

AMP101800030-T

1 W Ultra-Wideband Linear Amplifier Table Top Unit, 10 ... 18000 MHz

Features

- output power +31 dBm typ.
- high OIP3 +40 dBm typ.
- high dynamic
- self test function
- temperature monitor
- passive cooling
- AC mains supply

Applications

- EMC pre-amplifier
- instrumentation and measurement
- broadband communications
- military and aerospace
- software defined radio (SDR)
- research and development
- remote sensing



At a Glance

AMP101800030-T from Becker Nachrichtentechnik is a compact ultra-wideband amplifier device in 50 ohms technology. The robust electrical and mechanical design provides 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. The RF connectors are located on the front panel of the device. The presence of AC mains power is indicated by a LED on the front panel.

Special Features

Using modern semiconductor technologies give the amplifier module high dynamic properties over a wide operating bandwidth. Due the ultra-wide operation bandwidth the amplifier is suitable in military and aerospace software radio applications. An internal self-test function monitors current consumption and module temperature.

Rugged Design

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

High Dynamic

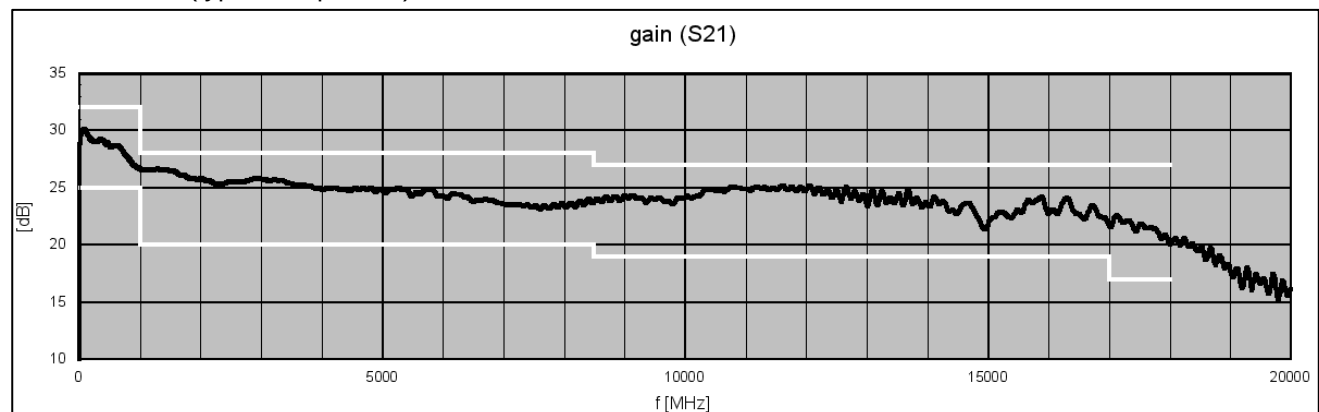
The low noise figure combined with the high output compression gives the amplifier device excellent dynamic range properties.

