becker nachrichtentechnik

AMP018032

1.3 W High Linearity Amplifier Module 100 kHz … 80 MHz

Features

- output power +32 dBm typ.
- OIP3 +55 dBm typ.
- OIP2 +110 dBm typ.
- open / short stable
- transient protected
- integrated heat sink

Applications

- RF equipment for short wave
- laboratory
- test equipment

At a Glance

AMP01832 from Becker Nachrichtentechnik is a compact amplifier module in 50 ohms technology designed for the use in professional applications. The robust electric and mechanic design gives solid operations over a long time. The amplifier works stable over a wide frequency range with many octaves.
Internal filters guarantee high suppression of spurious on the DC line.
The amplifier module has an integrated heat sink.

Push Pull Technology

The internal wideband amplifier stages are designed in push-pull technology. This technology gives the amplifier high linearity performance and wider operation bandwidths. Compared with the linearity of single stage amplifiers the push-pull technology gives much better power efficiency with less heat generation. This saves costs for cooling and increases life time of the amplifier.

Special Features

The highest IP2 and IP3 properties makes the amplifier module suitable in professional receiving systems applications where weak RF signals in combination with very strong signals must amplified without distortion effects.

Tolerant to Mismatches

Using power transistors with enough head room to maximum ratings make the amplifier module robust against reverse power and therefore robust against loads at the output which are not matched. The output of the amplifier module is robust against open and short load at the output.

Rugged Design

The amplifier is housed is a milled aluminum case. This saves the circuits against mechanical damage and gives best shielding for avoiding EMI influences caused by radio signals coming from the environment.

DC Connector Variants

For mechanical integration into customer specific setups the amplifier module is available in variants with horizontal or vertical orientation of DC plug. This enables optimized DC cable routing to the amplifier module.

RF Specification

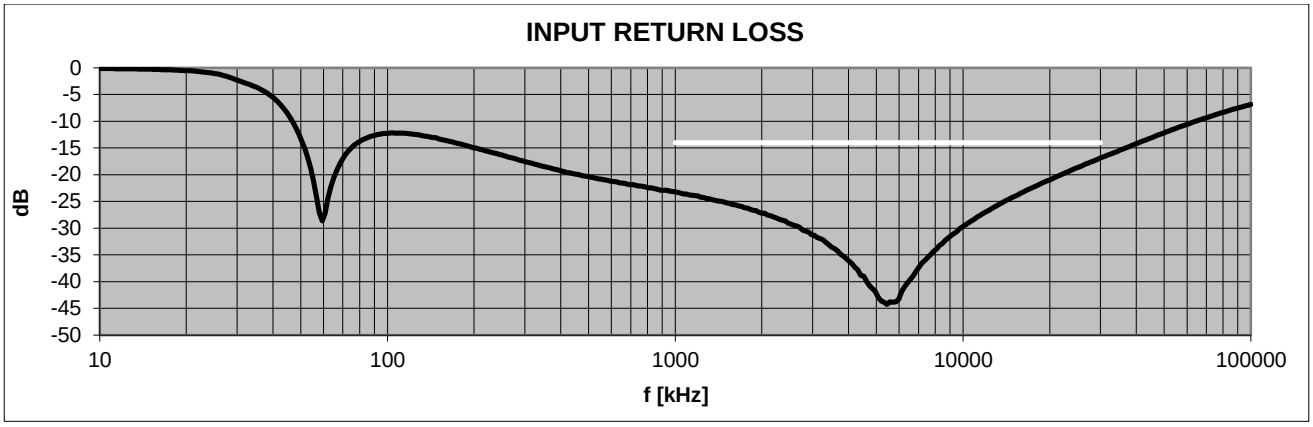
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{in} / Z_{out}		50		Ω	
low frequency	f_{min}		50	1000	kHz	
high frequency	f_{max}	30	80		MHz	
gain	S_{21}	17.5	18.5	19.5	dB	
gain ripple	ΔS_{21}			1.0	dB	
input return loss	S_{11}		-25	-14	dB	
output return loss	S_{22}		-23	-14	dB	
reverse isolation	S_{12}		-27	-25	dB	
1 dB compression	P_{1dB}	+30	+32		dBm	
3rd order intercept out	OIP3[1]	+50	+55		dBm	
2nd order intercept out	OIP2[1]	+100	+110		dBm	
noise figure	NF		3.8	5.0	dB	
maximum input power	P_{RFIN}			+20	dBm	output terminated with 50 Ohm
maximum DC Voltage	U_{DC}			0	V	RF ports low DC resistance to GND
RF connectors		SMA female				

