

## L293D Based Arduino Motor Shield



### Features:

- 2 connections for 5V 'hobby' servos connected to the Arduino's high-resolution dedicated timer - no jitter!
- Up to 4 bi-directional DC motors with individual 8-bit speed selection (so, about 0.5% resolution)
- Up to 2 stepper motors (unipolar or bipolar) with single coil, double coil, interleaved or micro-stepping.
- 4 H-Bridges: L293D chipset provides 0.6A per bridge (1.2A peak) with thermal shutdown protection, 4.5V to 12V • Pull down resistors keep motors disabled during power-up
- Big terminal block connectors to easily hook up wires (10-22AWG) and power
- Arduino reset button brought up top
- 2-pin terminal block to connect external power, for separate logic/motor supplies
- Tested compatible with Mega, UNO & Duemilanove
- Dimensions: 69mm x 53mm x 14.3mm (2.7in x 2.1in x 0.6in)

The L293D is a dedicated module to fit in Arduino UNO R3 Board, and Arduino MEGA. It is actually a motor driver shield that has full featured Arduino Shield can be used to drive 2 to 6 DC motor and 4 wire Stepper motor and it has 2 set of pins to drive a SERVO.

L203D is a monolithic integrated that has a feature to adopt high voltage, high current at four channel motor driver designed to accept load such as relays solenoids, DC Motors and Stepper Motors and switching power transistor. To simplify to used as two bridges on each pair of channels and equipped with an enable input. A separate supply input is provided for the logic, allowing operation at a lower voltage and internal clamp diodes are included.

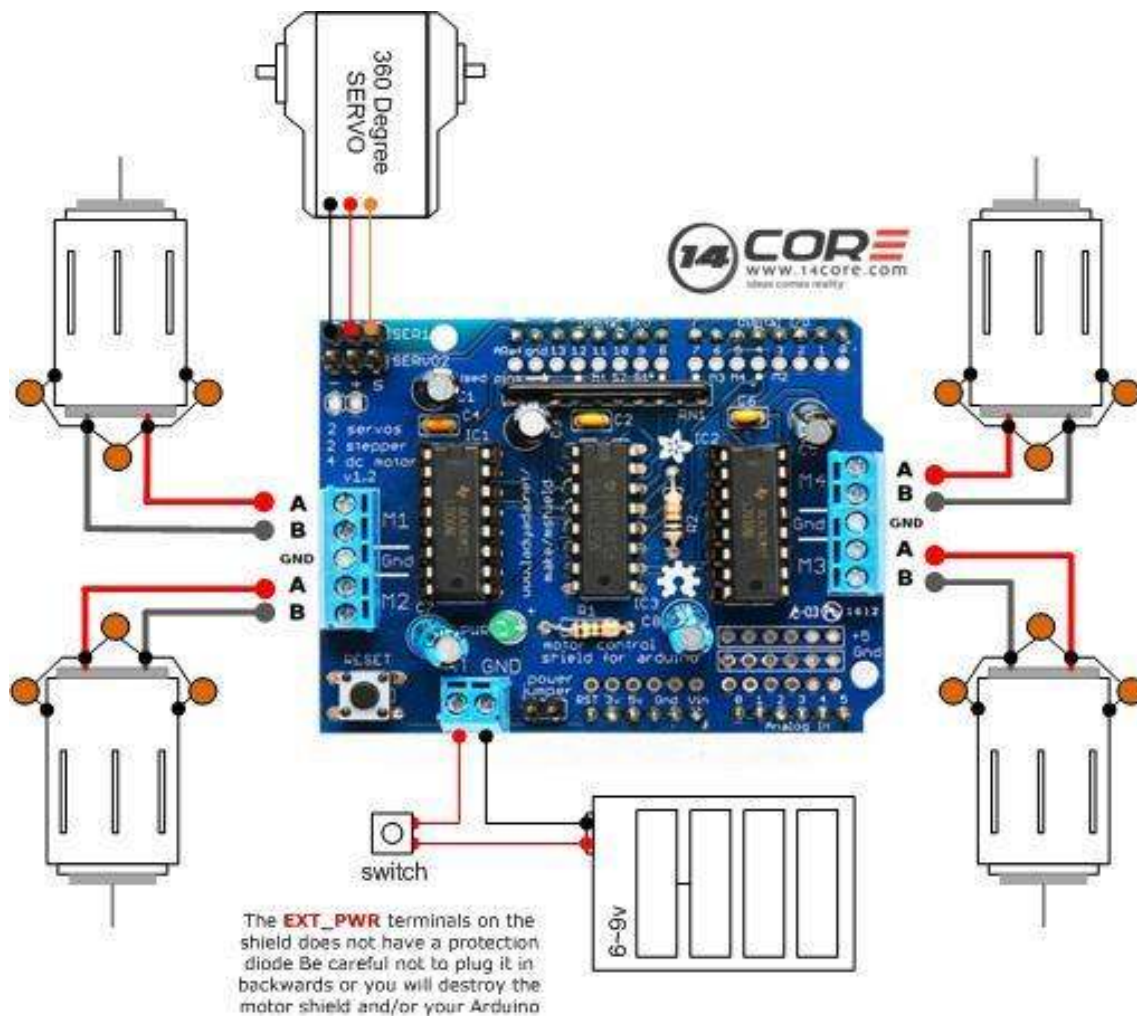
The device is suitable for use in switching applications at frequencies up to 5kHz. The L293D is assembled in a 16 lead plastic package which has 4 centre pins connected together and used for heat sinking. The L293D is assembled in a 20 lead surface mount which has 8 centre pins connected together and used for heat shrinking.

