

## AMP590033-T

### 2 W Booster Amplifier Table Top Unit 5 ... 900 MHz

#### Features

- output power +34 dBm typ.
- high OIP3 +49 dBm typ.
- VLF suppression filter
- open/short stable
- AC mains supply

#### Applications

- VHF/ UHF transmitters
- PA driver amplifier
- ISM
- laboratory
- test equipment



#### At a Glance

AMP590033-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**

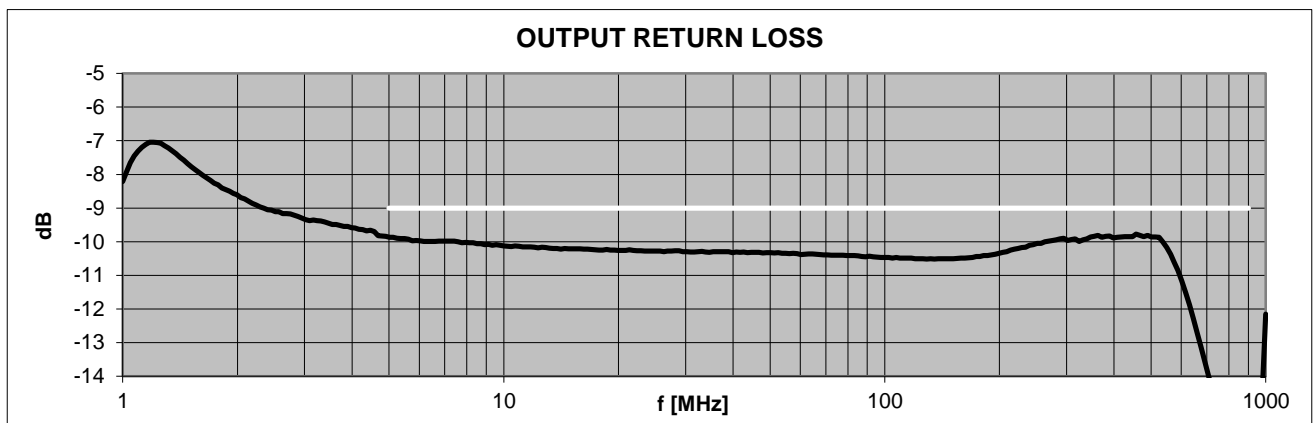
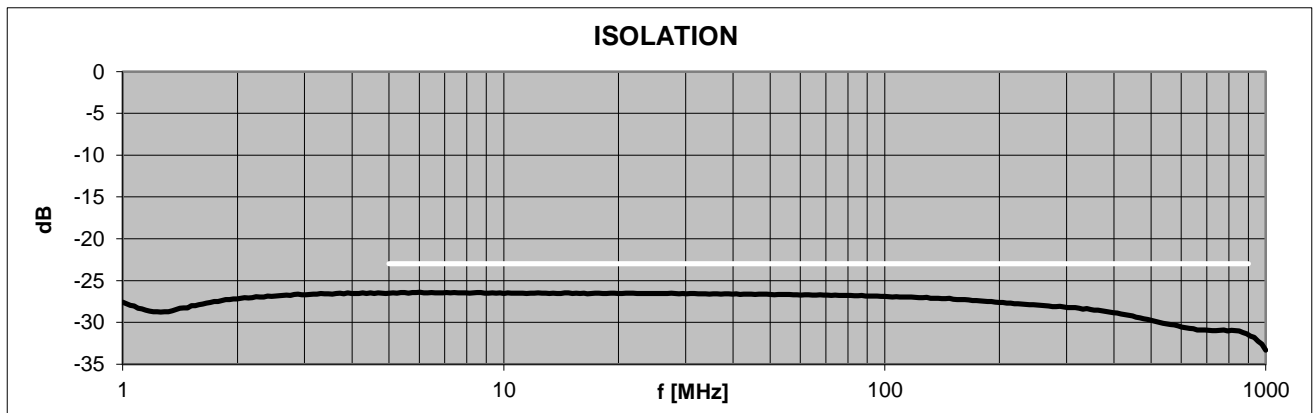
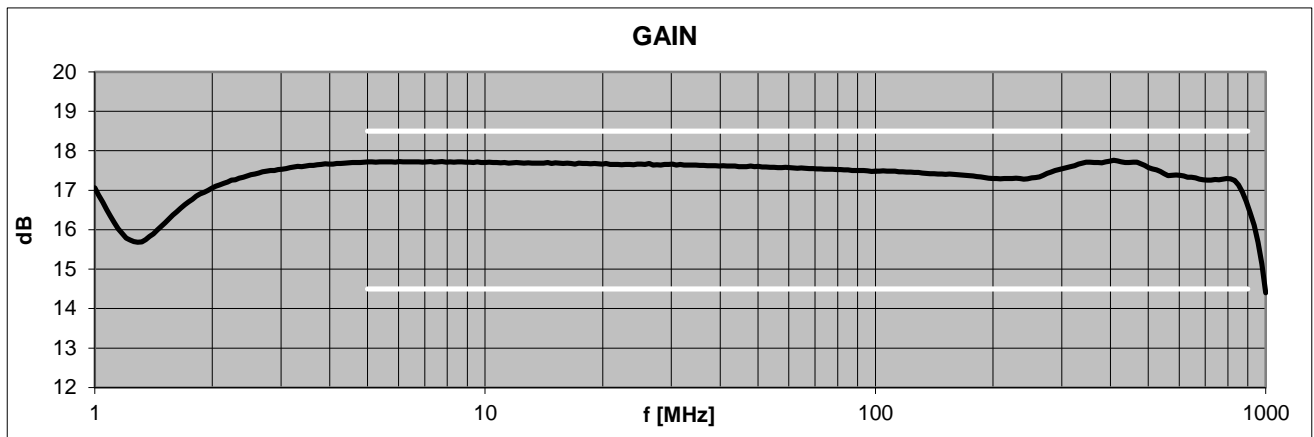
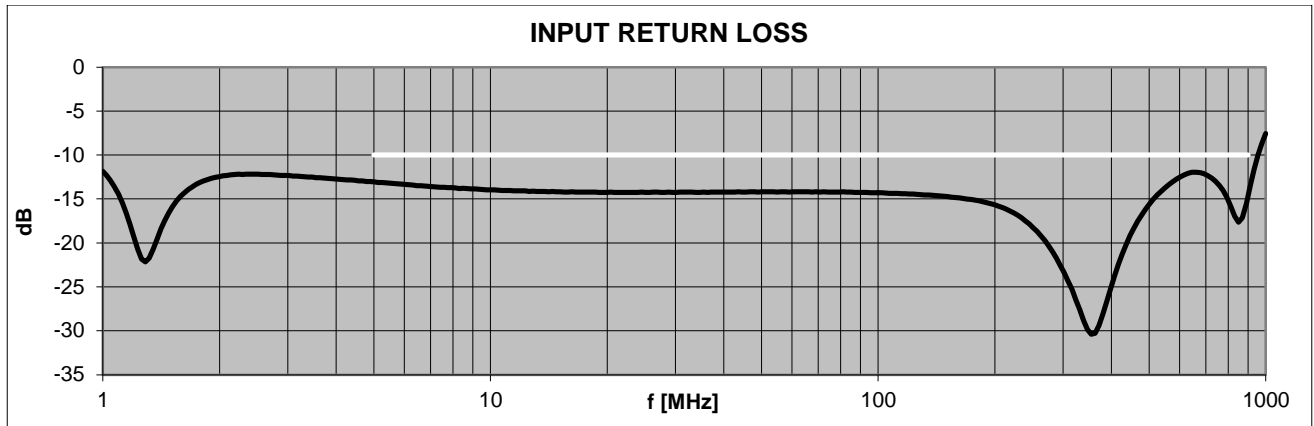
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	$Z_{in} / Z_{out}$		50		$\Omega$	
low frequency	$f_{min}$			5	MHz	
high frequency	$f_{max}$	900			MHz	
gain	$S_{21}$	14.5	17.5	18.5	dB	
gain ripple	$\Delta S_{21}$		$\pm 0.5$	$\pm 1.0$	dB	$f \leq 700$ MHz
