

Sheet: Stepper Drivers



File: steppers.sch

Sheet: Stepper Drivers 2



File: steppers2.sch

Sheet: Inputs



File: con_inputs.sch

Sheet: Emergency Stop



File: e-stop.sch

Sheet: Outputs



File: con_outputs.sch

Sheet: Power



File: Power.sch

Sheet: Misc Connectors

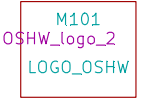
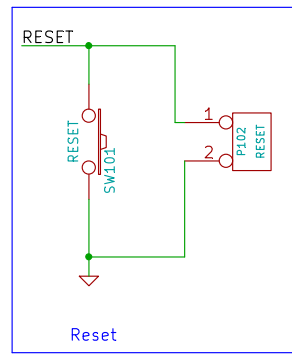
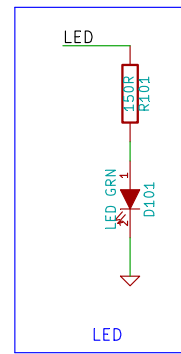


File: con_misc.sch

Sheet: Extra MOSFETs



File: Extra_Mosfets.sch



Bob Cousins 2013
 GPL v3
 Derived from RAMPS 1.4 rebrap.org/wiki/RAMPS1.4

File: RAMPS-FD.sch

Sheet: /

Title: RAMPS-FD (RAMPS for Arduino Due)

Size: A4 Date: 6 oct 2013

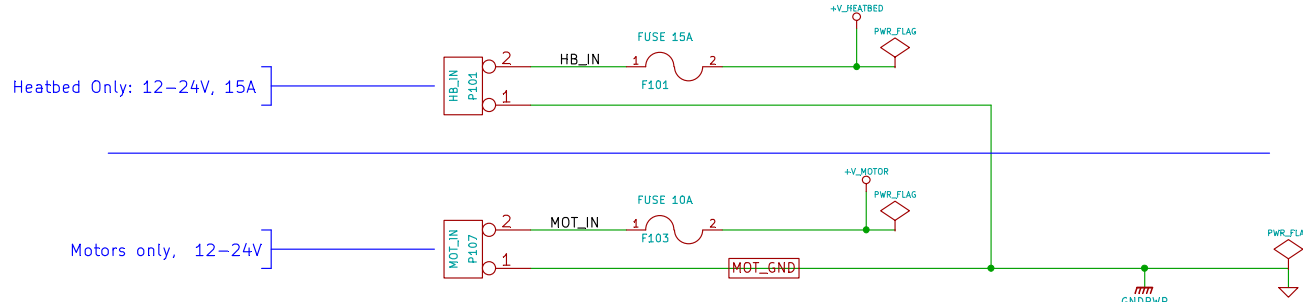
KiCad E.D.A. eschema (2013-07-07 BZR 4022)-stable

Rev: 0.2

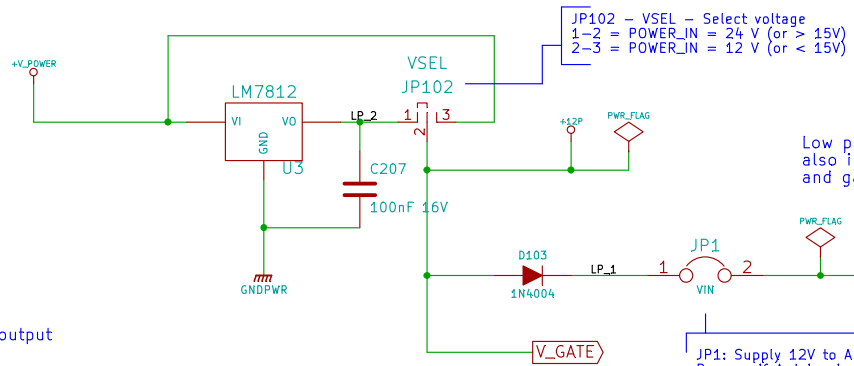
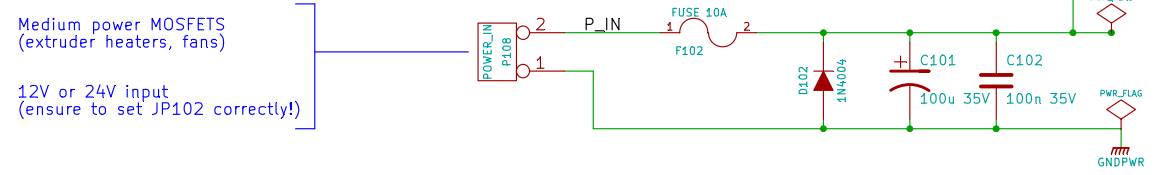
Id: 1/9