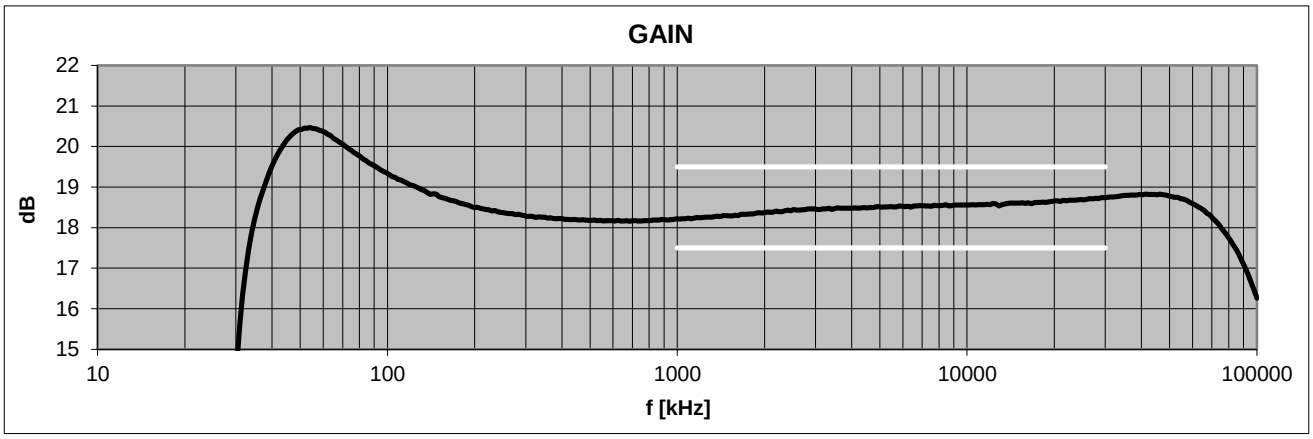
Note 1: Tested at 2 x 0 dBm P_{in} Δf = 1 MHz

