

4 W High Linearity, Full Redundant, UHF Wideband Amplifier Module 50 ... 1300 MHz

Features

- high linearity
- peak power +36 dBm typ.
- open/short stable
- VLF suppression
- optical supply and status indication
- wide supply range 11.5 V...28 V
- fail-safe, redundant design
- reverse polarity protection
- status signalling contact (floating)

Applications

- FM, IBOC, CATV, DVB-T
- LTE BD20 / BD28, EGSM
- ISM434, ISM868
- radio microphones
- in ear monitoring



At a Glance

The compact high dynamic wideband amplifier module AMP50130036L is designed for multi signal applications where high adjacent channel suppressions are required. The excellent dynamic of the AMP50130036L offers low noise figure in combination with a large signal operation capability with peak power levels of up to 4 watts.

Highest Reliability

Power supply and amplifiers stages of the AMP50130036L are duplicated. Therefore, it has an excellent reliability. A possible defect does not lead to total loss of function.

Robust Design

AMP50130036L features a rugged aluminum milling housing. The characteristics of the amplifier allow the use in demanding areas of application. The housing includes holes for mounting on a heat sink.

Built-in Test

For monitoring purposes, module temperature and operating currents of the power amplifier stages are monitored. If the module temperature or the supply current is not within the specified range, the error will be indicated by a LED "FAIL". For remote monitoring purposes of the amplifier status, the module offers floating switching contacts.

RF Specification

Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
impedance	Z_{IN}/Z_{OUT}		50		Ohms	
low frequency	f_{MIN}		30	50	MHz	
high frequency	f_{MAX}	1200	1300		MHz	
gain	S_{21}	33	34.5	36	dB	
input return loss	S_{11}		-14	-9	dB	
output return loss	S_{22}		-10	-6	dB	
reverse isolation	S_{12}		-45	-40	dB	
3 rd order intercept	OIP3	+47	+50		dBm	$f \leq 1000$ MHz, Note 1
2 nd order intercept	OIP2	+60	+75		dBm	Note 2
1 dB compression	P_{1dB}	+34	+36		dBm	$f \leq 1000$ MHz, PEP
output power	P_{out}			+30	dBm	RMS
noise figure	NF		3	5	dB	
input power	P_{in}			+5	dBm	no damage
RF connectors		SMA female				

