

AMP5220031-T

1 W High Dynamic Amplifier Table Top Unit 5 ... 2200 MHz

Features

- output power +31 dBm typ.
- high OIP3 +50 dBm typ.
- VLF suppression filter
- open/short stable
- AC mains supply

Applications

- VHF/ UHF transmitters
- cellular GSM, UMTS, LTE
- wireless communication
- laboratory
- test equipment



At a Glance

AMP5220031-T from Becker Nachrichtentechnik is a compact amplifier as table top unit in 50 Ohm technology. It is designed for the use in laboratory environments. 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. The amplifier offers a wide AC mains supply voltage range. The presence of AC power is indicated by a LED at the front side of the unit. Mounting feet are part of delivery.

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.

Special Features

The highest IP2 and IP3 properties makes the device suitable in professional applications where weak RF signals in combination with very strong signals or digital modulated signals must amplified without any distortion effects. An integrated high pass filter in the input suppress unwanted signals in the VLF and HF range.

Tolerant to Mismatches

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

Rugged Design

The amplifier unit has aluminum housing. The internal amplifier module additional is built in a milled aluminum case to give best shielding for avoiding EMI influences caused by radio signals coming from the environment. The RF connectors on the unit front side are N female type.

RF Specification

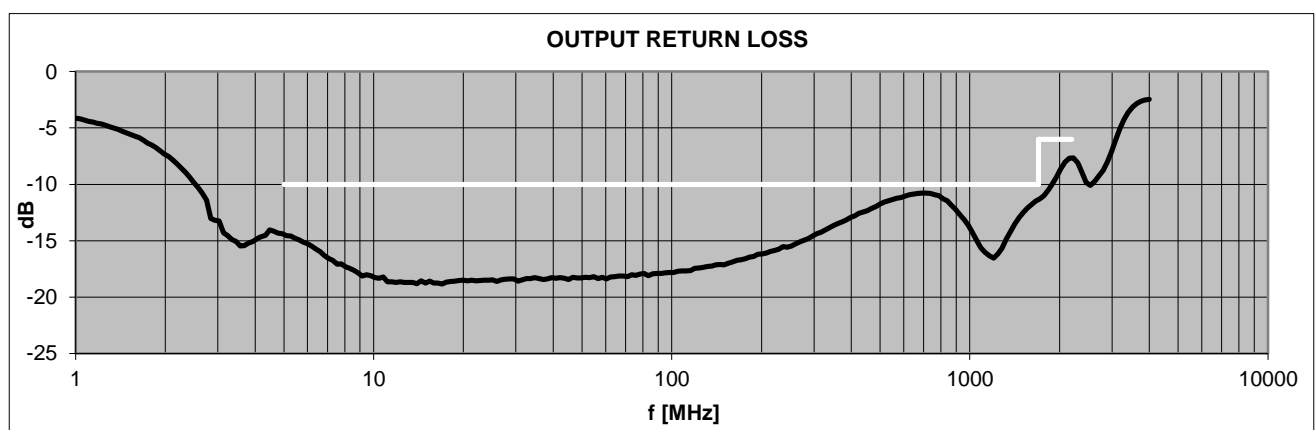
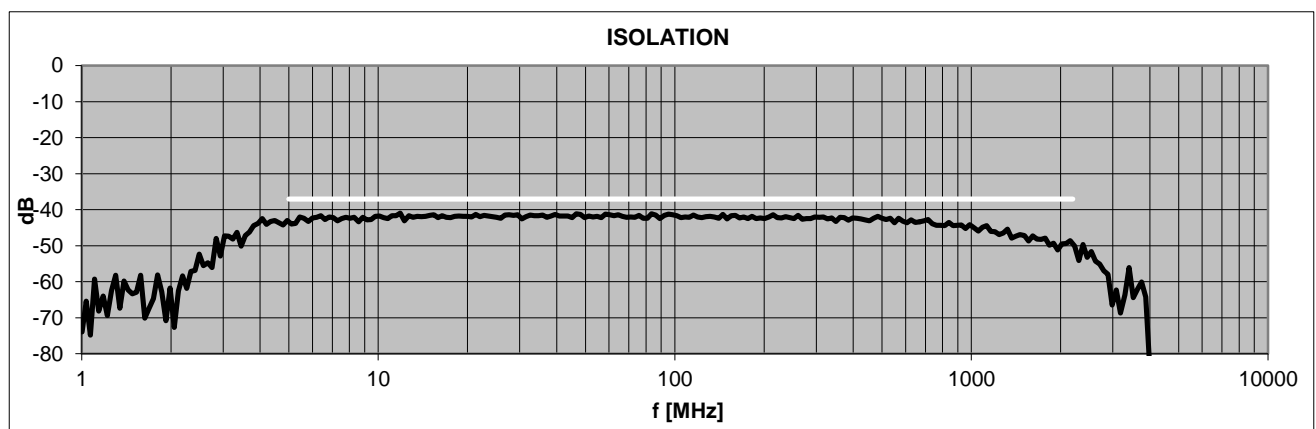
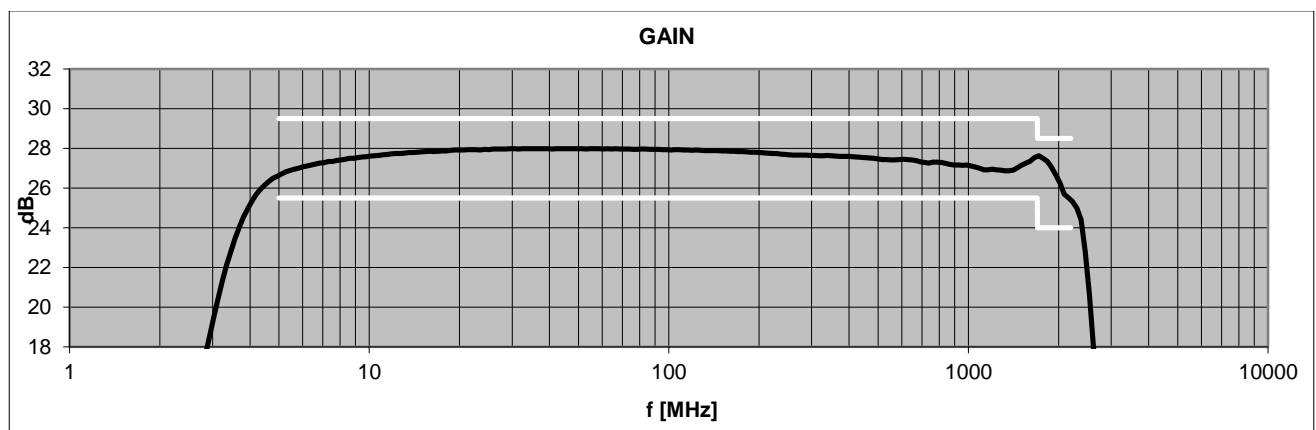
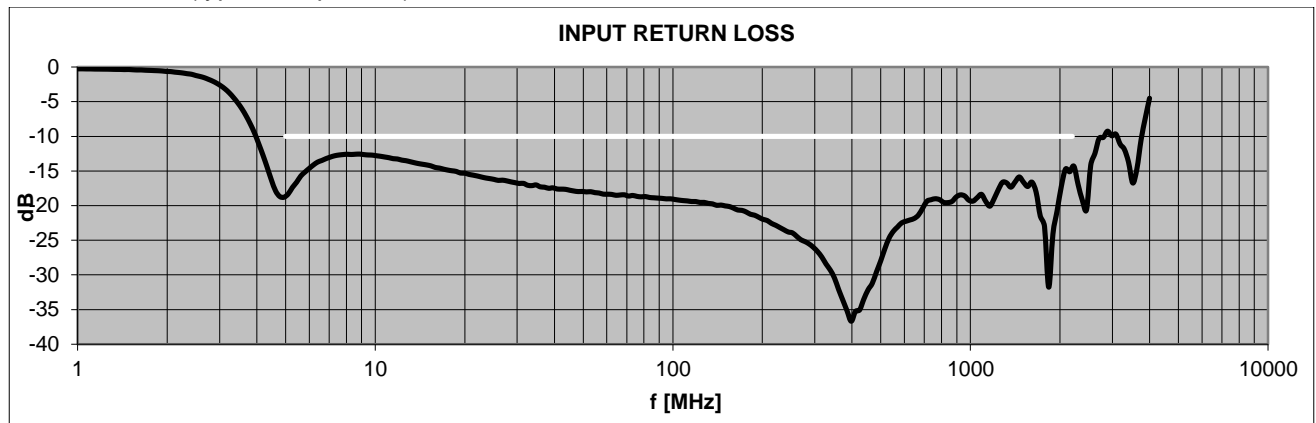
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{in} / Z_{out}		50		Ω	
low frequency	f_{min}			5	MHz	
high frequency	f_{max}	2200			MHz	
gain	S_{21}	25.5	27.5	29.5	dB	≤ 1700 MHz
	S_{21}	24.0	26.0	28.5	dB	> 1700 MHz
gain ripple	ΔS_{21}		± 0.6	± 1.0	dB	≤ 1700 MHz
VLF suppression	S_{21}		-85	-70	dB	@ 100 kHz, rel. 100 MHz
	S_{21}		-40	-25	dB	@ 1 MHz, rel. 100 MHz
input return loss	S_{11}		-15	-10	dB	
output return loss	S_{22}		-15	-10	dB	≤ 1700 MHz
	S_{22}		-8	-6	dB	> 1700 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	dBc	@ +30 dBm fundamental level
noise figure	NF		6.0	8.0	dB	$f < 10$ MHz
	NF		5.5	7.0	dB	$f \geq 10$ MHz
maximum input power	$P_{in,max}$			+15	dBm	output terminated with 50 ohms
maximum DC Voltage	U_{DC}			20	V	RF ports
ESD discharge resistor	R_{ESD}		4.7		k Ω	RF input
RF connectors	X_{RF}		N female			

