

2 W Power Amplifier Module 5 ... 900 MHz, 50 Ω

Features

- output power +34 dBm typ.
- high IP3 +49 dBm typ.
- high gain
- open/ short stable
- transient protected
- L/HF suppression
- wide DC supply range
- optical supply indication
- reverse polarity protected

Applications

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



At a Glance

AMP590033H from Becker Nachrichtentechnik is a compact high dynamic amplifier module suitable for frequencies from 5 MHz to 900 MHz in 50 Ohm technology.

Excellent Dynamic

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

Versatile Use

AMP590033H features a wide DC supply range which enables versatile use. The high gain allows maximum output power with an input power of approximate 0 dBm. AMP590033H is especially designed for application in the VHF and the lower UHF range. An internal high pass filter at the amplifier's input avoids influences of signals in the low frequency range. Also this amplifier is often used in laboratories for physical experiments dealing with quantum optics.

Robust Design

AMP590033H features a compact module design with integrated passive cooling. It is robust against mismatches which can occur when operating with complex loads. Especially in physical experiments this feature is of particular importance.

The DC supply input is reverse polarity protected; thereby inadvertently damage of the module is prevented.

This product is available in two different versions. They differ in the type of the power connector (straight or angled). The module's variant with angled power connector fits into typical 1 U enclosures.

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_{max}	900			MHz	
gain	S_{21}	26.5	30.0	33.0	dB	
gain ripple	ΔS_{21}		± 1.0	± 1.5	dB	$f \leq 700$ MHz
low frequency response	S_{21}			-70	dB	100 kHz, rel. 100 MHz
	S_{21}			-25	dB	1 MHz, rel. 100 MHz
input return loss	S_{11}		-18	-12	dB	
output return loss	S_{22}		-12	-9	dB	
reverse isolation	S_{12}		-48	-40	dB	
1 dB compression	P_{1dB}	33	34		dBm	$f \leq 700$ MHz
	P_{1dB}	30	33		dBm	$f > 700$ MHz
3 rd order intercept	$OPIP3^1$	42	47		dBm	$f < 20$ MHz
	$OPIP3^1$	45	49		dBm	$f \geq 20$ MHz
2 nd order intercept	$OPIP2^1$	65	90		dBm	
harmonic distortion	HD	-30	-40		dBc	1 st and 2 nd at +30 dBm fundamental
noise figure	NF		3.0	5.0	dB	$f \geq 10$ MHz
maximum input power	$P_{in max}$			+20	dBm	output terminated with 50 Ohm
RF connectors						SMA female