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

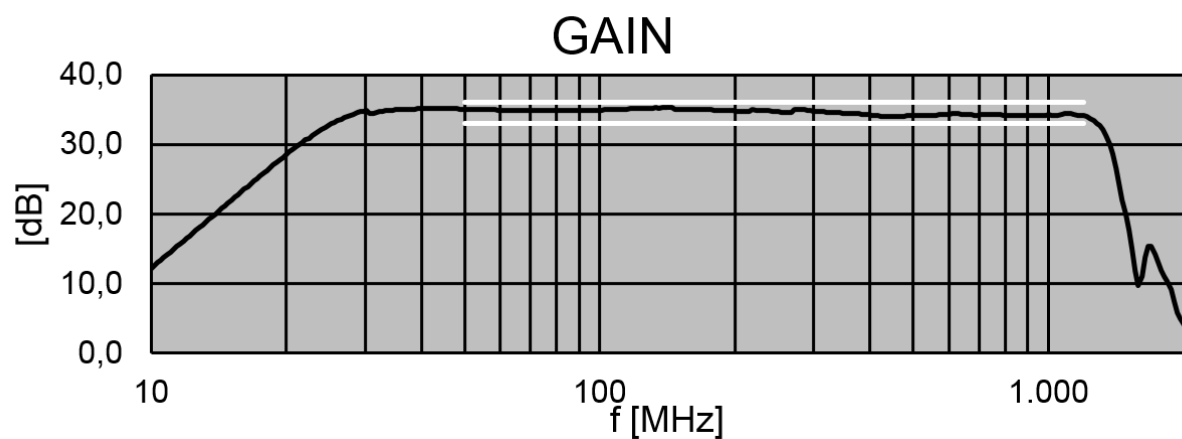
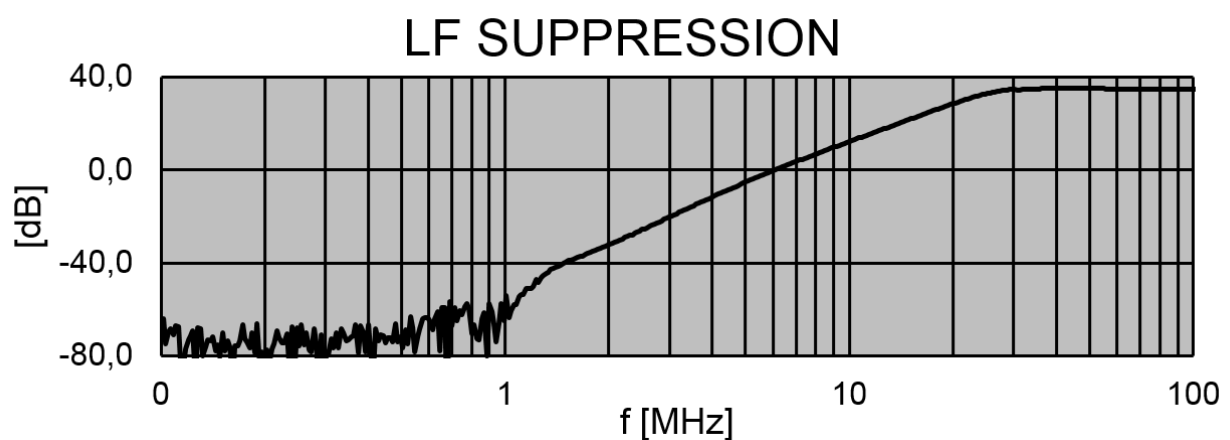
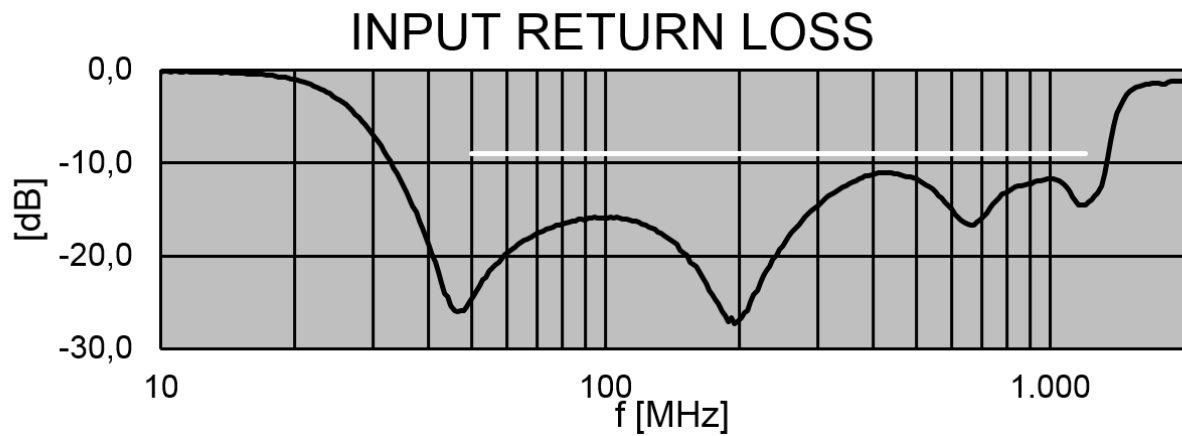
Note 2: Tested at $P_{out} 2 \times +25$ dBm; $f = 49/51; 99/101; 249/251; 499/501; 890/940; 1050/1150$, in-band products only

