

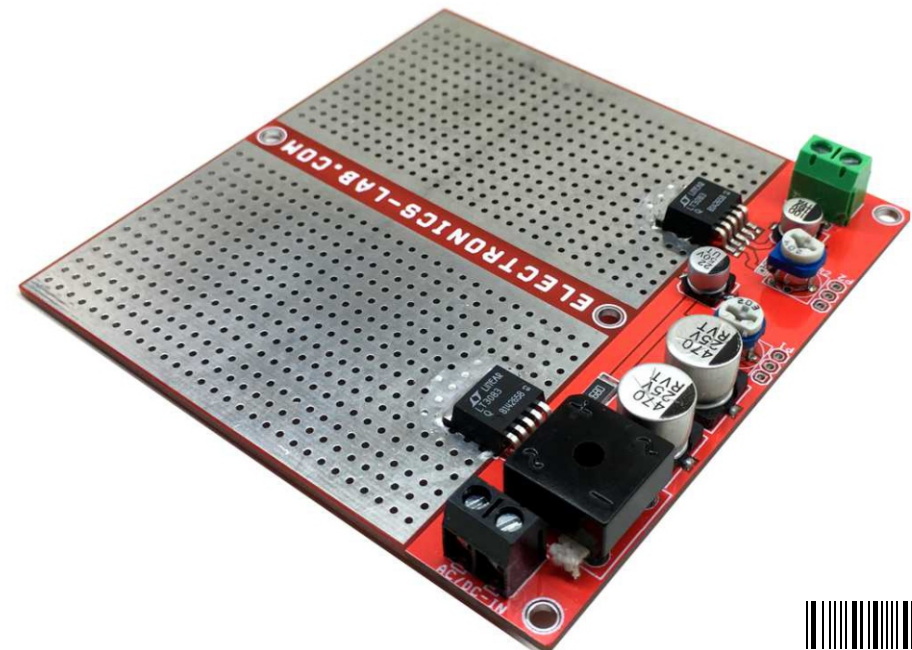
0 To 10 V Adjustable Lab Power Supply with Current Control

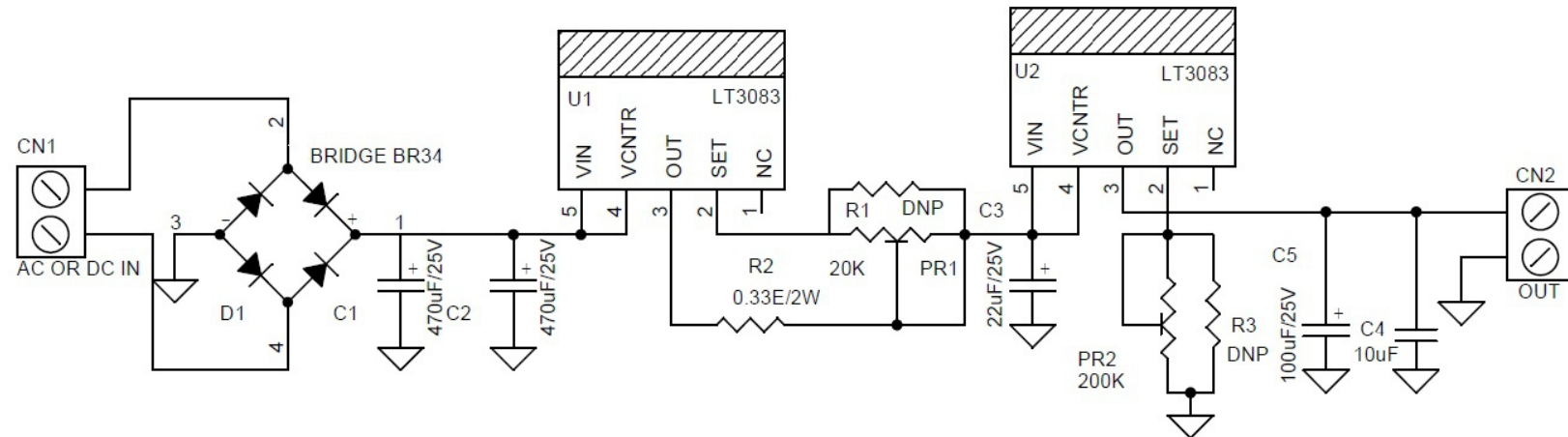
The circuit presented here is a very simple and easy to build Lab Power Supply. The output of this power supply is adjustable from 0 to 10V DC, and it has current limit control up to 3A. Two Trimmer potentiometers are provided to adjust the voltage and current. The input supply is DC 12V to 18V 3A or AC12V /3A. The screw terminals help to connect the input and output connections, and a large area on PCB provided as heat spread so no external heatsinks required. The power supply also includes over-temperature protection. The board is built using 2 x LT3083 chips, U1 is used as current source and U2 provides adjustable output voltage.

