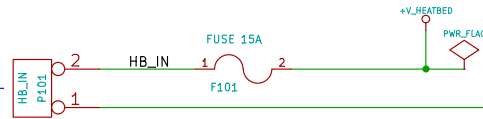
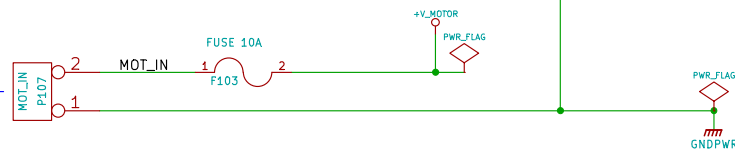


## Power

Heatbed Only: 12–24V, 15A

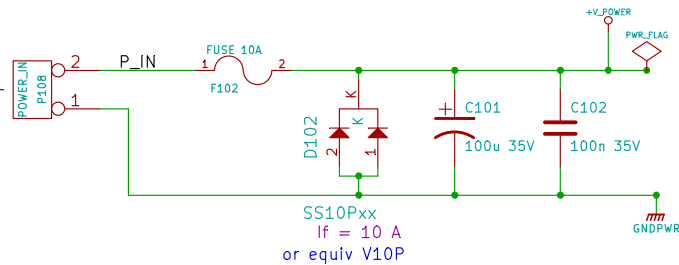


Motors only, 12–24V



Medium power MOSFETS  
(extruder heaters, fans)

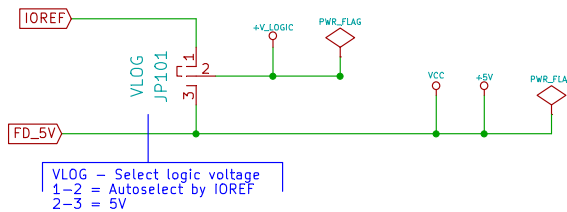
12V or 24V input  
(ensure to set JP102 correctly!)



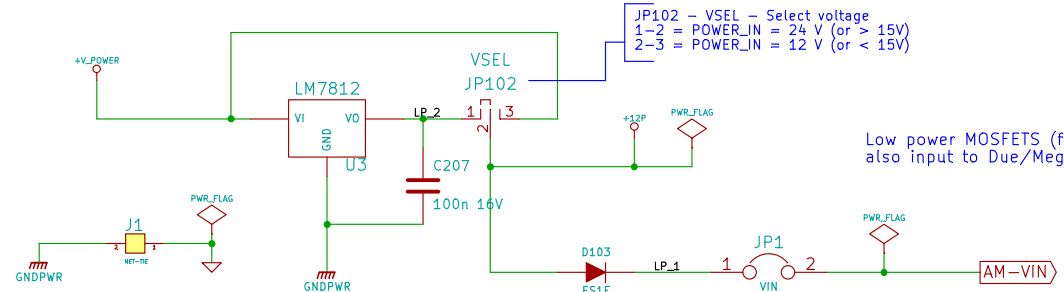
Note: use thick traces for all high power connections

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.

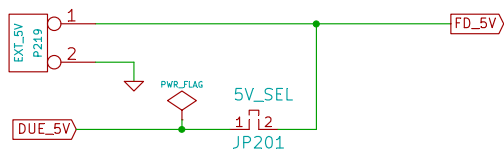


VLOG – Select logic voltage  
1–2 = Autoselect by IOREF  
2–3 = 5V

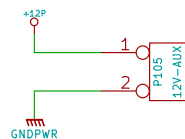


Low power MOSFETS (fans etc)  
also input to Due/Mega

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



Aux Power output



ATX Power On



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Derived from RAMPS 1.4 [reprap.org/wiki/RAMPS1.4](http://reprap.org/wiki/RAMPS1.4)

File: Power.sch

Sheet: /Power/

Title: RAMPS-FD (RAMPS for Arduino Due)

