

4.5 W Wideband Amplifier Module 20 ... 2800 MHz, 50 Ω

Features

- output power +36.5 dBm typ.
- high efficiency
- open/ short stable
- transient protected
- VLF suppression
- optical supply indication
- reverse polarity protected

Applications

- HTOL tests
- GSM / UMTS / LTE
- ISM 433 / 868 / 2400 MHz
- laboratory equipment
- research and development (R&D)



At a Glance

AMP20280035 from Becker Nachrichtentechnik is a compact wideband power amplifier module suitable for frequencies from 20 MHz to 2800 MHz in 50 Ohm technology.

High Efficiency

AMP20280035 offers very high efficiency because it can be operated in A-B mode. The module offers an output power of up to 4.5 watts which makes this amplifier suitable for applications such as HTOL (High Temperature Operating Life) tests. For these tests, AMP20280035 provides medium output power and ensures high efficiency at the same time. An internal high pass filter at the input of the amplifier avoids influences of signals in the low frequency range. The amplifier can be used in several areas of application, such as GSM / UMTS / LTE and ISM 433 / 868 / 2400 MHz.

Robust Design

AMP20280035 features a compact and robust module design with integrated passive cooling. It is robust against mismatches which can occur when operating with complex loads. 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}			20	MHz	
high frequency	f_{max}	2800			MHz	
gain	S_{21}	34	38	40	dB	$f < 100$ MHz
	S_{21}	31	36	40	dB	$100 \text{ MHz} \leq f \leq 2500$ MHz
	S_{21}	29	35	40	dB	$f > 2500$ MHz
	S_{21}			-23	dB	$f < 5$ MHz, rel. S_{21} @ 100 MHz
input return loss	S_{11}		-16	-10	dB	
reverse isolation	S_{12}		-60	-40	dB	
3 rd order intercept	OIP3 ¹		39			$f \leq 2000$ MHz
1 dB compression	P_{1dB}	33.0	35.5		dBm	$f \leq 2000$ MHz
3 dB compression	P_{3dB}	34.0	36.5		dBm	$f \leq 2500$ MHz
	P_{3dB}	32.0	34.5		dBm	$f > 2500$ MHz
noise figure	NF		4	7	dB	$f > 50$ MHz
input power				20	dBm	
RF connectors						SMA female