Power

PS-ON P103



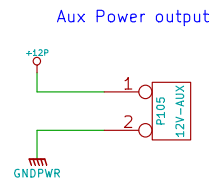
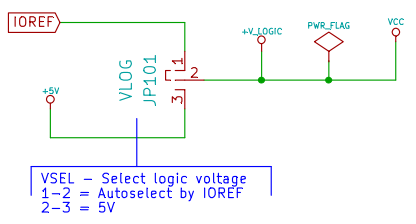
Note: use thick traces for all high power connections



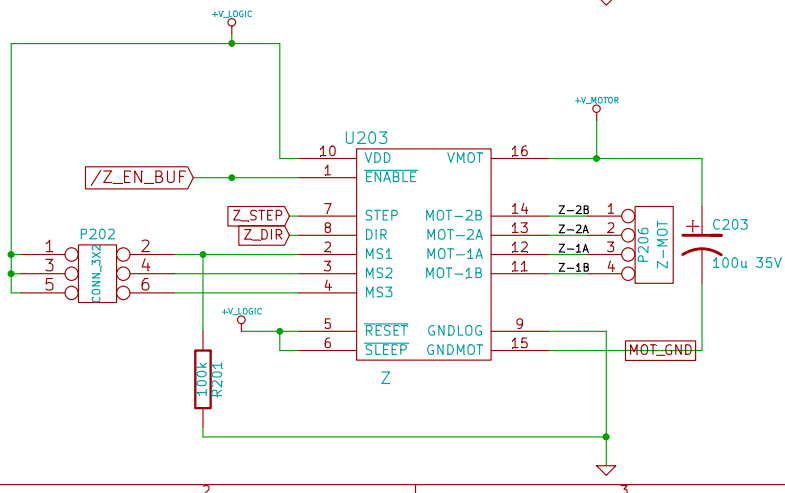
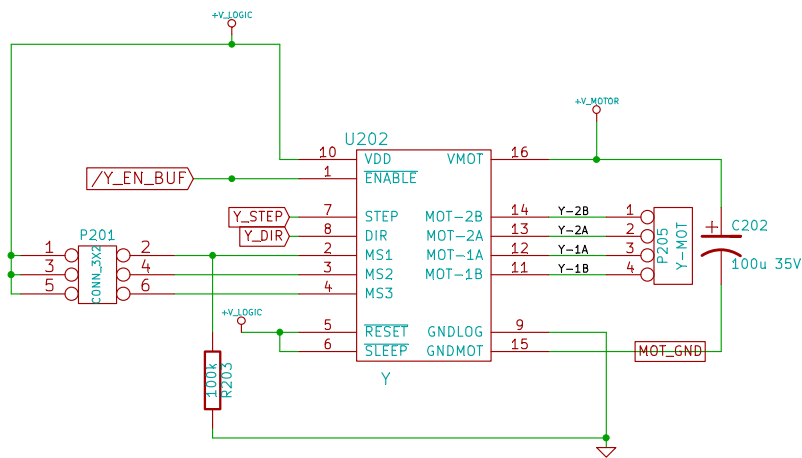
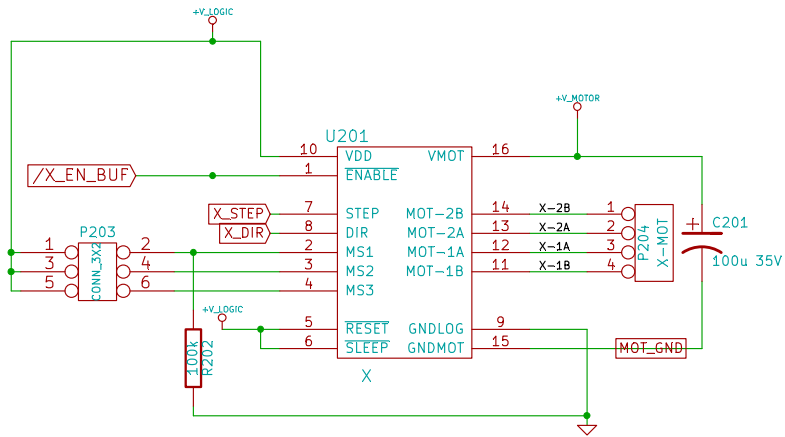
Low power MOSFETS (fans etc) also input to Due/Mega and gate voltage

JP1: Supply 12V to Arduino in standalone operation
Remove if Arduino is powered by USB or other supply

Note: On R3 compatible Arduinos, IOREF will supply 3.3V (Due), or 5V (Mega).
If IOREF is not provided (non-R3) then it must be a 5V Arduino so set VSEL to 5V.