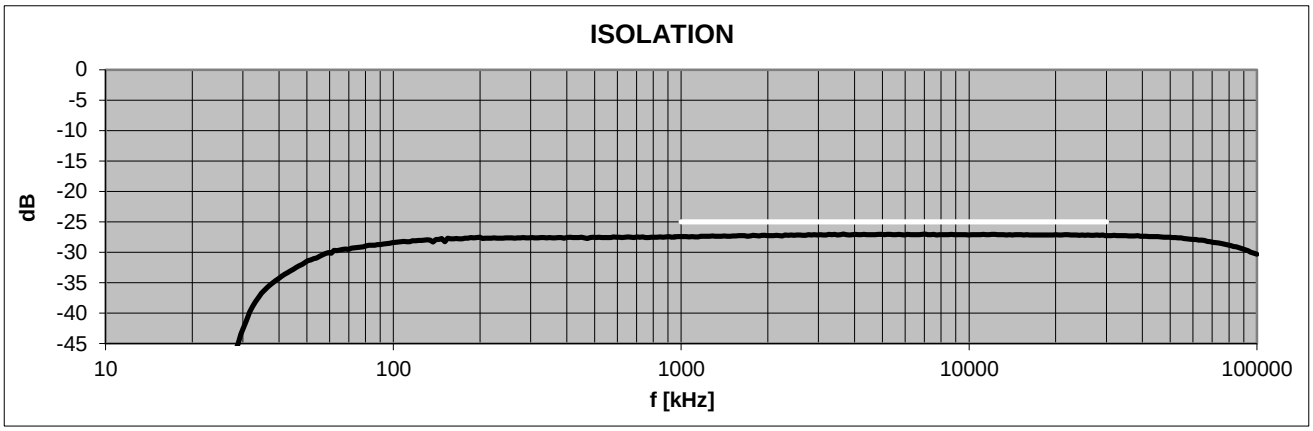
Common Specifications

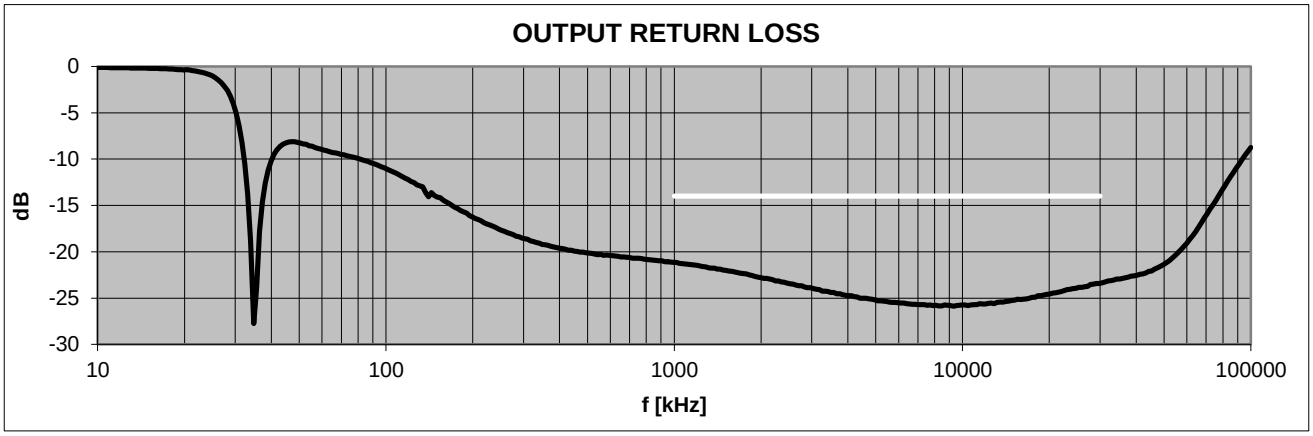
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
supply voltage	U_{DC}	23.5	24.0	24.5	V	
current consumption	I_{DC}	390	410	430	mA	
dimensions	W x H x D	approx. 99 x 19 x 75			mm	
weight	m		220		g	
power socket	X_{DC}	NSL-396M-2G/NSL-396M-2W				grid 3.96 mm, Var. 1/Var. 2
power plug	X_{DCP}	NSG396M-2				housing with 3 contacts are part of delivery
operating temp. range	T_O	0		+70	°C	module surface
storage temp. range	T_s	-40		+70	°C	
ordering information	AMP018032			1002.5701.1		vertical orientated power connector
	AMP018032			1002.5701.2		horizontal orientated power connector

S-Parameters (typical responses)