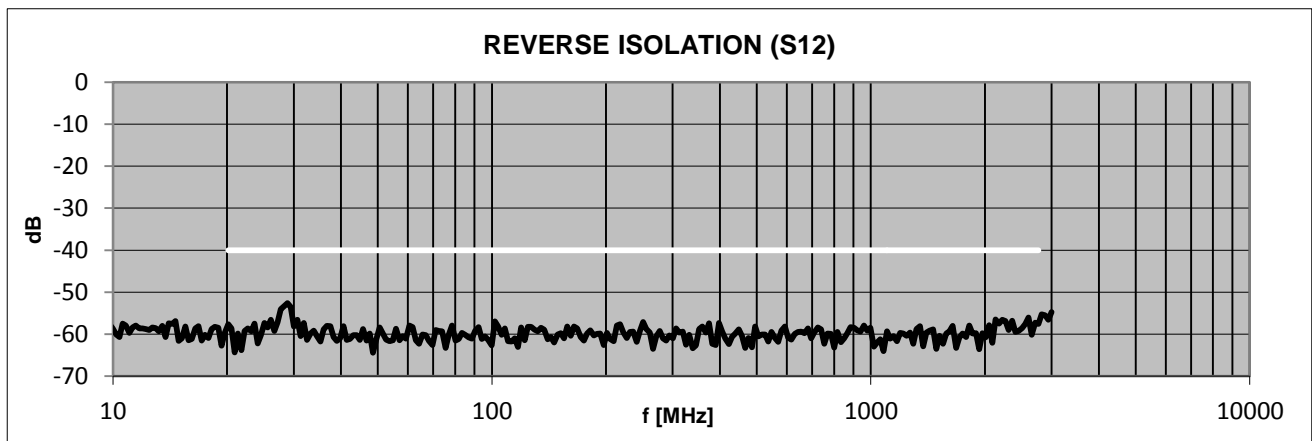
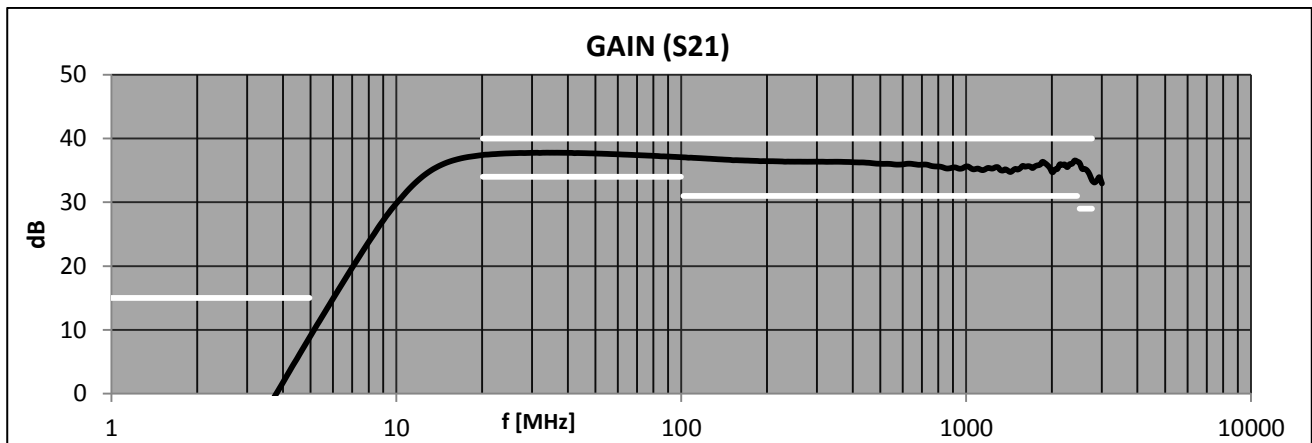
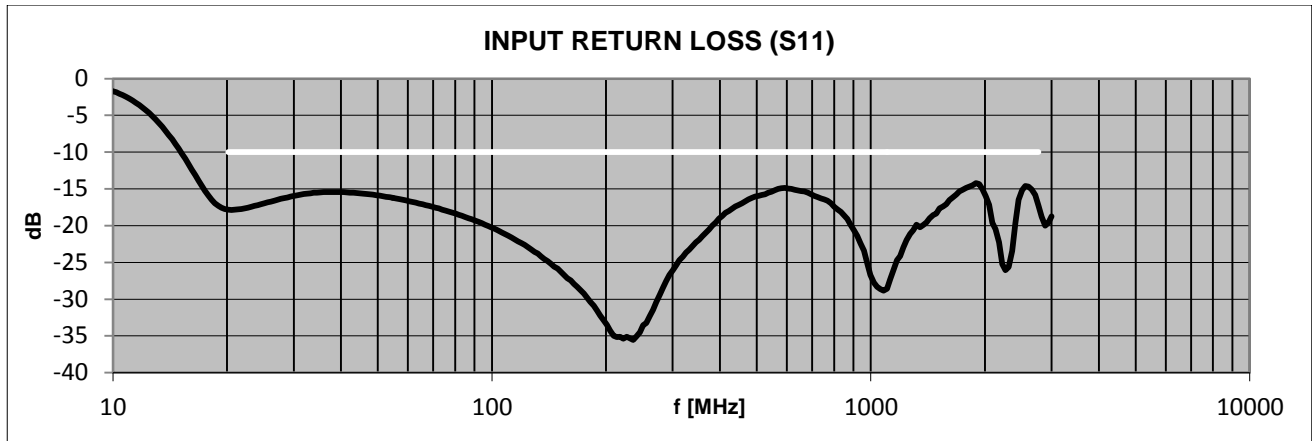
Note 1: Tested at $P_{out} 2 \times +20$ dBm; $\Delta f = 2$ MHz