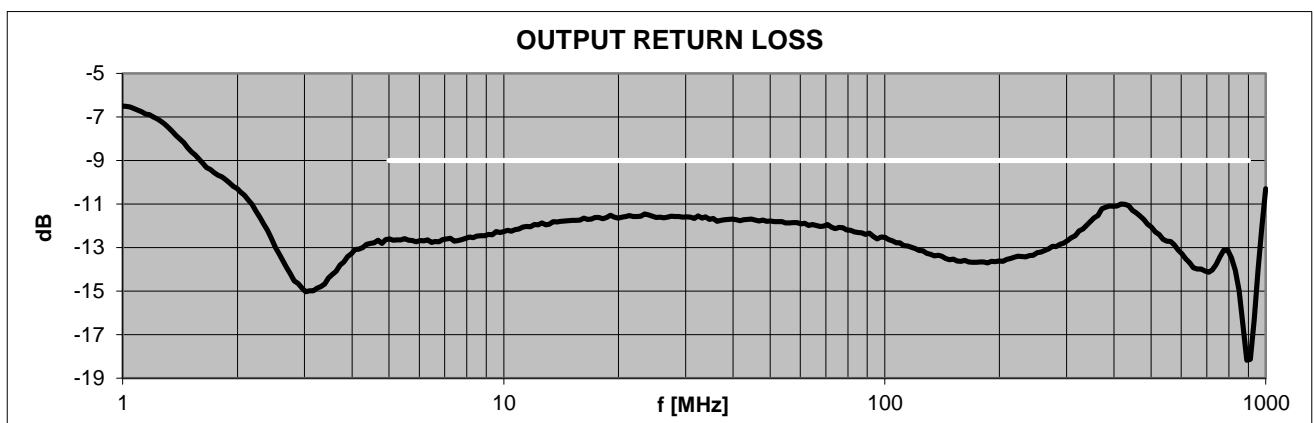
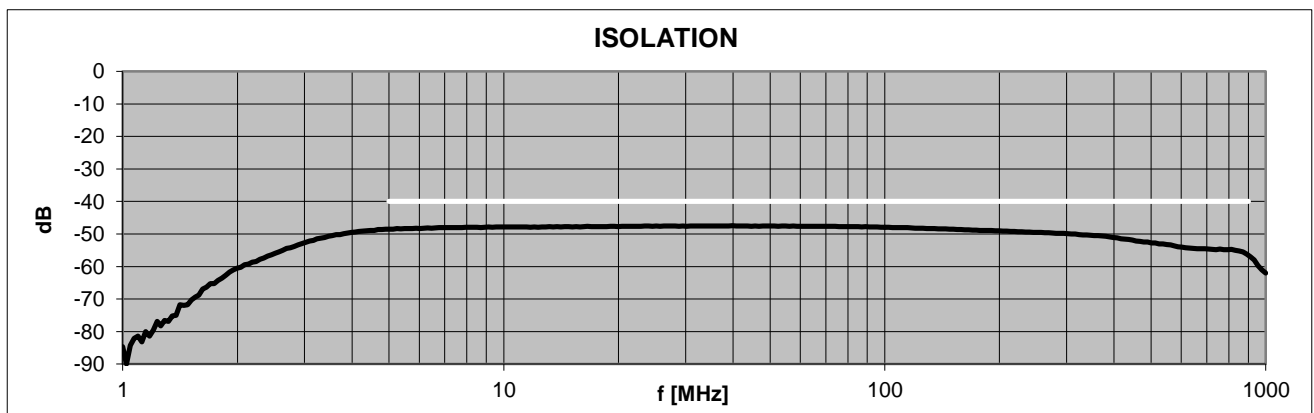
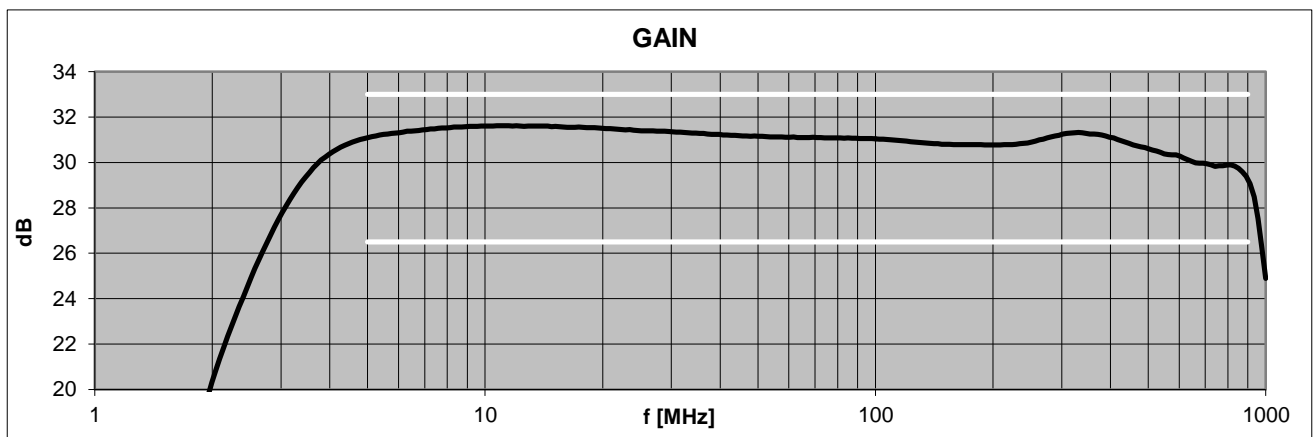
