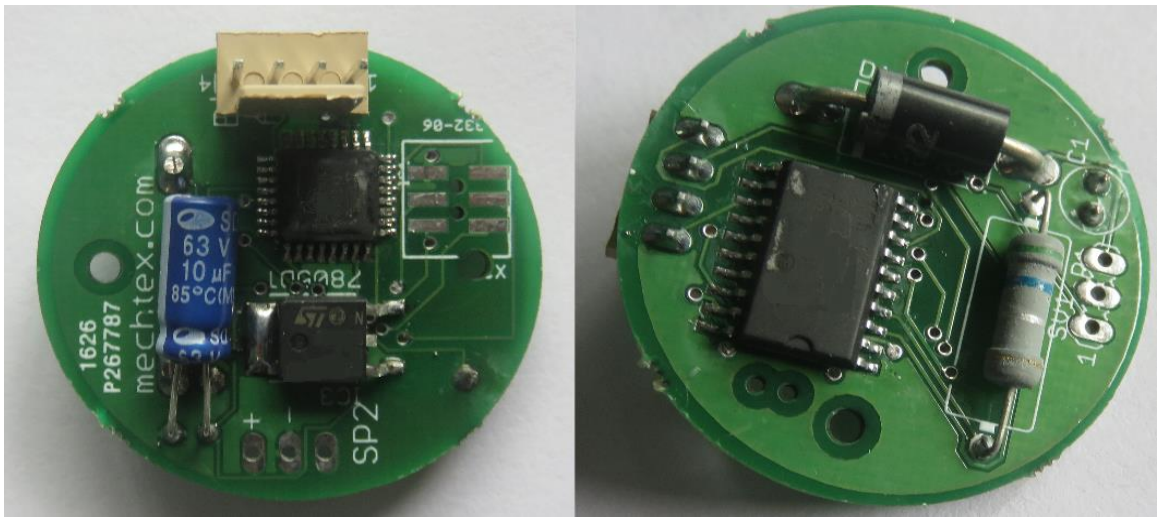
Fixed Speed Stepper Driver

Introduction

An economical solution for a BLDC motor for Fixed Speed applications requiring a Long Service life (>10,000 hours). A very simple yet sturdy constant voltage bipolar stepper driver that can be easily mounted on MECHTEX stepper motors. Just applying supply voltage, motor runs at desired preset speed and torque. A simple Dust Cover protecting the circuit from foreign bodies can be provided. Two speed selection modes are also available on special request.



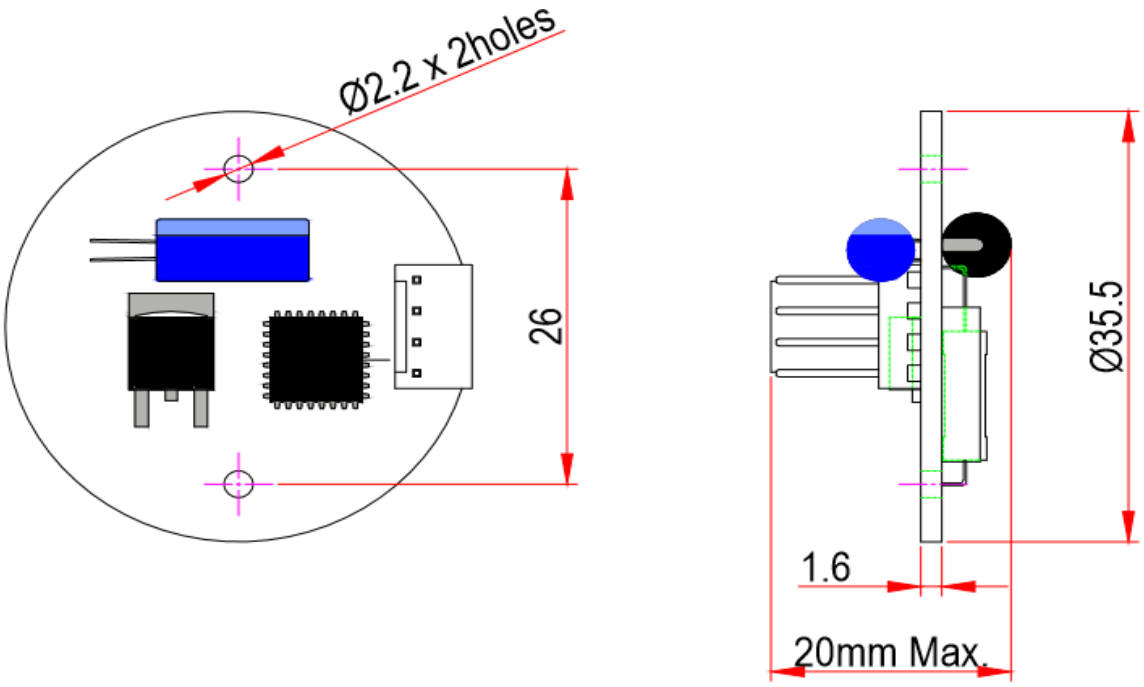
The main advantages of the circuit are:

- Economical Stepper Drive for a FIXED Speed DC Motor Application
- Life Expectancy of >10,000 hours.
- Small and easy mounting on MECHTEX motors.
- Supply Voltage Range from 6V-24V DC.
- Overcurrent and Reverse Polarity Protections.
- Can withstand up to 0.5A of continuous current and 1A spikes (<1ms).
- Customizable Speeds can be Set as per Requirement.

