

8 Channel Inductive Load Driver Arduino Shield

The 8 Channel Driver Arduino UNO Shield is designed to enable users to switch inductive loads up to 800mA each channel at up to 24V DC with no heat-sinking. It is ideal for such applications as driving 2X unipolar stepper motors, solenoids, relays, and small DC motors. It uses 2X DRV8803 Chip from Texas instruments which is 4 channel low side driver with over current protection. IC's Internal shutdown protection function is provided for over current protection, short circuit protection, undervoltage lockout, and over temperature. Faults are indicated by a fault output pin normally high goes low if fault condition occurs. Reset and enable pins has internal pull-down resistors. Board can be use to drive mainly inductive loads, since outputs are provided with clamp diode for protection. This shield can drive 2 unipolar stepper motors up to 750mA each with Arduino code. Shield also provided with TSOP1838 IR sensor and pot. IR receiver can help to turn Off /On 8 loads using Ir remote, DC motor/stepper motor speed control possible with help of onboard trimmer pot.

Note: I have tested this project up to 24V DC, but IC supports supply up to 60V, in case of high voltage operation required change C1, C2, C3, C4, C5 Capacitor's voltage to 60V. and LED series resistor to 4K7. Arduino and shield can work with 12V single supply. If supply of load is more then 12V, it is advisable to power up Arduino from USB and VM load supply separate, remove jumper J1 in this Case.

Features

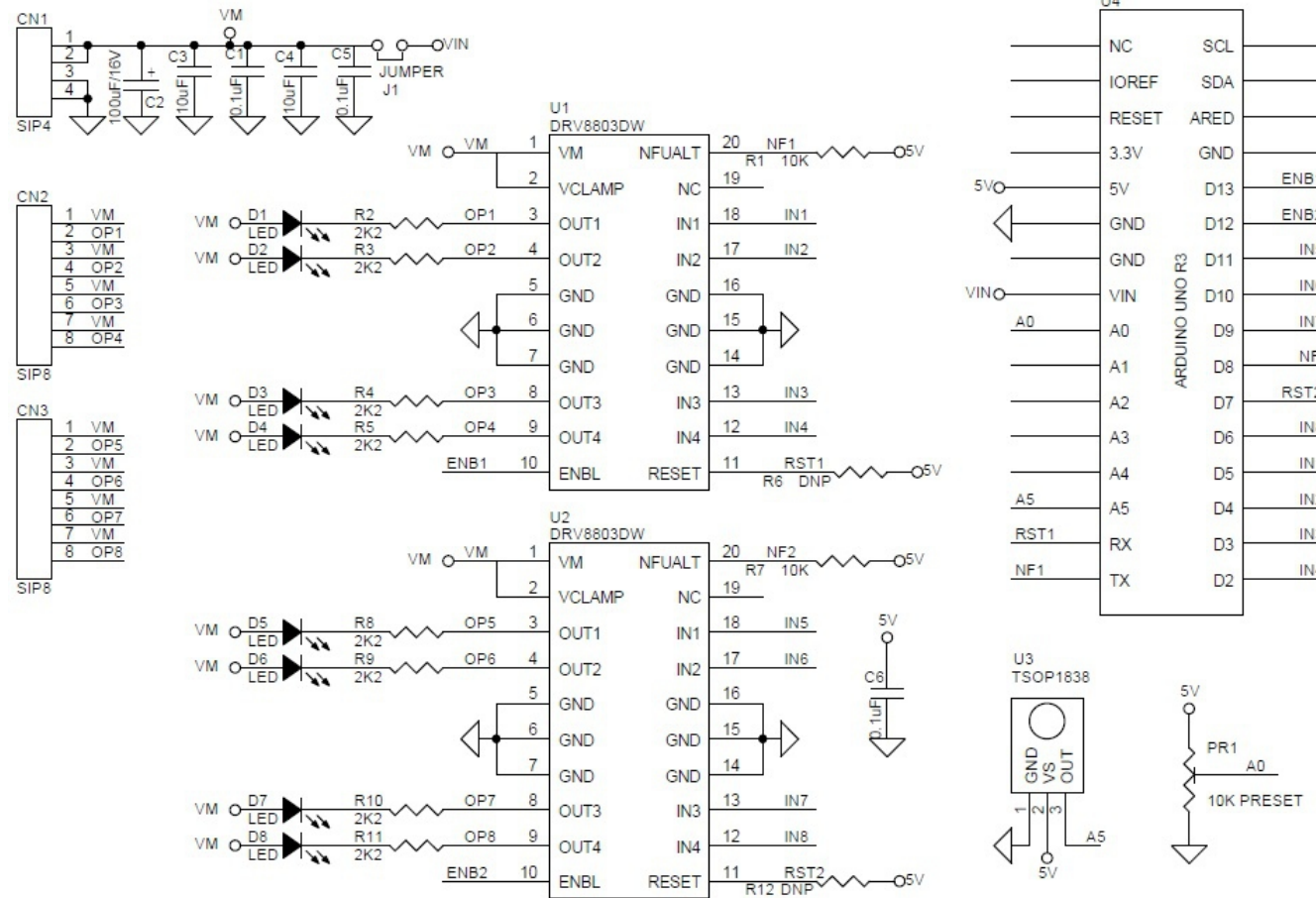
- Supply 9-24V DC (Supply up to 60V Possible Reade Note) For Load
- Supply Arduino 5V or USB power
- If Load is 12V , Close the Jumper J1, Connect supply to Arduino DC Jack or CN1
- Load 800mA Each Channel
- Operation LED's for 8 outputs
- Trimmer Pot for speed control applications
- TSOP1838 IR Receiver for Remote controlled ON/OFF Application
- PCB DIMENSIONS 53.39MM X 51.00MM

