

AMP20280035B

4.5 W Wideband Amplifier Module 20 ... 2800 MHz

Features

- output power +35.5 dBm typ.
- high efficiency
- VLF suppression
- optical supply indication
- reverse polarity protected
- replacement for AMP20280035

Applications

- power amplifier for cellular
- GSM, UMTS, LTE
- WiFi
- laboratory
- test equipment



At a Glance

AMP20280035B from Becker Nachrichtentechnik is a compact amplifier module in 50 ohms technology designed for the use in professional applications. 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. Internal filters and low noise voltage supplies guarantee high suppression of spurious. To avoid damages during installation the supply is protected against reverse polarity. For versatile use the amplifier works over a wide DC supply voltage range. The presence of DC power is indicated by a LED at the module. The amplifier module has an integrated heat sink.

Special Features

The AMP20280035B offers 4.5 watts RF output power with a good efficiency. An integrated high pass filter in the input suppresses unwanted signals in the VLF and HF range.

Rugged Design

The amplifier is housed in a milled aluminum case. This saves the circuits against mechanical damage and gives best shielding for avoiding EMI influences caused by radio signals coming from the environment.

DC Connector Variants

For mechanical integration into customer specific setups the amplifier module is available in variants with horizontal or vertical orientation of DC plug. This enables optimized DC cable routing to the amplifier module.