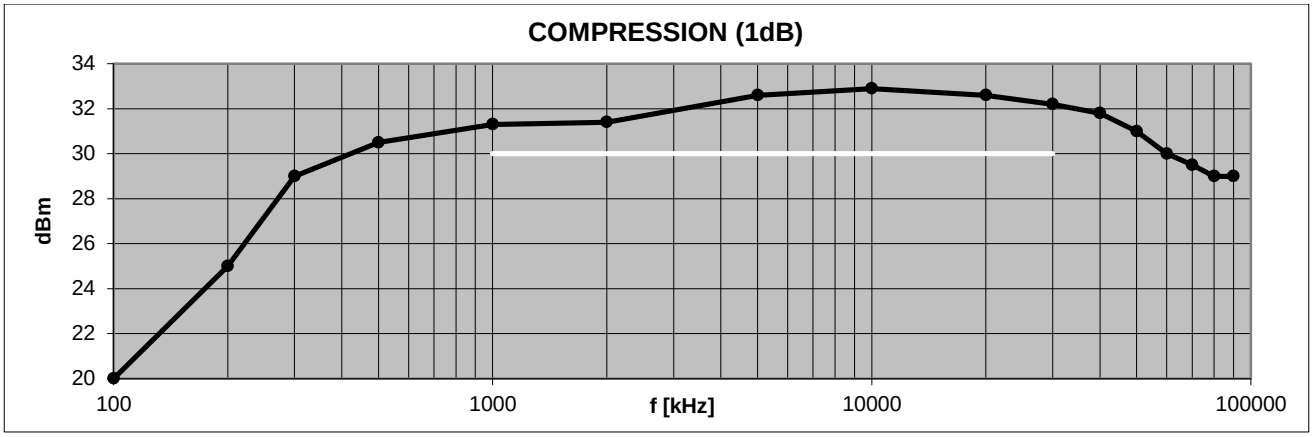


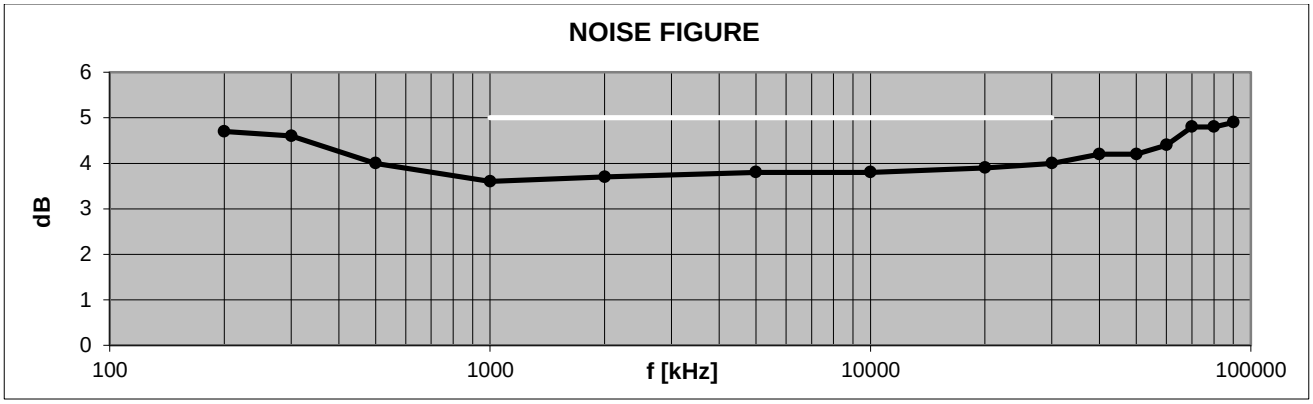