File: Power.sch	
Sheet: /Power/	
Title:	
Size: A4	Date: 6 oct 2013
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Rev:	
Id: 2/9	



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 GPL v3
 Derived from RAMPS 1.4 reprap.org/wiki/RAMPS1.4

File: steppers.sch
 Sheet: /Stepper Drivers/

Title: RAMPS-FS RAMPS for Due

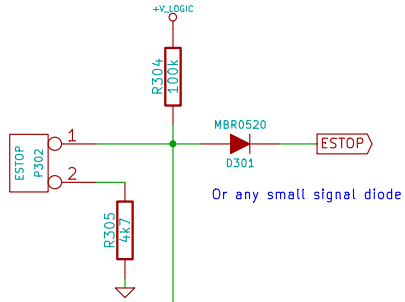
Size: A4 Date: 6 oct 2013

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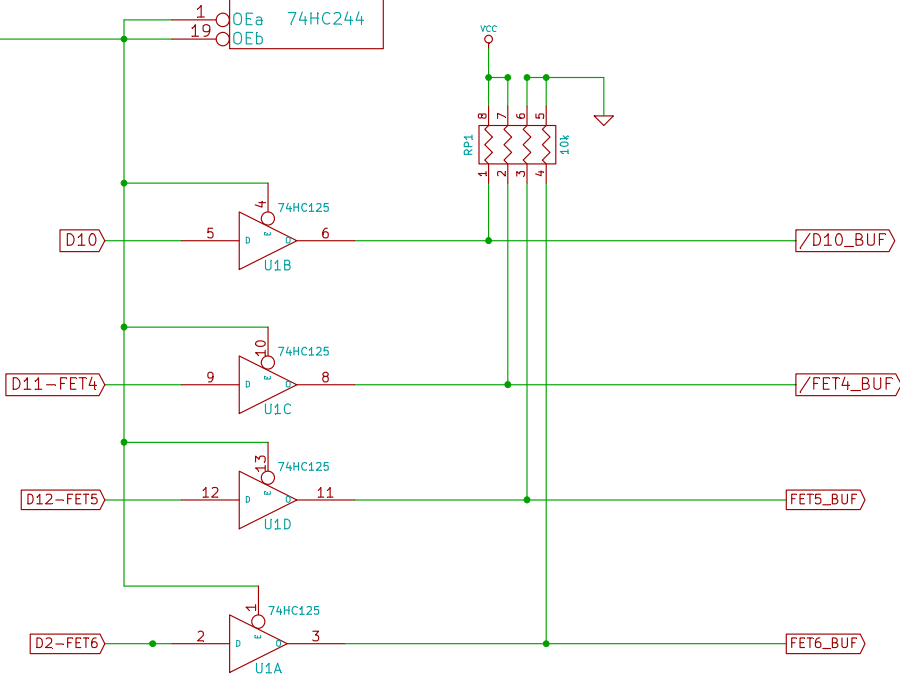
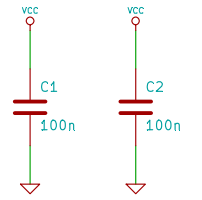
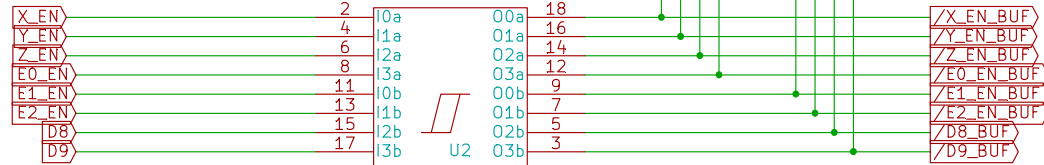
Rev: 0.2

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Emergency Stop switch (NC)
use jumper if not present