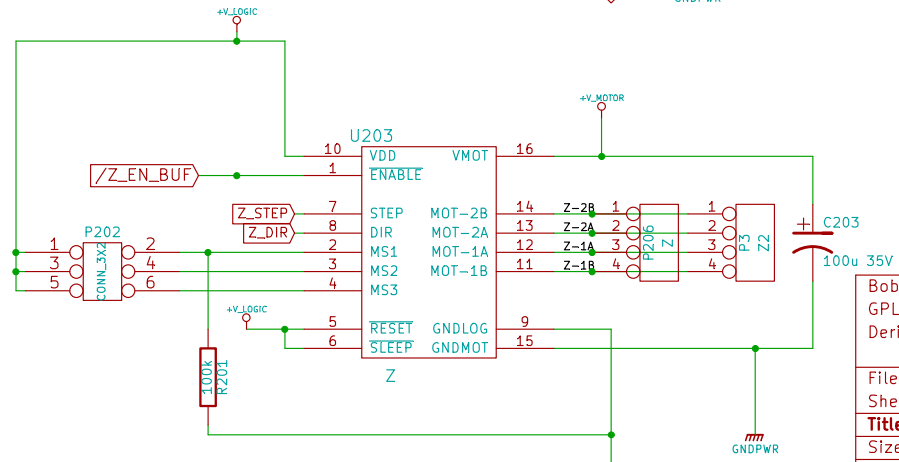
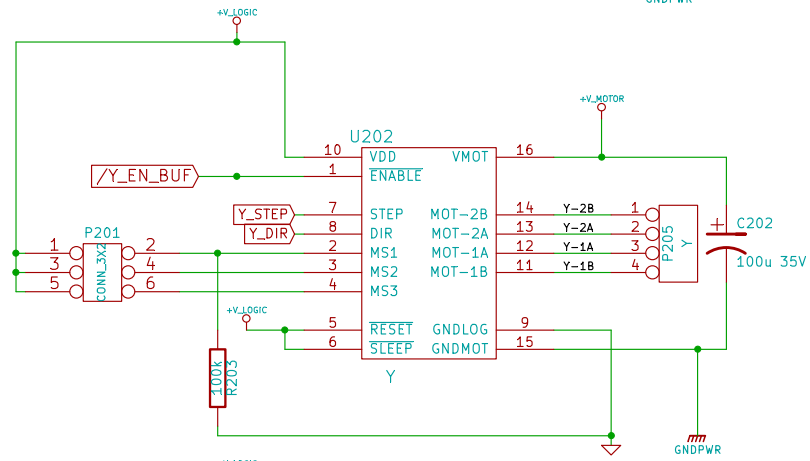
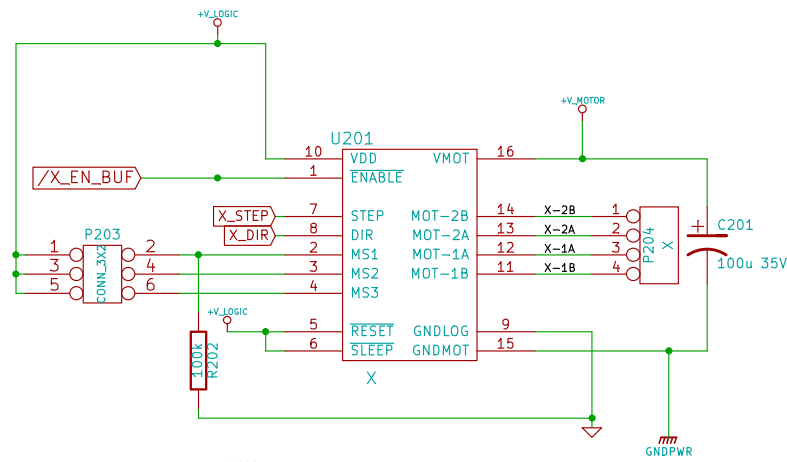
Size: A4