Common Specification

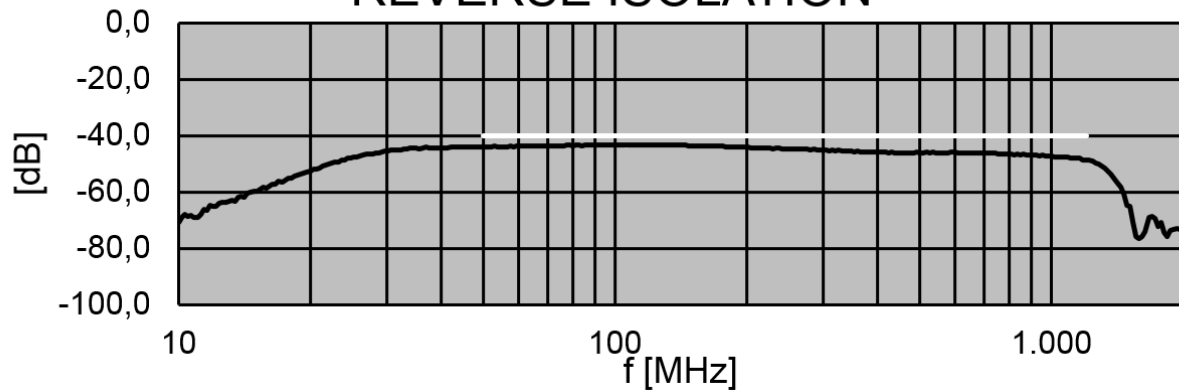
Parameter	Symbol	Min.	Typ.	Max.	Unit	Condition
supply voltage	U	11.5		28	V	DC
current consumption	I_{12V}		1450		mA	@ 12 V DC
dimensions	W x H x D	approx. 105 x 19.5 x 90			mm	without connectors
weight	m		350		g	
current threshold	I_{thres}		± 20		%	failure if current consumption exceeds
temperature threshold	T_{thres}		+80		°C	failure if temperature exceeds, hysteresis approx. 5 K
failure signalling		STATUS LED				gn / rd
		floating relay contacts				
switching current	I_{SW}			1	A	DC
switching voltage	U_{SW}			42	V	DC
recommend plug	X	Würth WR-TBL3641-5-3.5				5 pole; included accessories
operating temp. range	T_{AMB}	0		+55	°C	ambiance
	$T_{HOUSING}$			+75	°C	housing (Note 1)
storage temp. range	T_s	-40		+70	°C	
recommend heat sink		SK510/111,5/SA				Fischer Elektronik
fixed with		4x M3x16 + washer + spring washer				
ordering information		AMP50130036L		1602.5001.4		

Note 1: guaranteed under the following conditions:

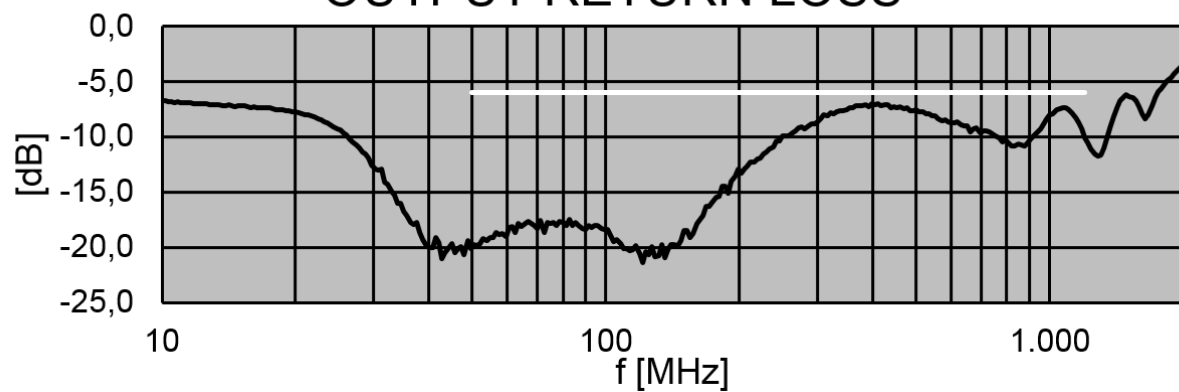
- a heat sink according specification (length ≥ 110 mm) is used
- the AMP module is mounted on the heat sink with sufficient temperature coupling
- the cooling fins are in vertical position
- air convection is ensured by a distance of at least 40 mm above and below the heatsink
- no other source of heat is radiating to the amplifier or heatsink
- the ambiance temperature is within the specified range

