

AMP10850026

400 mW Ultra-Wideband Amplifier Module 10 ... 8500 MHz

Features

- output power +27 dBm typ.
- wide DC supply range
- optical supply indication
- reverse polarity protected

Applications

- research and development (R&D)
- ISM315, 433, 868, 2499, 5800 MHz
- broadcast, GNSS
- laboratory
- test equipment



At a Glance

AMP10850026 from Becker Nachrichtentechnik is a compact ultra-wideband 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 AMP10850026 offers an ultra-high operation bandwidth. The low noise figure combined with the high output compression point gives the amplifier excellent dynamic range properties.

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}			10	MHz	
high frequency	f_{max}	8500			MHz	
gain	S_{21}	22	25	28	dB	$f < 50$ MHz
	S_{21}	23.0	25.5	28.0	dB	$50 \text{ MHz} \leq f \leq 7000 \text{ MHz}$
	S_{21}	22	25	28	dB	$f > 7000 \text{ MHz}$
input return loss	S_{11}		-10	-8	dB	$f < 500$ MHz
	S_{11}		-17	-10	dB	$f \geq 500$ MHz
output return loss	S_{22}		-15	-8	dB	$f \leq 6500$ MHz
	S_{22}		-8	-4	dB	$f > 6500$ MHz
reverse isolation	S_{12}		-70	-45	dB	
3 rd order intercept	OIP3 ¹	+26	+30		dBm	$f < 500$ MHz
	OIP3 ¹	+33	+35		dBm	$500 \text{ MHz} \leq f \leq 6000 \text{ MHz}$
	OIP3 ¹	+30	+33		dBm	$6000 \text{ MHz} < f \leq 8000 \text{ MHz}$
1 dB compression	P_{1dB}	+19	+21		dBm	$f < 500$ MHz
	P_{1dB}	+24	+26		dBm	$500 \text{ MHz} \leq f \leq 6000 \text{ MHz}$
	P_{1dB}	+23	+25		dBm	$f > 6000$ MHz
3 dB compression	P_{3dB}	+22	+24		dBm	$f < 500$ MHz
	P_{3dB}	+26	+27		dBm	$f \geq 500$ MHz
noise figure	NF		4.5	6.0	dB	$500 \text{ MHz} \leq f < 6500 \text{ MHz}$
	NF		2.5	4.0	dB	$6500 \text{ MHz} \leq f \leq 8000 \text{ MHz}$
input power	P_{in}			+15	dBm	
maximum DC Voltage	U_{DC}			20	V	RF ports
ESD discharge resistor	R_{ESD}		4.7		k Ω	RF ports
RF connectors	X_{RF}	SMA female				