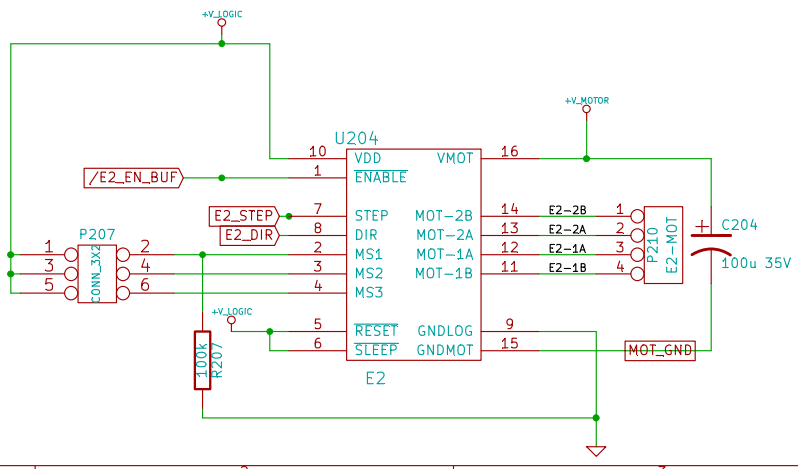
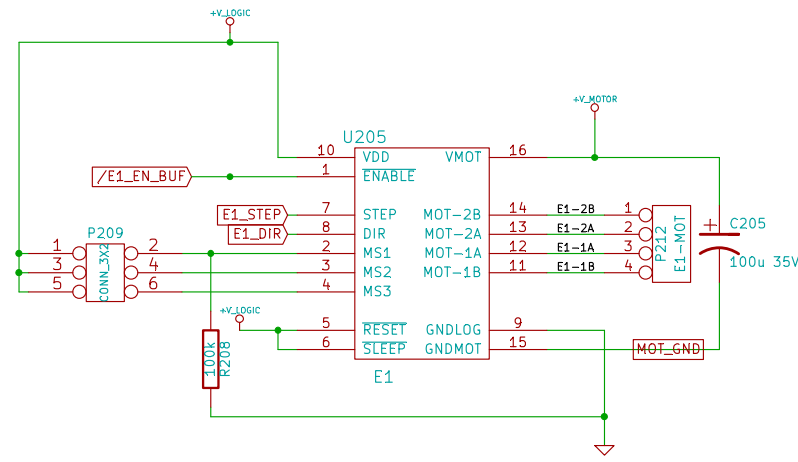
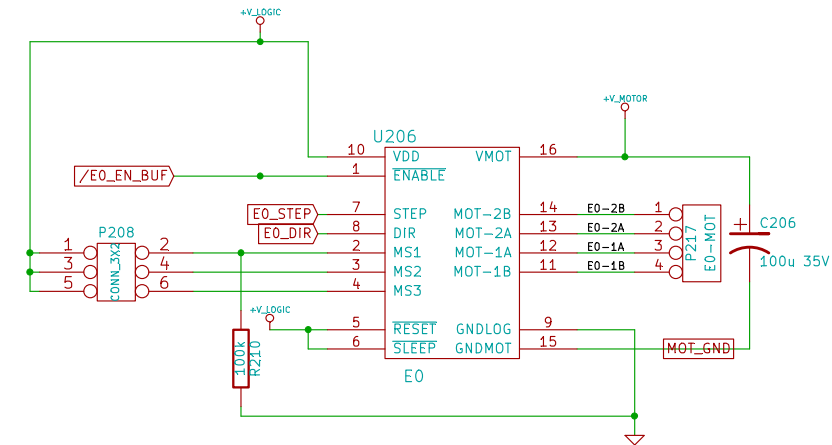
Or any small signal diode



Active low

Active high

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File: e-stop.sch Sheet: /Emergency Stop/		
Title: RAMPS-FS RAMPS for Due		
Size: A4	Date: 6 oct 2013	Rev: 0.2
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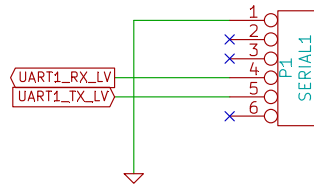
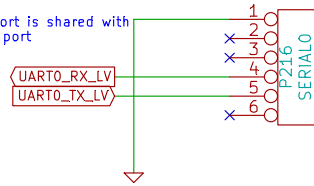
File: steppers2.sch			
Sheet: /Stepper Drivers 2/			
Title:			
Size: A4	Date: 6 oct 2013	Rev: 0.2	
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NB: On Arduino Due: IOs on this page are not 5V tolerant. Do not exceed 3.3V.

