

High Dynamic Range Amplifier 5 ... 2200 MHz, 50 Ω

Features

- output power +31 dBm typ.
- high IP3
- wideband
- open/ short stable
- transient protected
- L/HF suppression
- 110 V and 230 V AC mains supply

Applications

- VHF/ UHF preamplifier
- GSM / UMTS / LTE
- ISM 433 / 868 MHz
- PA drivers
- laboratory
- test equipment
- instrumentation

At a Glance

AMP5220031-T from Becker Nachrichtentechnik is a wideband, high dynamic amplifier suitable for frequencies from 5 MHz to 2200 MHz designed in 50 Ohm technology.

Excellent Dynamic

The high 3rd order intercept point and a low noise figure make this amplifier suitable even for applications with high demands.

Versatile Use

An internal high pass filter at the input of the amplifier avoids influences of signals in the low frequency range. It offers many fields of application, for example VHF/ UHF, ISM 433 / 868 MHz and GSM / UMTS / LTE.



Robust Design

AMP5220031-T features a compact design. It is robust against mismatches which can occur when operating with complex loads. The device is supplied by mains voltage and is equipped with N female connectors. This allows for a straightforward connection of the amplifier.

RF Specifications

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{in} / Z_{out}		50		Ohm	
low frequency	f_{min}			5	MHz	
high frequency	f_{min}	2200			MHz	
gain	S_{21}	25.5	27.5	29.5	dB	$5 \text{ MHz} \leq f \leq 1700 \text{ MHz}$
		24.0	26.0	28.5	dB	$1700 \text{ MHz} < f \leq 2200 \text{ MHz}$
gain ripple	ΔS_{21}		± 0.6	± 1.0	dB	$5 \text{ MHz} \leq f \leq 1700 \text{ MHz}$
low frequency response	S_{21}		-85	-70	dBr	100 kHz, rel. 100 MHz
	S_{21}		-40	-25	dBr	1 MHz, rel. 100 MHz
input return loss	S_{11}		-15	-10	dB	
output return loss	S_{22}		-15	-10	dB	$5 \text{ MHz} \leq f \leq 1700 \text{ MHz}$
	S_{22}		-8	-6	dB	$1700 \text{ MHz} < f \leq 2200 \text{ MHz}$
reverse isolation	S_{12}		-40	-37	dB	
1 dB compression	P_{1dB}	30	31		dBm	
3 rd order intercept	$OIP3^1$	43	50		dBm	
harmonic distortion	HD		-35	-25	dBr	+30 dBm fundamental
noise figure	NF		6.0	8.0	dB	$5 \text{ MHz} \leq f < 10 \text{ MHz}$
			5.5	7.0	dB	$10 \text{ MHz} \leq f \leq 2200 \text{ MHz}$
maximum input power	$P_{in,max}$			+15	dBm	output terminated with 50 Ohm
RF connectors						N female

