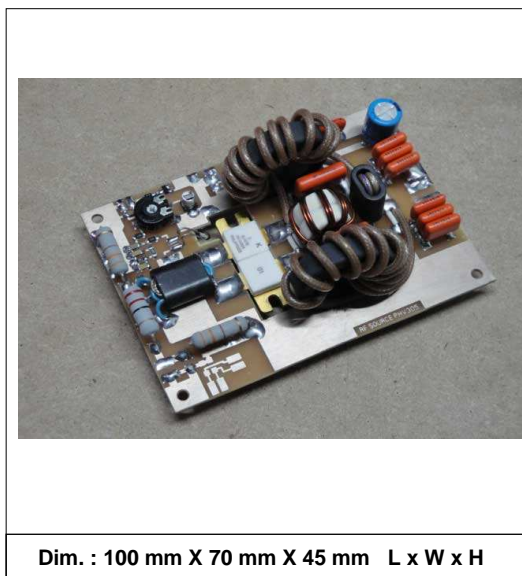


300W Linear Amplifier

Designed for HF - VHF Radio bands this Linear Amplifier incorporates transmission line transformers technology and MOS-FET device to enhance ruggedness and reliability.

- **1.50 – 54.00 MHz**
- **Input / Output : 50 Ohm**
- **Pout : 300 Watt**
- **Class AB (see text)**
- **Efficiency : 55% typical**
- **Silver Plated PCB**
- **Cover 50 MHz band @ 250 W**
- **Devices BLF278 or equivalent**



Dim. : 100 mm X 70 mm X 45 mm L x W x H

ABSOLUTE MAXIMUM RATINGS (Device Flange T = 70 °C)

Vdd	Drain Supply Voltage	52	Vdc
Idd	Drain Supply Current	14.0	Amp.
SWR	Load Mismatch (all phase angles, Tc=40°C, Id=10A)	3:1 see text	
Temp.	Max Storage Temperature Range	100 Degrees	C

ELECTRICAL SPECIFICATIONS (Heatsink T. = 45 °C, 50Ω loaded, Vdd = 48 V, 300 W,-3db ATT)

Characteristics	Min	Typ.	Max
Frequency (MHZ)	1.50		54.00
Output Power (Watt)		300 @ 1.5 – 30 250 @ 50MHz	
Input Power (Watt)	2.20		5.40
Power Gain (Watt)		18	
Current Drain (Amp.)			12.8
Efficiency (%)		55 @ 1.5 - 30 45 @ 50 MHz	
Input VSWR	1.3 : 1		1.7 : 1

GAIN & DRAIN Current table (Idq 1.0 Amp. + ON BOARD 3dB ATT, 300W OUT or 250W @ 54MHz)

Frequency MHz	RF INPUT Watt	GAIN	CURRENT
1.60	2.20	21.4	9.70
3.50	3.80	19.0	9.90
7.00	3.70	19.0	12.70
14.00	4.80	17.9	12.70
18.00	4.20	18.6	12.90
28.00	4.80	18.0	12.90
54.00	5.40	16.7	12.20

PHV305 is an RF Power Amplifier designed for the HF Broadcast or Ham Radio Bands transmitters or power amplifiers.

PHV305's output power is 300 Watt P.E.P. minimum at 50 Ohm load in the range of 1.5 – 30.0 MHz and 250 Watt P.E.P. in the range of 30.0 – 54.0 MHz.

This PA amplifies the input RF signal typically by 18dB, note that there is on board a 3db attenuator that can be removed in order to increased the gain by 3db it operates at 50V / 13A max power supply. The operating class is AB and the quiet current is 1.0A.

The Amplifier consists of one Push-Pull amplifying stage with active component a MOSFET BLF278 or MRF151G or equivalent.