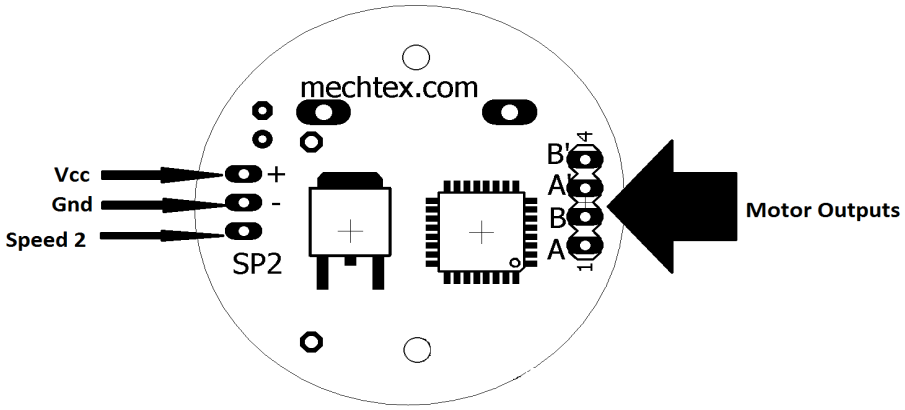
Specifications

Parameters	Description
Input Voltage Range	6 – 24 VDC
Maximum Constant current	0.5 Amp
Connections	2.5mm PCD connector MALE UL Part number 640454-4
Mating Connector	2.5mm PCD connector FEMALE UL Part number 1375820-4
No. of speed selection modes	2 modes (on special request only)
Drive Mode	Half Step Drive (Full Step on special request only)
Operating Temperature	-20° to 60° C
Protections Provided	Overcurrent and Reverse Polarity
Motor Cable AWG	20-26 AWG
Input Cables	26 AWG x 200mm x 10mm ends stripped (connectors can be
Mounting Holes	Ø2.2 @ 26PCD
Mounting	Pre-mounted on MECHTEX motors on Request
IP	00 as per IEC60529 30 available if mounted on MECHTEX motors
Duty Cycle	100%

Mechanical Data



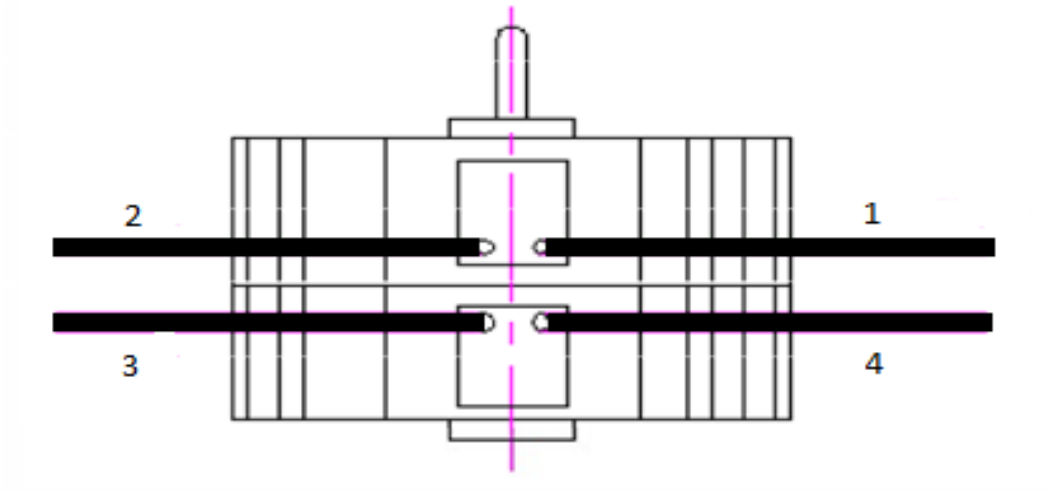
Circuit Outputs and Inputs



Circuit Connections

Vcc: This is the +ve input. It could be from 6V-24V.
Gnd: This is the -ve input.
Speed 2: Connect this pin to ground and restart the circuit for running the motor the second pre-set speed.
Motor Outputs: These are the 4 wires connected to the motor in the sequence A ,B ,A',B' from bottom to top. The motor outputs are as shown below.

Motor Wire Connections



Forward Direction Wire Sequence→ **A→2 B→4 A'→3 B'→1**
Reverse Direction Wire Sequence→ **A→1 B→3 A'→4 B'→2**