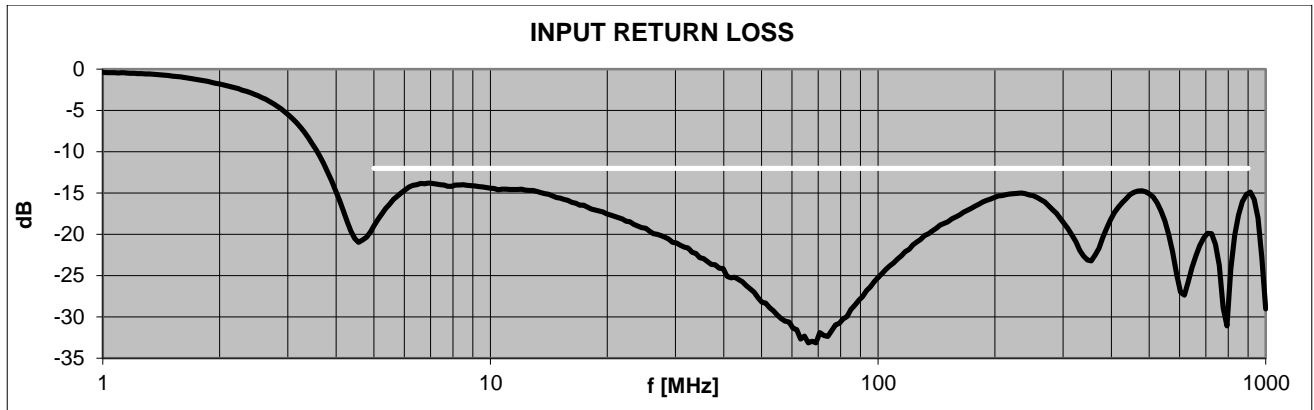
Note 1: Tested at $P_{out} 2 \times +13$ dBm; $\Delta f = 1$ MHz