Date: 20 apr 2016

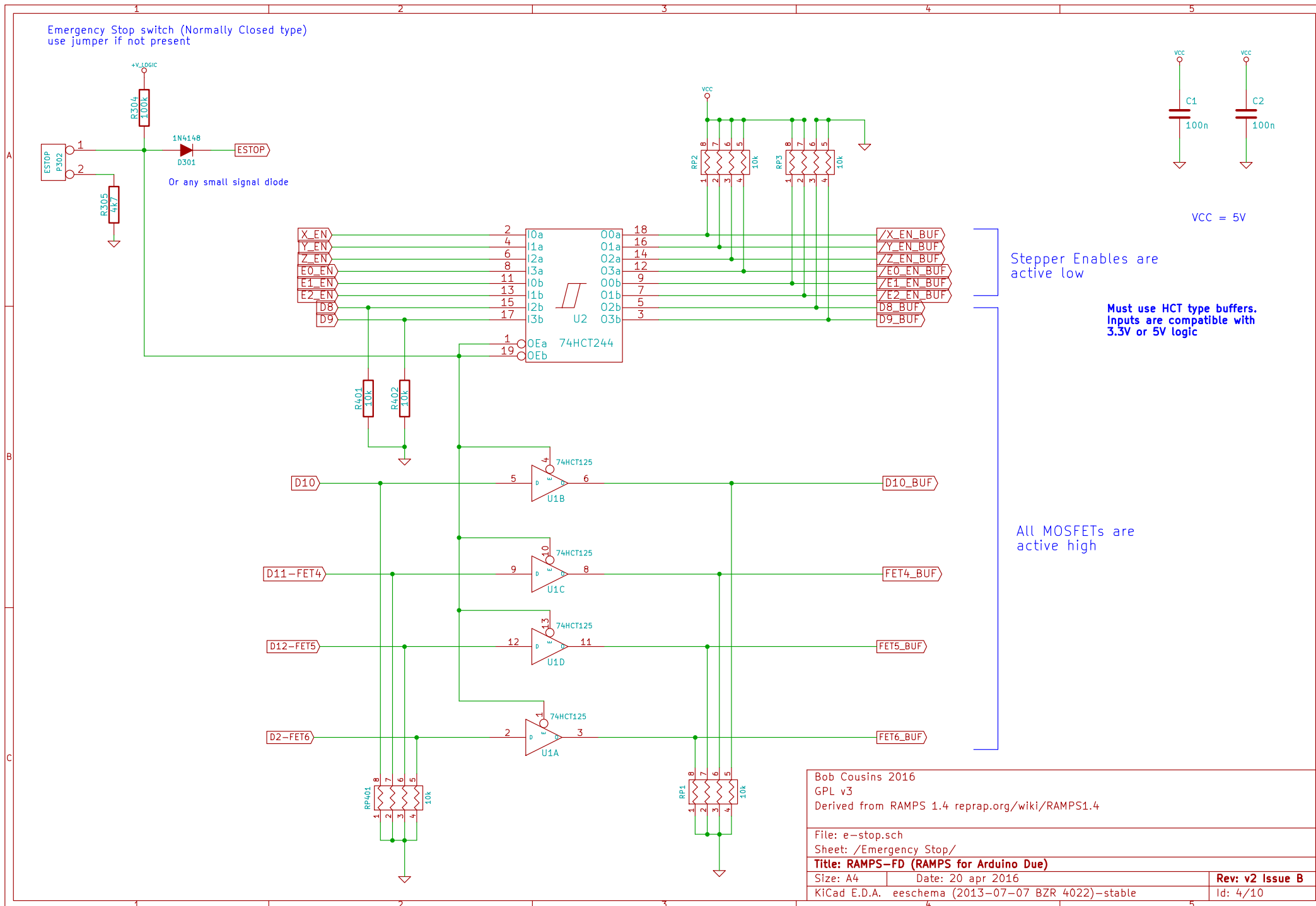
Rev: v2 Issue B

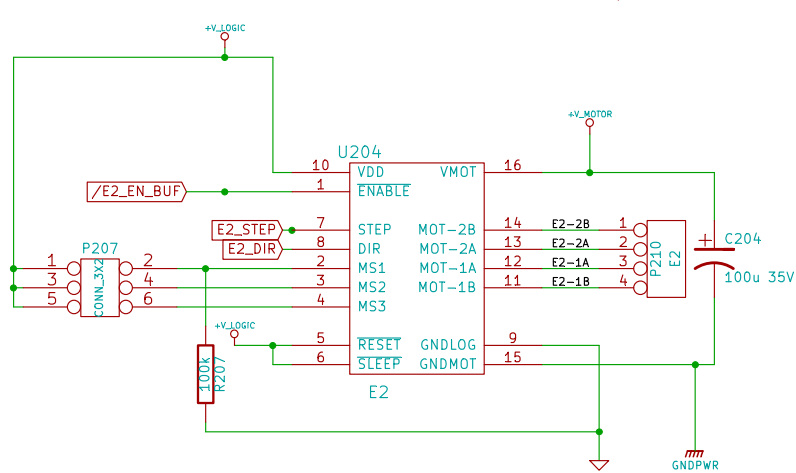
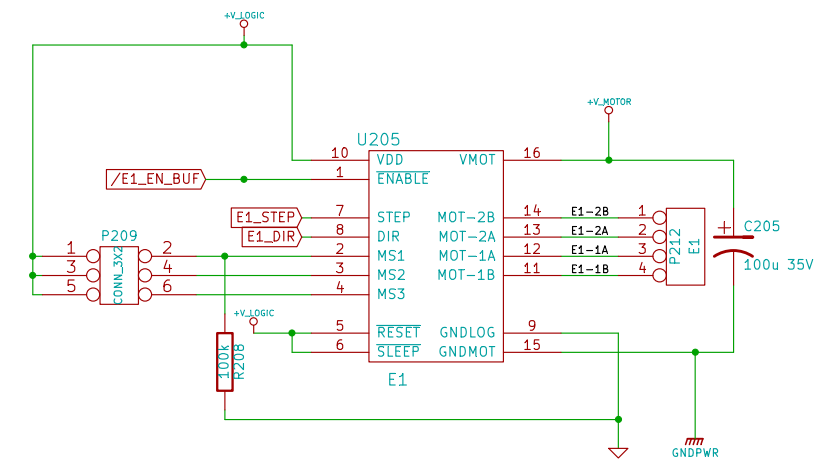
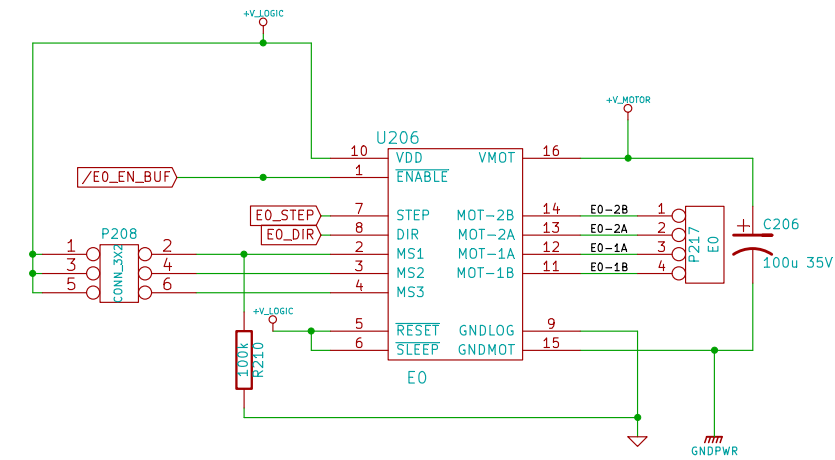
KiCad E.D.A. eschema (2013–07–07 BZR 4022)–stable

Id: 2/10



Bob Cousins 2016 GPL v3 Derived from RAMPS 1.4 <a href="http://reprap.org/wiki/RAMPS1.4">reprap.org/wiki/RAMPS1.4</a>		
File: steppers.sch Sheet: /Stepper Drivers/		
<b>Title: RAMPS-FD (RAMPS for Arduino Due)</b>		
Size: A4	Date: 20 apr 2016	Rev: v2 Issue B
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 3/10





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 GPL v3  
