

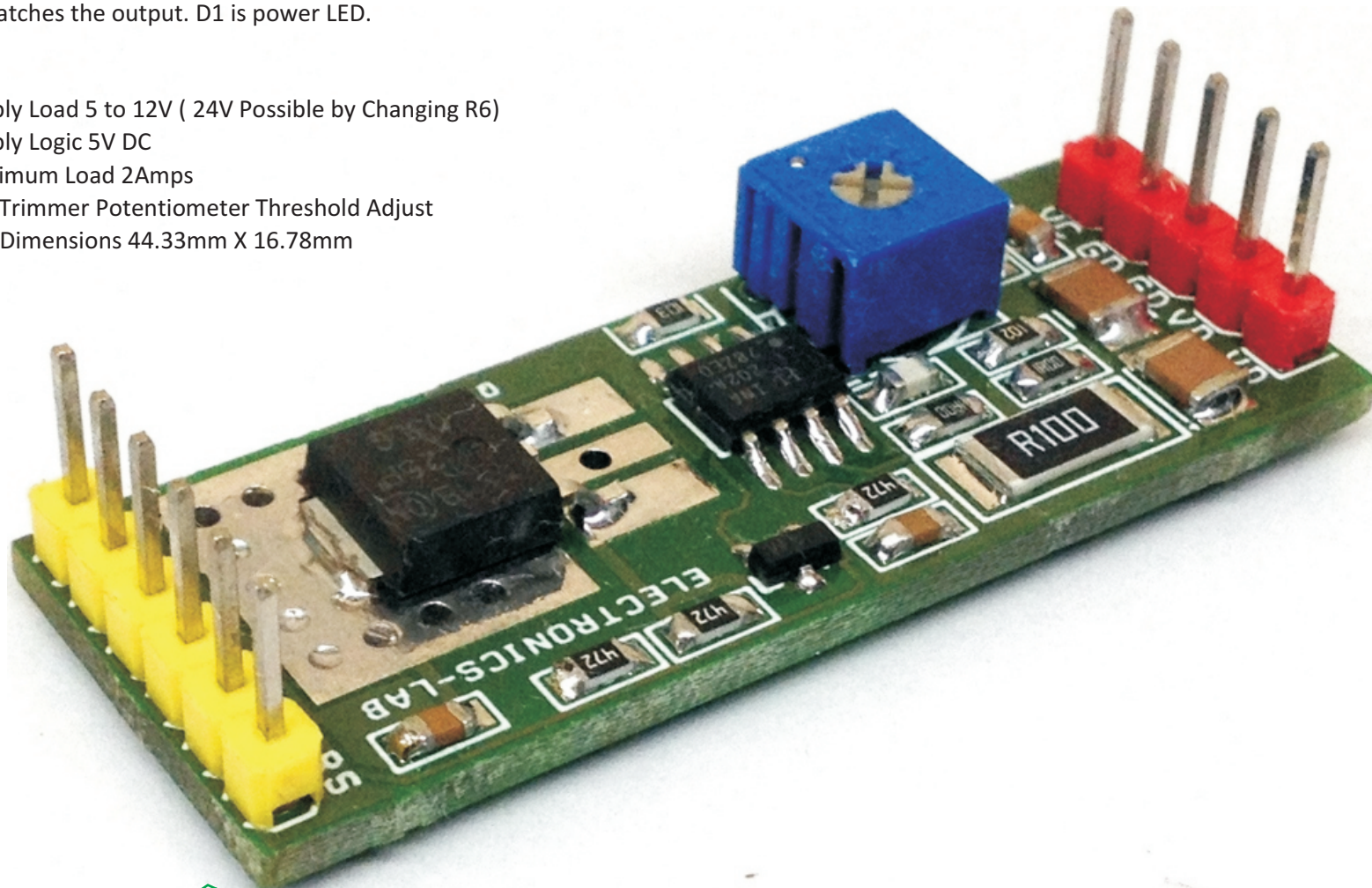
Current Limit Solid State Power Switch with Latch