VLF suppression	$S_{21}$			-70	dB	@ 100 kHz, rel. 100 MHz
	$S_{21}$			-25	dB	@ 1 MHz, rel. 100 MHz
input return loss	$S_{11}$		-13	-10	dB	
output return loss	$S_{22}$		-12	-9	dB	
reverse isolation	$S_{12}$		-27	-23	dB	
1 dB compression	$P_{1dB}$	+32.5	+34.0		dBm	$f \leq 700$ MHz
	$P_{1dB}$	+29.5	+32.0		dBm	$f > 700$ MHz
3 <sup>rd</sup> order intercept	$OIP3^1$	+42	+47		dBm	$f < 20$ MHz
	$OIP3^1$	+45	+49		dBm	$f \geq 20$ MHz
2 <sup>nd</sup> order intercept	$OIP2^1$	+65	+80		dBm	
harmonic distortion	$HD^2$		-40	-30	dBc	1 <sup>st</sup> and 2 <sup>nd</sup> @ +30 dBm fundamental level
noise figure	NF		4	7	dB	$f \geq 10$ MHz
maximum input power	$P_{in,max}$			+25	dBm	output terminated with 50 ohms
maximum DC Voltage	$U_{DC}$			20	V	RF ports
RF connectors	$X_{RF}$	N female				