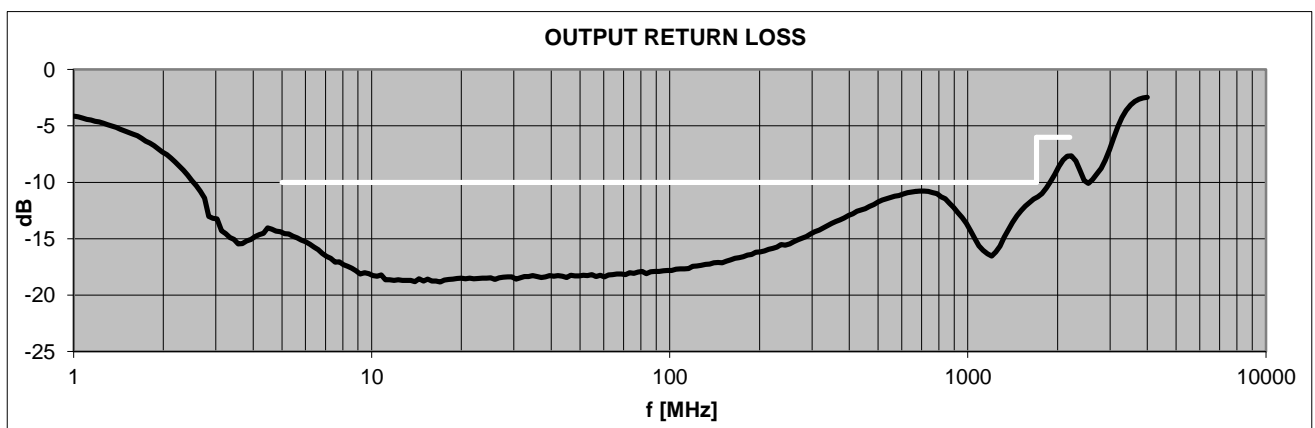
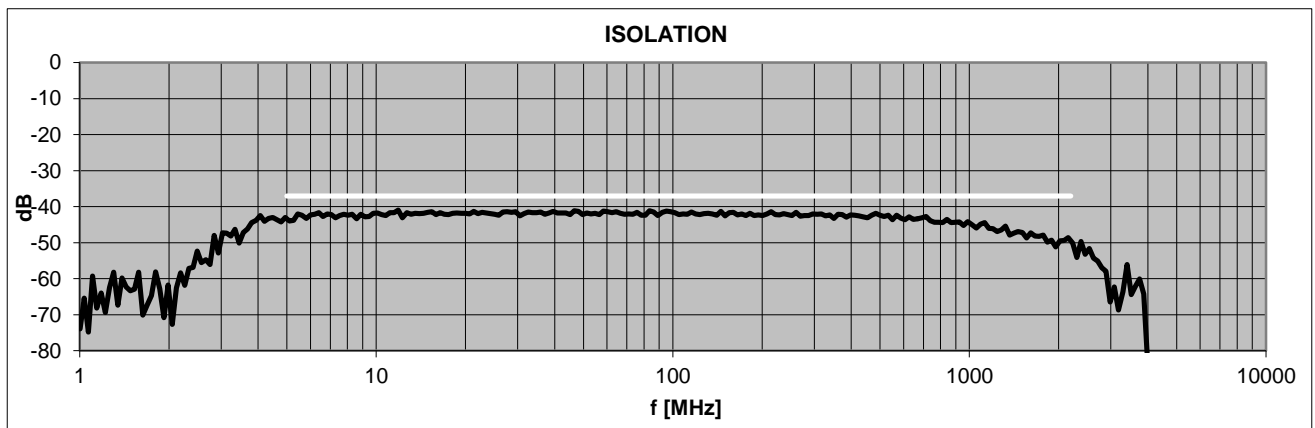
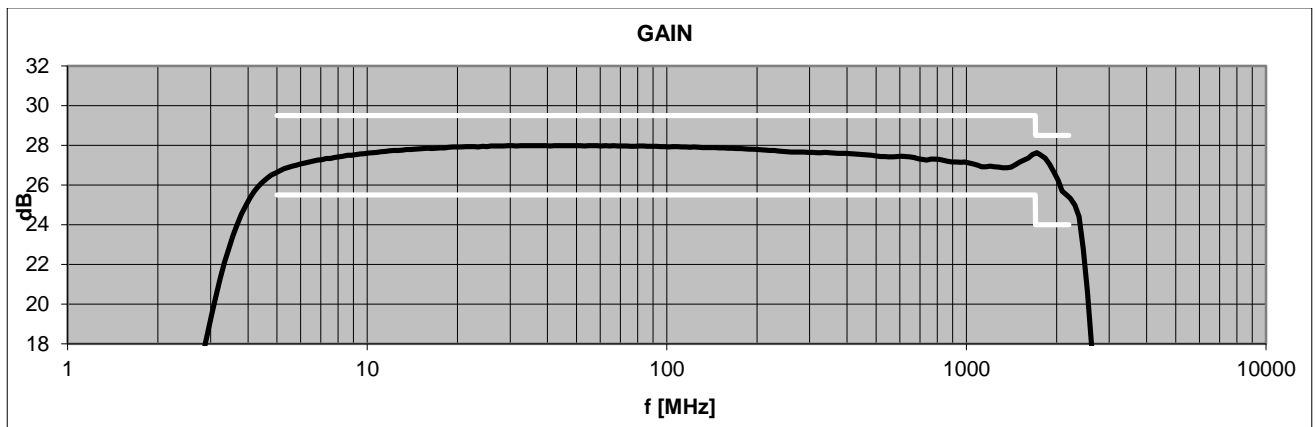