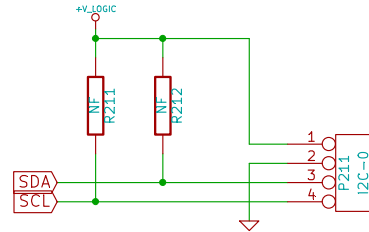
Serial

Note: this serial port is shared with USB programming port

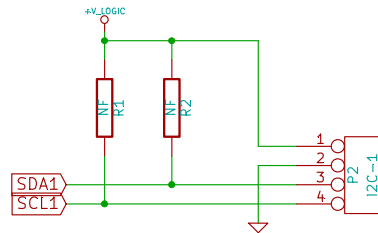
UART-TTL



I2C

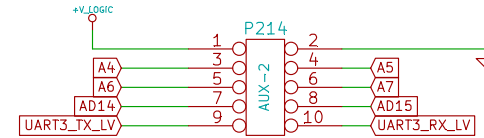


1k5 Pull ups on Due
Must not have external pullups to 5V if IOREF = 3.3V



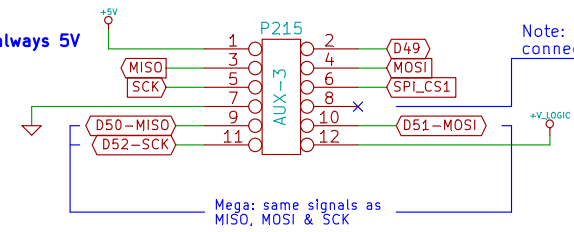
Aux connectors

Aux2



Aux3 - SPI

NB This pin is always 5V

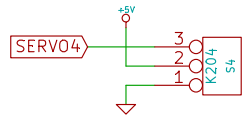
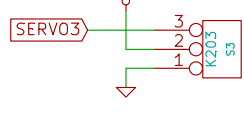
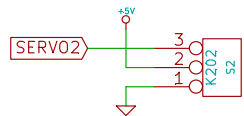
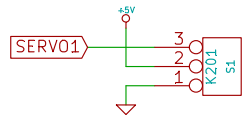
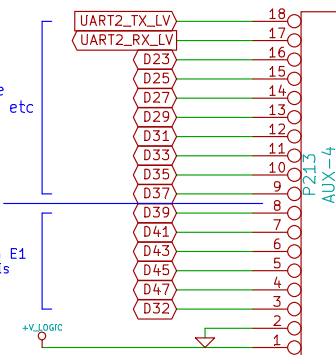


Mega: same signals as MISO, MOSI & SCK

Aux4 - general IO

These are free for LCD panel etc

These are shared with E1 and E2 stepper signals



Servos

Need buffered outputs?

File: con_misc.sch

Sheet: /Misc Connectors/

Title:

Size: A4 Date: 6 oct 2013

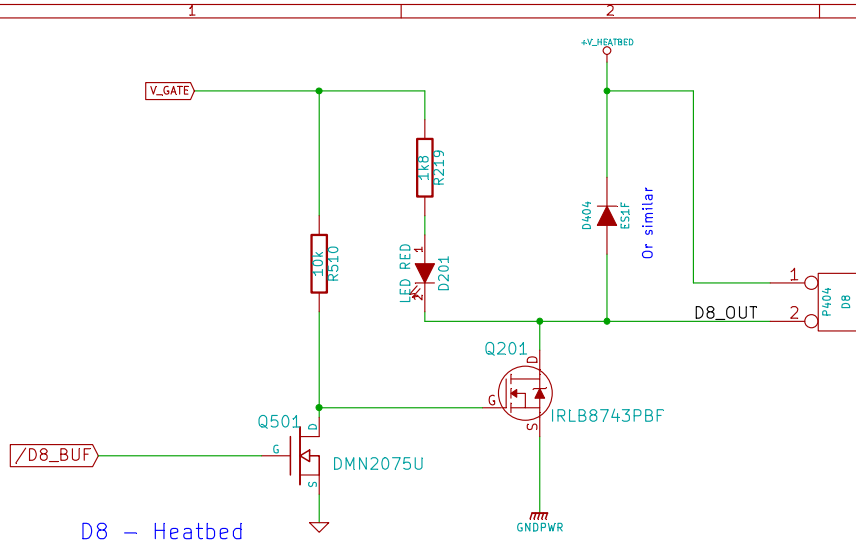
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Rev: 0.2

