# L293D PCB Component List and Instructions Version 2
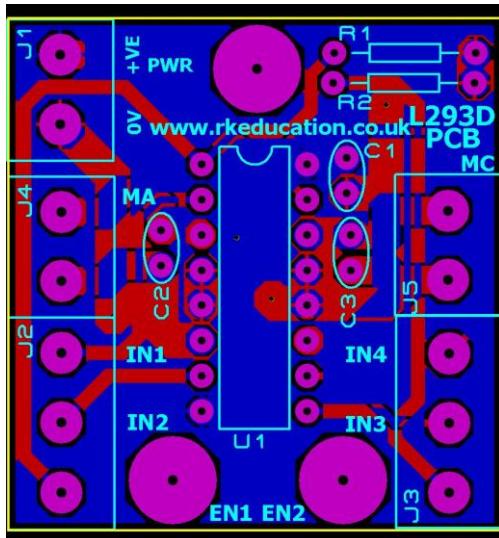


PCB layout
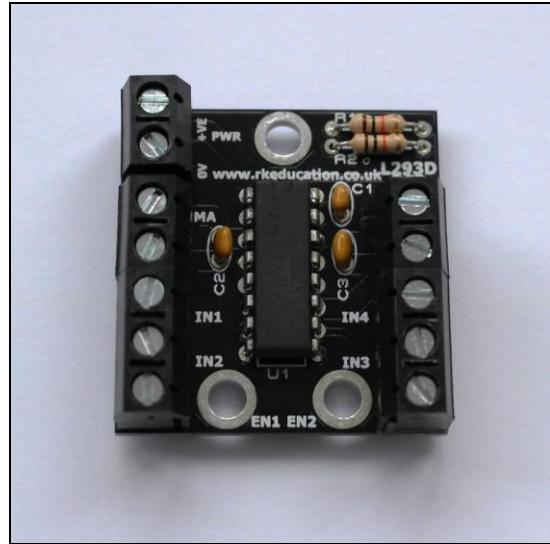

Constructed PCB
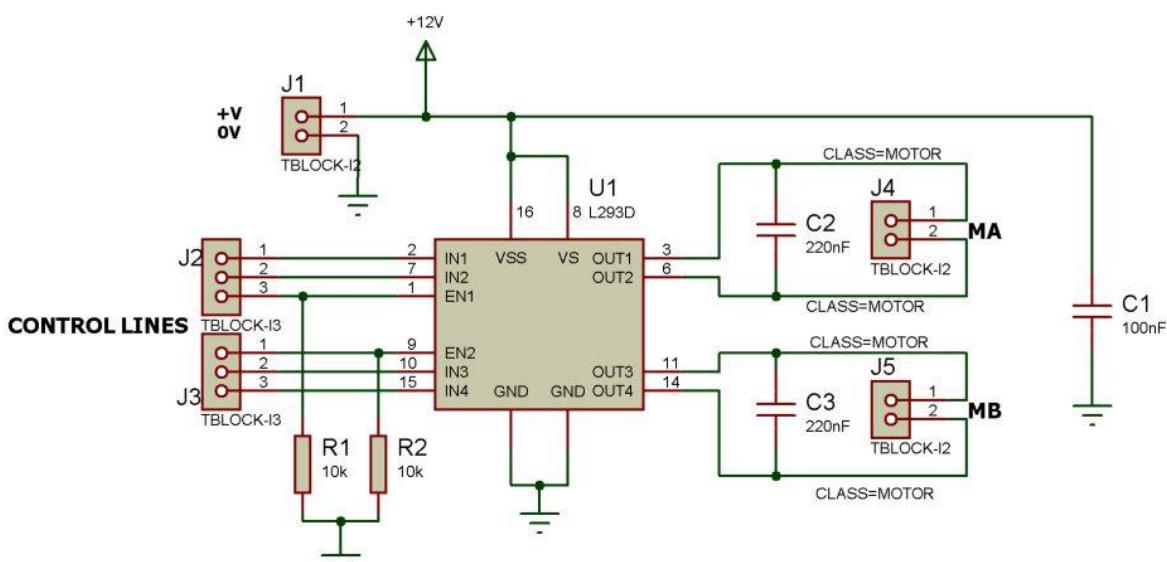
Schematic Diagram
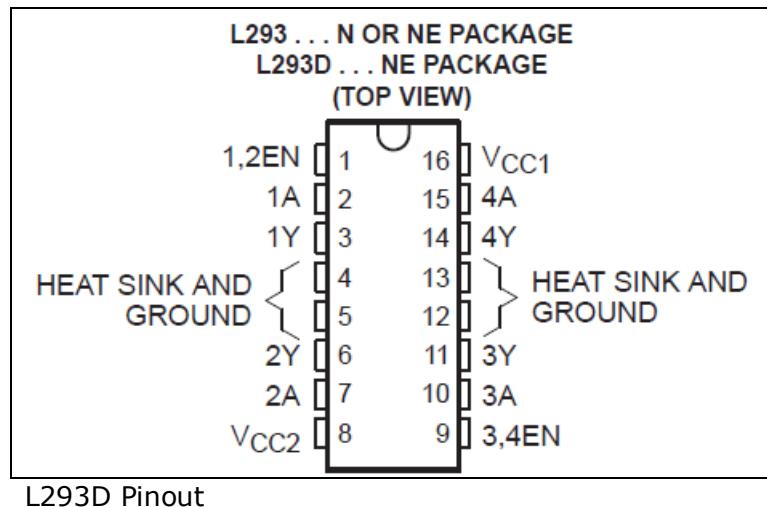
L293D Pinout