Note 1: Tested at  $P_{out} 2 \times +13$  dBm;  $\Delta f = 1$  MHz

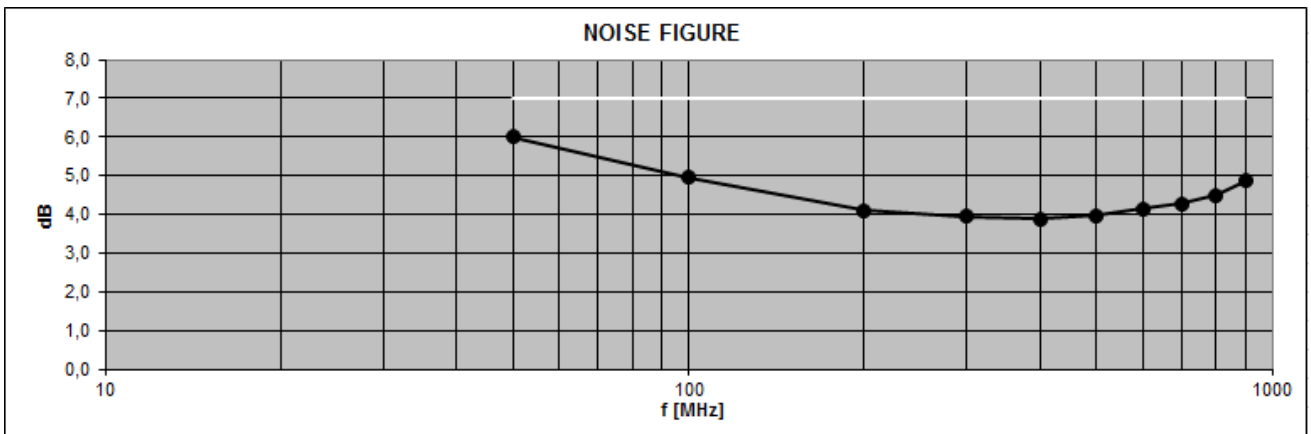
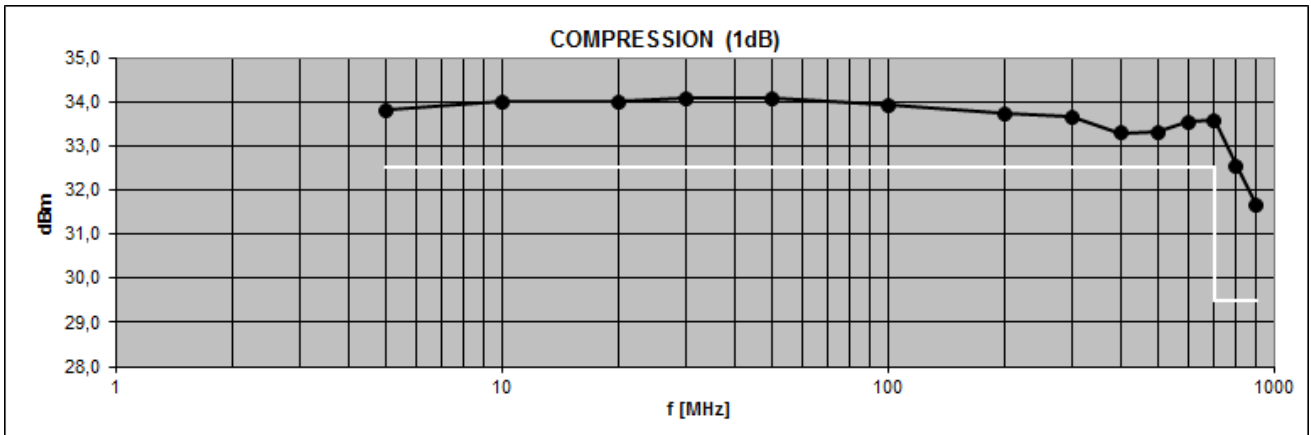
**Common Specification**

