2016

TENET TECHNETRONICS

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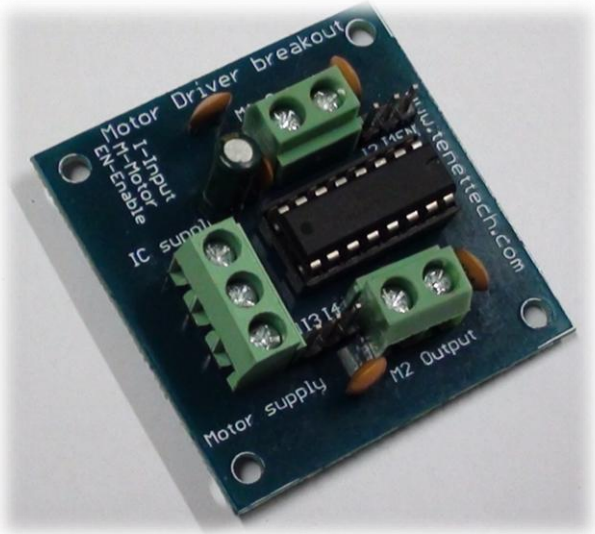
Tenet's L293D motor driver breakout



Contents

#9/3, Shree Lakshmi Complex, 2nd Floor, Opp. To Vivekananda Park, Girinagar, Bangalore - 560085.
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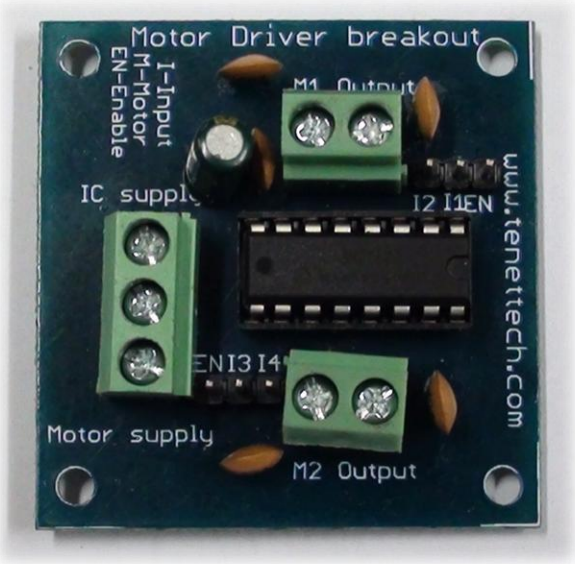
Introduction

Tenet's L293Dbreakout is a dual H-bridge motor driver integrated circuit. Motor drivers act as current amplifiers since they take a low-current control signal and provide a higher-current signal. This higher current signal is used to drive the motors.

L293D contains two inbuilt H-bridge driver circuits. In its common mode of operation, two DC motors can be driven simultaneously, both in forward and reverse direction. The motor operations of two motors can be controlled by input logic at pins 2 & 7 and 10 & 15. Input logic 00 or 11 will stop the corresponding motor. Logic 01 and 10 will rotate it in clockwise and anticlockwise directions, respectively.

Enable pins 1 and 9 (corresponding to the two motors) must be high or floating for motors to start operating. When an enable input is high or floating, the associated driver gets enabled. As a result, the outputs become active and work in phase with their inputs. Similarly, when the enable input is low, that driver is disabled, and their outputs are off and in the high-impedance state.



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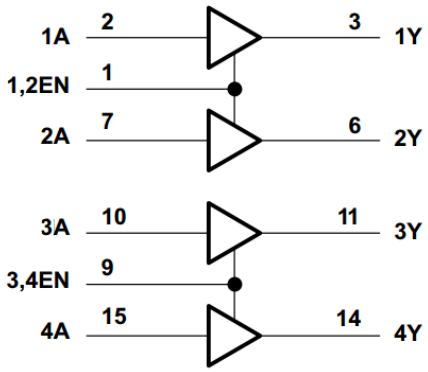
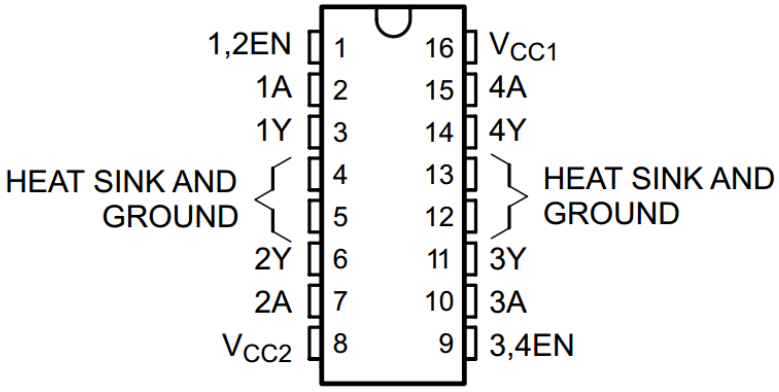
Logic Diagram



Pin Configurations and Functions

NE Package
16-Pin PDIP
Top View



Pin Functions

PIN		TYPE	DESCRIPTION
NAME	NO.		
1,2EN	1	I	Enable driver channels 1 and 2 (active high input)
<1:4>A	2, 7, 10, 15	I	Driver inputs, noninverting
<1:4>Y	3, 6, 11, 14	O	Driver outputs
3,4EN	9	I	Enable driver channels 3 and 4 (active high input)
GROUND	4, 5, 12, 13	—	Device ground and heat sink pin. Connect to printed-circuit-board ground plane with multiple solid vias
V_{CC1}	16	—	5-V supply for internal logic translation
V_{CC2}	8	—	Power VCC for drivers 4.5 V to 36 V

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Features

- Wide Supply-Voltage Range: 4.5 V to 36 V
- Separate Input-Logic Supply
- Internal ESD Protection
- High-Noise-Immunity Inputs
- Output Current 1 A Per Channel (600 mA forL293D)
- Output Clamp Diodes for Inductive TransientSuppression (L293D)

Applications

- Stepper Motor Drivers
- DC Motor Drivers
- Latching Relay Drivers
- Robotics

Specifications:

Absolute maximum ratings

Parameters	Min.	Max.	Unit
Supply voltage, VCC1	-	36	V
Output supply voltage, VCC2	-	36	V
Input voltage, Vi	-	7	V
Output voltage, Vo	–3	VCC2 + 3	V
Peak output current, Io (non-repetitive, t ≤ 100 µs)	–1.2	1.2	A
Continuous output current, Io	–600	600	A

Recommended Operating Conditions

Parameters		Min.	Max.	Unit
Supply voltage	VCC1	4.5	7	V
	VCC2	VCC1	36	V

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High-level input voltage	VCC1 ≤ 7 V	2.3	VCC1	V
	VCC1 ≥ 7 V	2.3	7	V
Low-level output voltage		–0.3	1.5	V
Operating free-air temperature		0	70	°C

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