EasyDriver v4.4

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

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 3.3V max current will be 550mA
At VREF of 1V max current will be 166mA
Minimum current gives smoothest microsteps
Maximum current gives highest torque

PFD intermediate voltage
Change R12 and add in
R17 to create any voltage
on PFD for best high
speed performance.
See datasheet

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
2 SLEEP
1 MS1

JP6
2 MS2
1 ENABLE

JP7
2 RESET
1 PFD

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

JP2
3 DIR
2 STEP
1 GND

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

JP3
4 OUT1B
3 OUT1A
2 OUT2B
1 OUT2A

VCC
R16
TRIMPot adj pot
R5
5.1K
GND

TP1

C4
680pF
R3
20K
GND

VCC
10K
R11
SLEEP
V+

IC1

1	REF	PFD	24	PFD
2	RC2	RC1	23	
3	/SLEEP	/RESET	22	RESET
4	OUT2B	OUT1B	21	OUT1B
5	LOAD_SUPPLY2	LOAD_SUPPLY1	20	V+
6	GND1	GND4	19	
7	GND2	GND3	18	
8	SENSE2	SENSE1	17	
9	OUT2A	OUT1A	16	OUT1A
10	STEP	/ENABLE	15	ENABLE
11	DIR	LOGIC_SUPPLY	14	
12	MS1	MS2	13	MS2

A3967SLB

VCC
R12
10K
NOPOP
???
R17
GND

R15
10K
VCC
R4
20K
C5
680pF
GND

R1
.75
GND

.75
R2
GND

R13
10K
VCC
GND

R14
10K
VCC
MS1

R10
10K
VCC

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

V+

Must use LM317
For 30V V+ input

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

VCC

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

JP1
2
1

C3
100uF
C1
.1uF

IN OUT
ADJ
IC2
V_REG_317SMD

SJ1

R8
240

C2
1uf
GND

R9
PWR LED
YELLOW
GND

JP4
1
2

Both C3 and C1 must
Be rated for >30V

R6
390

SJ2

R7
330

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

GND

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Designed by Brian Schmalz

Produce by Spark Fun Electronics

TITLE: EasyDriver_v44   SFE

Document Number: REV:

Date: 11/1/2010 1:58:02 PM   Sheet: 1/1

Change List:
v4.3 (12/09/2009)
    v4.3 Added mounting holes
v4.4 (10/24/2010)
    Fixed MIN/MAX silkscreen
    All vias now .02"

11/1/2010 2:11:19 PM D:\Projects\EasyDriver\EE\Driver\EasyDriver_v44\EasyDriver_v44.sch (Sheet: 1/1)