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	$U_{AC}$	90		260	V	AC, 50 ... 400 Hz
power consumption	$P_{AC}$		21		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	AMP590033-T			0901.5013.1		

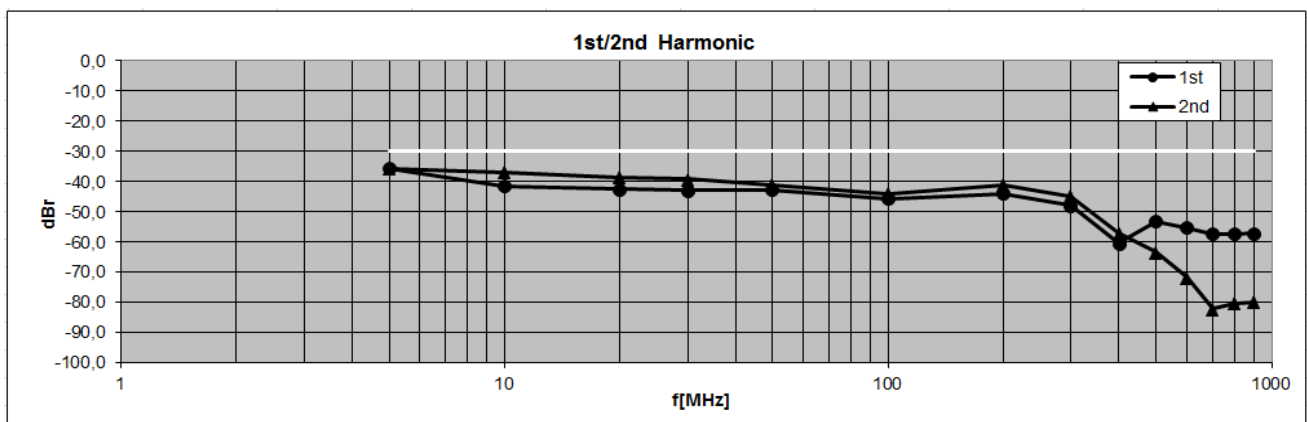
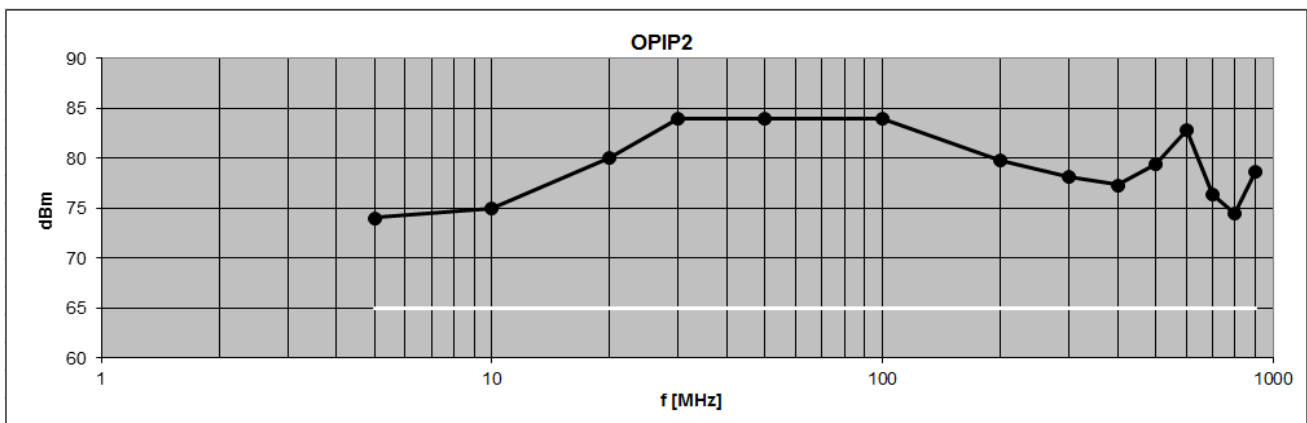
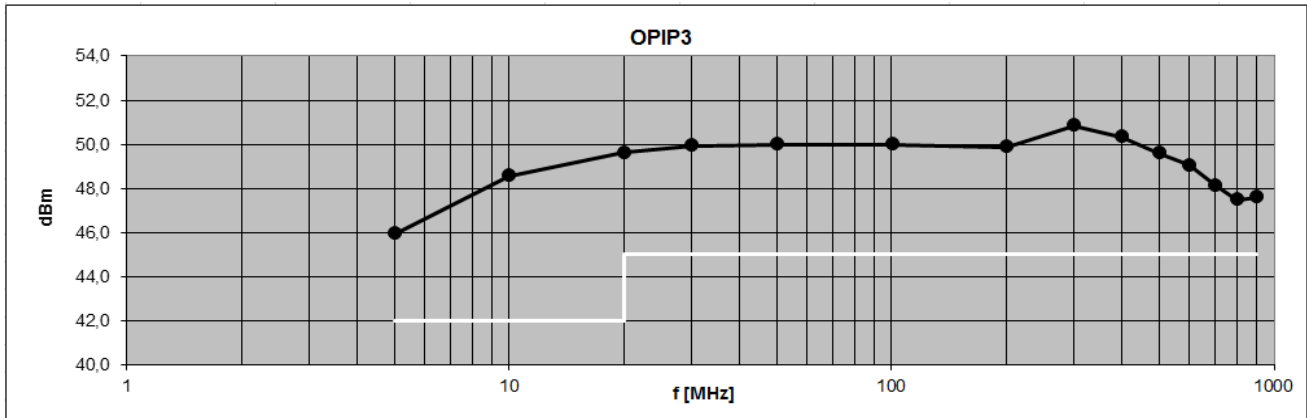