RF Specification

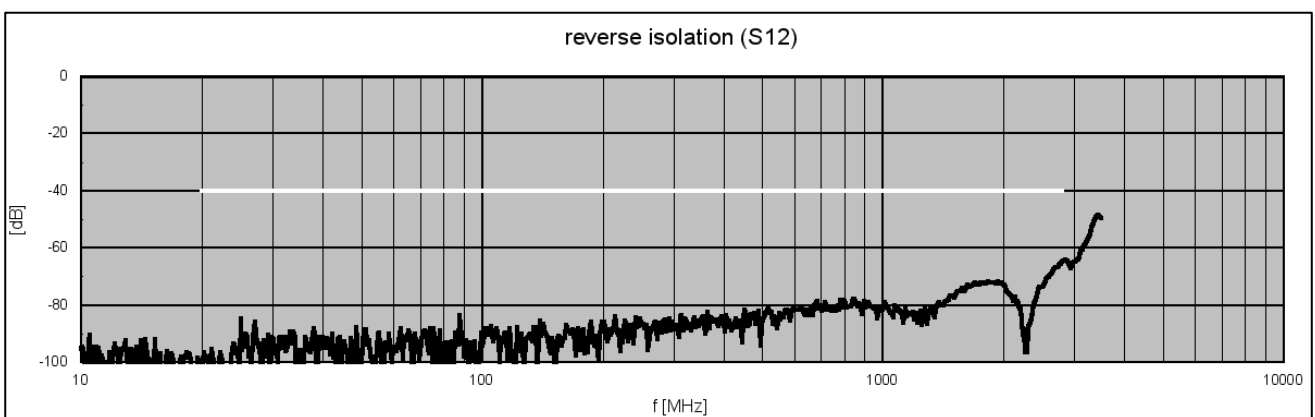
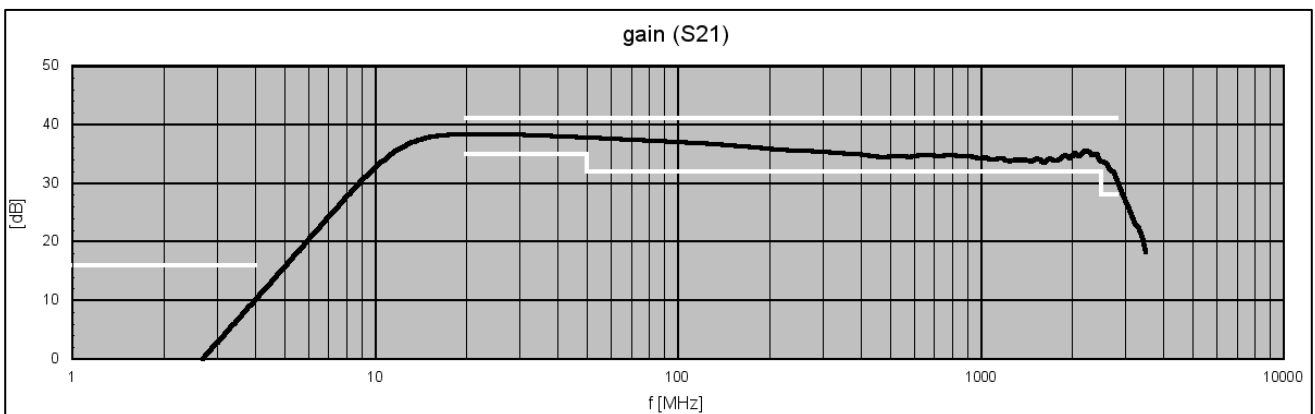
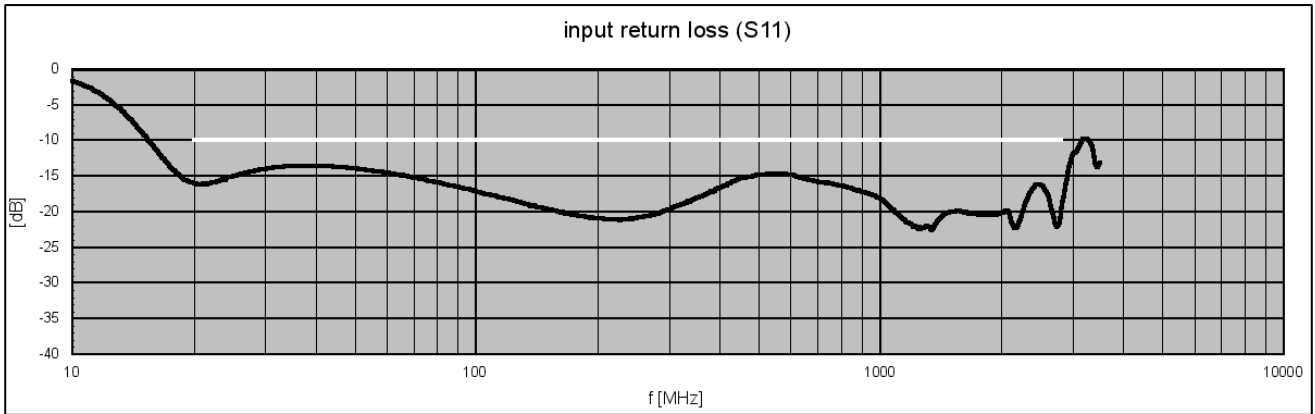
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{in} / Z_{out}		50		Ω	
low frequency	f_{min}			20	MHz	
high frequency	f_{max}	2800			MHz	
gain	S_{21}	35	39	41	dB	$f < 50$ MHz
	S_{21}	32	36	41	dB	$50 \text{ MHz} \leq f \leq 2500$ MHz
	S_{21}	28	34	41	dB	$f > 2500$ MHz
	S_{21}			-23	dB	$f < 4$ MHz, rel. S_{21} @ 100 MHz
input return loss	S_{11}		-16	-10	dB	
reverse isolation	S_{12}		-70	-40	dB	
3 rd order intercept	OIP3 ¹		+43		dBm	
1 dB compression	P_{1dB}	+33	+35		dBm	$f \leq 2000$ MHz
3 dB compression	P_{3dB}	+34	+36		dBm	$f \leq 2500$ MHz
	P_{3dB}	+32	+34		dBm	$f > 2500$ MHz
noise figure	NF		4	7	dB	$f > 50$ MHz
Maximum input power				+20	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}	SMA female				