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

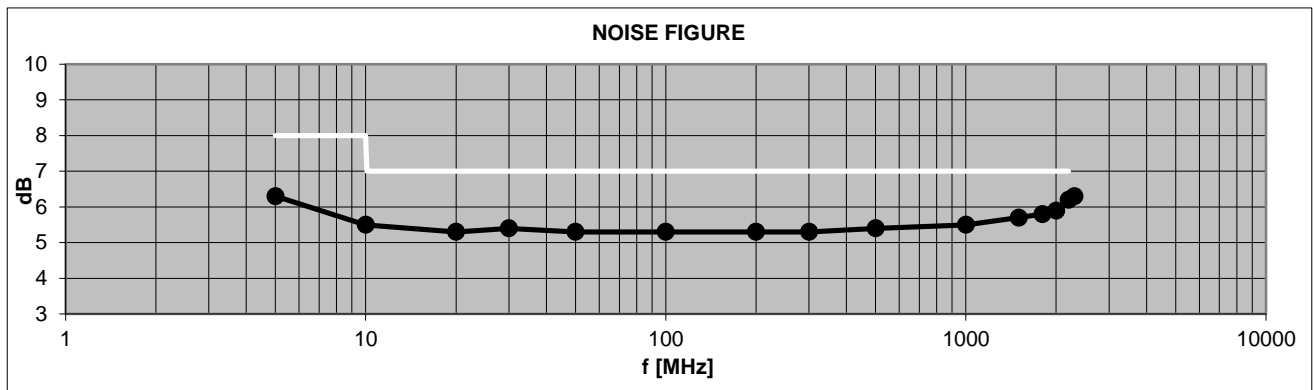
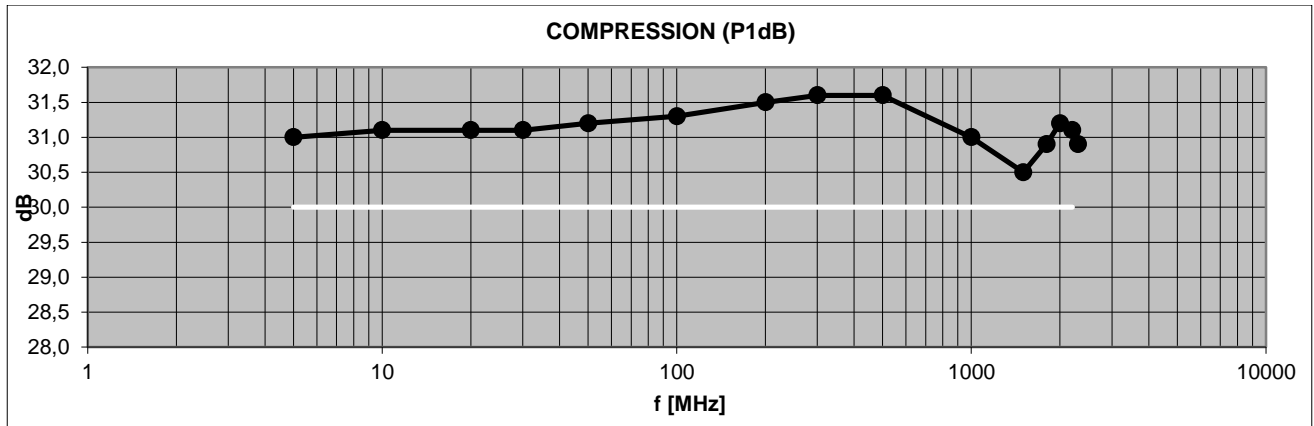
Common Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U_{AC}	90		260	V	AC, 50 ... 400 Hz
power consumption	P_{AC}		19		W	
power socket	X_{AC}	IEC-60320 C14				country specific power cable
dimensions	W x H x D	approx. 115 x 100 x 190			mm	without connectors
weight	m		1.5		kg	
operating temp. range	T_o	+5		+40	$^{\circ}C$	housing surface
storage temp. range	T_s	-40		+70	$^{\circ}C$	
ordering information		AMP5220031-T		1005.5103.1		

