EasyDriver v4.5

www.schmalzhaus.com/EasyDriver

An easy to use bipolar stepper motor driver
Use 4 wire, 6 wire or 8 wire steper motors
From about 150mA/phase to about 750mA/phase
Defaults to 5V for Vcc (logic supply), settable to 3.3V
Supply 8V to 30V DC power input on JP1
Do not connect or disconnect motor
whlie EasyDriver is powered

DEFAULT OPTIONS
Short JP5, JP6, JP7 pins
to GND or Vcc to override

SLEEP = Vcc (awake)
MS1 = Vcc (1/8 microstep)
MS2 = Vcc (1/8 microstep)
ENABLE = GND (enabled)
RESET = Vcc (not reset)
PFD = Vcc (slow decay mode)

JP5 JP6 JP7

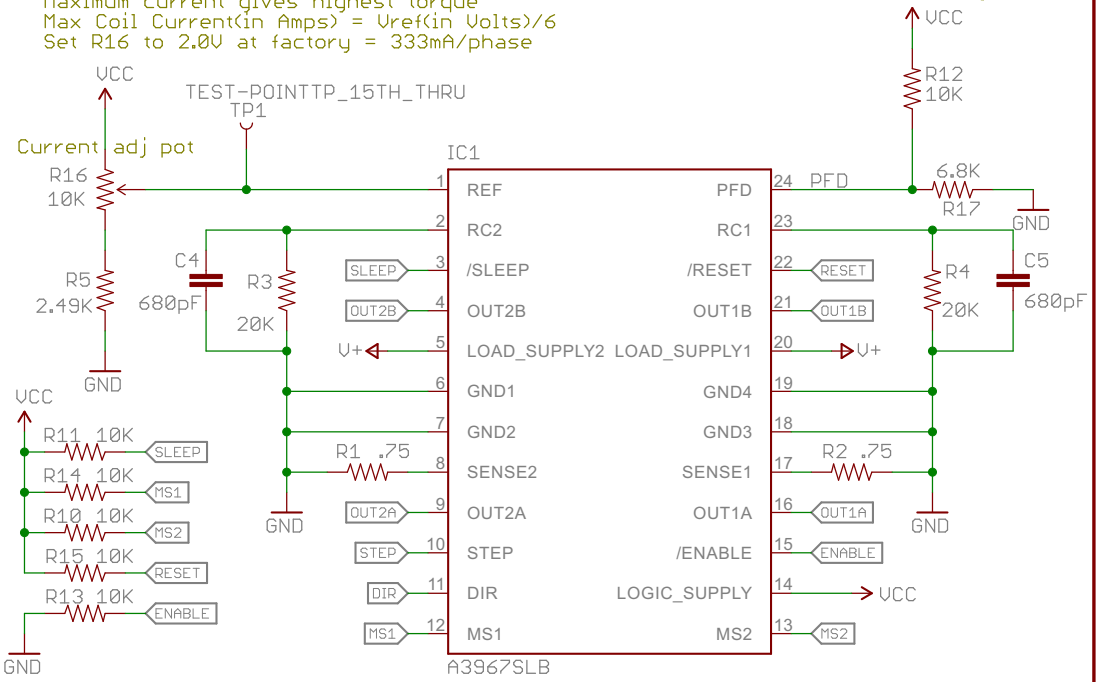
DIR is level sensitive
A rising edge on STEP
causes a step
Both take 0V to Vcc

