[10 WATTS HF LINEAR AMPLIFIER USING IRF530 FOR 20M]

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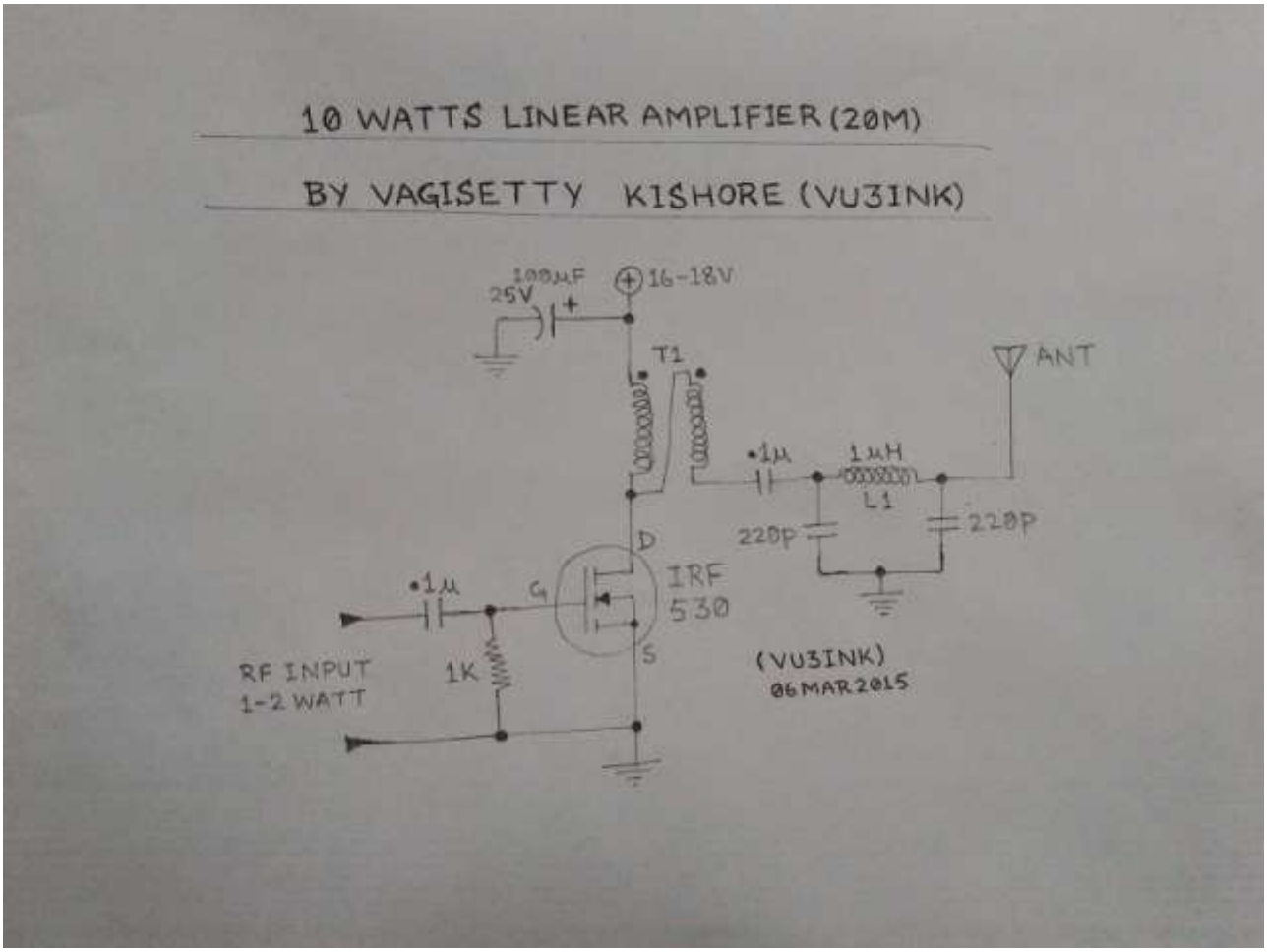
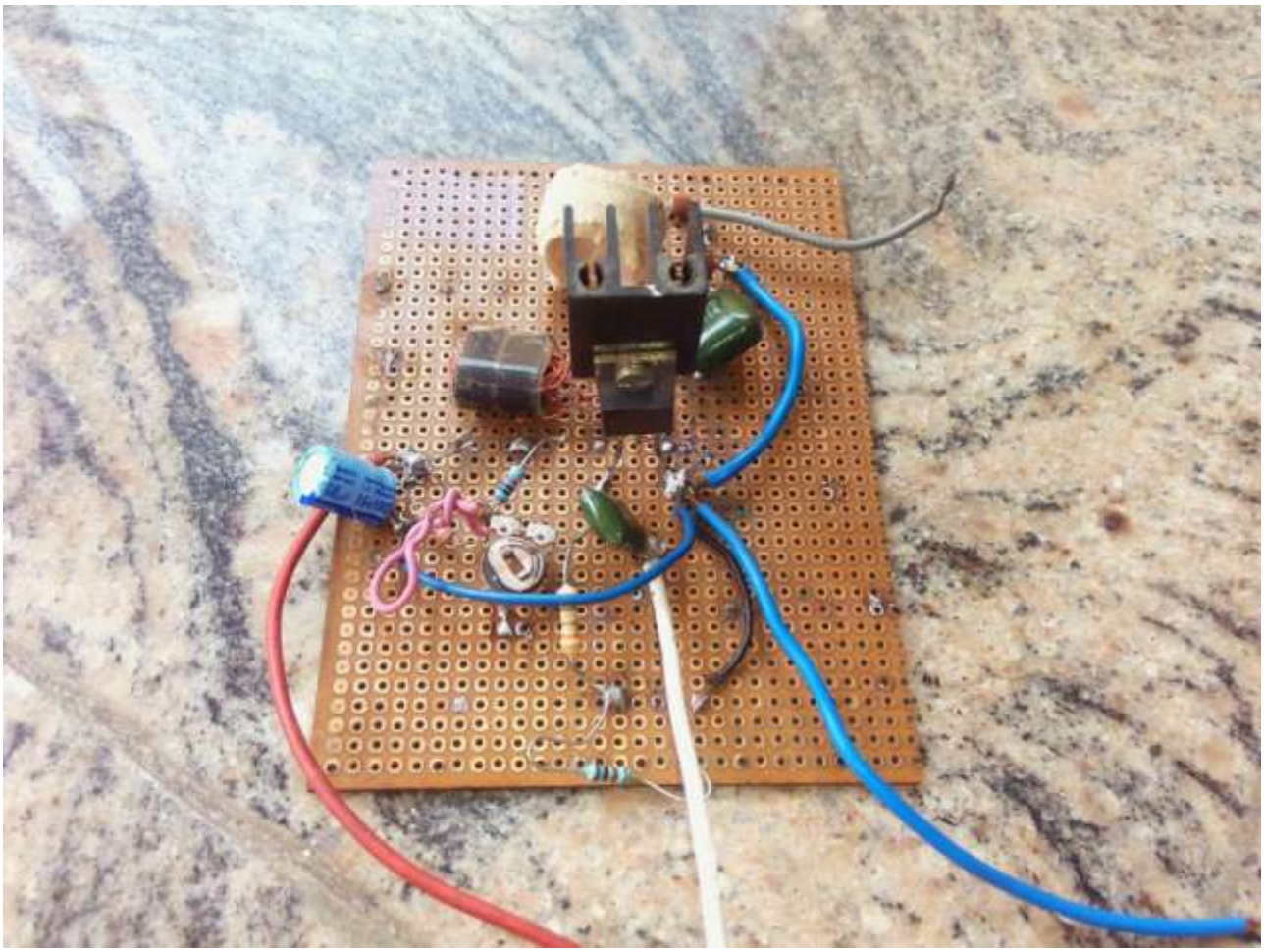
BY VAGISETTY KISHORE (VU3INK)