Common Specifications

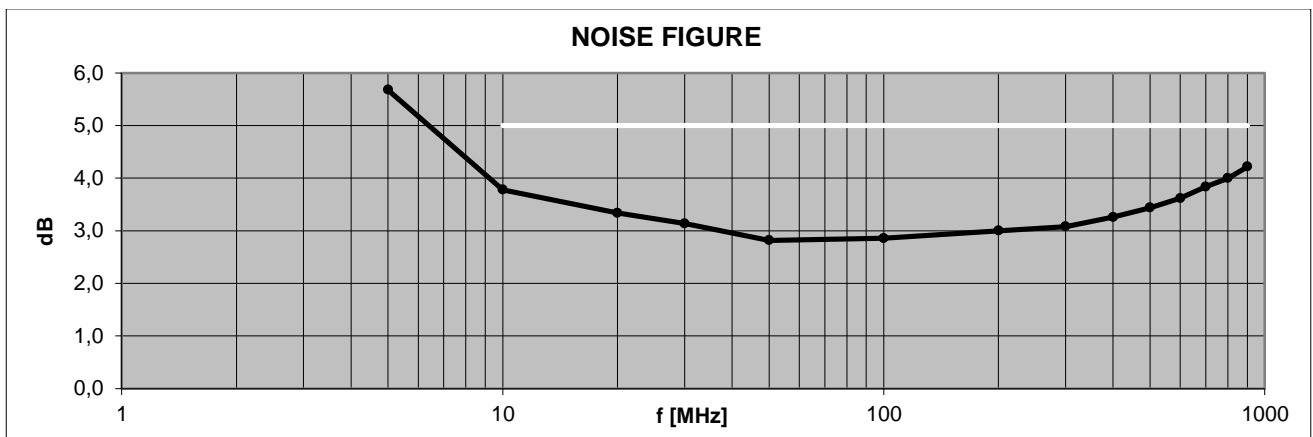
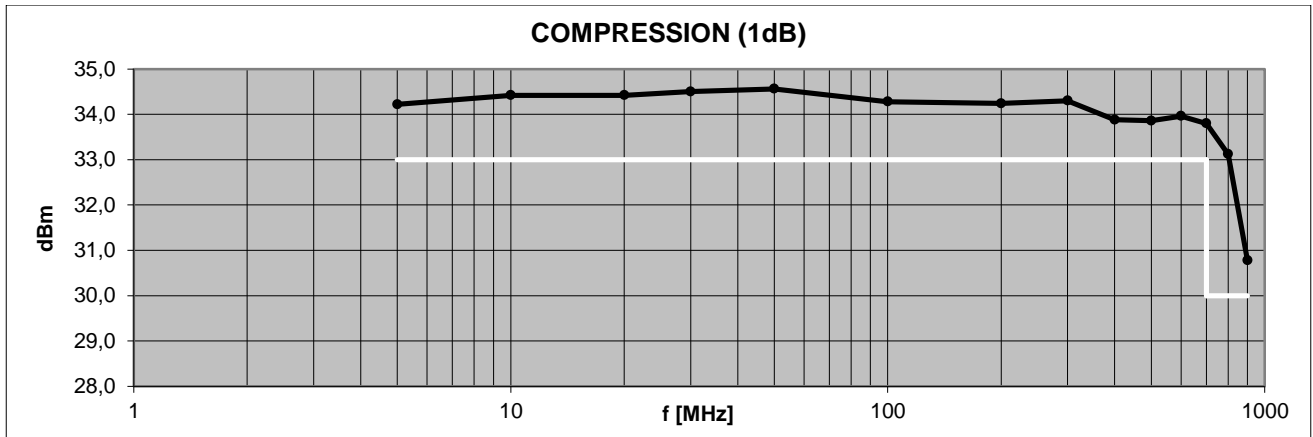
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
supply voltage	U	11		28	V	DC
current consumption	I	350		1200	mA	I_{min} at +28 V
	I	820	890	1100	mA	At +12 V
dimensions	L x W x H	approx. 99 x 75 x 36			mm	
weight	m		360		g	
recommend power plug	NSG396M-2					included accessories
operating temp. range	T_o	-20		+65	°C	ambiance
storage temp. range	T_s	-40		+70	°C	
ordering information	AMP590033H			0901.5001.1		straight power connector
	AMP590033H			0901.5001.2		angled power connector