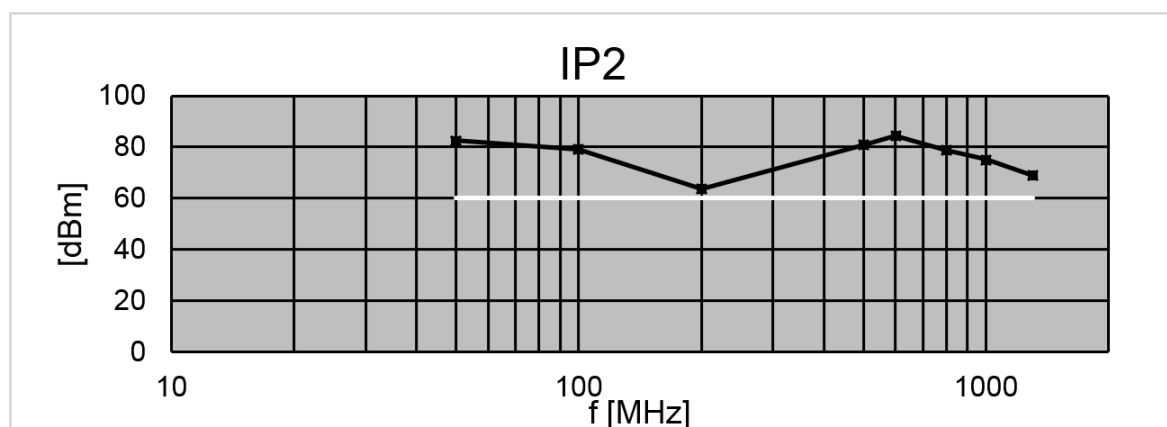
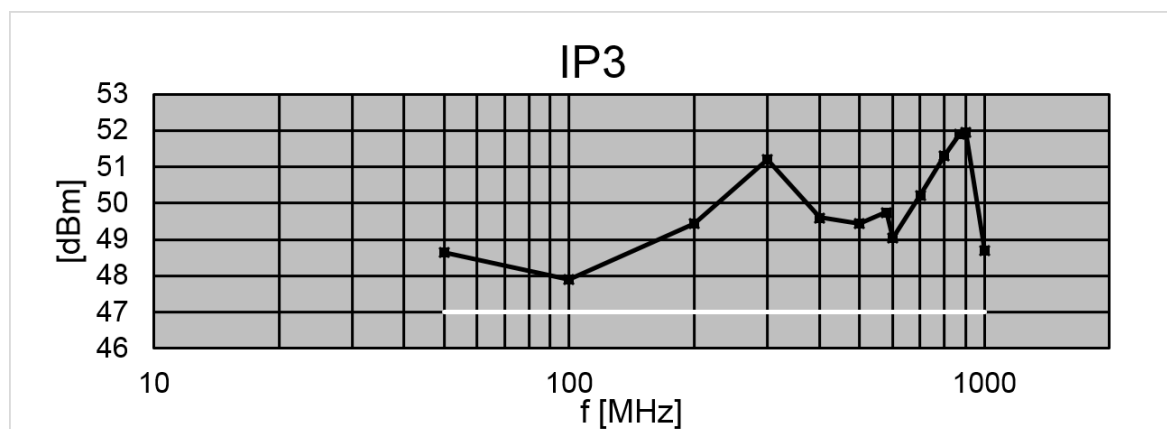