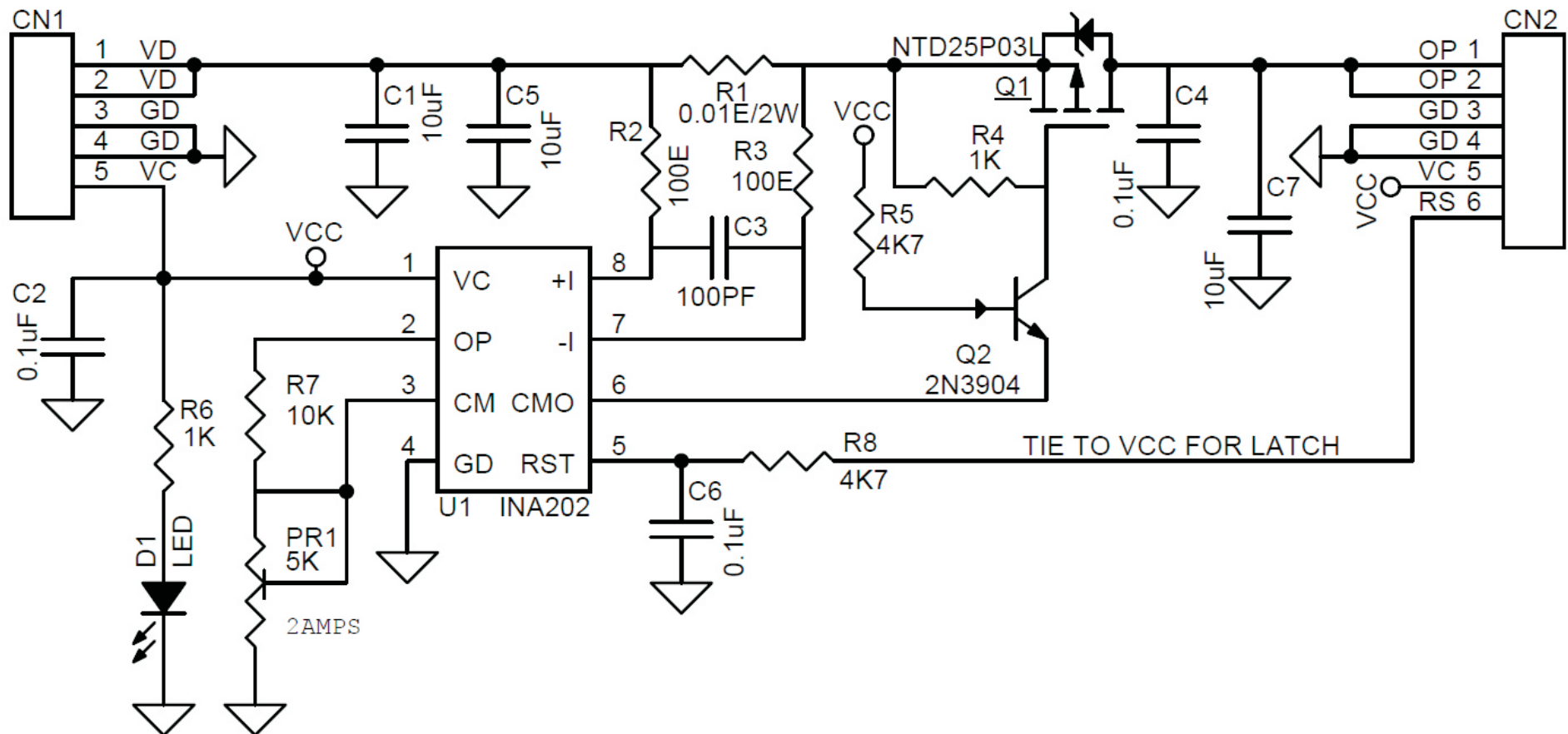
The project published here is a solid state power switch with current limiting that prevents damage to host devices from faulty load conditions. This analog current limit switch have low on-resistance P channel Mosfet and INA202 driver IC from Texas instrument. The project operate from input voltage from 5V to 24V and can handle current up to 2Amps .The versatile project can be used in Smart Power applications , It is widely used to clamp the overload current, deliver constant current.

