BigEasyDriver v1.6a

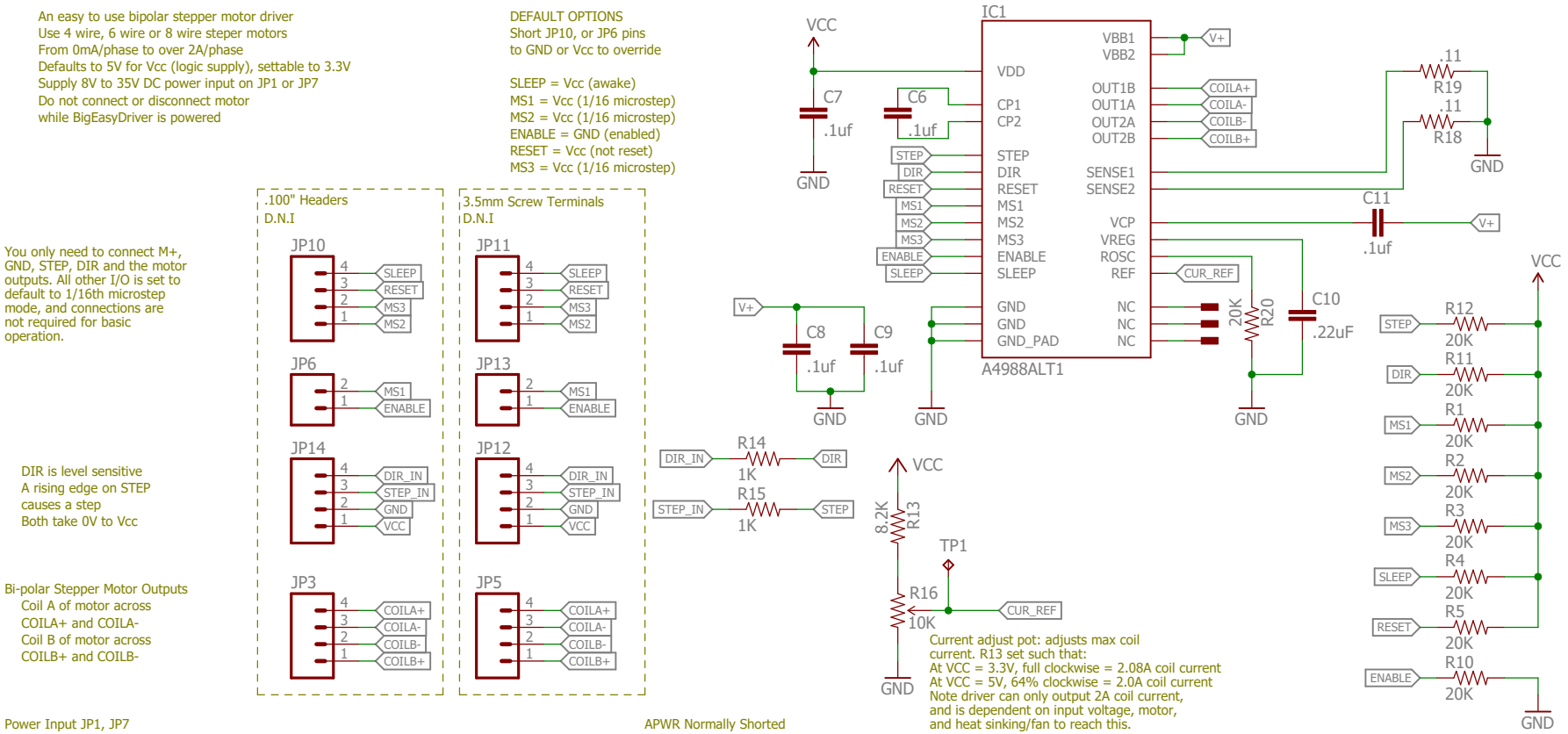
www.schmalzhaus.com/BigEasyDriver

An easy to use bipolar stepper motor driver
Use 4 wire, 6 wire or 8 wire steper motors
From 0mA/phase to over 2A/phase
Defaults to 5V for Vcc (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 Vcc to override

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

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



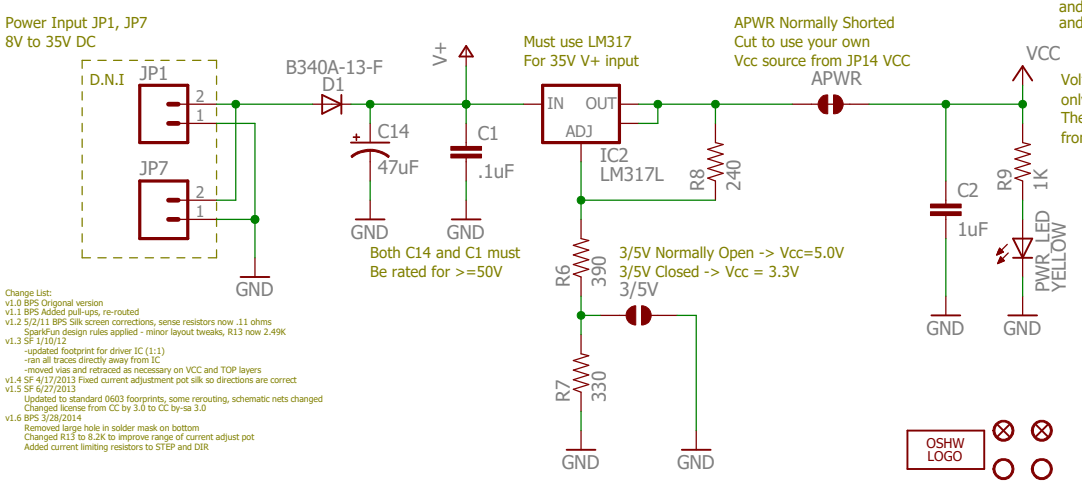
You only need to connect M+,
GND, STEP, DIR and the motor
outputs. All other I/O is set to
default to 1/16th microstep
mode, and connections are
not required for basic
operation.

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

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

Current adjust pot: adjusts max coil
current. R13 set such that:
At VCC = 3.3V, full clockwise = 2.08A coil current
At VCC = 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.

Power Input JP1, JP7
8V to 35V DC



Both C14 and C1 must
Be rated for >=50V

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

TITLE: BigEasyDriver_v16a | SFE

Design by: Brian Schmalz
Revised by Patrick Alberts
Produced by SparkFun Electronics

REV: v16a

Date: 11/10/2016 3:36 PM | Sheet: 1/1

OSHW LOGO

Change List:
v1.0 BPS Origonal 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 (1:1)
-ran all traces directly away from IC
-moved vias and retraced as necessary on VCC and TOP layers
v1.4 SF 4/17/2013 Fixed current adjustment pot silk so directions are correct
v1.5 SF 6/27/2013
Updated to standard 0603 foorprints, 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