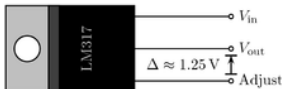
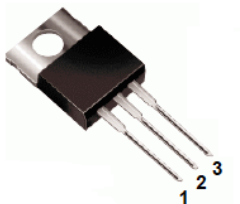
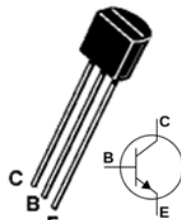
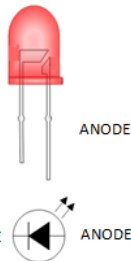
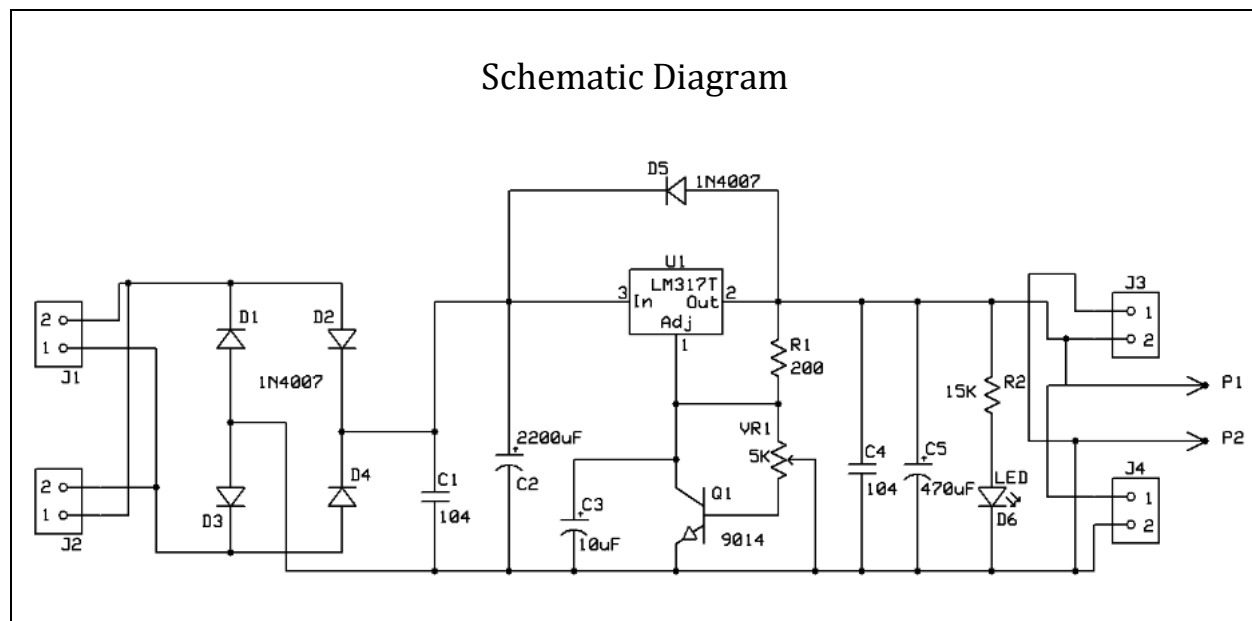


THE ELECTRONICS HOBBY KIT

LM317 ADJUSTABLE REGULATED POWER SUPPLY

Operating voltage : DC IN 5-35V AC IN 6-25V Output voltage : 1.25V-30V Output Current : max 1A		
R1 = 200Ω R2 = 15kΩ VR1 = 5K Potentiometer D1- D5 = 1N4007 D6 = LED 3mm Red C1,C4 = 104 C2 = 2200uF (50V) C3 = 10uF (25V) C5 = 470uF (50V) Q1 = Transistor 9014 U1 = LM317T with HEATSINK J1 = KF-301-2P terminal block J2 = DC Plug DC-5.5*2.1 J3, J4 = 2.54 2P (Vertical connector) P1, P2 = 4mm Banana Jack LED Spacer x1 Standoff and nuts x4, M3 screw x1 Knob x1 Banana to crocodile wire x1 PCB 69*50mm x1	 <p>LM317 Pin Arrangement</p>  <p>1. Adjust 2. V_{out} 3. V_{in} Heatsink is connected to pin 2</p>	 <p>TRANSISTOR 9014</p>  <p>CATHODE ANODE CATHODE ANODE</p>



Theory Of Operation

This LM317 variable regulated power supply is ideal to adjust output voltage from 1.25V to 30V with maximum of 1A load current. A DC input voltage of 5-35V or AC 6-25V can be applied to J1 or J2 terminal and rectified by the full bridge rectifier D1-D4. C1 is a bypass capacitor and C2 is the filter capacitor. The output voltage of LM317 pin 2 depends on the voltage ADJ of LM317 pin 1. VR1 is adjust to control output dc voltage of 1.25V to 30V. The Voltage ADJ is set internally to 1.25V in between pin 1 and 2 of LM317. The Output voltage V_{out} can be calculated as below.

$$V_{out} = 1.25 \times \{1 + (VR1/R1)\}$$

C3 capacitor is to improve the ripple noise.

D5 diode protects LM317 against input short circuit.

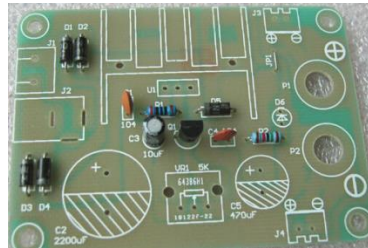
Q1 transistor is use as load protection. When adjusting the VR1, the poor potentiometer contact will turn on Q1 and connect pin1 of LM317 to ground thus set the V_{out} to minimum of 1.25V to protect the load connection.

Assembly Instruction Diagram Step

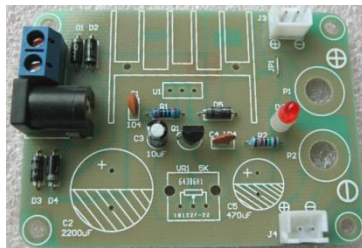
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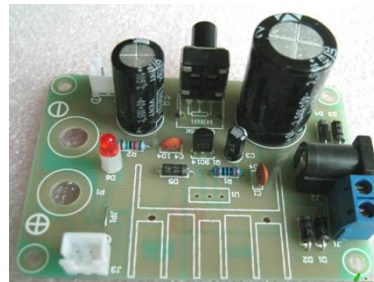
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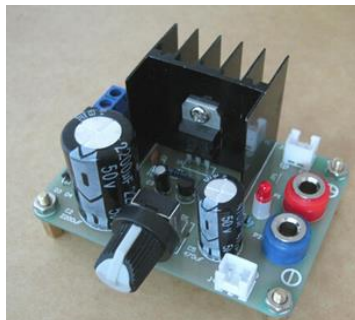
3.



4.



5.



6.

