

Developed and designed for Amateur Radio applications, this amplifier incorporates micro strip and MOSFET technology to guarantee 300, 600, and above output power if appropriately coupled.

Its high efficiency allows the usage of reduced size radiators (low dissipation)

- 432 MHz
- 48 - 50 Volt
- Input / output 50 O
- $P_{out} : 300 \text{ W} \pm 1\text{dB}$
- Gain : $\geq 20 \text{ dB}$
- Class A, AB or C (adjustable)
- 4 mm thick Copper Base
- Teflon laminated pc board



Dimension: (L x W x H) 123 x 50 x 30 mm

ABSOLUTE MAXIMUM RATING (T case = 25 °C)

Symbol		Value	Unit
V_s	Drain Voltage Supply	52	V dc
I_s	Supply Current (total)	12	A dc
VSWR	Load Mismatch (all phase angles, $T_c = 40^\circ\text{C} @ 300 \text{ W}$)	5 : 1	
T_{bp}	Base Plated Operating Temperature	40	°C
T_{stg}	Storage Temperature Range	- 20 ÷ + 70	°C

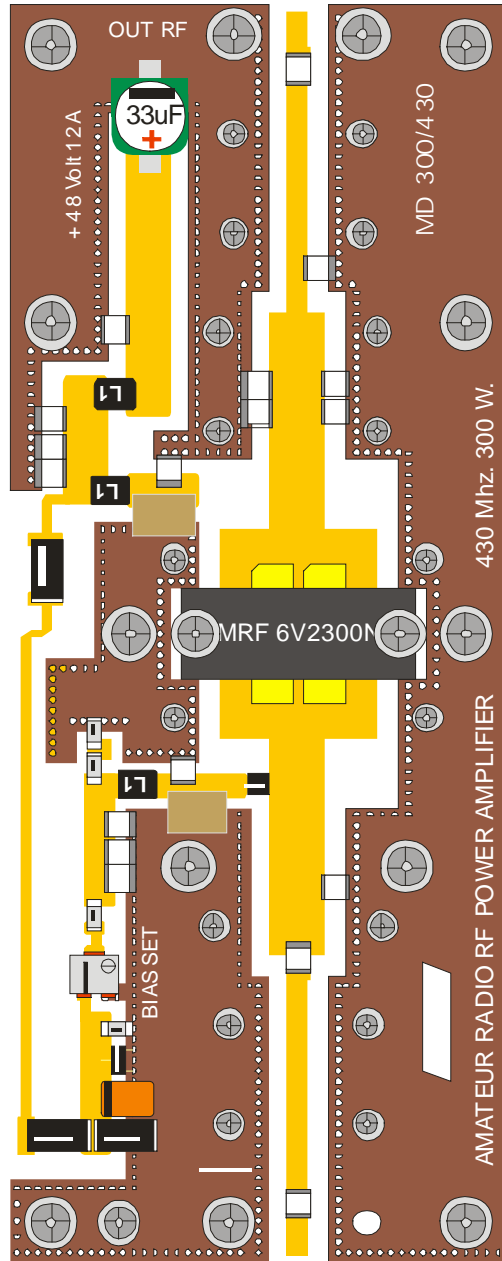
ELECTRICAL SPECIFICATIONS (T case = 38° C, 50 O loaded, Vs = 49 V, IA = 11 – 12 A , IDQ = 0.5 A total)

Characteristics	Min	Typ.	Max	Unit
Operating Frequency Range	400	430	450	MHz
Power Input	2.0	3.0	4.5	Watt
Power Gain	19	20	23	dB
Power Output (fundamental)	300	300	320	Watt
Input VSWR	1.2:1	$\geq 1.3 : 1$	1.5:1	
Insertion Phase Variation (Unit to Unit)	± 2	± 3	± 4	Degrees
Power Gain Variation (Unit to Unit)		± 1		dB
F2 Second Harmonic	- 39	- 37	- 40	dBc