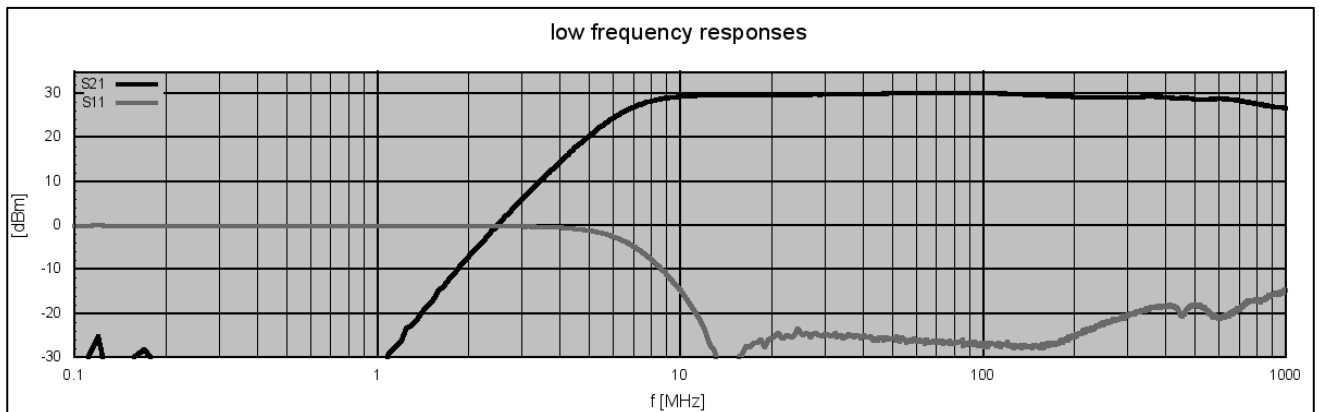
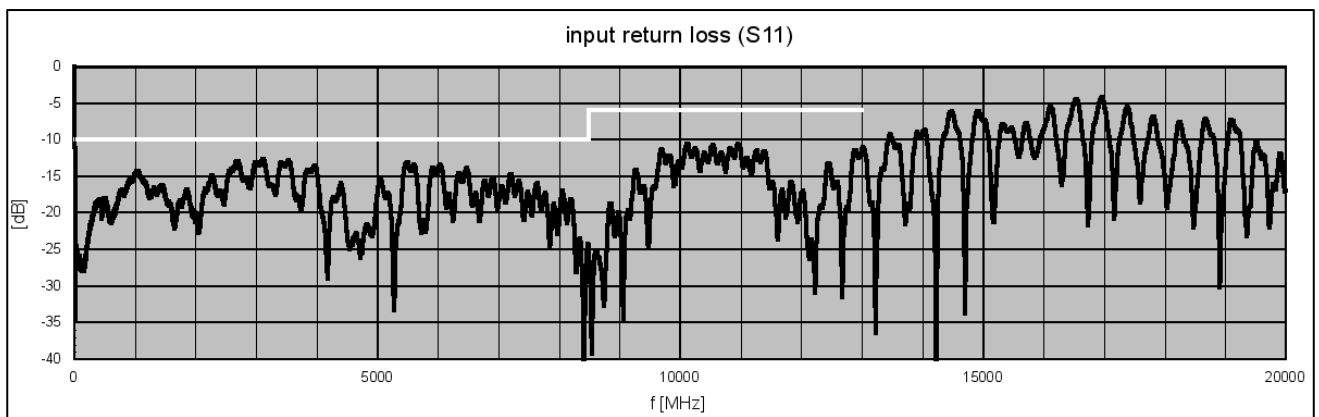
RF Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{IN}/Z_{OUT}		50		Ω	
frequency	f_{LOW}			10	MHz	
	f_{HIGH}	18000			MHz	
linear gain	S_{21}	25	28	32	dB	$f \leq 1 \text{ GHz}$
	S_{21}	20	25	28	dB	$1 \text{ GHz} < f \leq 8.5 \text{ GHz}$
	S_{21}	19	24	27		$8.5 \text{ GHz} < f \leq 17 \text{ GHz}$
	S_{21}	17	21	27	dB	$f > 17 \text{ GHz}$
input return loss	S_{11}		-15	-10	dB	$f \leq 8.5 \text{ GHz}$
	S_{11}		-11	-6	dB	$8.5 \text{ GHz} < f \leq 13 \text{ GHz}$
			-6			$f > 13 \text{ GHz}$
reverse isolation	S_{12}		-70		dB	
3 rd order intercept	$OIP3^{(1)}$	+35	+40		dBm	$f \leq 5 \text{ GHz}$
	$OIP3^{(1)}$	+31	+36		dBm	$5 \text{ GHz} < f \leq 12 \text{ GHz}$
saturation power	P_{SAT}	+29	+32		dBm	$f \leq 5 \text{ GHz}, P_{IN} = +15 \text{ dBm}$
	P_{SAT}	+27	+29		dBm	$5 \text{ GHz} < f \leq 17 \text{ GHz}, +15 \text{ dBm}$
	P_{SAT}		+26		dBm	$f = 18 \text{ GHz}, P_{IN} = +15 \text{ dBm}$
1 dB compression	P_{1dB}	+24	+28		dBm	$f \leq 12 \text{ GHz}$
	P_{1dB}		+28		dBm	$f \geq 12 \text{ GHz}$
noise figure	NF		5	8	dB	$0.5 \text{ GHz} \leq f \leq 17 \text{ GHz}$
input power	P_{IN}			+15	dBm	no damage
DC voltage	U_{DC}			15	V	
ESD discharge resistor	R_{ESD}		4.7		k Ω	RF ports
RF connectors	X_{RF}	N female				