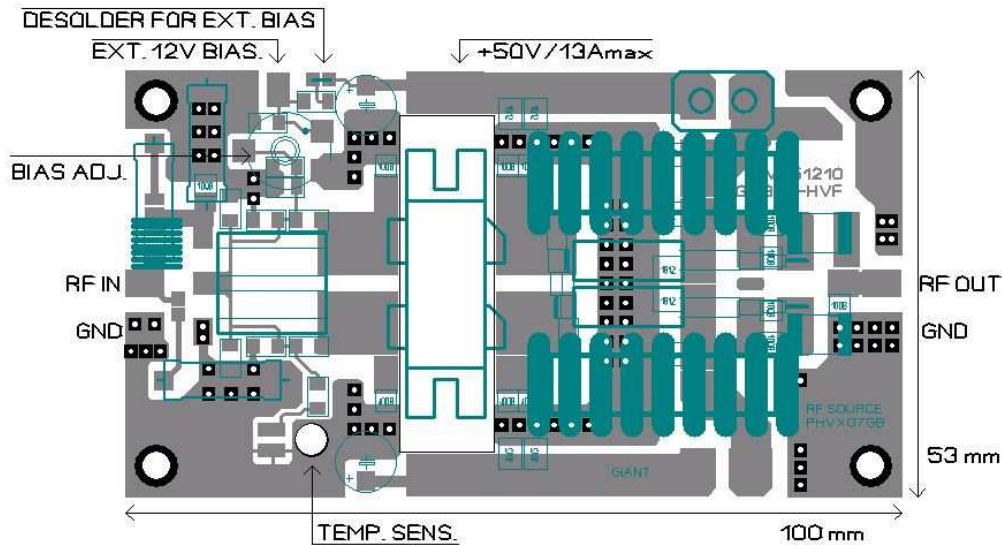
Input – output resistance is 50 Ohm achieved by wide band RF transformers.

This amplifier module is supplied without heat sink and it has to be mounted on one in order to operate properly.

A heat sink capable to handle the heat dissipation of this PA will have a factor of 0.1 °C/W or better (approximately 35X12X4cm aluminum heat sink) plus forced air cooling. Also note that the PCB needs to be mounted on the heat sink.

Use all the four available holes for this purpose so every hole which is also a GND point will be directly grounded.

The Power FET needs to be mounted on the heat sink using a minimum quantity of thermal silicone compound (recommended Dow Corning 340 heat sink compound or equivalent).



Note1:

Due to the High gain of this amplifier, a typical shielding between final stage and any driver/low power stage is required.

Note2:

High driver level can damage this amplifier, Max input level is + 3dB referred to the typical input power.

Note3:

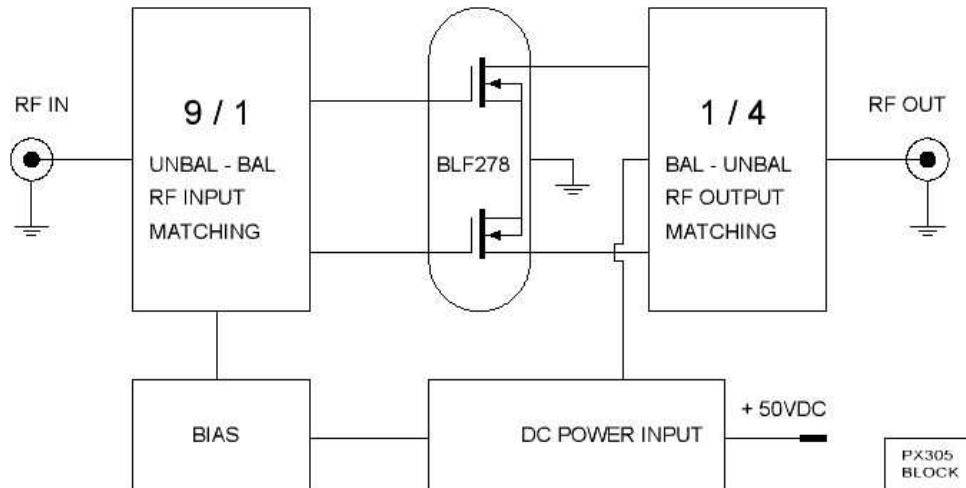
When forced air cooling is utilized, it is advisable to install an over temperature cut-off switch on the heat sink that is wired in series with the power supply input. The temperature rating of the cut-off switch should be slightly higher than the maximum temperature of the heat sink during normal operation with the fan. Therefore, the switch will remove power from the unit if the temperature of the heat sink increases due to a failure of the fan (or other causes).

Note4:

Use a thin layer of thermal compound no more than 0.05 mm thickness.

Warning:

Failure to use a proper heat sink will cause the transistors to burn out. This type of failure is not covered by warranty. This product can be ordered with a custom heat sink. Please contact factory for more information.



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