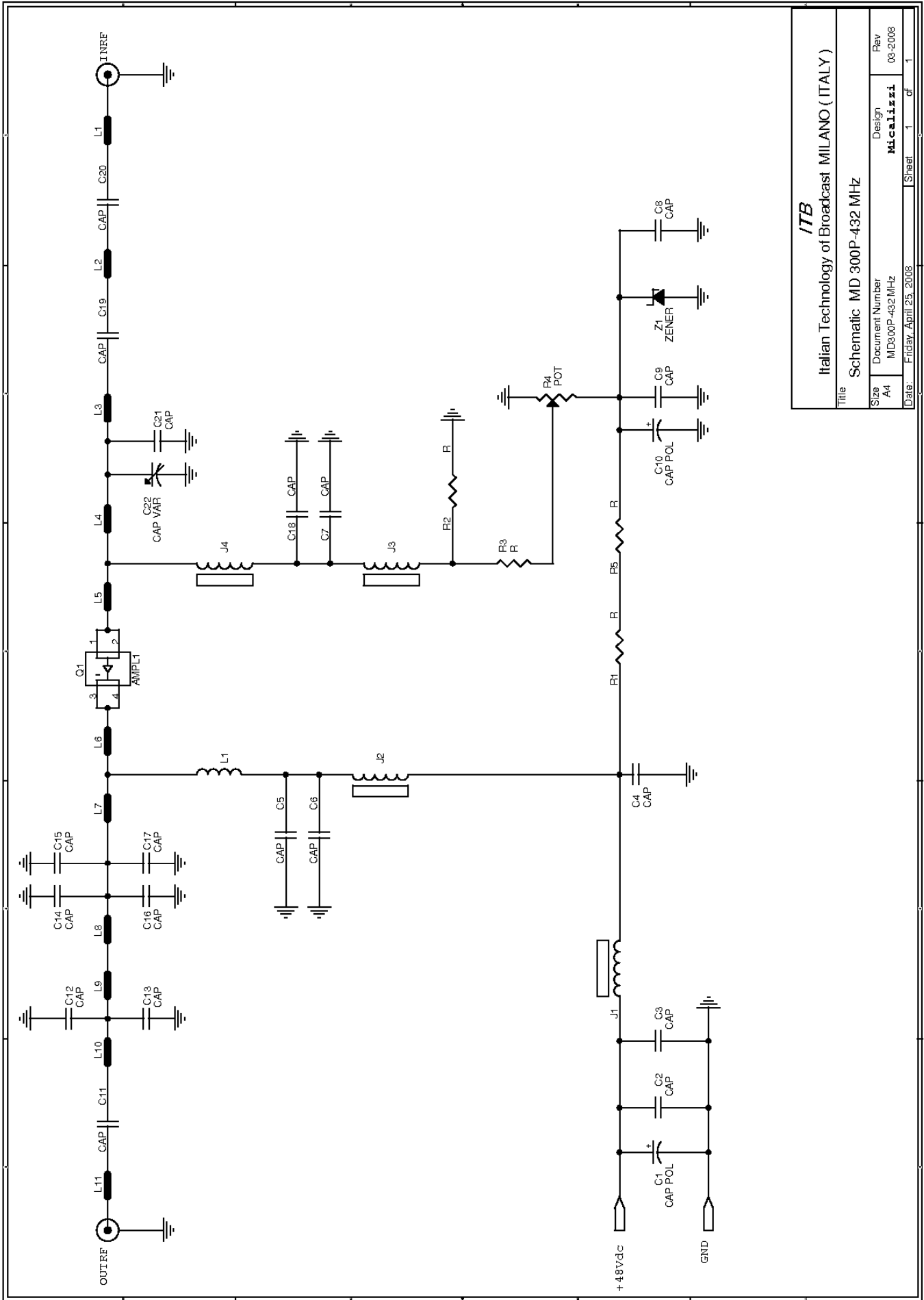
Dynamic test Vs = 49 V. , IDQ = 400mA (total) , Copper Base Temperature = 30°c

Frequency MHz	Vdc	P. In Watt	Power output Watt (total)	F2 Second Harmonic	F3 Third Harmonic	Gain dB	Efficiency
432	+49	3	300 CW	- 40 dBc	- 50 dBc	=20	= 65%

COMPONENTS



DIAGRAM



ITB	
Italian Technology of Broadcast MILANO (ITALY)	
Title Schematic: MD 300P-432 MHz	
Size A4	Document Number MD300P-432 MHz
Date: Friday, April 25, 2008	Design Micalizzi
Sheet 1	Rev 03-2008

PROTOCOL TEST

PRELIMINARIES

- 1) Put conductive paste on 300MOD432 and screw it on heatsink
- 2) Close 8 screws 3MA
- 3) Connected IN and OUT of module to RF connectors
- 4) Connected tester on Ampere
- 5) Connected OUT RF connector to good wattmeter
- 6) Connected dummy load 50 Ω
- 7) Connected Spectrum Analyzer
- 8) Adjust power supply limiter to 400 - 500 mA @ 49 Volt

We advice connected low pass filter with low insertion loss (0,15 dB or better) with -40 dB UP 450 MHz.

- 1) Connected generator to RF INPUT connector
- 2) Switch ON power supply adjusted on 49 Volt and limited on 600 mA
- 3) Check "**BIAS current**" ABOUT 400 - 500 mA, adjust it with R2 if necessary.

After all operation remove limiter on current and switch on generator (TX); adjust input to 1 W, check RF OUT and increase step by step until to obtain RF 350 Watt. We recommended don't exceeded power out, however don't exceeded 11 – 12 A. You can use 50 Volt, in this case the performance will be little bit better, but we recommended to use the module on 300 watt.

We recommended to use a good blower on the dissipator, to have on the Fet no more than 45° C.

The Fet must be protected from R.O.S., we advice to make PCBord to obtain 5 negative Volt to connected on PIN "INHIBIT"; we advice a threshold of -10 dB @ 300 Watt out.