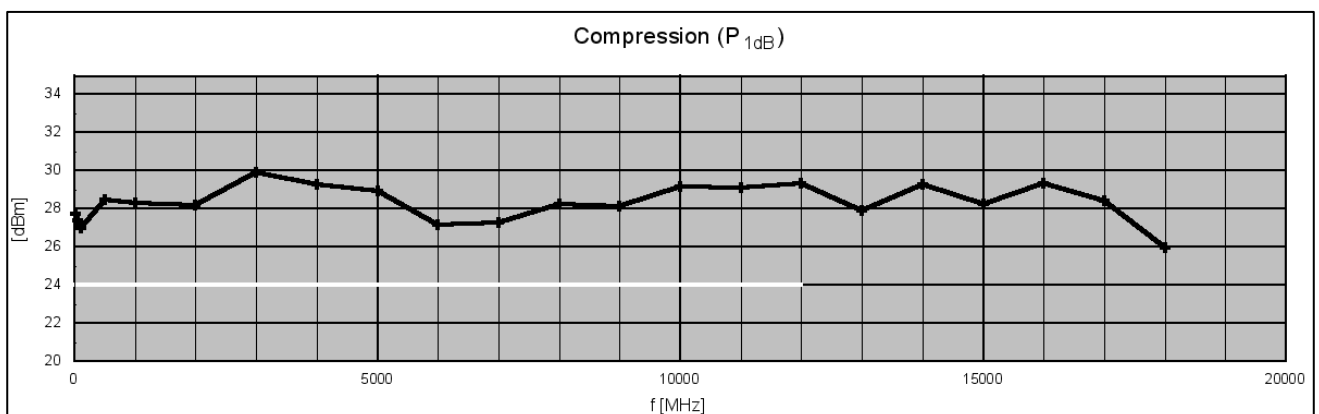
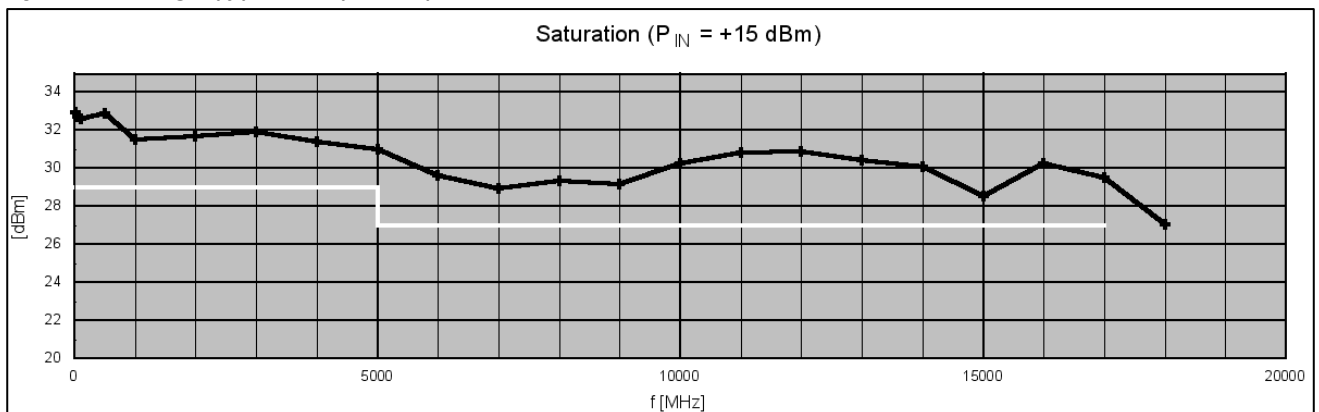
Note 1: Tested at 2x +17dBm, $\Delta f = 2 \text{ MHz}$ **Common Specification**