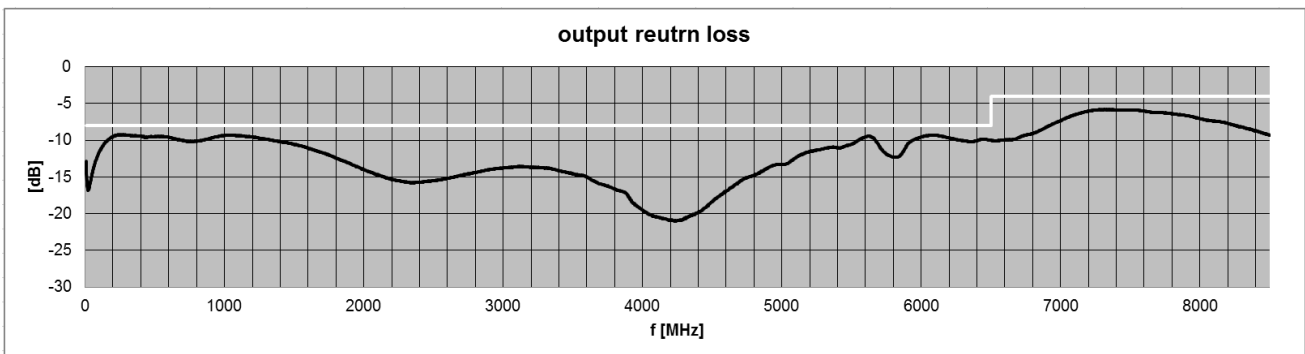
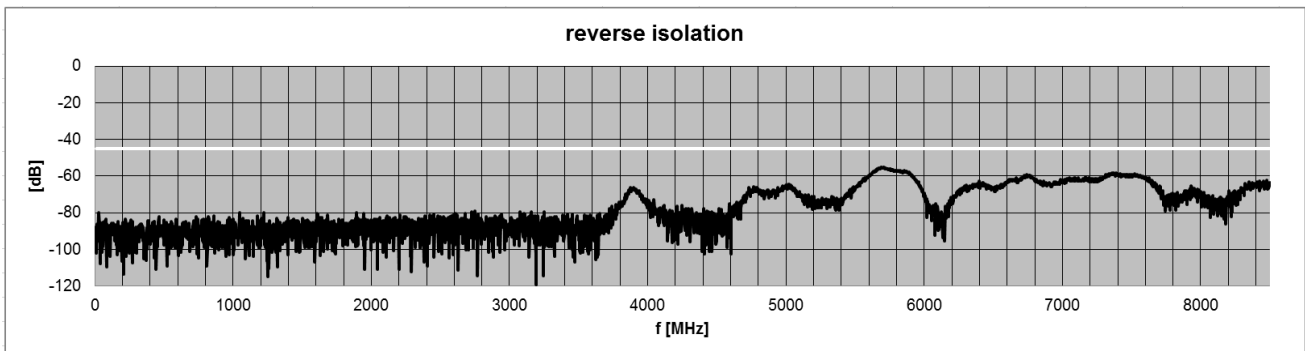
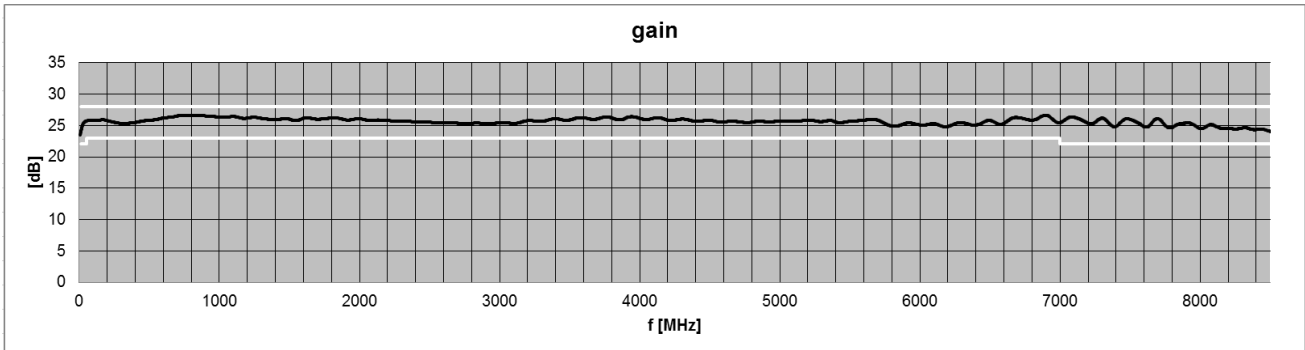
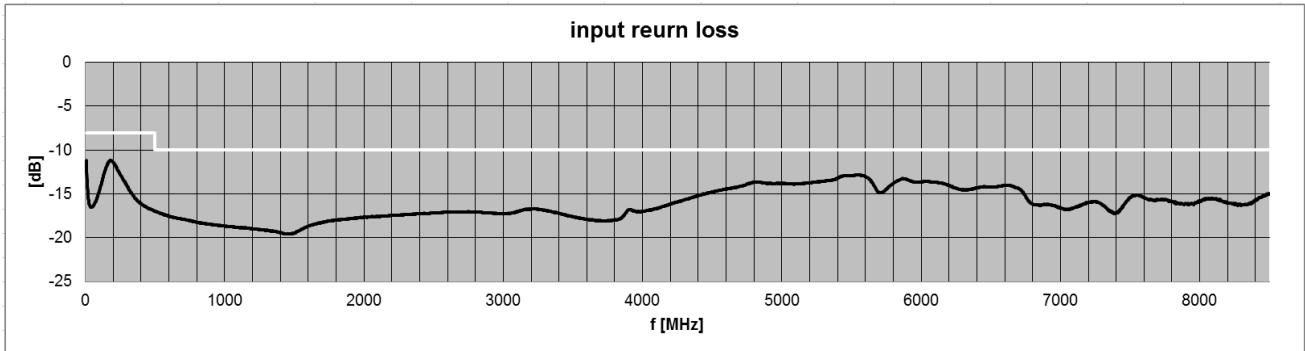
Note 1: tested at $P_{out} 2 \times +16$ dBm; $\Delta f = 2$ MHz