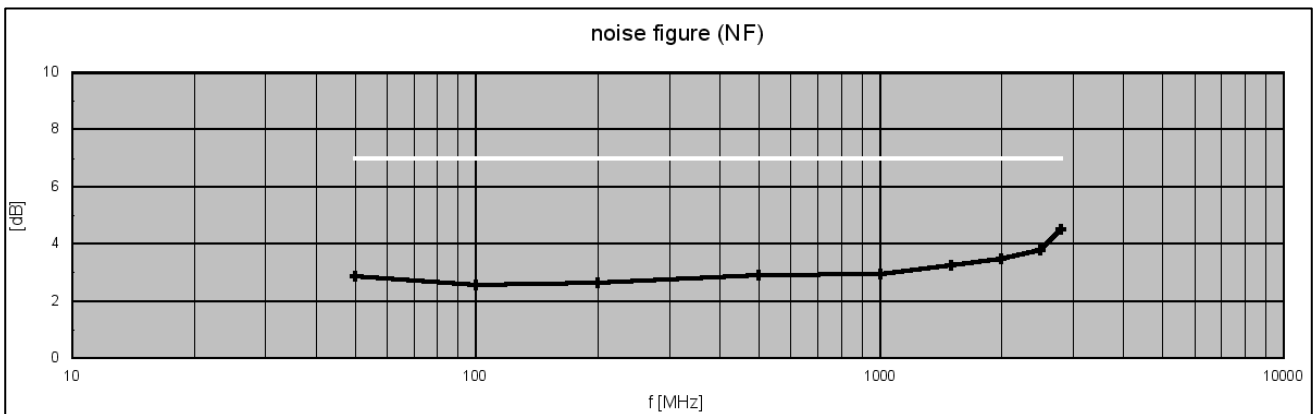
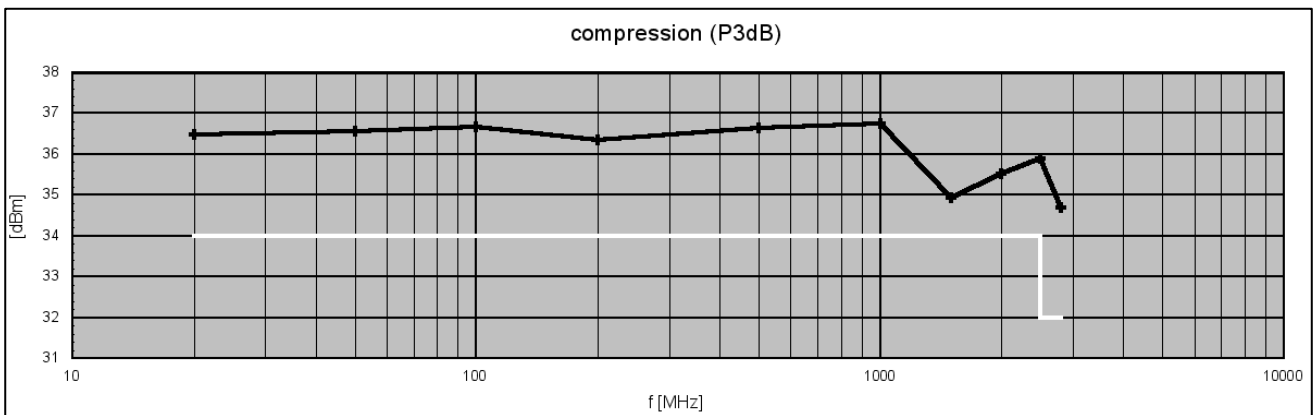
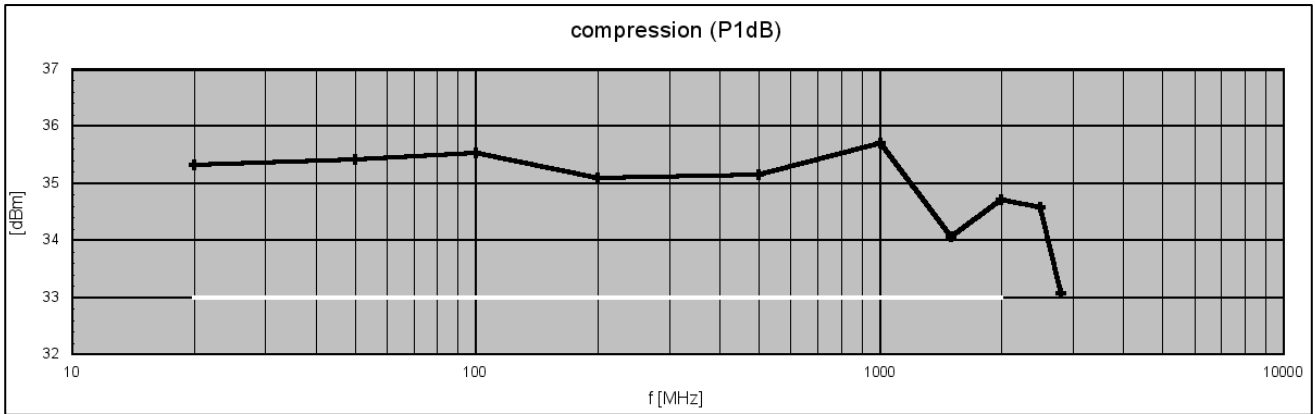
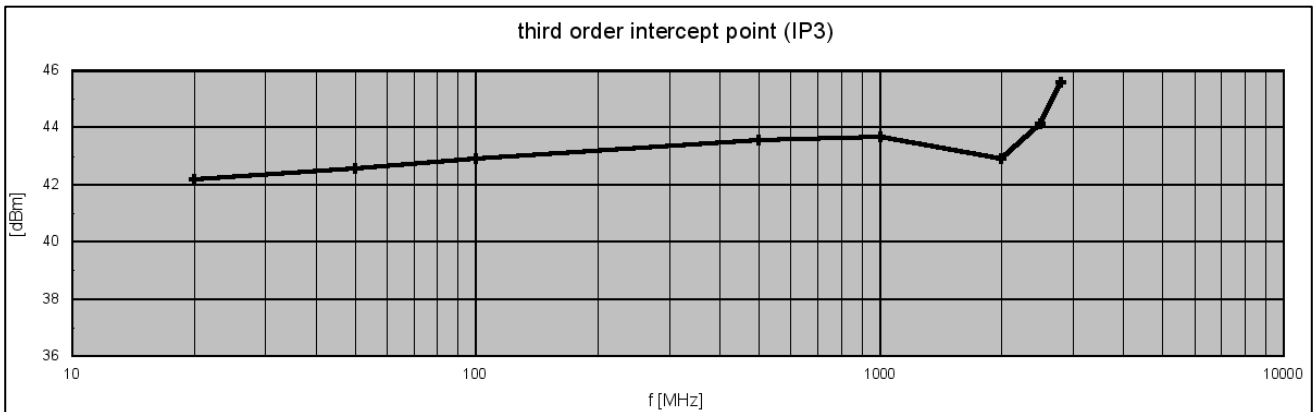
Note 1: Tested at $P_{out} 2 \times +25$ dBm; $\Delta f = 2$ MHz