**S-Parameters (typical responses)**

## Dynamic Range (typical responses)



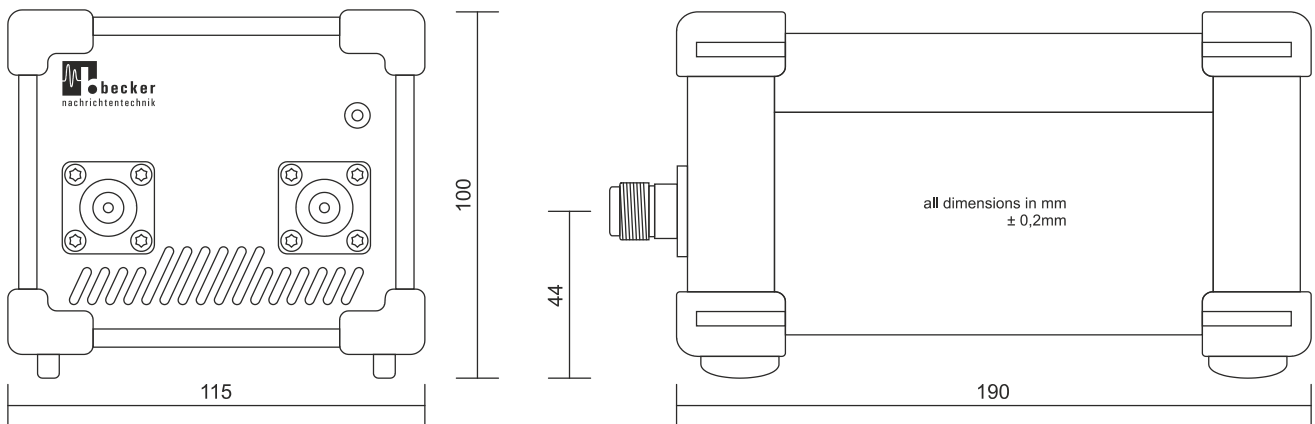
## Linearity (typical responses)



## 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