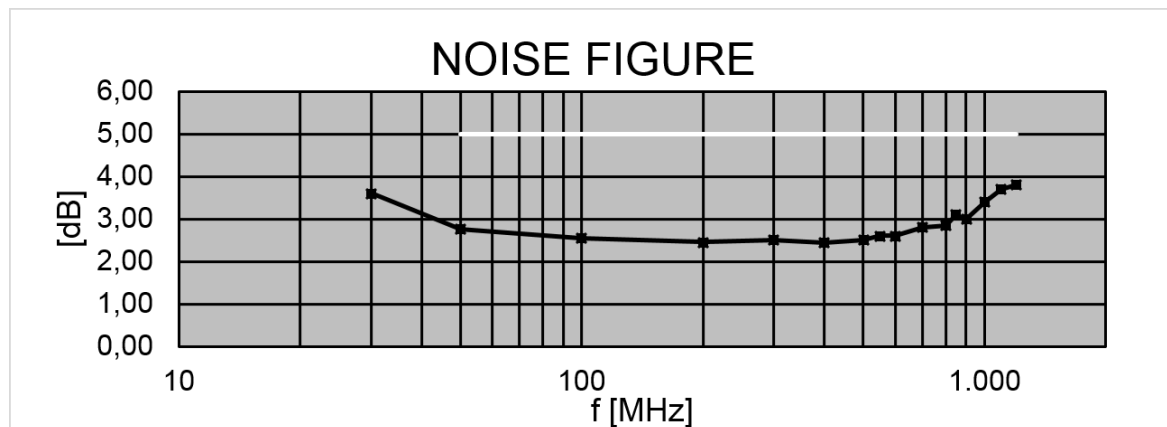
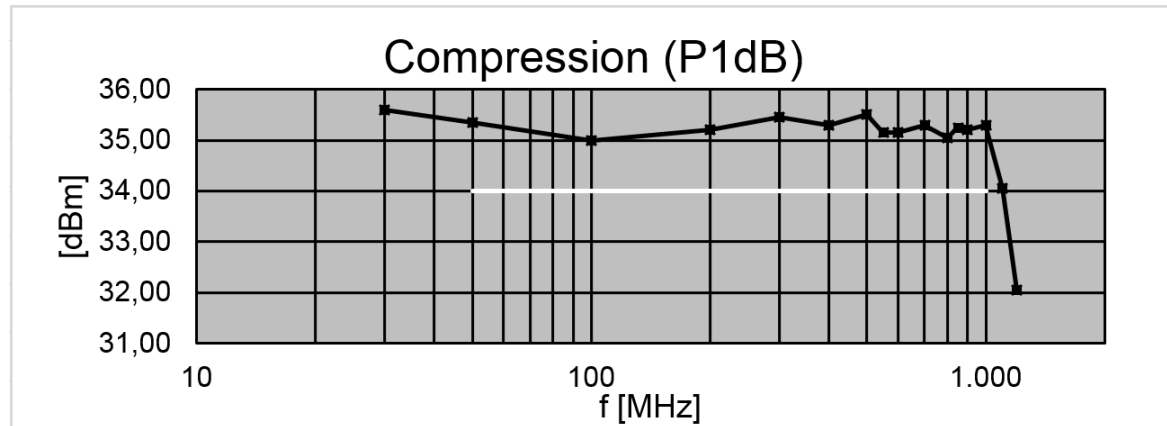
S-Parameters (typical responses)

