The Variable Power Supply Project

This is a fairly simple, yet very versatile workbench power supply. With a current limit of 1.5 amperes and a variable voltage from 1.2 volts to 24 volts on the output of the LM317T, this unit will come in very handy for your diversified electronic projects (which usually include different DC voltages. I have used it mainly for supplying my FM transmitters with different voltages, to see the different effects it has on the units. In fact, I use it for all my FM transmitters. It has served me well...and is still serving proudly!

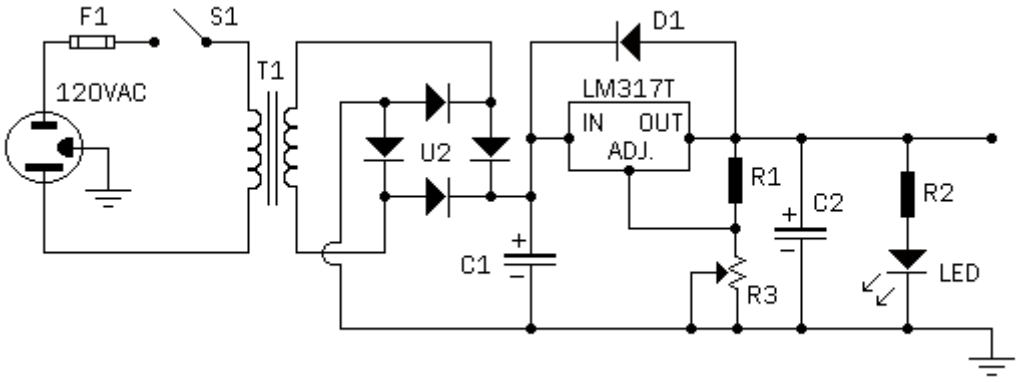
Also, if you are getting tired of having to buy, buy and buy +9v batteries...this project would be another reason for making the unit. Yes, in making electronic projects, it is always gratifiying to know that, with this unit, you will always have a constant supply of DC voltage...whenever you need it...for whatever voltage you may want...and forever how long.

I got these complete plans from the ARRL 1989 Handbook. The following text and schematic is straight from the book...

A Base-Station Power Supply

The schematic below shows that the circuit operates directly from a 117-VAC. The LED is located on the output and provides a quick visual check of the output status. All the components are mounted inside a small aluminum box. Again, the cabinet serves as the heat sink for the regulator chip.

The LM317T Power Supply Schematic Diagram



F1 - 2 A, fast acting fuse

S1 - SPST switch

T1 - Radio Shack # 273-1352 (The primary coil is 120VAC. The secondary coil is 12.6VAC Center Tap) The secondary has three wires coming from the transformer. Use only the two wires that give a voltage reading somewhere in the vicinity of 26VAC...and cap-off (or tape) the wire that is left alone. The two wires that are to be used on the secondary are inter-changeable...that is, they can be placed either way in the circuitry.

U2 - Bridge rectifier, 4 A, 100 PIV

C1 4700uF/35v

D1 - Silicon power diode, 1N4001 or equivalent

LM317T Adjustable Voltage Regulator (TO-220 Case) Internal Current Limiting Protection

R1 - 220 ohm resistor (1/2 watt)

R2 - 330 ohm resistor (1/2 watt)

R3 - 4.7K Potentiometer

C2 - 1uF Electrolytic Capacitor

LED - Green LED

Accompanying Text

Make sure you either use the aluminum housing for the heat-sink of the LM317T voltage regulator, or use a large separate heat-sink for it (at least 3 inches by 3 inches). Before applying power, double check all wiring. The first time you plug it in, get your DVM out and check for variable output voltage by adjusting R3. If the voltage fluctuates when adjusting the potentiometer, it is ready to be used for your first project.

That concludes this project...

It will surely serve you well...as it is still doing for me. If for some reason there is a concern or some assistance you might need, do not hesitate to e-mail me at...