

## RF BROADBAND AMPLIFIER HF – VHF

- Frequency Range 1.8 ÷ 150 MHz
- 3.5 – 5 W Input ( @ 500 W Carrier Out )
- S.W.R. input ≤ 1.1:5
- S.W.R. Output ≤ 50:1
- Input - Output Impedance 50 Ω
- FM - CW – SSB - DIGITAL Mode
- Vdd 45 - 50 Volt
- Idd ( @ 500 W RF Out, 48.5 Volt ) 13 - 15 A
- Max Temperature Copper Base Plated 70°C
- Bias Temperature Compensated
- Adjustable Bias ( from C class to A class )
- High efficiency
- H 24 Service ( with adequate ventilation )
- HIGH Quality
- High stability
- 9.5 mm thickness Copper Base Plated



Dimension : 135 X 50 X 50 mm  
WEIGHT ± 700 g.

### ABSOLUTE MAXIMUM RATING ( T case = 25 °C )

Symbol		Value	Unit
$V_s$	Drain Voltage Supply	50	Vdc
$I_s$	Supply Current ( total )	20	A.dc
VSWR	Load Mismatch ( all phase angles, $T_c = 25^\circ\text{C}$ @ 500 W )	50:1	
$T_{bp}$	Base Plate Operating Temperature	70	°C
$T_{stg}$	Storage Temperature Range	- 20 ÷ + 70	°C

### ELECTRICAL SPECIFICATIONS ( T case = 40° C, 50 Ω loaded, $V_s = 48.5\text{ V}$ , $I_A = 13 - 15\text{ A}$ , $IDQ = 0.8\text{ A}$ total )

**Dynamic test**  $V_s = 48.5\text{ V}$ ,  $IDQ = 800\text{ mA}$  ( total ), Copper Base Temperature = 35°C

( THE DATA ARE ONLY INDICATIVE AND MAY VARY FROM A PALLET PALLET )

Freq. MHz	Vdd	P. In Watt	P. Out Watt *	current c.	F2	F3	Gain dB	Efficiency
1.8	48.5	5	500	13.5				
3.2	48.5	5	500	14.5				
7.2	48.5	3.2	500	13.3				
10.5	48.5	3	500	14.2				
14.2	48.5	3	500	14.5				
18.2	48.5	3.5	500	15				
24.1	48.5	3.5	500	15				
29	48.5	3.5	500	14.8				
50.1	48.5	5.8	500	14.9				
70.1	48.5	5	500	14.5				
144	48.5	5	500	12.8				

\* TOTAL

Italab Communications  
via Casale 3/a, cap. 20144 Milano ( Italy )  
Phone: 0039 02 90389417 – Fax : 0039 02 23168389  
mail: [info@italab.it](mailto:info@italab.it) web site : [www.italab.it](http://www.italab.it)

## CARATTERISTICHE GENERALI

Progettato e sviluppato per applicazioni professionali, questo amplificatore a Tecnologia Mosfet garantisce una potenza di uscita su 50Ω di 500 Watt su tutte le bande Radioamatoriali comprese tra 1.8 e 150 MHz.

La sua alta efficienza permette un considerevole risparmio di energia e una riduzione delle dimensioni nelle applicazioni a lui dedicate; non meno importante è la riduzione di dimensioni e peso sia del radiatore che dell'alimentatore.

Allo stato dell'arte, questo è senza dubbio il miglior prodotto con un ottimo rapporto prezzo / potenza / qualità.

Ultimo nato nella " Flotta " dei prodotti ITB, questa unità amplificatrice completa la gamma per uso Radioamatoriale, dalle caratteristiche eccezionali e tecnicamente quanto di meglio disponibile sul mercato allo stato dell'arte, l' AMP500 LBHV permette un facile assemblaggio di un completo " SSPA "(Solid State Power Amplifier) che soddisfa tutte le esigenze sia sulla gamma HF che quella VHF.

La costruzione si limita solamente a: Radiatore di calore , ventilatori, alimentatore, eventuale semplice protezione, minuterie quali scatola e connettori RF, naturalmente, visto la potenza di uscita, si consiglia l'uso di adeguato Filtro Passabasso per ogni banda in cui lo si utilizzerà .