REVERSE ISOLATION

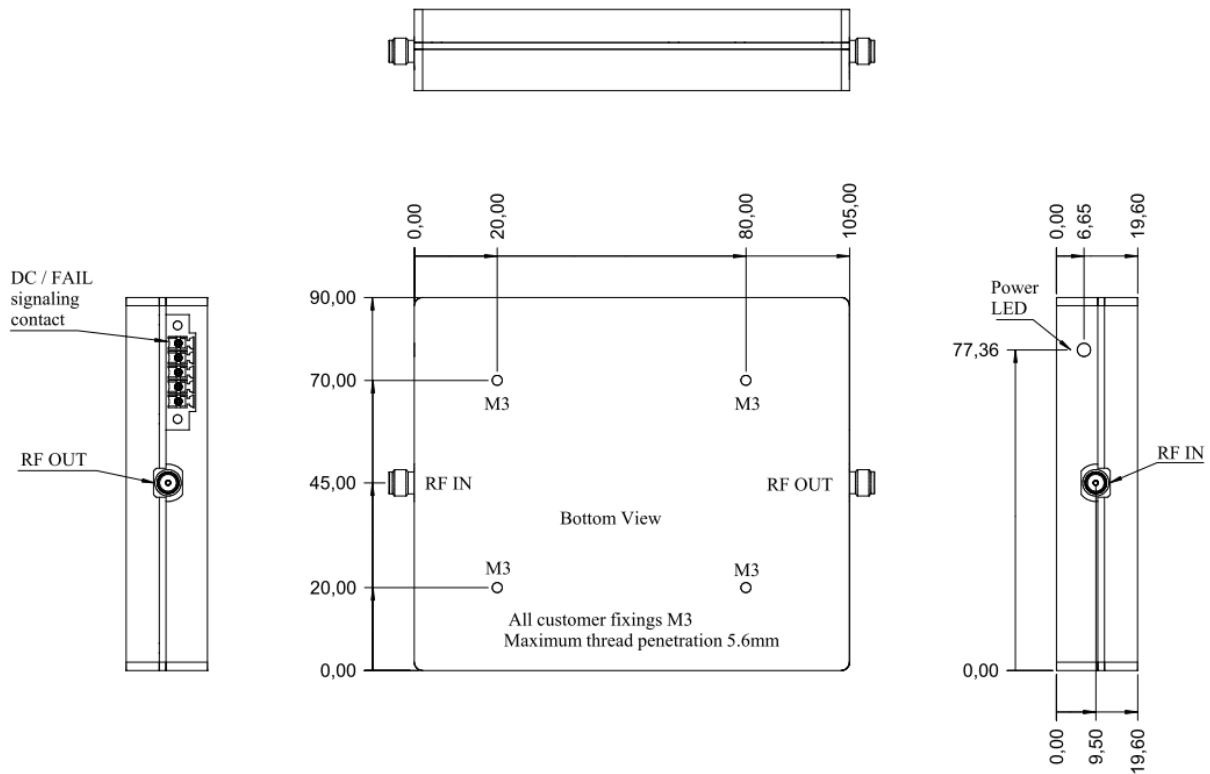


OUTPUT RETURN LOSS

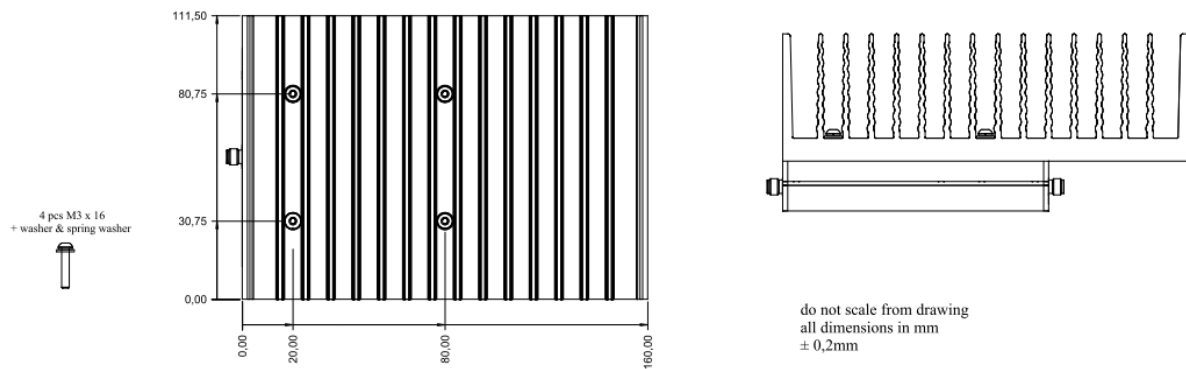


Dynamic Range (typical responses)