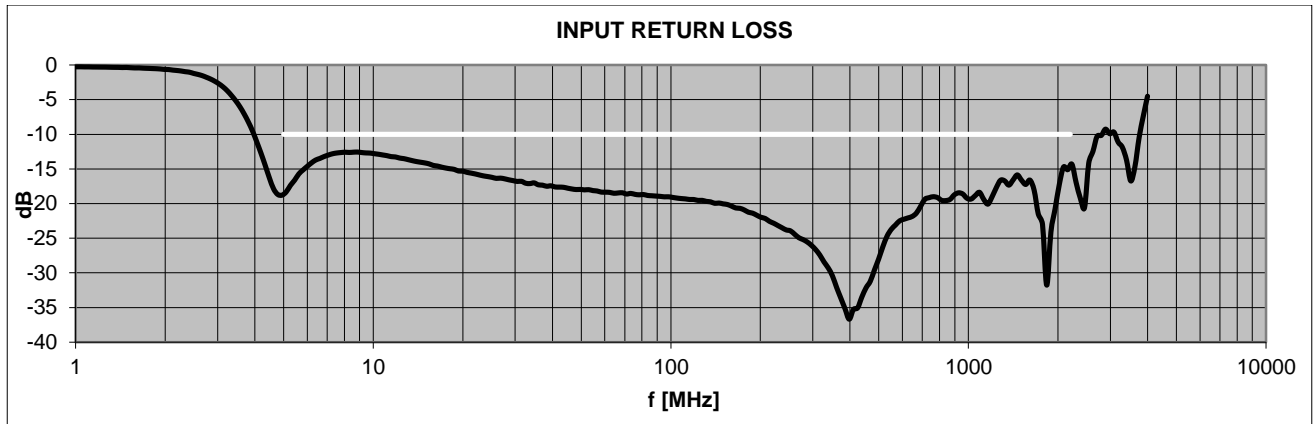
Note 1: Tested at $P_{out} 2 \times +17 \text{ dBm}$; $\Delta f = 1 \text{ MHz}$

