SINGLE OUTPUT POWER SUPPLY

ASSEMBLY INSTRUCTIONS

1. Install & solder all Resistors
2. Install & solder all Capacitors
3. Install & solder LEDs
4. Install & solder Terminal Blocks, Power Jack, Fuse Holder & fuse
5. Plug in AC/DC & apply power to the circuit & verify ~19 VDC at TP1
6. Remove power
7. Install T1 (2N2222 or 2N3904), D1 (15 V Zener) & D2 (6.2 V Zener)
8. Plug in AC/DC & apply power to the circuit & verify
    a. ~14 VDC at TP2
    b. 6.2 VDC at TP3

    If voltages at TP2 & TP3 are not present then correct issue (T1 installed correctly?)
9. Install & solder Pass Transistors, T2 and Op Amp
10. Plug in AC/DC & apply power to the circuit & verify output at X2-1 and X3-2 can be varied by trim pot R10 from 10 VDC to 15 VDC; record Vmax for OVP setup procedure
11. **CURRENT LIMIT SETUP PROCEDURE**

    Using a variable load, verify that the circuit current limits (output voltage drops off) noting the current at which current limit occurs
12. Using a Resistor Substitution Box in parallel with R6 select a value that sets current limit to 130% of max output design current (for the basic Single Output using the TO-220 Pass Transistors set the current limit to ~2.6 A)
13. Install & solder the closest standard value resistor for R7
14. Verify current limit and if current limit is ok then short the output and observe that the:
    a. The Fuse does not blow (current limit is working)
    b. Output voltage returns to normal when short is removed
15. **OVP SETUP PROCEDURE**

    Install & solder D4 and T3 (SCR)
16. Using an external power supply connect Positive to X2-1 & Negative or COM to X3-2 and a Resistor Substitution Box for R16 select a value that trips Over Voltage at Vmax + 0.2 V
17. Install & solder the closest standard value resistor for R16 and verify OVP operation
18. **MECHANICAL**
    a. Decide what heat sink solution to use
        i. Mount TO-220 to chassis?
        ii. Mount individual TO-220 heat sinks?
        iii. Other?
    b. Decide on mechanical packaging
        i. Install AC/DC & Regulator in a chassis?
19. **ACCESSORIES**
    a. Add a volt/current meter?
    b. Add a power switch?