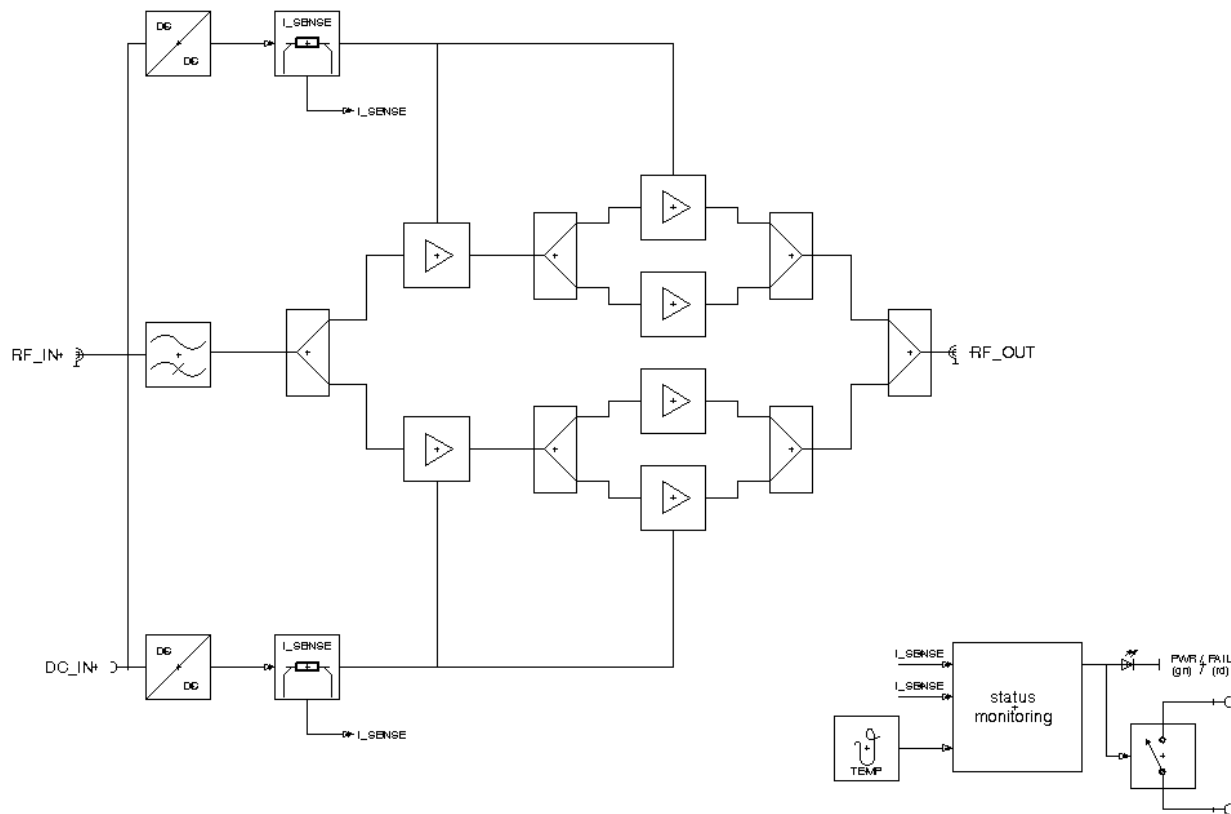
Dimensions



Mounting Example

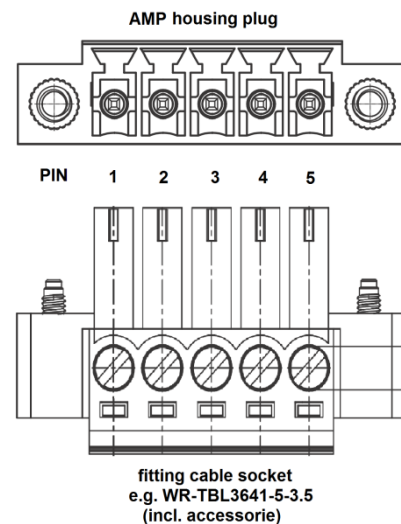


Block Diagram



PIN Assignment (Supply voltage / STATUS-signalling contact)

PIN	Designation	Remark
1	GND	ground
2	+UB	DC supply voltage
3	REL_COM	relay common
4	REL_OK	OK when closed
5	REL_FAIL	failure when closed



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.