Common Specifications

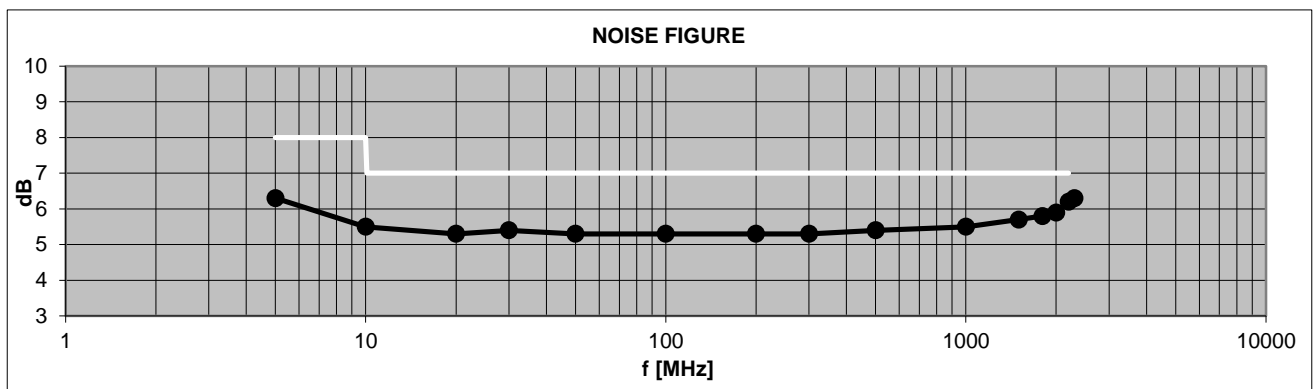
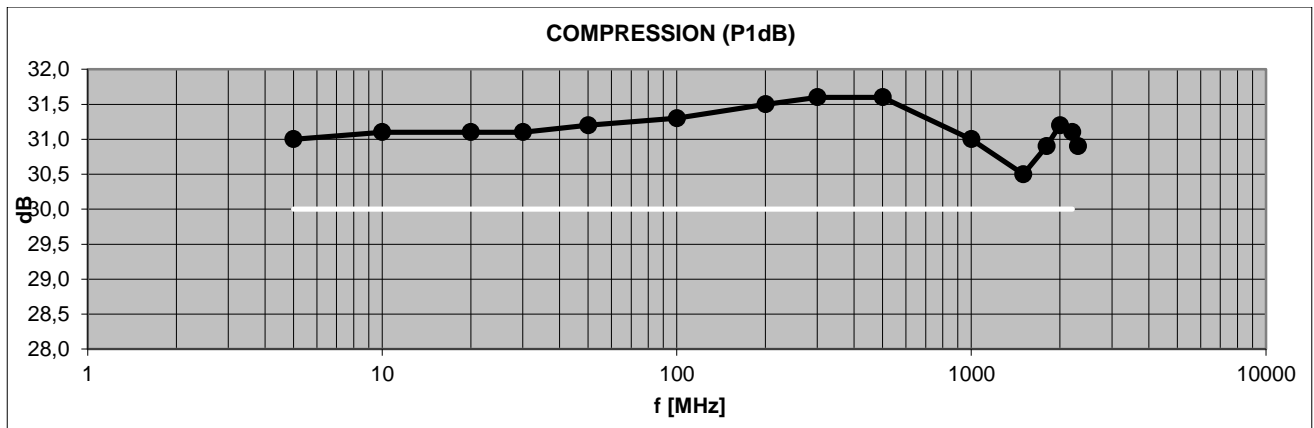
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U	90		260	V	AC
	f	50		400	Hz	
power consumption	P		19		VA	
dimensions	L x W x H	approx. 175 x 115 x 95			mm	length without connectors
weight	m		1500		g	
operating temp. range	T_o	+5		+40	°C	ambiance
storage temp. range	T_s	-40		+70	°C	
ordering information	AMP5220031-T			1005.5103.1		