Common Specification

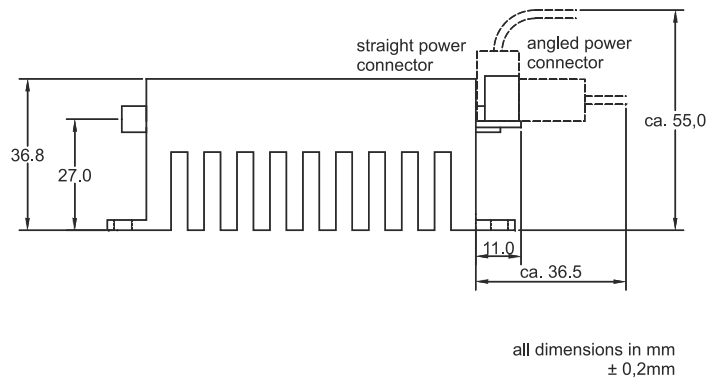
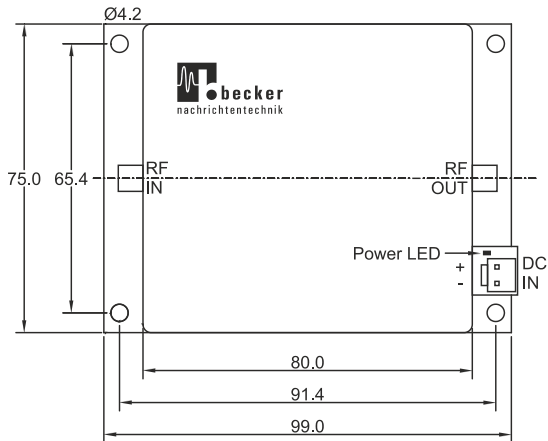
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
supply voltage	U_{DC}	23.5	24.0	24.5	V	DC
Quiescent current	I_Q		170		mA	no input signal
current consumption	I_{DC}		500		mA	maximum output power
dimensions	W x H x D	approx. 99 x 36 x 75			mm	
weight	m		350		g	
power socket	X_{DC}	NSL-396M-2W/NSL-396M-2G				grid 3.96 mm, Var. 1/Var. 2
power plug	X_{DCP}	NSG396M-2				housing with 3 contacts are part of delivery
operating temp. range	T_o	0		+70	$^{\circ}\text{C}$	module surface
storage temp. range	T_s	-40		+70	$^{\circ}\text{C}$	
ordering information		AMP20280035B		1209.5201.1		vertical orientated power connector
		AMP20280035B		1209.5201.2		horizontal orientated power connector