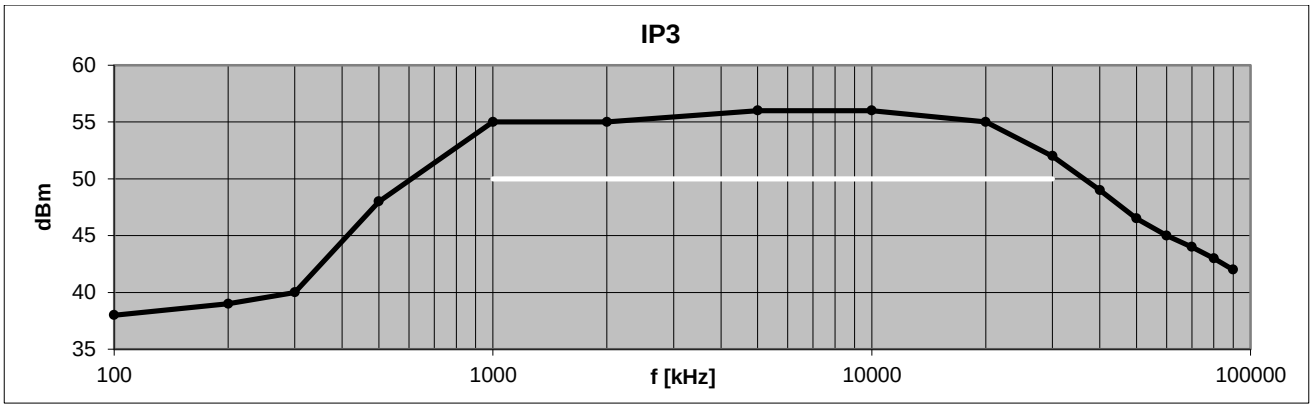


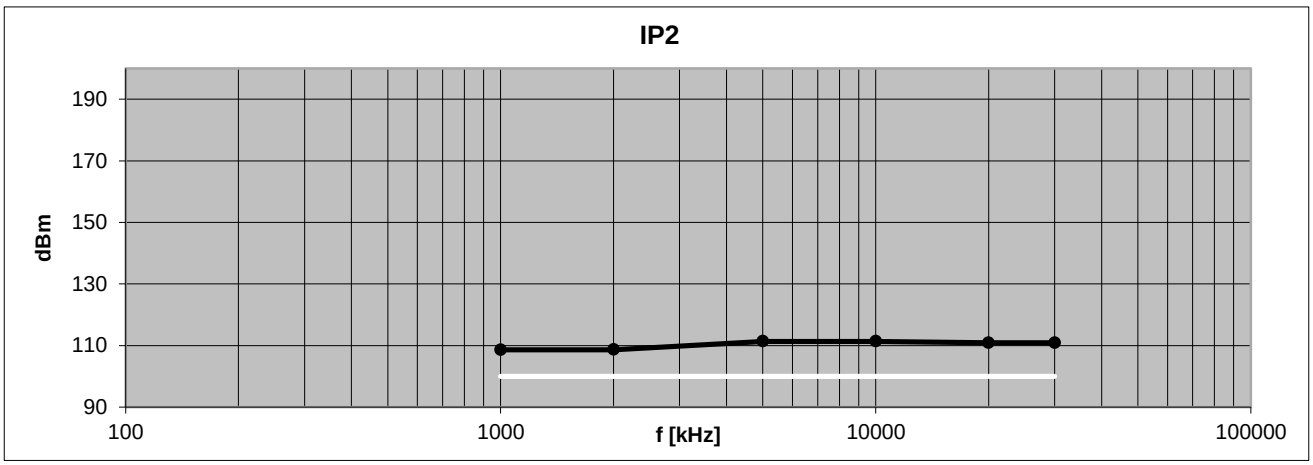
Dynamic Range (typical responses)