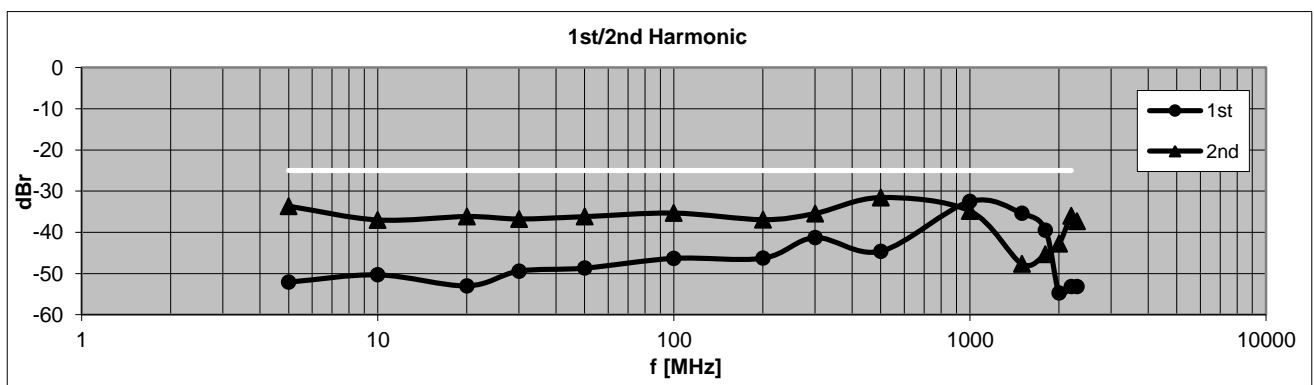
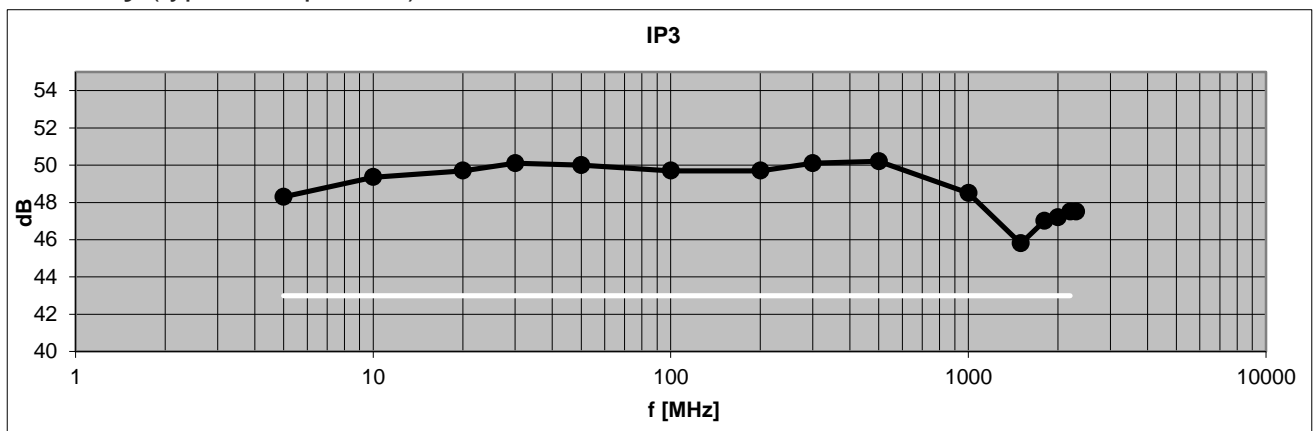
S-Parameters (typical responses)



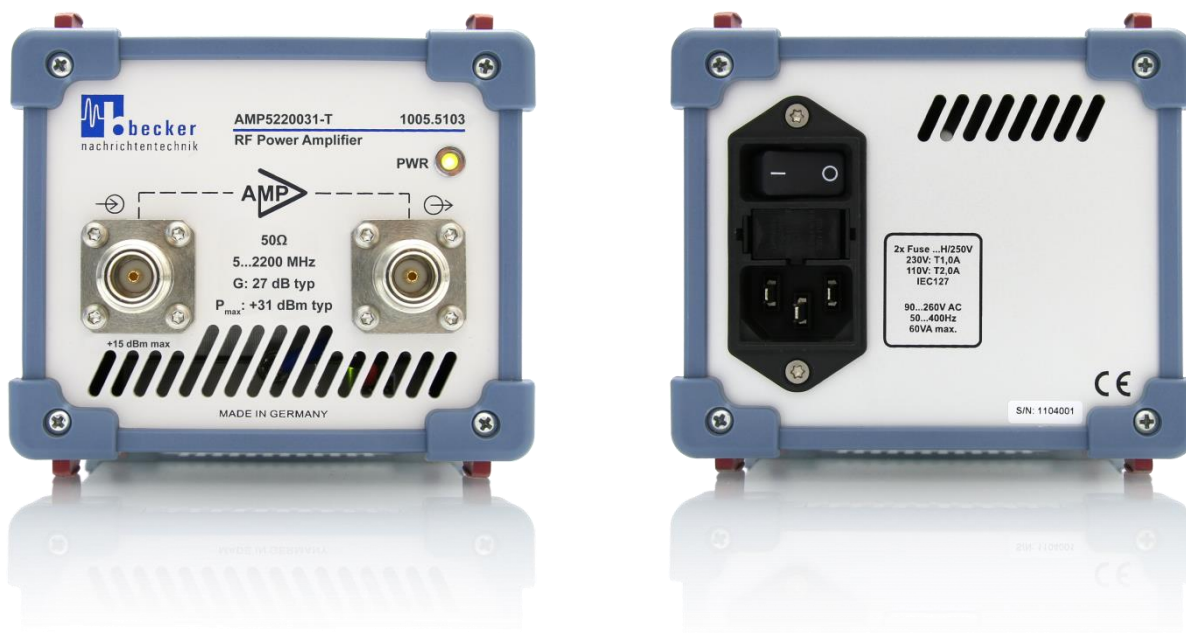
Dynamic Range (typical responses)