 Derived from RAMPS 1.4 [reprap.org/wiki/RAMPS1.4](http://reprap.org/wiki/RAMPS1.4)

File: steppers2.sch  
 Sheet: /Stepper Drivers 2/  
**Title: RAMPS-FD (RAMPS for Arduino Due)**

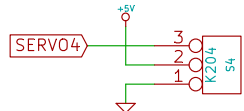
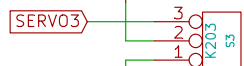
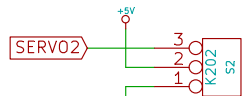
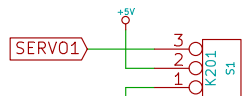
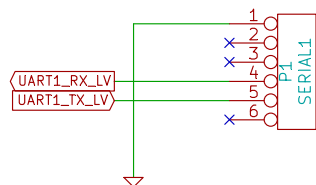
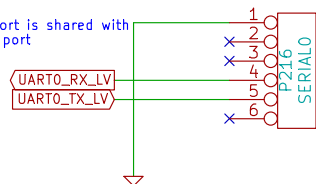
Size: A4	Date: 20 apr 2016	Rev: v2 Issue B
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 5/10

**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

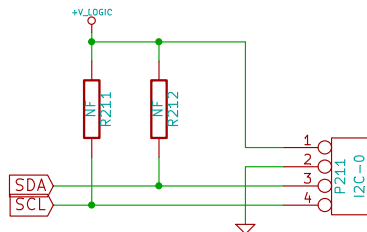
UART-TTL



Servos

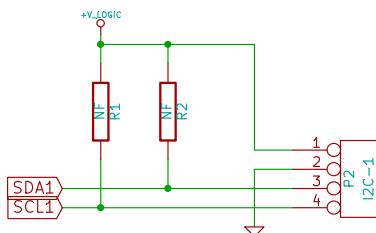
Need buffered outputs?