Common Specification

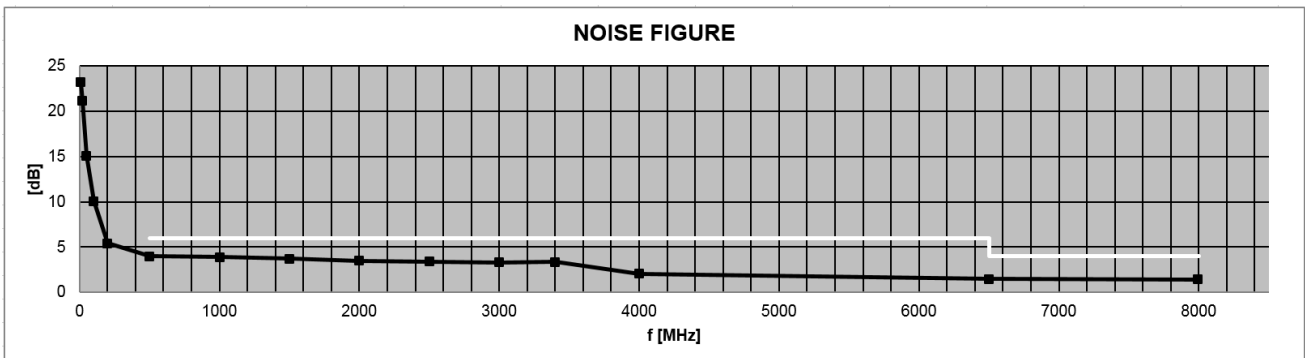
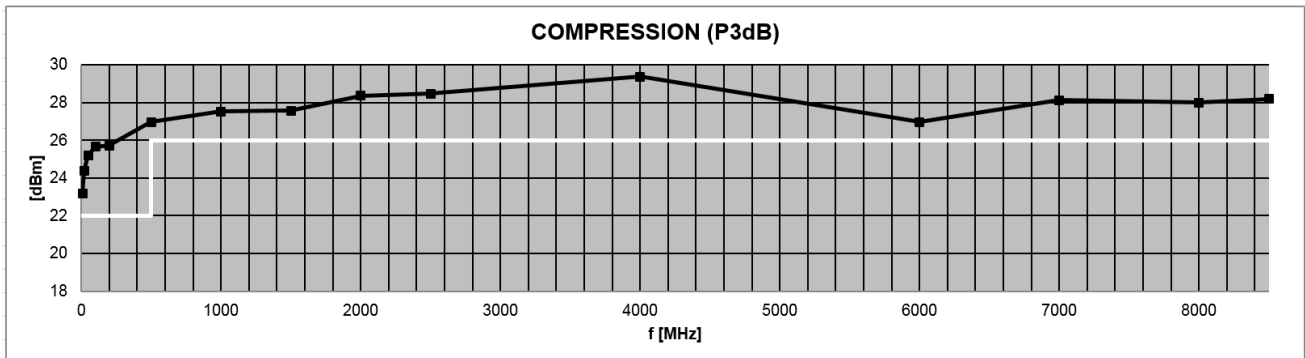
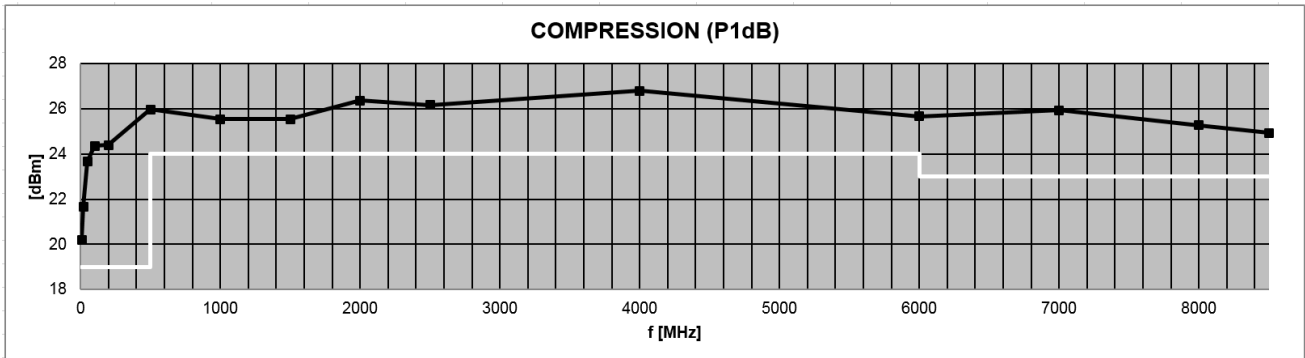
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
supply voltage	U_{DC}	12		28	V	
power consumption	P_Q	5.8	6.5*	6.8	W	no input signal, *: at 24V
	P_{DC}		7.5	8.5		at maximum RF output power
dimensions	W x H x D	approx. 99 x 36 x 75			mm	
weight	m		350		g	
power socket	X_{DC}	NSL-396M-2W/NSL-396M-2G				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		AMP10850026		1305.5001.1		vertical orientated power connector
		AMP10850026		1305.5001.2		horizontal orientated power connector