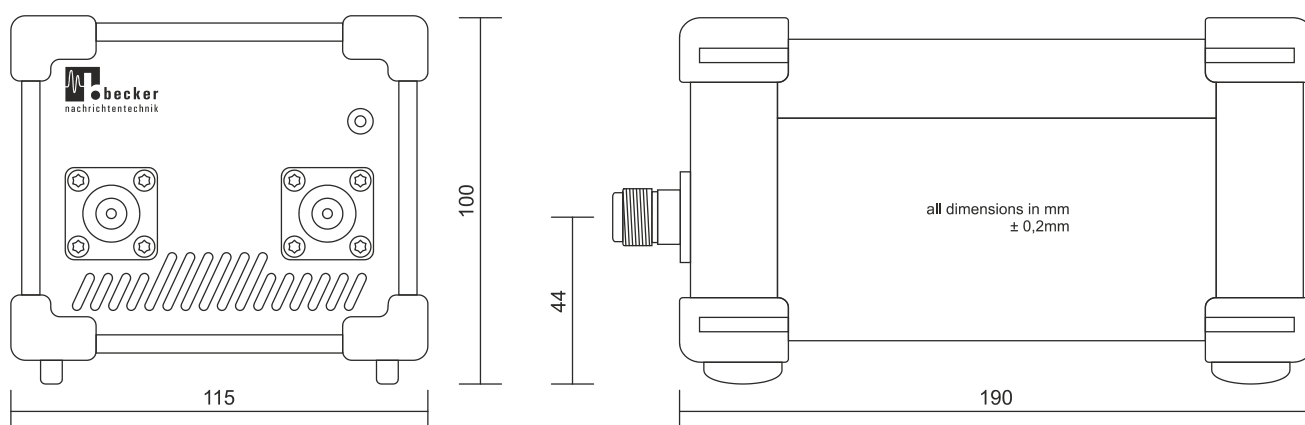
Linearity (typical responses)



Front / Rear View



Dimensions



Related Products

Product	Description	P/N
AMP018032-T	1 W Medium Power Amplifier 100 kHz ... 80 MHz, 50 Ω	1002.5703.1
LNA1080014-T	High Dynamic Range Amplifier 10 ... 800 MHz, 50 Ω	0901.5503.1
AMP590033-T	2 W Booster Amplifier 5 ... 900 MHz, 50 Ω	0901.5013.1
AMP590033H-T	2 W Power Amplifier 5 ... 900 MHz, 50 Ω	0901.5003.1
AMP5270026-T	High Dynamic Amplifier 5 ... 2700 MHz, 50 Ω	1005.5203.1
AMP20280035-T	4.5 W Wideband Amplifier 20 ... 2800 MHz, 50 Ω	1209.5003.1
AMP10850026-T	500 mW Wideband Amplifier 10 ... 8500 MHz, 50 Ω	1305.5003.1

