Variable Tube Voltage Regulator PS200 User Manual

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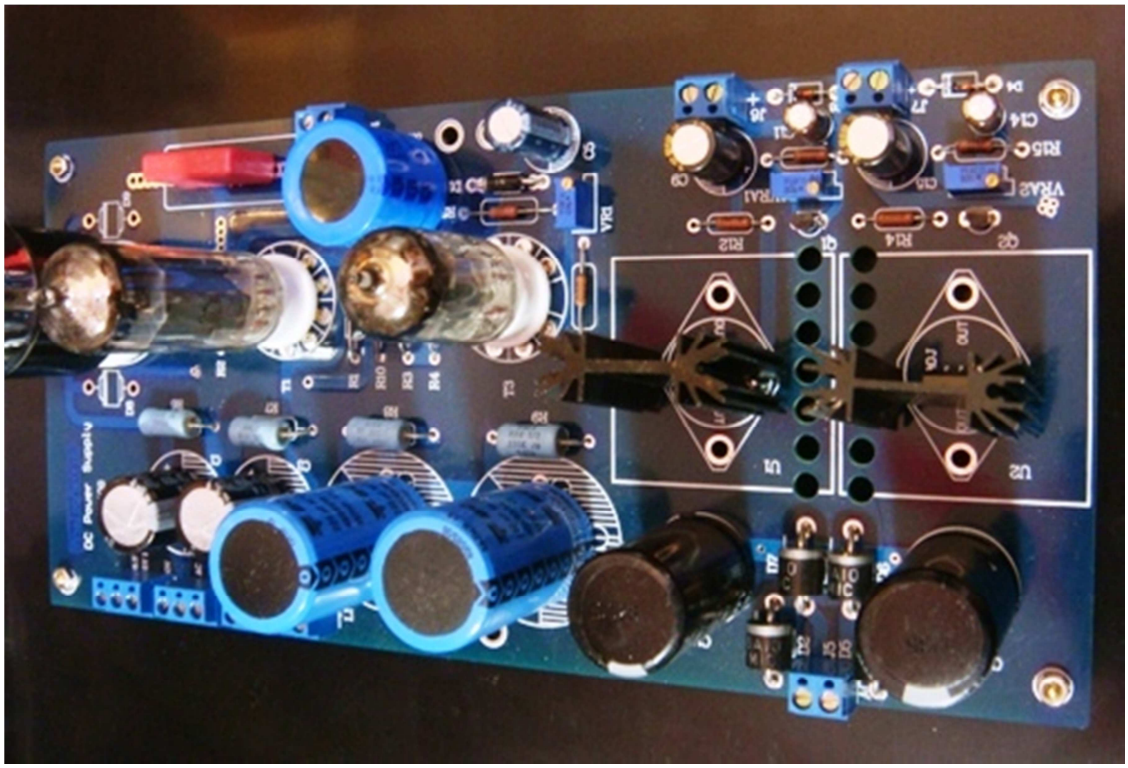

FEATURES

- One rectifier tube 5Z2/5Z3/5U4/6X4 and two pentodes EL84/6P14 and EF86/6J8.
- Variable output voltage: 190-450V DC (100mA) and two 0-30V DC (1.5A)
- Optional diode bridges for rectifier.
- Optional connector for choke 10H 150mA.
- Power requirements: two 360/400V AC(100mA), one 12.6V/15V AC(1A), either one 5V AC or two 6.3V AC (1A).
- PCB dimension: 120mm (W) x 250mm (L)
- PCB thickness: 2.5mm, double layer, 2oz copper.

PRECAUTIONS

- Do not use finger or any body parts to touch the components or board! It is hazardous, since the high voltage capacitors may not be fully discharges after switched off the power supply.
- Turn off the power supply if the transformer is getting hot or some smoke is observed or strange buzz sound is heard.

- Fuse should be used either in power transformer or main socket to avoid accidentally large current drawing.
- Always contact technicians or experts to seek help.

PROCEDURES

1. Solder all the components according to the schematic, part list, and photo. D1 uses 1N5378B (100V Zener diode) for 190-380V, whereas D1 uses 1N5383B (150V Zener diode) for 250-450V DC. Also, notice the direction of the Zener diodes and the polarity of the high voltage capacitors (C1, C2, C3, C4, C5, and C6). Either solder optional diodes D8 and D9 or not if use the rectifier tube (6X4, 5Z2P, 5Z3P)
2. Short the L1 if not use the optional choke.
3. Plug the rectifier tube 5Z2/5Z3/5U4/6X4 only or using D8 or D9 only. Connect the secondary wirings of the power transformer to the board: apply two 280/320/360/400V AC with center tap to J1 (e.g. 280V-0-280V, starting from the lowest voltage first before everything works fine); For J2, apply 5V AC if use rectifier tube 6X4 or 6.3V for 5Z2P/5Z3P; Apply 6.3V AC for J3; Apply 12.6V/15V AC to J5.
4. Measure the voltage at C1 or L1, it should approximately equals to Vin /0.7 DC; and also there are some DC voltages at J6 and J7, where Vin is the input AC voltage.
5. The output voltages can by adjusted by resistor trimmers VR1 for high voltage, and VRA1 and VRA2 for low voltages.

CHECK LISTS

1. The directions of Zener diode and high voltage capacitors.
2. Solder the D8 and D9 only if not use the rectifier tube (6X4/5Z2P/5Z3P)
3. Ensure the tubes are lighted up
4. Either short or connect choke to L1 connector.

If you have any problem in assembly, please contact us by email to tech@analogmetric.com