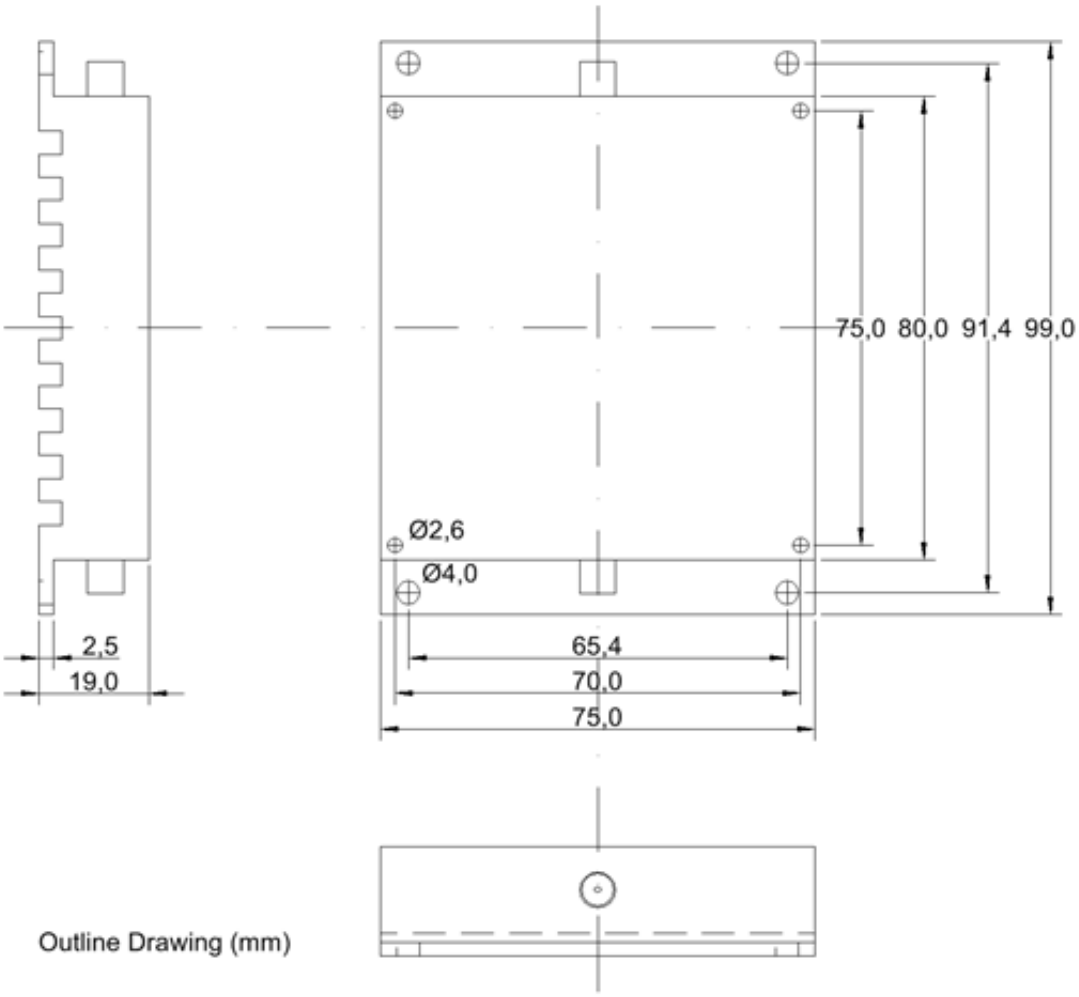


Linearity (typical responses)





Dimensions



Outline Drawing (mm)

Related Products

Product	Description	P/N
AMP1053043H	20 W Power Amplifier Module 10 ... 530 MHz	1001.5001.x
AMP2000600040L	13 W Power Amplifier Module 2000 … 6000 MHz	1711.5001.1
AMP300600040L	10 W Power Amplifier Module 300 … 6000 MHz	1801.5001.1
AMP20280035	4.5 W Wideband Amplifier Module 20 … 2800 MHz	1209.5001
AMP3060036	4 W Ultra High Linearity, Full Redundant, Wideband Amplifier Module 30 ... 600 MHz with heat sink	1602.5001.1
AMP3060036L	4 W Ultra High Linearity, Full Redundant, Wideband Amplifier Module 30 ... 600 MHz for mounting on heat sink	1602.5001.2
AMP590033	2 W Booster Amplifier Module 5 … 900 MHz	0901.5011.x
AMP590033H	2 W Amplifier Module 5 … 900 MHz	0901.5001.x
AMP5170033	2 W Amplifier Module 5 … 1700 MHz	1401.5011.1
AMP5220031	1 W High Dynamic Amplifier Module 5 … 2200 MHz	1005.5101.x
AMP5270026	400 mW High Dynamic Amplifier Module 5 … 2700 MHz	1005.5201.x
AMP10850026	400 mW Ultra Wideband Amplifier Module 10 ... 8500 MHz	1305.5001.x
LNA1080014	400 mW Low Noise Amplifier Module 10 … 800 MHz	0901.5501.x

Remark: All modules with P/N extension with ".x" are available with horizontal or vertical orientated DC power connector.