1. This is an easy to build 10 watts HF linear amplifier for 20M. The MOSFET used is IRF530. Based on my experience I have found that IRF530 is more resistant to 'Thermal Runaway' than IRF510. Though 'Input Capacitance' of IRF530 (700pF) is higher than IRF510 (135pF), I have comfortably used it on 14 Mhz.

2. I had taken references from the following :
   (a) M0DAD – For whole circuit idea.
   (b) YC3LVX – For biasing method.
   (c) VU3INJ – For making of 4:1 transformer.

3. The MOSFET IRF530 is biased as Class 'C' amplifier (1K resistor between GATE and SOURCE). Since it's biased as Class 'C', I have eliminated the use of variable resistor at the GATE (though variable resistor and resistors are shown in the picture, they are not connected in the circuit) thus making the circuit even simpler.

4. The linear amplifier takes 1 – 2 watts of RF power input and delivers about 9 – 10 watts output.

5. The RF voltage at the DRAIN should be about 70V (without DUMMY LOAD) and with 50 OHM DUMMY LOAD, the RF voltage should measure between 30 to 35 volts.

6. T1 – 6 to 8 turns bifilar on two stacked binocular cores or pig nose cores (OR) 8 turns on FT50 – 43 ferrite core.

7. Equivalents for MOSFET used in the circuit:
   (a) Q1 (IRF530) - IRF510, IRF830

8. Appropriate HEATSINK need to be used on Q1.

9. LPF – Low Pass Filter used is for 20m. L1 is 15 turns on (T68 – 6) yellow toroid (OR) 11 turns on ½ inch diameter air core.