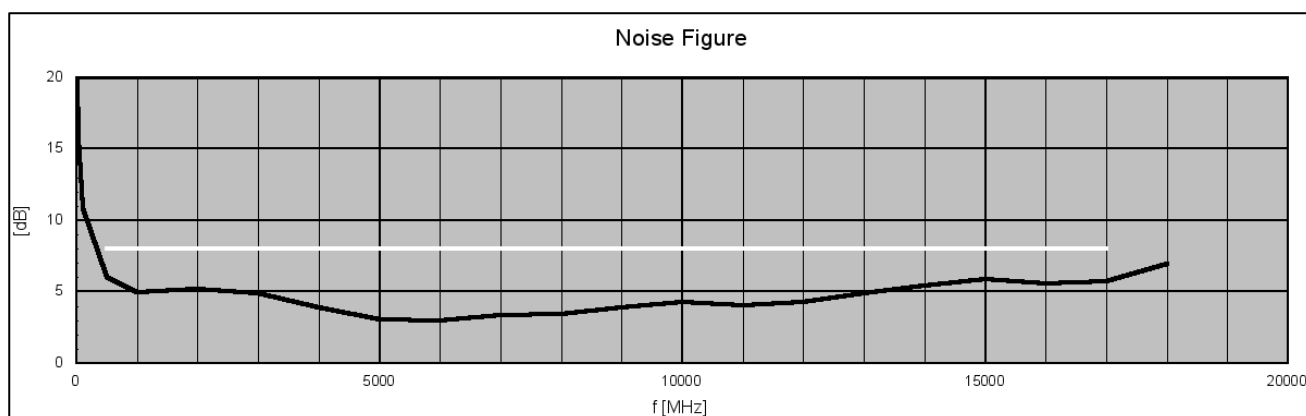
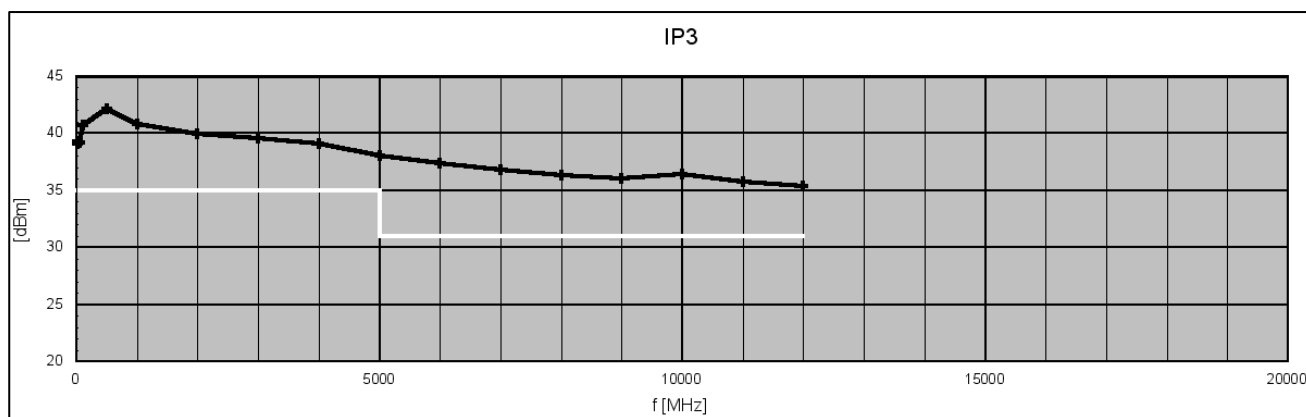
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
power supply	U_{AC}	90		260	V	AC, 50 ... 400 Hz
power consumption	P_{AC}		15		W	
power socket	X_{AC}	IEC-60320 C14				country specific power cable
dimensions	W x H x D	approx. 115 x 100 x 190			mm	without connectors
weight	m		1.5		kg	
operating temp. range	T_o	+5		+40	$^{\circ}\text{C}$	housing surface
storage temp. range	T_s	-40		+70	$^{\circ}\text{C}$	
ordering information	AMP101800030-T			2106.5003.1		