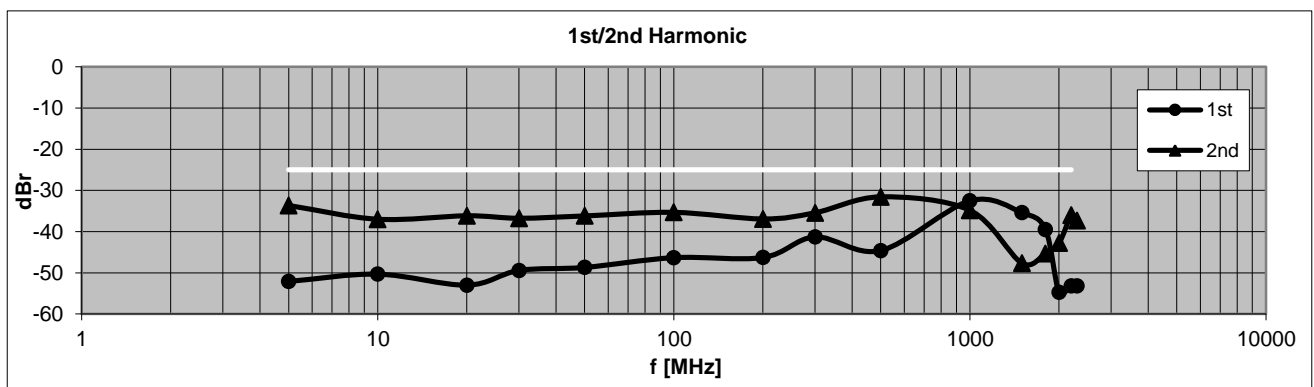
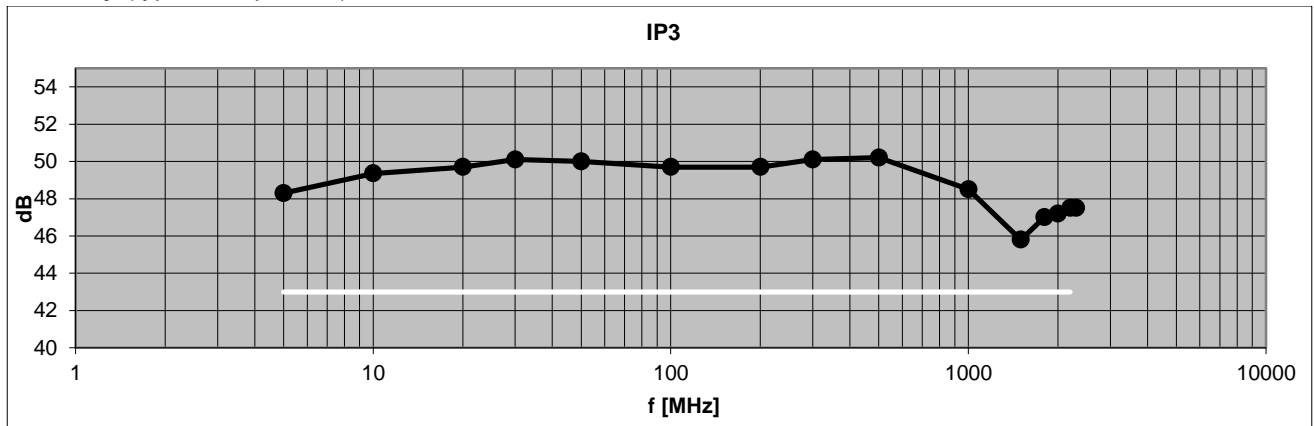