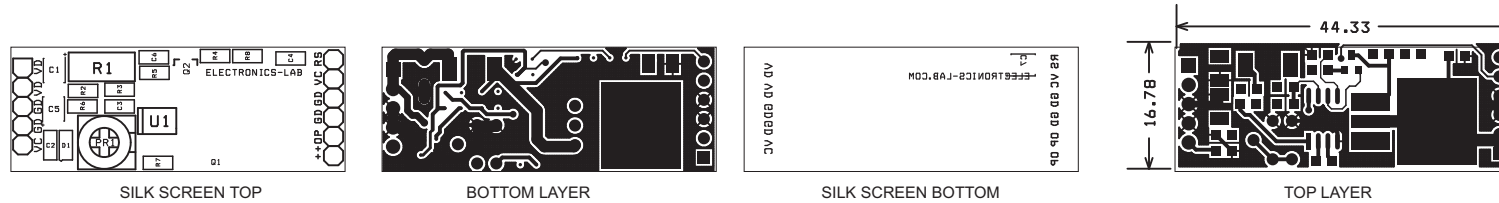
The project provides 2A current, if load current increases more than set point (2amps) automatically isolates the switch. The over-current limit threshold is set to 2 Amps but it can be programmed using an external resistor R7 and PR1 and by changing value of Shunt resistor R1, refer data sheet of INA202 for more information for current adjustment and current limit. Circuit also required logic 5V supply other than the load supply. Trimmer potentiometer helps to set the threshold current. Setting the output is simple using trimmer pot, turn the trimmer potentiometer counter clockwise and connect current meter between load , tie the reset wire to VCC 5V switch on the logic supply and logic supply, turn the pot till it is latches the output. D1 is power LED.

Features

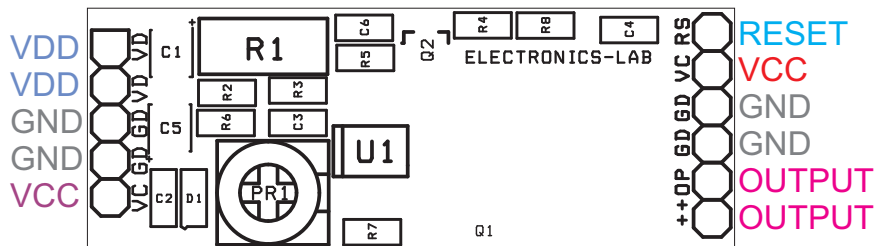
- Supply Load 5 to 12V (24V Possible by Changing R6)
- Supply Logic 5V DC
- Maximum Load 2Amps
- PR1 Trimmer Potentiometer Threshold Adjust
- PCB Dimensions 44.33mm X 16.78mm







PCB Dimensions 44.33mm X 16.78mm



| BOM | | | |
|-----|-------|----------|------------------------|
| SR. | QNTY. | REF. | DESC. |
| 1 | 1 | CN1 | 5 PIN Header Connector |
| 2 | 1 | CN2 | 6 Pin Header Connector |
| 3 | 3 | C1,C5,C7 | 10uF SMD 1210 |
| 4 | 3 | C2,C4,C6 | 0.1uF SMD 0805 |
| 5 | 1 | C3 | 100PF SMD 0805 |
| 6 | 1 | D1 | LED SMD 0805 |
| 7 | 1 | PR1 | 5K TRIMMER |
| 8 | 1 | Q1 | NTD25P03L DPAK |
| 9 | 1 | Q2 | 2N3904 SMD SOT23 |
| 10 | 1 | R1 | 0.01E/2W SMD 2512 |
| 11 | 2 | R2,R3 | 100E SMD 0805 |
| 12 | 2 | R4,R6 | 1K SMD 0805 |
| 13 | 2 | R5,R8 | 4K7 SMD 0805 |
| 14 | 1 | R7 | 10K SMD 0805 |
| 15 | 1 | U1 | INA202 SMD |