Common Specifications

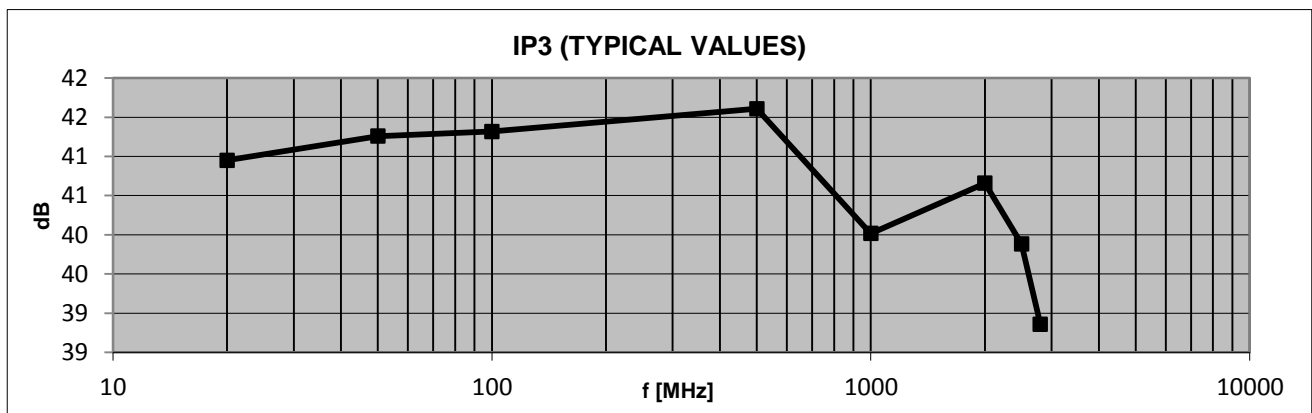
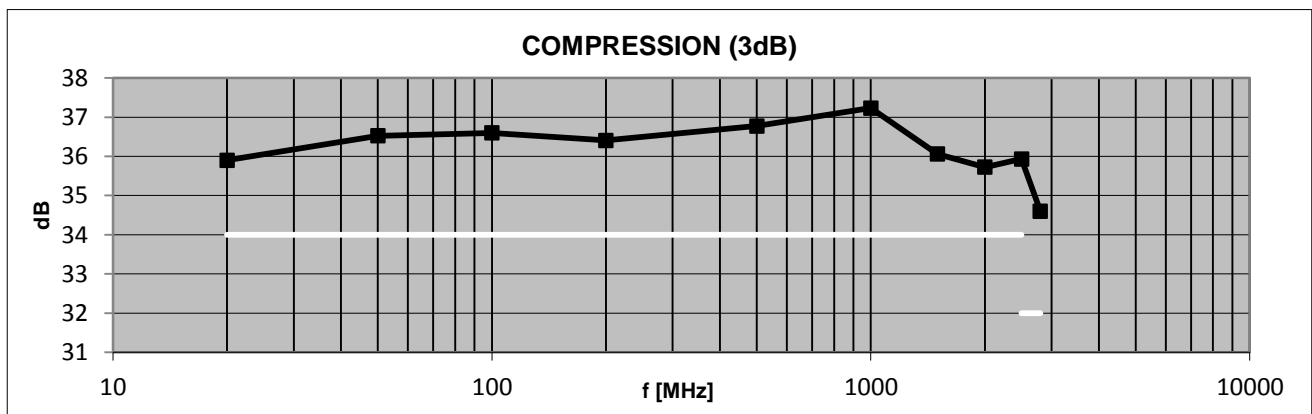
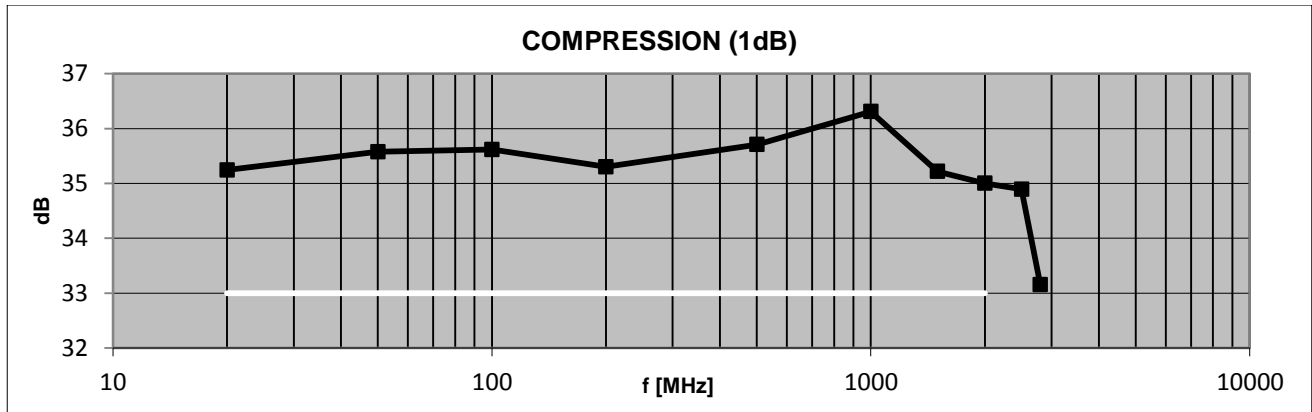
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
supply voltage	U	23.5	24.0	24.5	V	DC
Quiescent current	I_Q		200		mA	no input signal
current consumption	I		550		mA	maximum output power
dimensions	L x W x H	approx. 99 x 75 x 36			mm	
weight	m		350		g	
recommend power plug	NSG396M-2					included accessories
operating temp. range	T_o	-20		+65	°C	ambiance
storage temp. range	T_s	-40		+70	°C	
ordering information		AMP20280035		1209.5001.1		straight power connector
		AMP20280035		1209.5001.2		angled power connector



