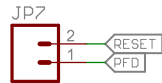
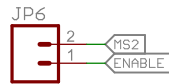
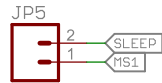


# EasyDriver v4.5

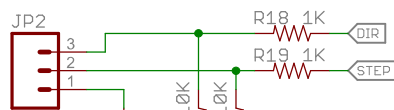
An easy to use bipolar stepper motor driver  
 Use 4 wire, 6 wire or 8 wire stepper motors  
 From about 150mA/phase to about 750mA/phase  
 Defaults to 5V for Ucc (logic supply), settable to 3.3V  
 Supply 8V to 30V DC power input on JP1  
 Do not connect or disconnect motor while EasyDriver is powered

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

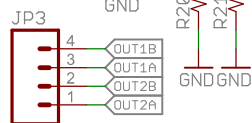
SLEEP = Ucc (awake)  
 MS1 = Ucc (1/8 microstep)  
 MS2 = Ucc (1/8 microstep)  
 ENABLE = GND (enabled)  
 RESET = Ucc (not reset)  
 PFD = Ucc (slow decay mode)



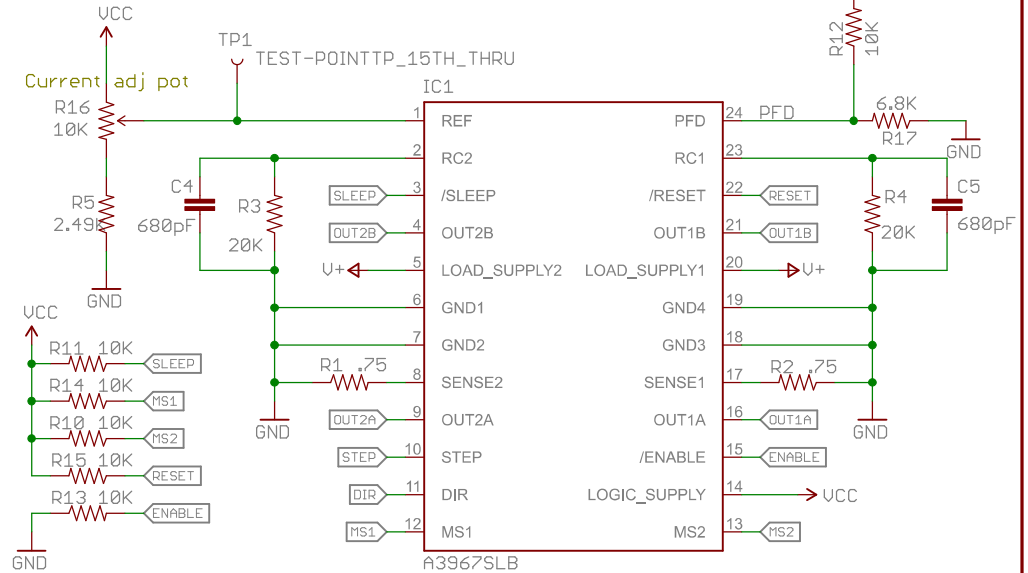
DIR is level sensitive  
 A rising edge on STEP causes a step  
 Both take 0V to Ucc



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



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

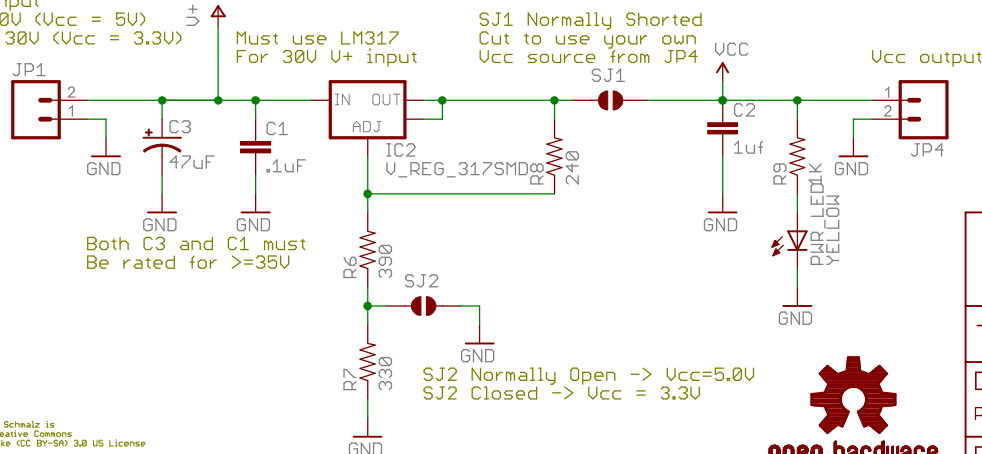


PFD intermediate voltage  
 Set for 'mixed-decay' mode.

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

Must use LM317  
 For 30V U+ input

SJ1 Normally Shorted  
 Cut to use your own Ucc source from JP4



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

SJ2 Normally Open -> Ucc=5.0V  
 SJ2 Closed -> Ucc = 3.3V

Change List:  
 v4.3 12/09/09 BPS added mounting holes  
 v4.4 10/24/20 BPS Fixed microstep ejkscreen  
 All vias now .02"  
 v4.4 1/3/12 BPS 1 C3 now 47uF  
 v4.5 2/25/14 BPS

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TITLE: EasyDriver\_v45 SFE

Design by: Brian Schmalz  
 Produced by Spark Fun Electronics  
 REV: 4.5

Date: 12/18/2014 9:51:38 AM Sheet: 1/1