S-Parameters (typical responses)



Dynamic Range (typical responses)

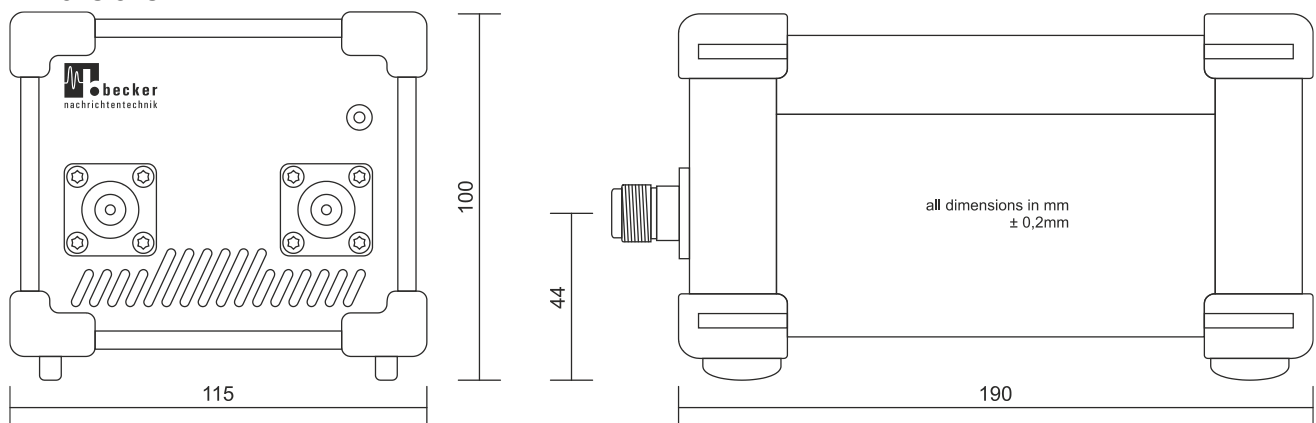




Appearances



Dimensions



Related Products

Product	Description	P/N
AMP20280035B-T	4.5 W Wideband Amplifier Table Top Unit 20 ... 2800 MHz	1209.5203.1
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
AMP5220031-T	1 W High Dynamic Range Amplifier Table Top Unit 5 ... 2200 MHz	1005.5103.1
AMP5270026-T	400 mW High Dynamic Amplifier Table Top Unit 5 ... 2700 MHz	1005.5203.1
AMP018032-T	1.3 W High Linearity Table Top Unit 100 kHz...80 MHz	1002.5703.1
LNA1080014-T	400 mW Low Noise Amplifier Table Top Unit 10 ... 800 MHz	0901.5503.1
AMP40100034-R	4 W Wideband Amplifier 19" Device 40 ... 1000 MHz	1209.5002.1
AMP5220031H-R	1 W High Dynamic TX Amplifier 19" Device 5 ... 2200 MHz	1404.5102.1
AMP101800030-R	1 W Ultra-Wideband Linear Amplifier 19" Device 10 ... 18000 MHz	2106.5002.1
AMP20280035B-R	4.5 W Wideband Amplifier 19" Device 20 ... 2800 MHz	1209.5202.1
AMP590033H-R	2 W Power Amplifier 19" Device 5 ... 900 MHz	0901.5002.1
AMP018032-R	1.3 W High Linearity Amplifier 19" Device 100 kHz ... 80 MHz	1002.5702.1