L'utilizzatore dovrà montarlo su un dissipatore alettato capace di dissipare circa 400 W senza superare un rialzo termico di 30°C mediante ventilazione forzata.

L'alimentatore dovrà fornire una tensione ben stabilizzata di 45 - 50 Volt ed almeno 35 A. senza andare in limitazione.

La sua alta linearità lo rende idoneo all'uso in digitale.

## GENERAL DESCRIPTION

Projected and developed for professional use, this Mosfet Technology amplifier grants a 50 Ω output power of 500 watts on all HAM Radio bands between 1.8 and 150 Mhz.

Its high efficiency allows a considerable energy saving and a reduction in size of its applications; not less important is the reduction of size and weight both of the radiator that the feeder.

At state of the art, this is without a doubt the best product with an excellent power / value for money.

Latest among all products ITB, this amplifier unit completes the range for HAM Radio use, with its exceptional featuring. Technically the best available on the market at state of the art, the 'AMP500 LBHV grants an easy assembly of a complete "SSPA "(Solid State Power Amplifier) that satisfies all needs on both the HF and the VHF range.

The assembly is limited only to radiator heat, fans, power supply, any simple protection, and small items such as box and RF connectors. Obviously, since the output power, we recommend the use of a suitable low-pass filter for each band in which it will be used.

The operator must mount it on a finned heatsink to dissipate about 400 W without exceeding a temperature rise of 30 ° C by forced ventilation.

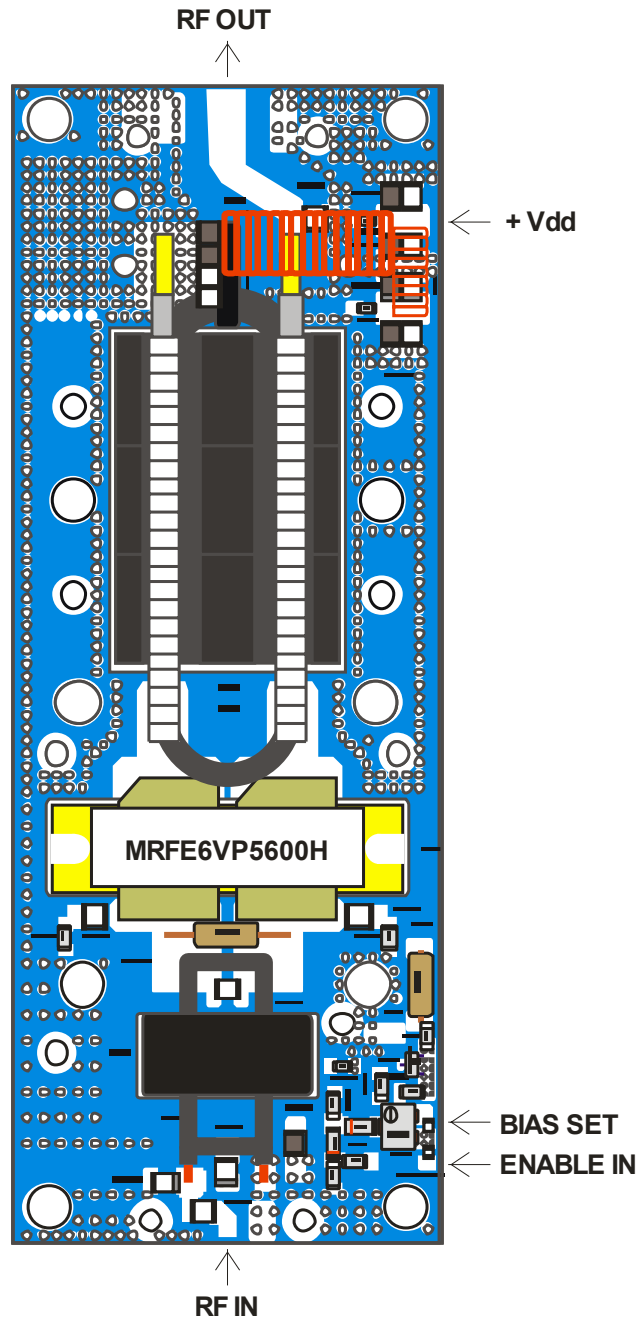
The power supply must provide a well-stabilized voltage of 45-50 volts and at least 35 A. without exceeding the limitation value.