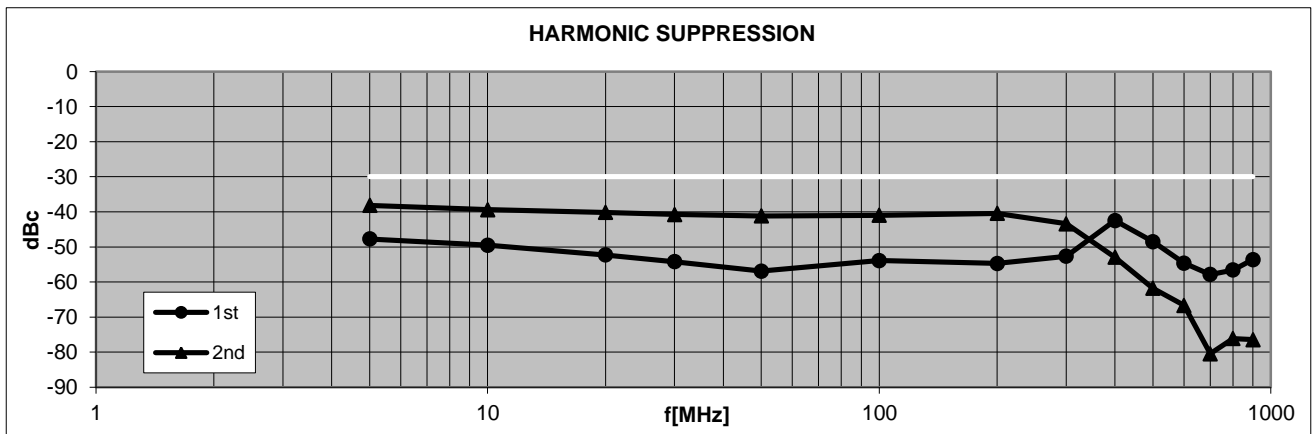
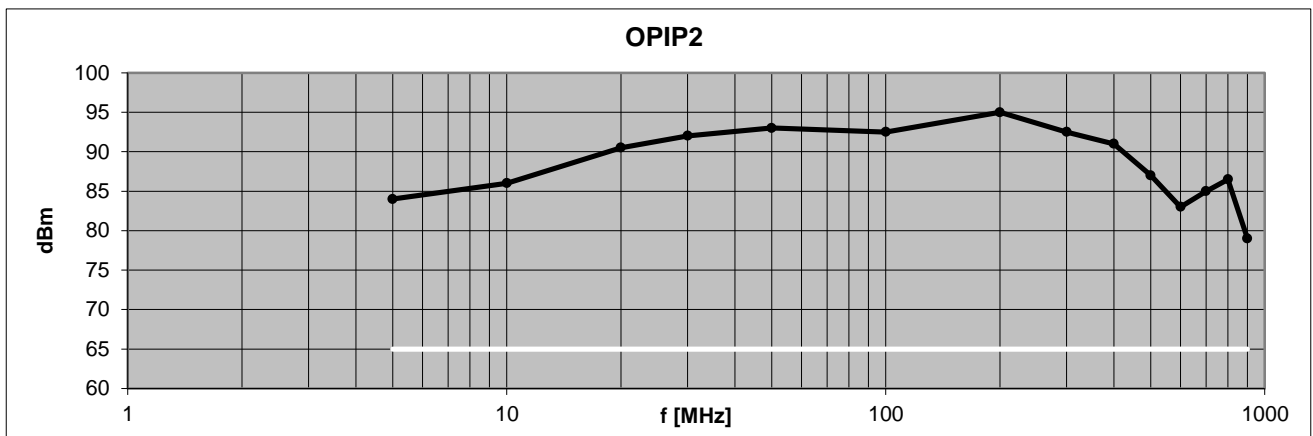
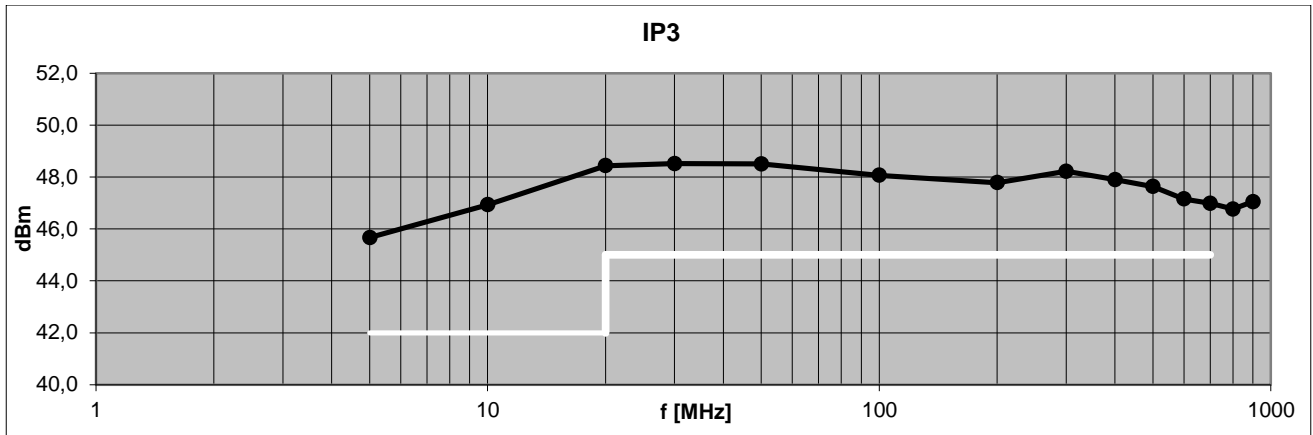
S-Parameters (typical responses)