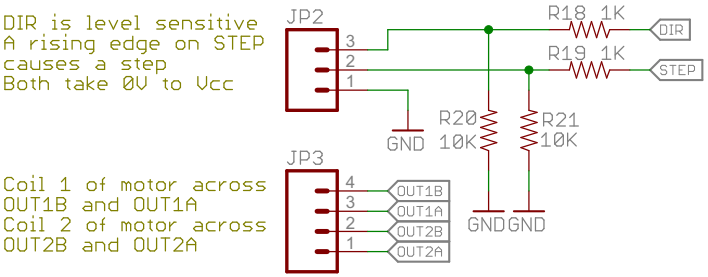
JP2 JP3

Coil 1 of motor across
OUT1B and OUT1A
Coil 2 of motor across
OUT2B and OUT2A

TP1 = Vref input to driver
Monitor this test point with meter
as you adjust current adj pot
Valid range 1.0V to Vcc
At Vref of 5V max current will be 833mA
At Vref of 2V max current will be 333mA
At Vref of 1V max current will be 166mA
Minimum current gives smoothest microsteps
Maximum current gives highest torque
Max Coil Current(in Amps) = Vref(in Volts)/6
Set R16 to 2.0V at factory = 333mA/phase

PFD intermediate voltage
Set for 'mixed-decay' mode.



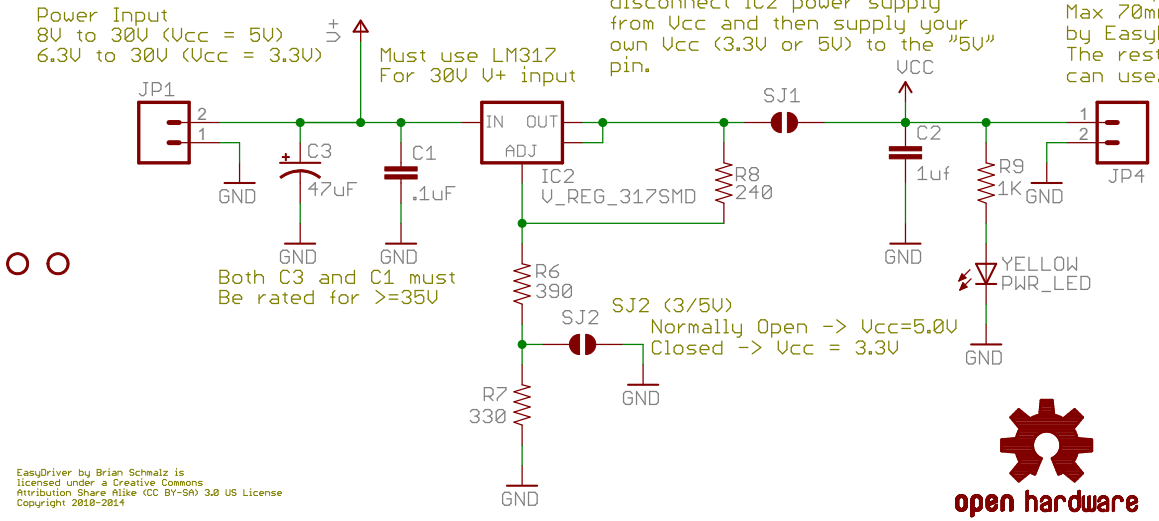


Power Input
8V to 30V (Vcc = 5V)
6.3V to 30V (Vcc = 3.3V)

Must use LM317
For 30V V+ input

SJ1 (APWR) Shorted with copper trace from factory. Cut trace to disconnect IC2 power supply from Vcc and then supply your own Vcc (3.3V or 5V) to the "5V" pin.

Vcc output
Max 70mA used
by EasyDriver.
The rest you
can use.



Both C3 and C1 must
Be rated for >=35V

Change List:
v4.3 12/09/09 BPS Added mounting holes
v4.4 10/24/28 BPS
Fixed MIN/MAX silkscreen
All vias now .02"
v4.4 1/3/12 BPS : C3 now 47uF
v4.5 2/25/14 BPS
Added series resistors and pull douns on STEP/DIR
Updated pot foopprint
Made bottom layer GND rather than VCC
Updated to latest SparkFun footprints
Suithed from CC BY 3.0 to CC BY-SA 3.0 license
Fixed pot silkscreen direction
R5 now 2.5K Ohms to get down to 1V on Vref
R17 now 6.8K to set PDF to 'mixed-decay' mode

open hardware

TITLE: EasyDriver_v45 | SFE

Design by: Brian Schmalz
Produced by Spark Fun Electronics

REV: 4.5

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