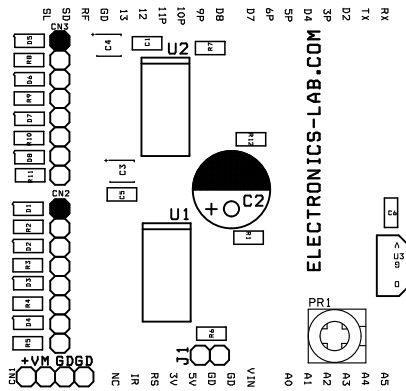
Arduino Pins Configuration (Arduino: DRV8803)

U1: D13>>ENB1 (ENABLE-1), D0>>RST1 (RESET-1), D1>>NF1 (FAULT-1), D5>>IN1, D4>>IN2, D3>>IN3, D2>>IN4

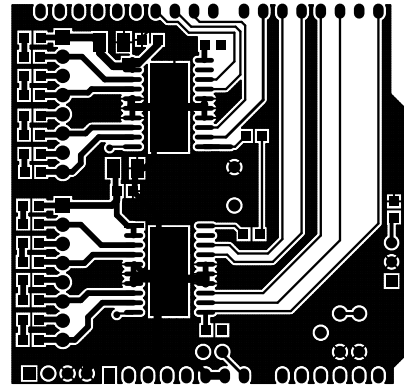
U2: D12>>ENB2 (ENABLE-2), D7>>RST2(RESET-2), D8>>FN2 (FAULT-2), D11>>IN5, D10>>IN6, D9>>IN7, D6>>IN8



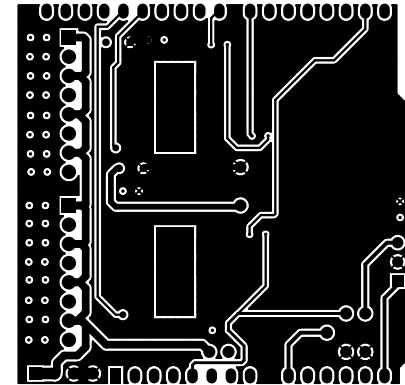




SILK SCREEN TOP

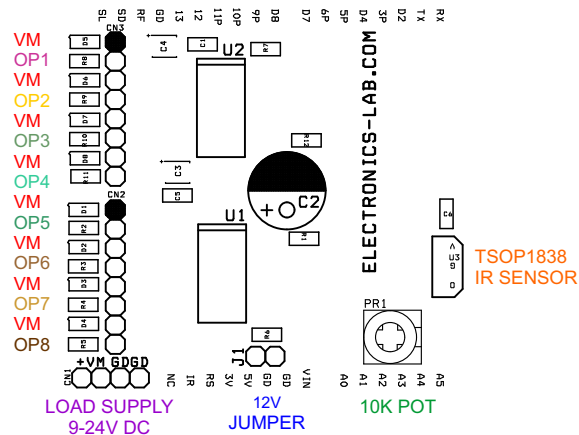


TO PLAYER



BOTTOM LAYER

PCB DIMENSIONS 53.39MM X 51MM



SR.	QNTY.	REF	DESC.
1	1	CN1	4 PIN MALE HEADER 2.5MM
2	2	CN2,CN3	8 PIN MALE HEADER 2.54MM
3	2	C1,C5	0.1uF/50V SMD 0805
4	1	C2	470uF/50V
5	2	C3,C4	10uF/50V SMD 1210
6	8	D1,D2,D3,D4,D5,D6,D7,D8	LED-RED SMD 0805
7	1	J1	JUMPER
8	4	R1,R6,R7,R12	10K SMD 5% 0805
9	8	R2,R3,R4,R5,R8,R9,R10,R11	2K2 SMD 5% 0805
10	2	U1,U2	DRV8803DW