Its high linearity makes it suitable for digital use.

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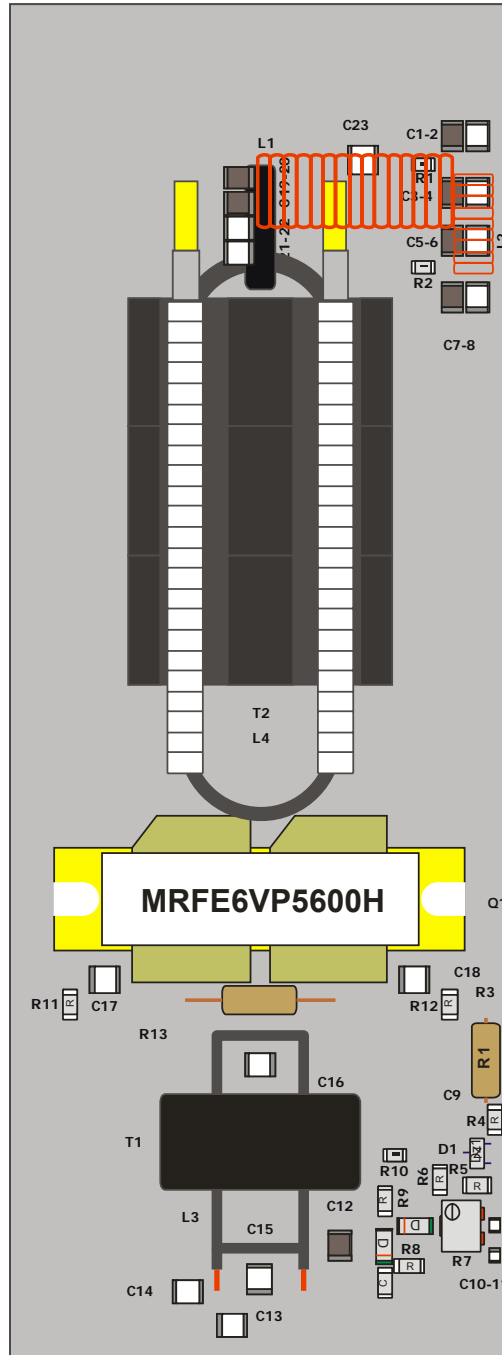
via Casale 3/a, cap. 20144 Milano ( Italy )  
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mail: [info@italab.it](mailto:info@italab.it) web site : [www.italab.it](http://www.italab.it)

## CONNECTIONS



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## COMPONENTS MAP



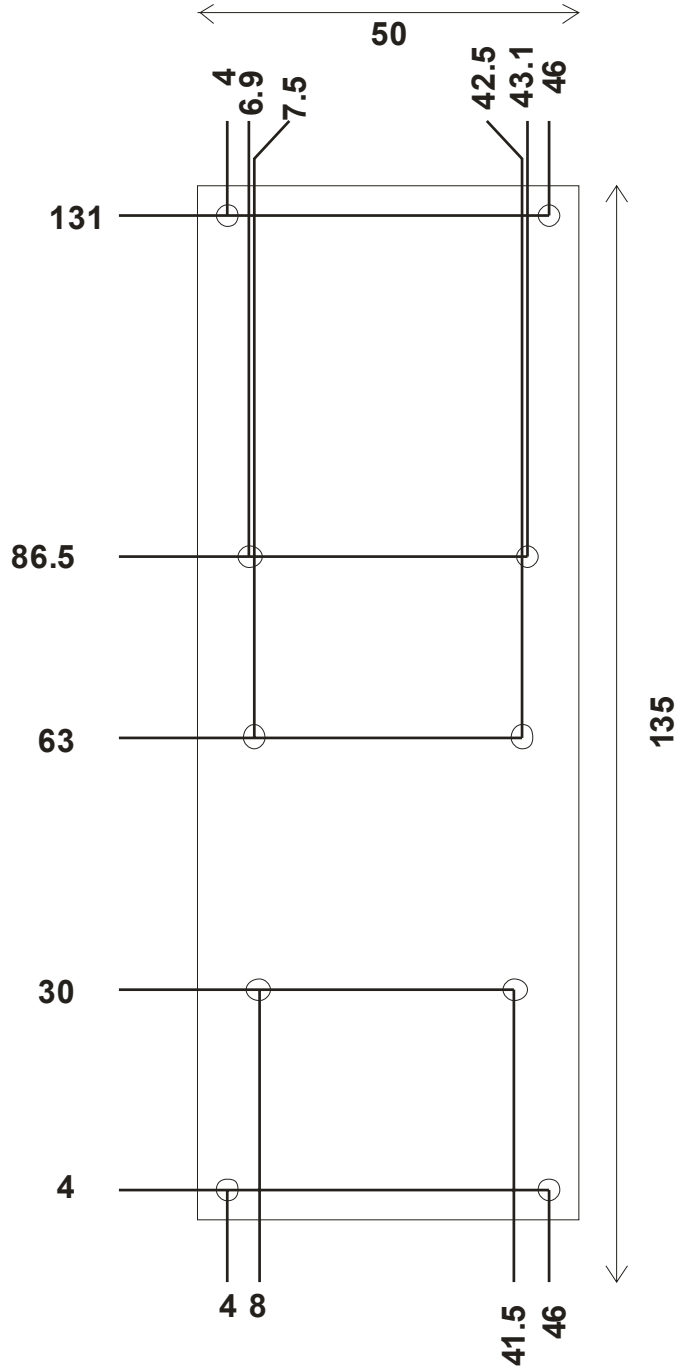
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## Components list

