BigEasyDriver v1.2

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).

.100" Headers
D.N.I

2.5mm Screw Terminals
D.N.I

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

JP10: 4 SLEEP, 3 RESET, 2 MS3, 1 MS2
JP11: 4 SLEEP, 3 RESET, 2 MS3, 1 MS2
JP6: 2 MS1, 1 ENABLE
JP13: 2 MS1, 1 ENABLE

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

JP14: 4 DIR, 3 STEP, 2 GND, 1 VCC
JP12: 4 DIR, 3 STEP, 2 GND, 1 VCC

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

JP3: 4 COILA+, 3 COILA-, 2 COILB-, 1 COILB+
JP5: 4 COILA+, 3 COILA-, 2 COILB-, 1 COILB+

IC1 A4983
VBB1, VBB2, VDD, CP1, CP2, STEP, DIR, RESET, MS1, MS2, MS3, ENABLE, SLEEP, GND, GND, GND_PAD
OUT1B, OUT1A, OUT2A, OUT2B, SENSE1, SENSE2, VCP, VREG, ROSC, REF, NC, NC, NC
COILA+, COILA-, COILB-, COILB+
CUR_REF

VCC, V+, C7 .1uf, C6 .1uf, C8 .1uf, C9 .1uf, C11 .1uf, C10 .22uF
R19 .11, R18 .11, R20 20K, R13 2.49K, R16 10K, TP1
Current adj pot
Motor current 0mA to 2.4A

STEP R12 20K
DIR R11 20K
MS1 R1 20K
MS2 R2 20K
MS3 R3 20K
SLEEP R4 20K
RESET R5 20K
ENABLE R10 20K

Power Input JP1, JP7
8V to 35V DC

D.N.I JP1, JP7
B340A-13-F D1
C14 47uF, C1 .1uF
IC2 LM317L
R8 240

Must use LM317
For 35V V+ input

APWR Normally Shorted
Cut to use your own
Vcc source from JP14 VCC

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

Both C14 and C1 must be rated for >=50V
R6 390 3/5V Normally Open -> Vcc=5.0V
3/5V Closed -> Vcc = 3.3V
3/5V
R7 330
C2 1uF
R9 1K
PWR_LED YELLOW

Change List:
v1.0 Origonal version
v1.1 Added pull-ups, re-routed
v1.2 5/2/11 Silk screen corrections, sense resistors now .11 ohms
SparkFun design rules applied - minor layout tweaks, R13 now XXX

OSHW LOGO

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