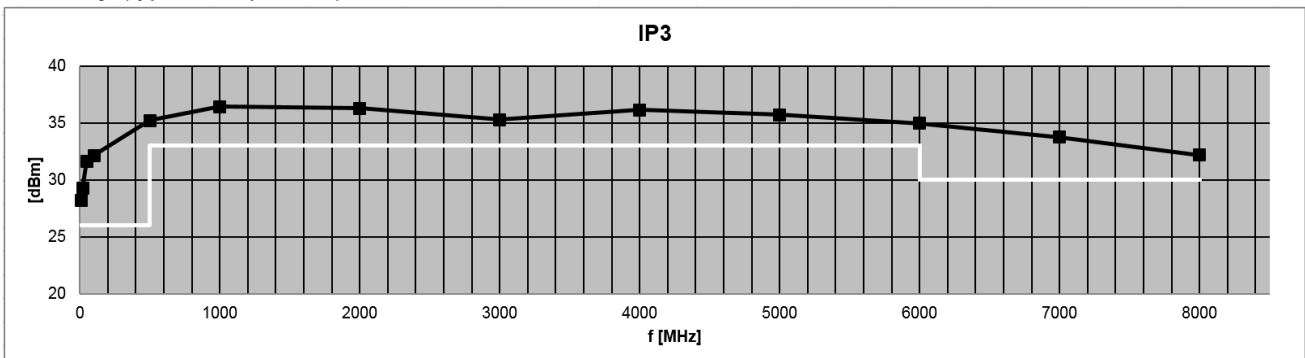
S-Parameters (typical responses)



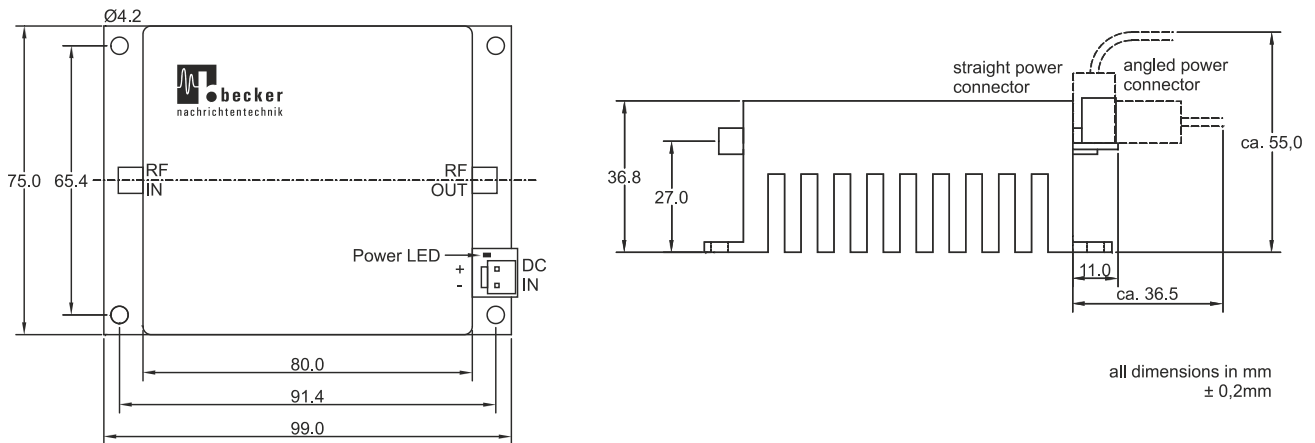
Dynamic Range (typical responses)



Linearity (typical responses)



Dimensions



Related Products

Product	Description	P/N
AMP1053043H	20 W Power Amplifier Module 10 ... 530 MHz	1001.5001.x
AMP2000600040L	13 W Power Amplifier Module 2000 ... 6000 MHz	1711.5001.1
AMP300600040L	10 W Power Amplifier Module 300 ... 6000 MHz	1801.5001.1
AMP20280035	4.5 W Wideband Amplifier Module 20 ... 2800 MHz	1209.5001.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
AMP590033	2 W Booster Amplifier Module 5 ... 900 MHz	0901.5011.x
AMP590033H	2 W Amplifier Module 5 ... 900 MHz	0901.5001.x
AMP5170033	2 W Amplifier Module 5 ... 1700 MHz	1401.5011.1
AMP5220031	1 W High Dynamic Amplifier Module 5 ... 2200 MHz	1005.5101.x
AMP018032	1.3 W High Linearity Amplifier Module 100 kHz...80 MHz	1002.5701.x
AMP5270026	400 mW High Dynamic Amplifier Module 5 ... 2700 MHz	1005.5201.x
AMP10850026	400 mW Ultra Wideband Amplifier Module 10 ... 8500 MHz	1305.5001.x
LNA1080014	400 mW Low Noise Amplifier Module 10 ... 800 MHz	0901.5501.x

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