

BigEasyDriver v1.6

www.schmalzhaus.com/BigEasyDriver

An easy to use bipolar stepper motor driver
 Use 4 wire, 6 wire or 8 wire stepper motors
 From 0mA/phase to over 2A/phase
 Defaults to 5V for Ucc (logic supply), settable to 3.3V
 Supply 8V to 35V DC power input on JP1 or JP7
 Do not connect or disconnect motor while BigEasyDriver is powered

DEFAULT OPTIONS
 Short JP10, or JP6 pins to GND or Ucc to override

SLEEP = Ucc (awake)
 MS1 = Ucc (1/16 microstep)
 MS2 = Ucc (1/16 microstep)
 ENABLE = GND (enabled)
 RESET = Ucc (not reset)
 MS3 = Ucc (1/16 microstep)

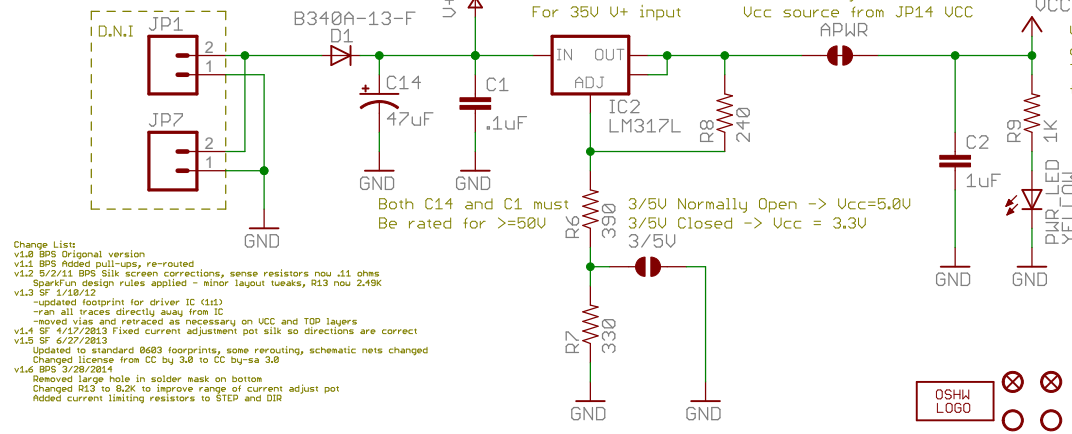
NOTE: UCC is normally an OUTPUT. You do not need to supply power to the Big Easy Driver through UCC. The only power needed is through M+ (motor power).

You only need to connect M+, GND, STEP, DIR and the motor outputs. All other I/O is set to default to 1/16th microstep mode, and connections are not required for basic operation.