Items	Min	Typical	Max	Unit
Control Voltage	4.5	5	5.5	V
Driver Voltage	6	9	15	V
Output Current			1.2	A
Dimensions				cm
Weight				gm

Control up to 4 DC motors.

- Control 2 Servos.
- Logic Control Voltage VSS: 4.5 ~ 5.5 V
- Motor Supply Voltage VSS: 15v
- Drive operating current IO: 1.2A
- 8 Stage Serial Shift Registers

### **Wiring a DC Motor**



Motor requires more energy specially cheap motors since chip motors less efficient. The important thing you need is find out what voltage require your going to use. some small motors are only intended to run at 1.5 volts but it is just a common to have 6 ~ 12v motors. The motor controller on L294D shield is design to run at 4.5v to 25v. most 1.5 ~ 3 volts motor will not works on this shield. another thing you need is to figure it out how much current the motor will support? The L293D chip support up to 600 mA per motor, with 1.2A peak current. Note ones you head towards 1A you'll probably want to put a heat sink on the chip, otherwise it will get thermal failure or burning out the chip.

**Note:**

Do not connect the motor to 5v line on the board. There are two places you can get your motor high voltage supply.

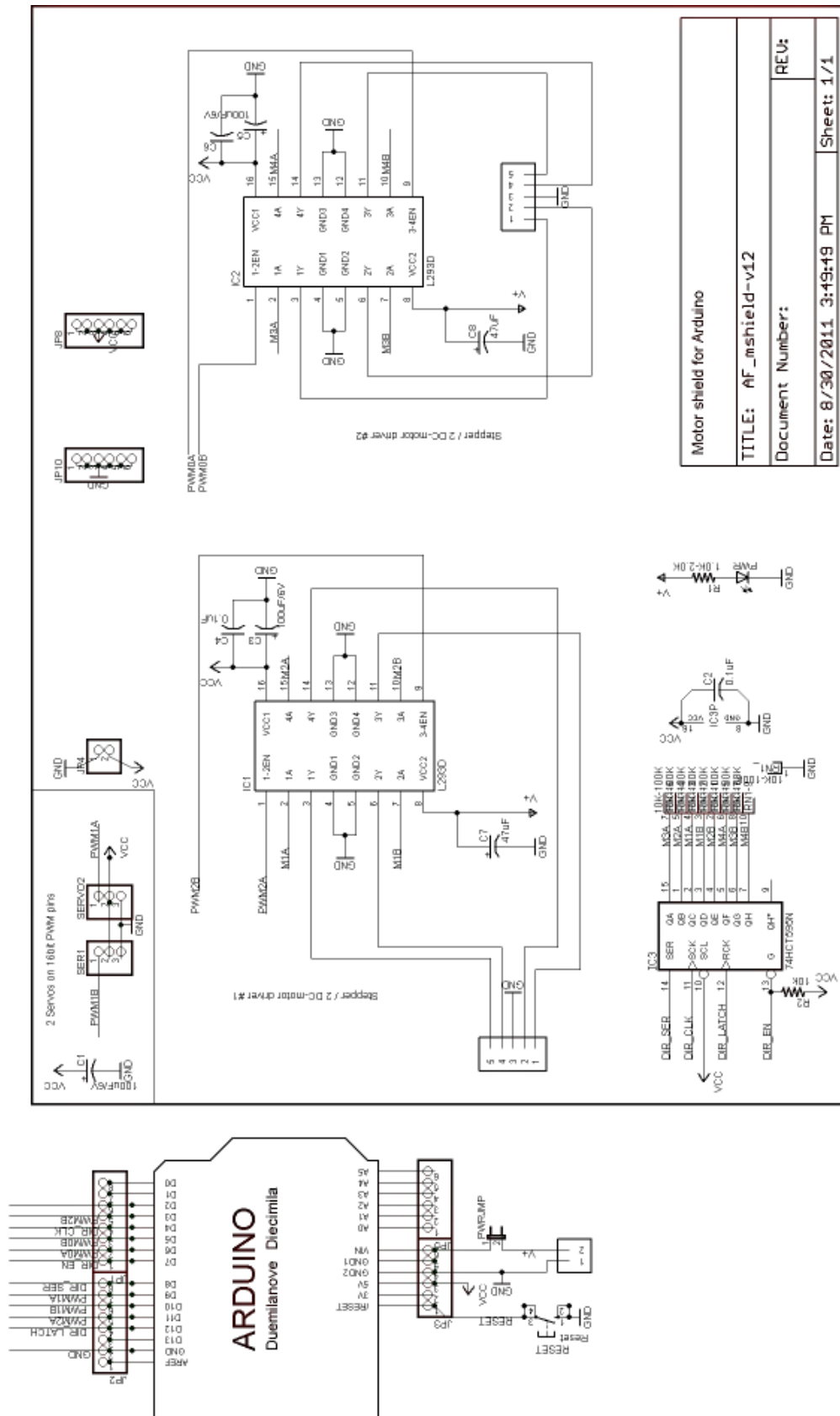
## **Wiring and Installation the DC Motor to the l293D Shield**

The DC motor are used for all sort of robotics projects. The motor shield can drive up to 4 or 6 DC motors bi directional, it means that they can be driven forward and backward. The speed can also be varied at 0.5% increments using PWM(Pulse with Modulation) this means that speed can be controlled.

### **Note:**

The H-Bridge Chip is not supported for driving load over 0.6A over 1.2A so this it means that this chip is for small motors. Check the datasheet below to learn more. To connect simply place the 2 wires to the terminal with screw and then connect them to either M1, M2, M3, or M4 follow the example diagram above.

Schematic :



Motor shield for Arduino  
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