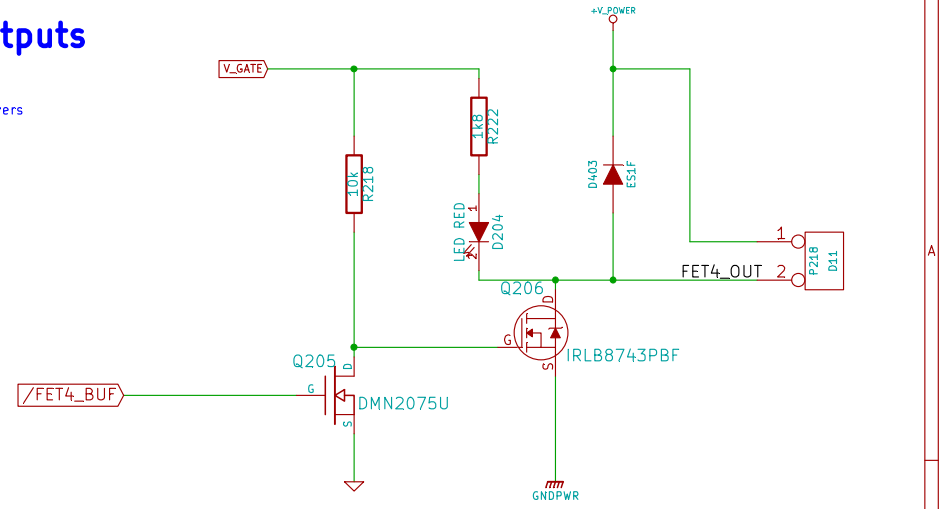
Id: 6/9

MOSFET Outputs

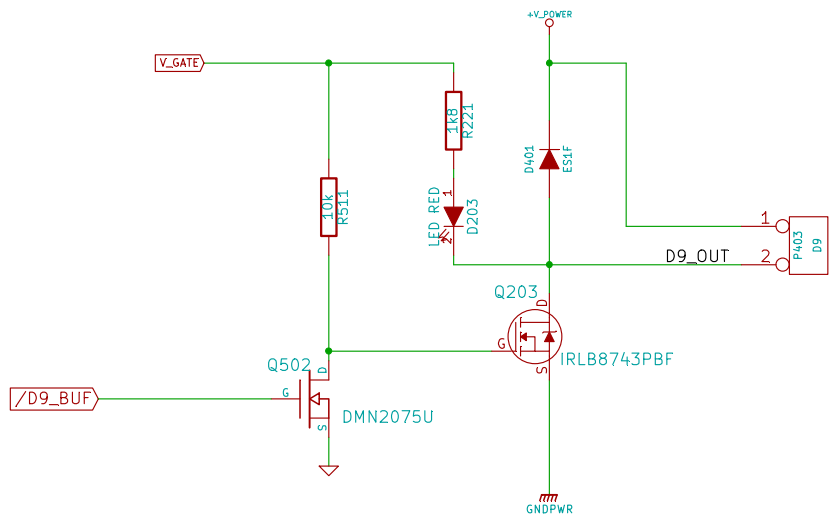
NB: inverting drivers



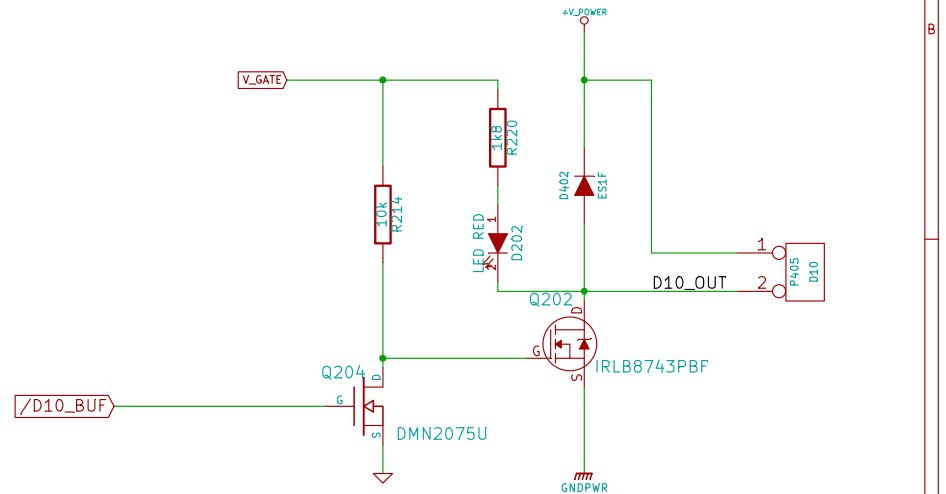
D8 - Heatbed



FET4 - Extruder 3 / Fan

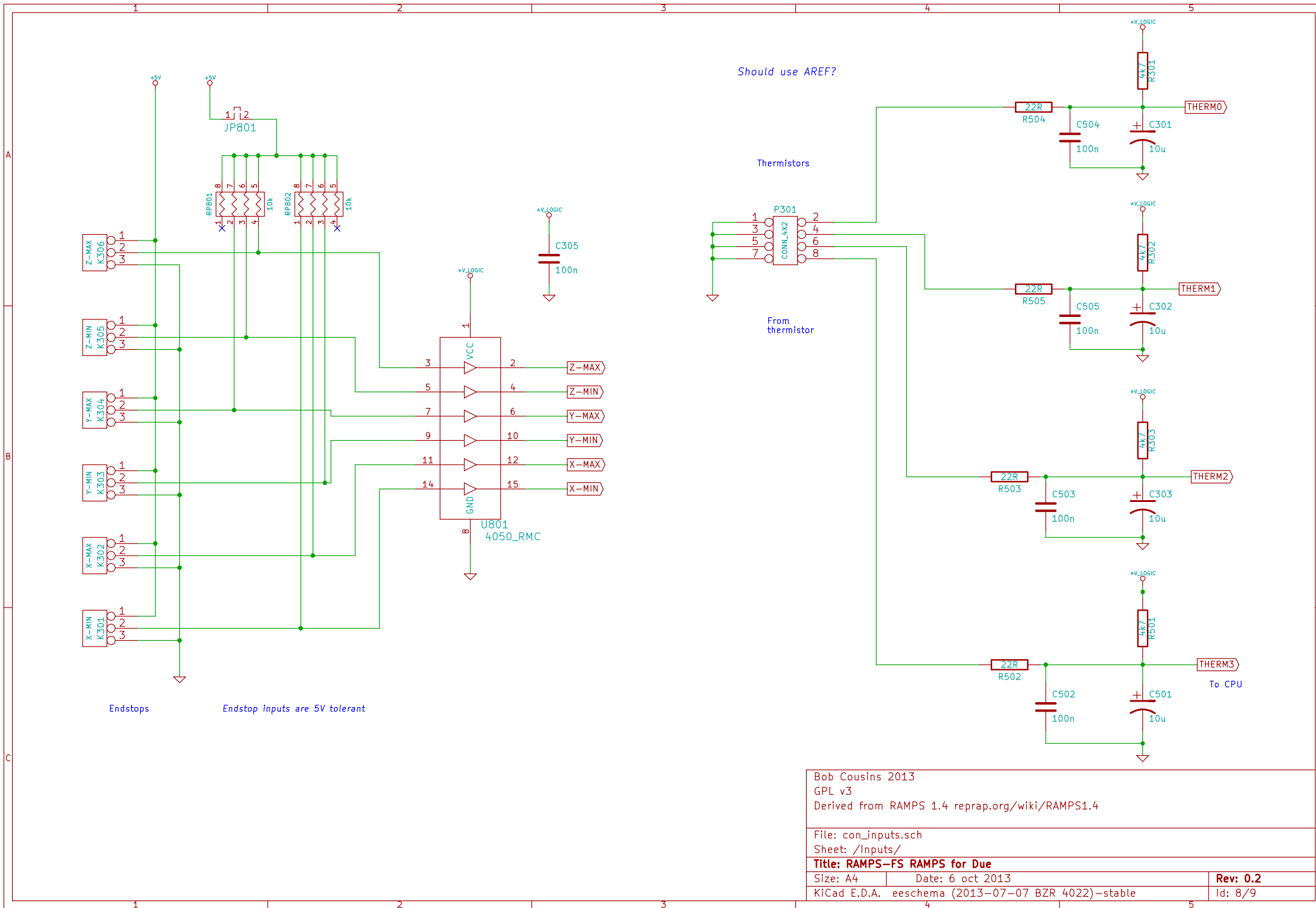


D9 - Extruder 1



D10 - Extruder 2 / Fan

File: con_outputs.sch	
Sheet: /Outputs/	
Title:	
Size: A4	Date: 6 oct 2013
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Rev: 0.2	
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Endstops Endstop inputs are 5V tolerant