Description

The L293D project PCB has been specifically designed to use the L293D H-Bridge chip and is great for interfacing with PIC and Atmel microcontrollers such as the Arduino, PICAXE and Genie

- A low cost method of producing high power and DC motor projects
- Can be interfaced to various microcontrollers and ICs such as PIC, ATMEL etc
- The control/interface lines are accessible with terminal blocks
- Great for DC motor control projects including vehicles and robots
- Can drive 2 DC motors at 600mA or 1 at 1.2A
- Motors are reversible
- Manufactured using a double sided professional PCB
- Compact design

Please note that this is the documentation for V2 of the PCB. The 78L05 regulator has been removed and 2 10k pull down resistors have been added to the ENABLE control lines.

Component List

BAT and PWR SW - 2 way 5mm pitch terminal blocks for power supply and power switch
2 x 2 way 5mm terminal blocks
2 x 3 way 5mm terminal blocks
C1 – 100nF multilayer ceramic capacitor
C2, C3 – 220nF multilayer ceramic capacitor
IC1 – L293D (no DIP socket is needed as the IC heatsinks into the PCB)
R1, R2 - 10k resistors (brown, black, orange)

Instructions

For detailed information on the L293D dual h-bridge driver please see the appropriate datasheet, this can be found at www.rapidonline.co.uk

When constructing PCBs it is advisable to start with the components with the lowest profile, for example resistors, with this PCB start with the IC socket.

Connecting Power

The power is connected to the terminal block marked Battery, the 0V input, usually black is put in the left hand terminal and the +VE, usually red, is put in the right hand terminal, a regulated DC power supply should be used. A power switch can be added to the terminal block marked POWER SW, if a switch is not needed short the terminal block's terminals.

Using the L293D

The L293D is an h-bridge drive chip, for more information on this chip please refer to a datasheet for this device, see www.rapidonline.co.uk

The L293D powers two motors at up to 600mA each or 1 motor up to 1.2A, motors are reversible, the outputs to the motors are clearly marked **MA** and **MB**. The motors are controlled by sending appropriate output signals from the microcontroller to the L293D, the L293D must be enabled and 2 inputs marked **EN1** and **EN2** are used, to enable send a logic 1 to the appropriate enable input, the chip may be permanently enabled if required. To control motors use the following as a guide,

Microcontroller		L293D	
Pin x	to	pin 7	MA
Pin x	to	pin 2	MA
Pin x	to	pin 15	MB
Pin x	to	pin 10	MB

Both inputs low	- motor stop
First output high, second output low	- motor forward
First output low, second output high	- motor reverse
Both inputs high	- motor stop

To attach a motor simply screw the flying leads from the motor into the appropriate terminal block.

Please note that if you use the L293D near to its maximum limits then a heat sink will need to be used.

Please visit our website

www.rkeducation.co.uk

If you have any comments or queries please email us at

technical@rkeducation.co.uk

L293D H-Bridge Motor Driver PCB Schematic – www.rkeducation.co.uk