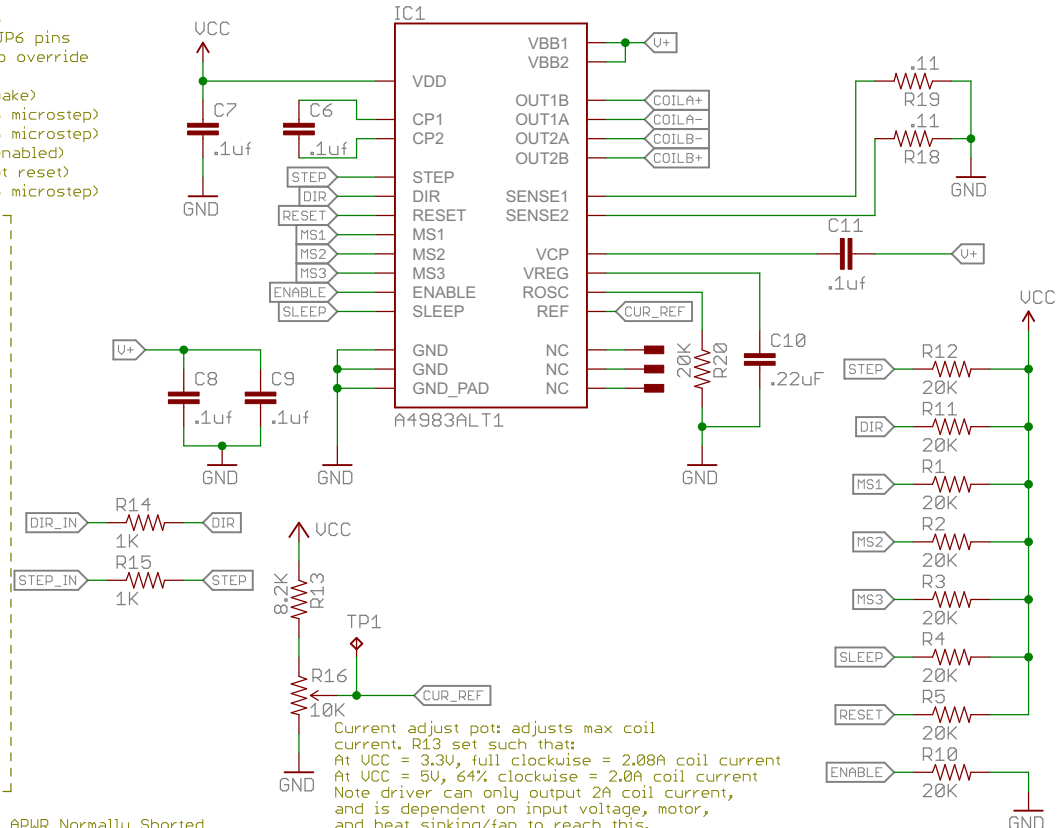
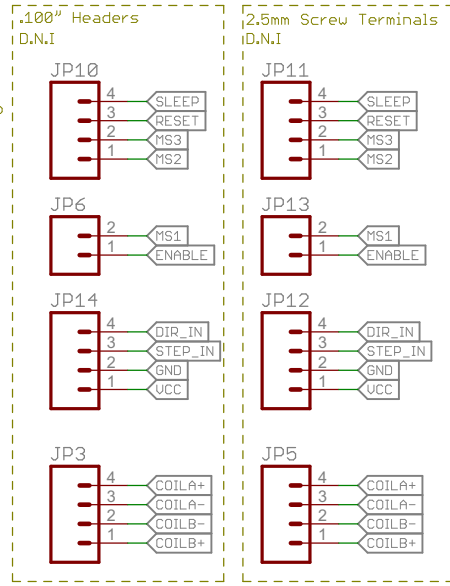
DIR is level sensitive
 A rising edge on STEP causes a step
 Both take 0V to Ucc

Bi-polar Stepper Motor Outputs
 Coil A of motor across COILA+ and COILA-
 Coil B of motor across COILB+ and COILB-

Power Input JP1, JP7
 8V to 35V DC



Change List:
 v1.0 BPS Original version
 v1.1 BPS Added pull-ups, re-routed
 v1.2 5/2/11 BPS Silk screen corrections, sense resistors now .11 ohms
 - SparkFun design rules applied - minor layout tweaks, R13 now 2.49K
 v1.3 SF 1/10/12
 - updated footprint for driver IC (11)
 - ran all traces directly away from IC
 - moved vias and retraced as necessary on UCC and TOP layers
 v1.4 SF 4/27/2013 Fixed current adjustment pot silk so directions are correct
 v1.5 SF 6/27/2013
 Updated to standard 0603 footprints, some rerouting, schematic nets changed
 Changed license from CC by 3.0 to CC by-sa 3.0
 v1.6 BPS 3/28/2014
 Removed large hole in solder mask on bottom
 Changed R13 to 8.2K to improve range of current adjust pot
 Added current limiting resistors to STEP and DIR



Current adjust pot: adjusts max coil current. R13 set such that:
 At UCC = 3.3V, full clockwise = 2.08A coil current
 At UCC = 5V, 64% clockwise = 2.0A coil current
 Note driver can only output 2A coil current, and is dependent on input voltage, motor, and heat sinking/fan to reach this.

Voltage regulator can supply 100mA only 15mA of which the BED needs. The rest you can use, if you want from the UCC pin.

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