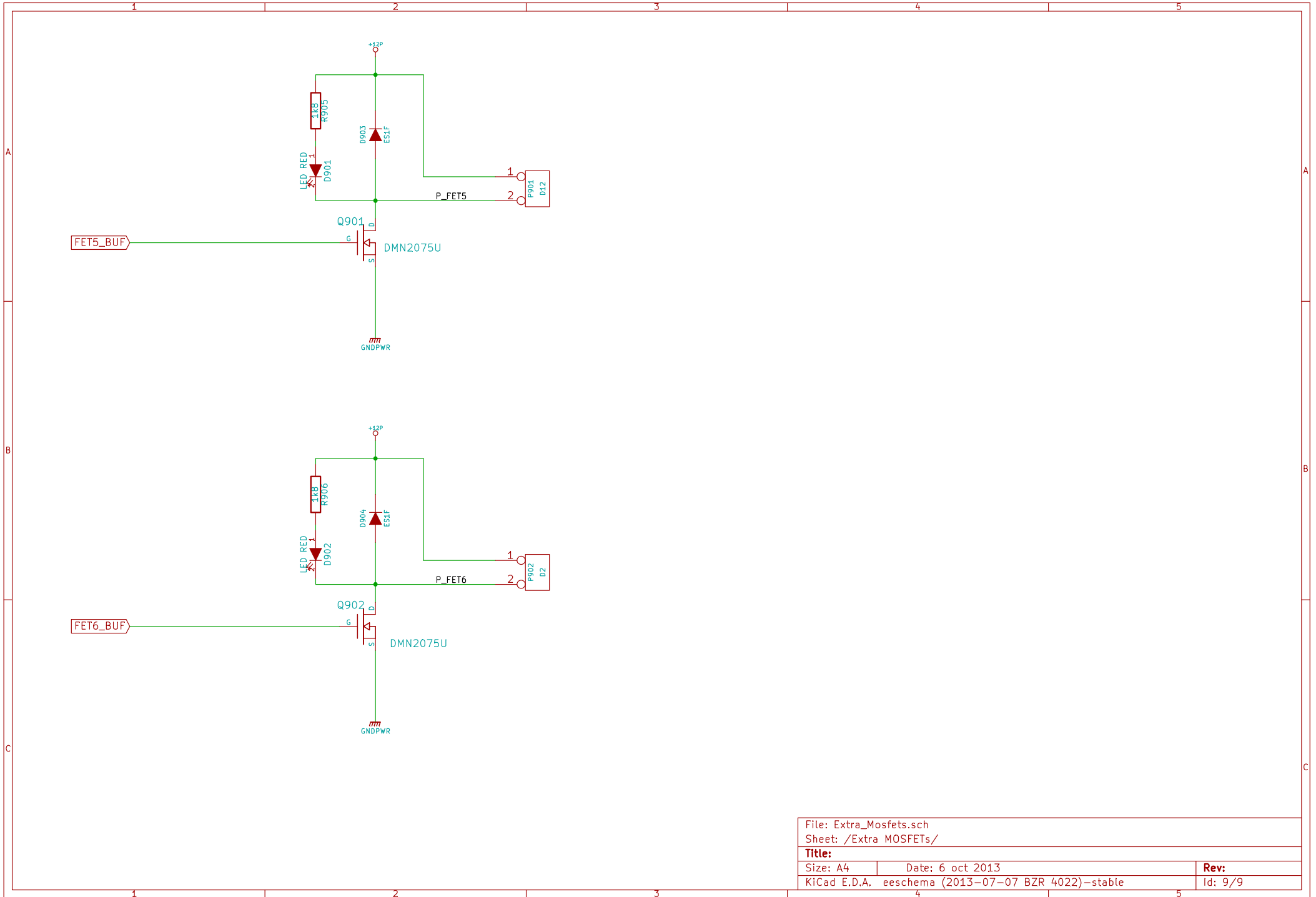
Should use AREF?

Thermistors

From thermistor

To CPU

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File: con_inputs.sch		
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KiCad E.D.A. eschema (2013-07-07 BZR 4022)-stable		Id: 8/9



File: Extra_Mosfets.sch		
Sheet: /Extra MOSFETs/		
Title:		
Size: A4	Date: 6 oct 2013	Rev:
KiCad E.D.A. eschema (2013-07-07 BZR 4022)-stable		Id: 9/9