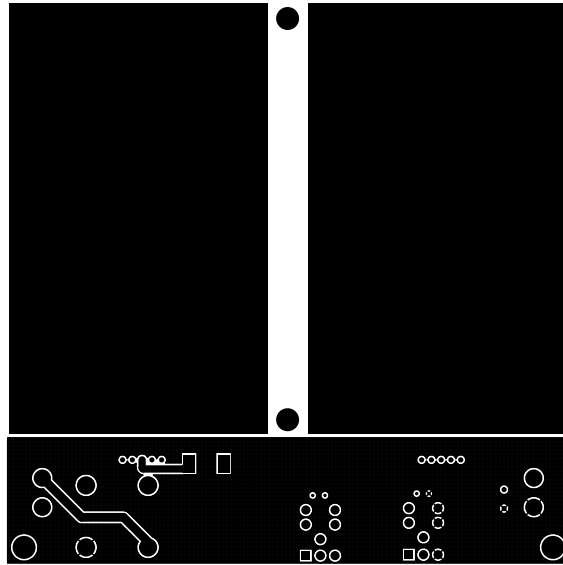
The LT®3083 is a 3A low dropout linear regulator that can be paralleled to increase output current or spread heat on surface mounted boards. Architected as a precision current source and voltage follower, this new regulator finds use in many applications requiring high current, adjustability to zero, and no heat sink. The device also brings out the collector of the pass transistor to allow low dropout operation— down to 310mV—when used with multiple supplies. A key feature of the LT3083 is the capability to supply a wide output voltage range. By using a reference current through a single resistor, the output voltage is programmed to any level between zero and 23V (DD-PAK and TO-220 packages). The LT3083 is stable with 10 μ F of capacitance on the output, and the IC is stable with small ceramic capacitors that do not require additional ESR as is common with other regulators. Internal protection circuitry includes current limiting and thermal limiting.

Feature

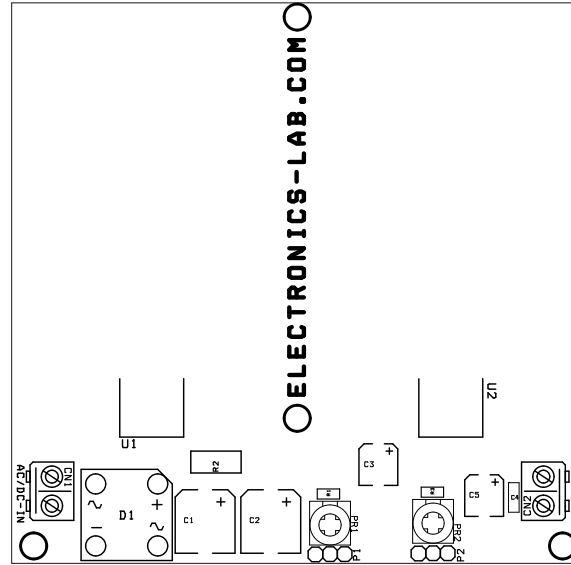
- Input Supply DC 12V to 18V DC 3Amps or AC12V 3Amps
- Output 0 to 10V DC
- Current Control 0 to 3Amps
- Trimmer Pot PR1 Current Adjust
- Trimmer Pot PR2 Output Voltage Adjust
- <1mV Load regulation
- Current Limit with Foldback and Over Temperature Protection
- PCB Dimensions 98.58MM X 98.58MM



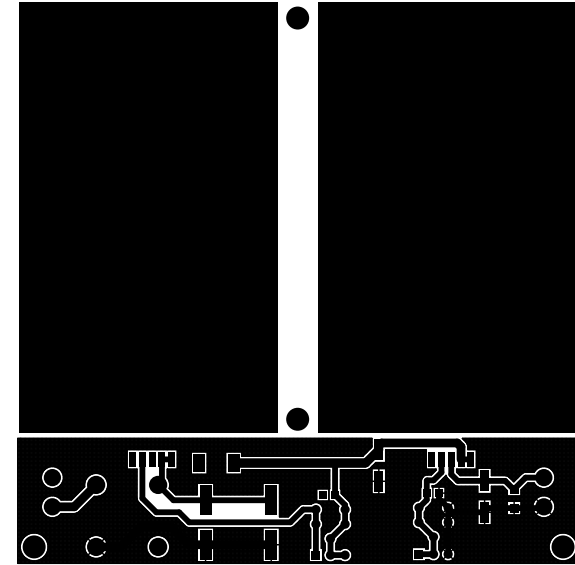




BOTTOM LAYER



SILK SCREEN TOP



TOP LAYER

PCB DIMENSIONS 98.58MM X 98.58MM

| BOM | | | | |
|-----|------|-------|----------------------|----------------------------|
| SR. | QNTY | REF. | DESC. | DIGIKEY/MOUSER |
| 1 | 1 | CN1 | 2 PIN SCREW TERMINAL | DIGIKEY 609-3918-ND |
| 2 | 1 | CN2 | 2 PIN SCREW TERMINAL | DIGIKEY 609-3918-ND |
| 3 | 2 | C1,C2 | 470uF/25V | DIGIKEY 493-2194-2-ND |
| 4 | 1 | C3 | 22uF/25V | DIGIKEY PCE3811TR-ND |
| 5 | 1 | C4 | 10uF/16V | DIGIKEY 1276-1137-1-ND |
| 6 | 1 | C5 | 100uF/25V | DIGIKEY 493-2105-2-ND |
| 7 | 1 | D1 | BRIDGE BR34 3A/40V | DIGIKEY 2197-583-BR-34-ND |
| 8 | 1 | PR1 | 20K TRIMMER POT | DIGIKEY 3306F-203-ND |
| 9 | 1 | PR2 | 200K TRIMMER POT | DIGIKEY 3306F-204-ND |
| 10 | 2 | R1,R3 | DNP/OMIT | DNP/OMIT |
| 11 | 1 | R2 | 0.33E/1W SIZE 2512 | DIGIKEY PT.33YCT-ND |
| 12 | 2 | U1,U2 | LT3083 | DIGIKEYLT3083EQ#TRPBFTR-ND |