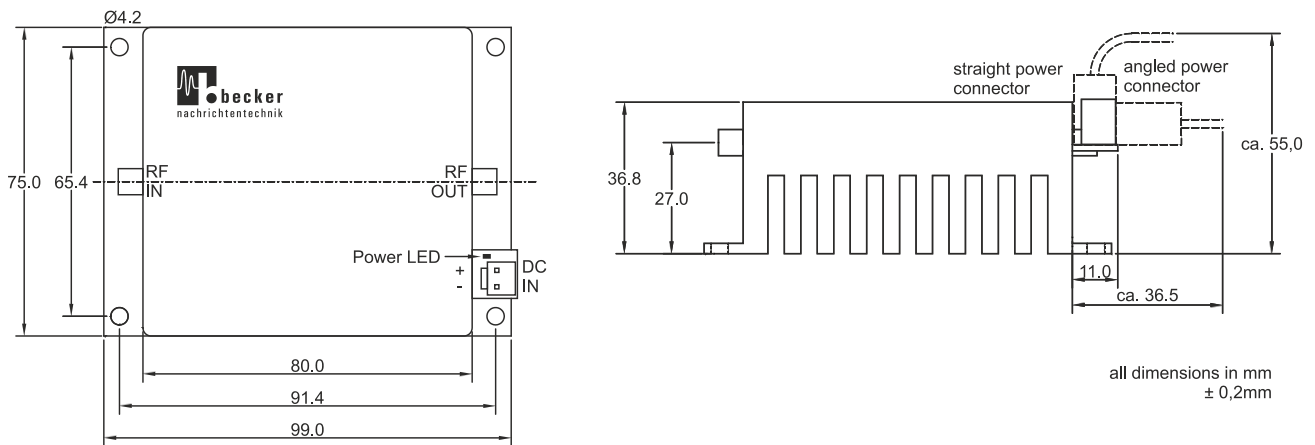
Dynamic Range (typical responses)



Linearity (typical responses)



Dimensions



Related Products

Product	Description	P/N
AMP018032	1 W Medium Power Amplifier Module 100 kHz ... 80 MHz, 50 Ω	1002.5701.1
LNA1080014	High Dynamic Range Amplifier Module 10 ... 800 MHz, 50 Ω	0901.5501.1
AMP590033	2 W Booster Amplifier Module 5 ... 900 MHz, 50 Ω	0901.5011.1
AMP5270026	High Dynamic Amplifier Module 5 ... 2700 MHz, 50 Ω	1005.5201.1
AMP5220031	High Dynamic Amplifier Module 5 ... 2200 MHz, 50 Ω	1005.5101.1
AMP20280035	4.5 W Wideband Amplifier Module 20 ... 2800 MHz, 50 Ω	1209.5001.1
AMP10850026	500 mW Wideband Amplifier Module 10 ... 8500 MHz, 50 Ω	1305.5001.1
AMP5170033	Extremely High Linearity Amplifier Module 5 ... 1700 MHz, 50 Ω	1401.5011.1
AMP1053043H	20 W Power Amplifier Module 10 ... 530 MHz, 50 Ω	1001.5001.1