TITOLO			NOTE
R	1	SMD RESISTOR 1.5 K $\Omega$ , 0. 25W	
R	2	SMD RESISTOR 1.5 K $\Omega$ , 0. 25W	
R	3	SMD RESISTOR 3.3 K $\Omega$ , 1W	
R	4	SMD RESISTOR 1.5 K $\Omega$ , 0. 25W	
R	5	SMD RESISTOR 1.5 K $\Omega$ , 0. 25W	
R	6	SMD RESISTOR 1.5 K $\Omega$ , 0. 25W	
R	7	SMD TRIMMER 2.2K	
R	8	SMD RESISTOR 47 $\Omega$ , 0. 25W	
R	9	SMD RESISTOR 8.2 K $\Omega$ , 0. 25W	
R	10	SMD TERNISTOR 10 K $\Omega$	
R	11	SMD RESISTOR 47 $\Omega$ , 0. 25W	
R	12	SMD RESISTOR 47 $\Omega$ , 0.25W	
R	13	RESISTOR 39 $\Omega$ - 2 W ANTINDUCTIVE	
C	1-3-5-7	SMD CAPACITOR 2.2 $\mu$ F 100Volt	
C	2-4-6-8	ATC CAPACITOR 100B, 1Kpf - 500 Volt	
C	9	SMD CAPACITOR 2.2 $\mu$ F 100Volt	
C	10-11	SMD CAPACITOR 100KpF 100 Volt	
C	12	SMD CAPACITOR 100k pF 100 Volt	
C	13	ATC CAPACITOR 100A, 1Kpf - 150 Volt	
C	14	ATC CAPACITOR 100B, 10 pf - 500 Volt	
C	15	SMD CAPACITOR 100KpF 100 Volt	
C	16	ATC CAPACITOR 100B, 110 pf - 500 Volt	
C	17	SMD CAPACITOR 100KpF 100 Volt	
C	18	SMD CAPACITOR 100KpF 100 Volt	
C	19÷22	ATC CAPACITOR 100B, 1Kpf - 500 Volt	
C	23	ATC CAPACITOR 100B, 1Kpf - 500 Volt or similar	
D	1	SMD ZENER 7.5Volt	
D	2	SMD DIODE TYPE BAT 42	
D	3	SMD DIODE TYPE BAT 42	
L1		15 TURNS ENAMELED WIRE TYPE 1, 25MM DIAMETER OF 4.5 mm	
L2		10 TURNS ENAMELED WIRE TYPE 0.4MM DIAMETER OF 2.5 mm	
L3		ORIGINAL PART	
L4		ORIGINAL PART	
Q1		MRFE6VP5600H FREESCALE	
T1		ORIGINAL PART	original part
T2		ORIGINAL PART	original part

## Drilling on the heat sink (Quotes millimetres )

It is recommended to have a thread depth of at least 8 mm



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## recommended fan system



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