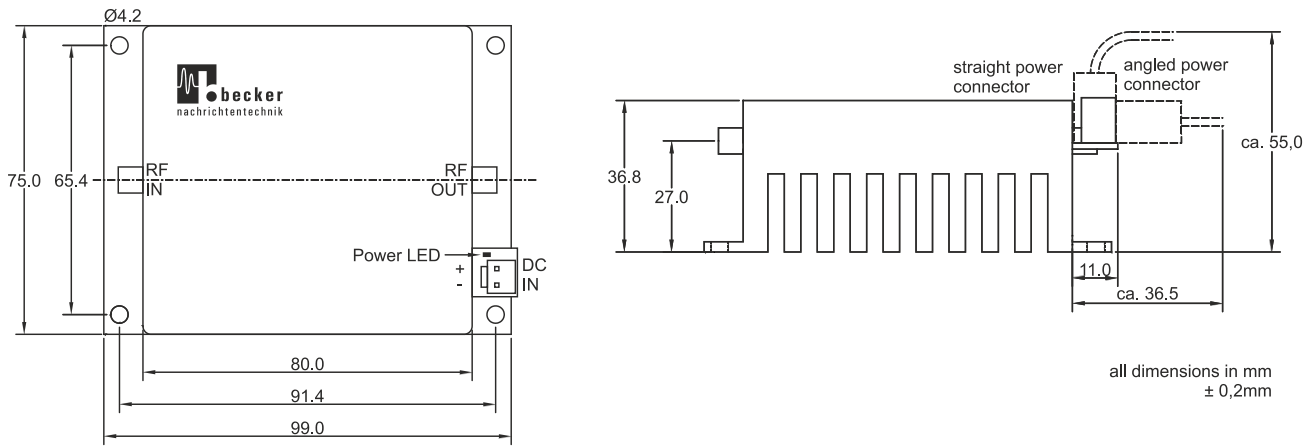
S-Parameters (typical responses)



Dynamic Range (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
AMP590033H	2 W Power Amplifier Module 5 ... 900 MHz, 50 Ω	0901.5001.1
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
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