S-Parameters (typical responses)

Dynamic Range (typical responses)



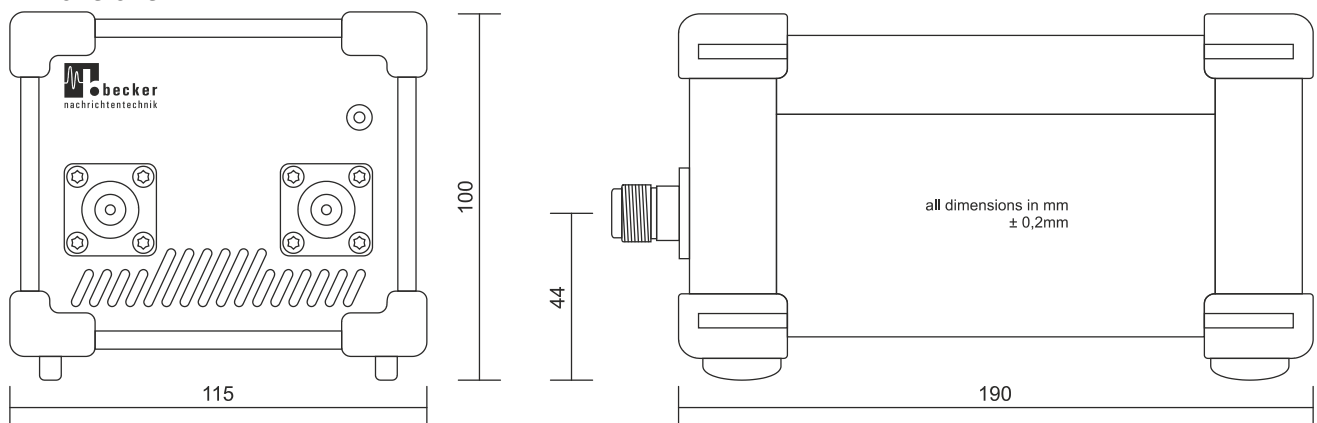
Linearity (typical responses)



Appearances



Dimensions



Related Products

Product	Description	P/N
AMP20280035-T	4.5 W Wideband Amplifier Table Top Unit 20 ... 2800 MHz	1209.5003.1
AMP590033-T	2 W Booster Amplifier Table Top Unit 5 ... 900 MHz	0901.5013.1
AMP590033H-T	2 W Amplifier Table Top Unit 5 ... 900 MHz	0901.5003.1
AMP018032	1.3 W High Linearity Table Top Unit 100 kHz...80 MHz	1002.5703.1
AMP5220031	1 W High Dynamic Amplifier Table Top Unit 5 ... 2200 MHz	1005.5103.1
AMP5270026	400 mW High Dynamic Amplifier Table Top Unit 5 ... 2700 MHz	1005.5203.1
AMP10850026	400 mW Ultra Wideband Amplifier Table Top Unit 10 ... 8500 MHz	1305.5003.1
LNA1080014	400 mW Low Noise Amplifier Table Top Unit 10 ... 800 MHz	0901.5503.1

