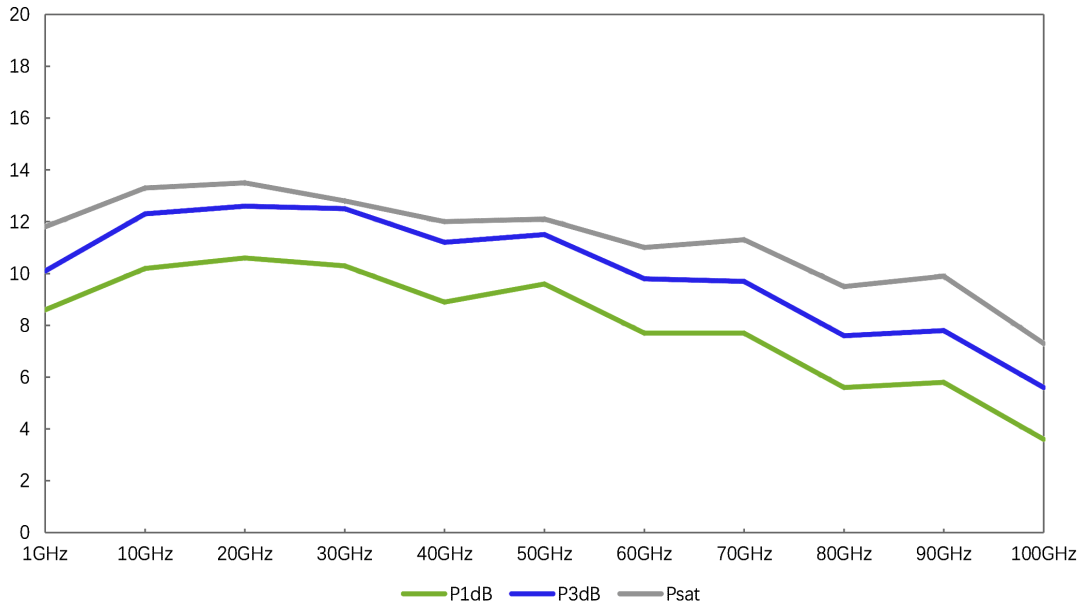
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Typical Responses



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