S-Parameters (typical responses)

Dynamic Range (typical responses)**Linearity (typical responses)**

Dimensions



Related Products

Product	Description	P/N
AMP20002000042	10 W Power Amplifier Module, 2000 MHz ... 20 GHz Module with external heat sink	2301.5111.1
AMP20002000042L	10 W Power Amplifier Module, 2000 MHz ... 20 GHz Module for mounting on external heat sink	2301.5101.1
AMP101800030	1 W Ultra-Wideband Linear Amplifier Module, 10 ... 18000 MHz	2106.5001.x
AMP17001300038	6 W Power Amplifier Module, 1700 ... 13000 MHz Module with external heat sink	2004.5111.1
AMP17001300038L	6 W Power Amplifier Module, 1700 ... 13000 MHz Module for mounting on external heat sink	2004.5011.1
AMP300600040	10 W Power Amplifier Module, 300 ... 6000 MHz Module with external heat sink	1801.5101.1
AMP300600040L	10 W Power Amplifier Module, 300 ... 6000 MHz Module for mounting on external heat sink	1801.5001.1
AMP01600017B	50 mW Wideband Amplifier, 100 kHz ... 6000 MHz	1604.5001.2
AMP51505925-TRX	Wi-Fi TX/RX Booster Amplifier for Radiating Cables	1802.5001.1
AMP51505925-TRX-K	Kit for 5 GHz Wi-Fi Coverage Extension using Radiating Cables	1802.5011.1
AMP20280035B	4.5 W Wideband Amplifier Module, 20 ... 2800 MHz	1209.5201.x
AMP5270026	400 mW High Dynamic Amplifier Module, 5 ... 2700 MHz	1005.5201.x
AMP5220031	1 W High Dynamic Amplifier Module, 5 ... 2200 MHz	1005.5101.x
AMP5170033	2 W Amplifier Module 5 ... 1700 MHz	1401.5011.1
AMP50130036	4 W High Linearity, Full Redundant, UHF Wideband Amplifier, 50...1300 MHz Module with heat sink	1602.5001.4
AMP50130036L	4 W High Linearity, Full Redundant, UHF Wideband Amplifier, 50...1300 MHz Module for mounting in external heat sink	1602.5001.5
AMP590033	2 W Booster Amplifier Module 5 ... 900 MHz Module with heat sink	0901.5011.x
AMP590033L	2 W Booster Amplifier Module 5 ... 900 MHz Module for mounting in external heat sink	0901.5011.x
AMP590033H	2 W Amplifier Module 5 ... 900 MHz Module with heat sink	0901.5001.x
AMP590033HL	2 W Amplifier Module 5 ... 900 MHz Module for mounting in external heat sink	0901.5001.x
LNA1080014	400 mW Low Noise Amplifier Module 10 ... 800 MHz	0901.5501.x
AMP3060036	4 W Ultra High Linearity, Full Redundant, Wideband Amplifier Module 30 ... 600 MHz with heat sink	1602.5001.1
AMP3060036L	4 W Ultra High Linearity, Full Redundant, Wideband Amplifier Module 30 ... 600 MHz for mounting on heat sink	1602.5001.2
AMP1053045	30 W Linear Power Amplifier Module 10 ... 530 MHz	1908.5001.1
AMP17024048L	60 W DAB Linear Power Amplifier Module 170 ... 240 MHz Module for mounting on external heat sink	2104.5001.4
AMP17024048	60 W DAB Linear Power Amplifier Module 170 ... 240 MHz Module with external heat sink	2104.5101.4
AMP7610849L	80 W FM Linear Power Amplifier Module 76 ... 108 MHz Module for mounting on external heat sink	2104.5001.3
AMP7610849	80 W FM Linear Power Amplifier Module 76 ... 108 MHz Module with external heat sink	2104.5101.3
AMP018032	1.3 W High Linearity Amplifier Module 100 kHz...80 MHz	1002.5701.x

Note: Sorted descending by upper limit frequency.

All modules with P/N extension with ".x" are available with horizontal or vertical orientated DC power connector.