## I2C

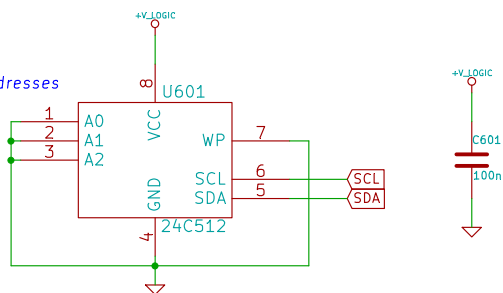


1k5 Pull ups on Due

Must not have external pullups to 5V if IOREF = 3.3V



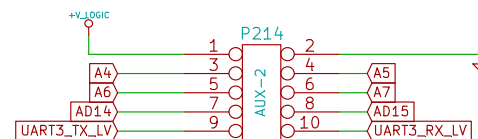
Might want to allow other addresses



EEPROM

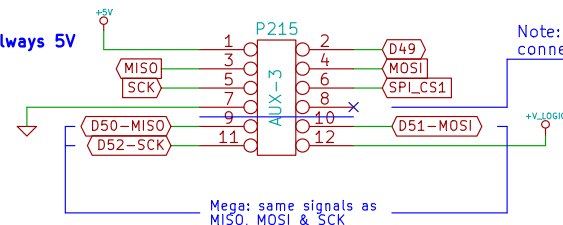
## Aux connectors

### Aux2



### Aux3 - SPI

**NB This pin is always 5V**

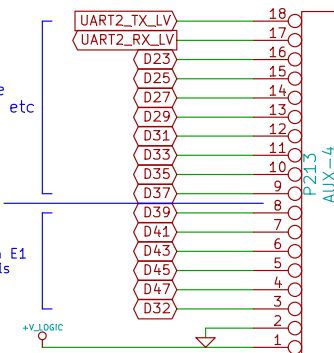


Note: Some add-on boards connect this pin to GND.

### Aux4 - general IO

These are free for LCD panel etc

These are shared with E1 and E2 stepper signals



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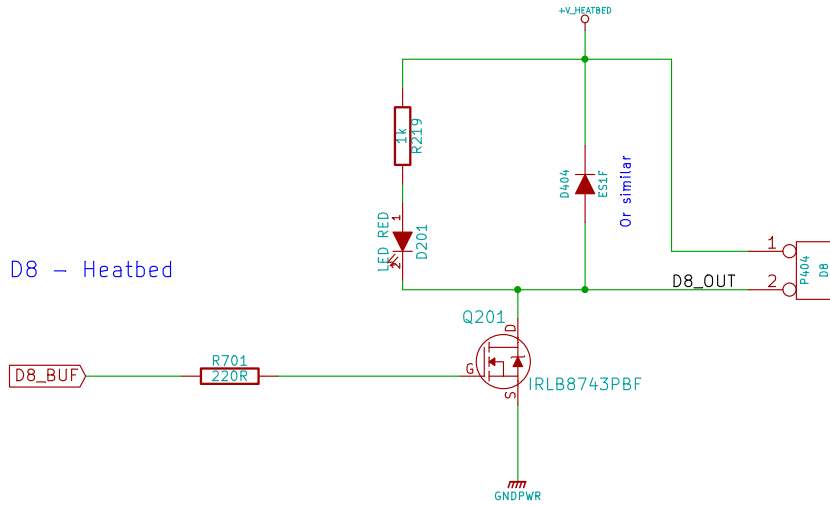
File: con\_misc.sch  
Sheet: /Misc Connectors/  
**Title: RAMPS-FD (RAMPS for Arduino Due)**

Size: A4	Date: 20 apr 2016	Rev: v2 Issue B
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 6/10

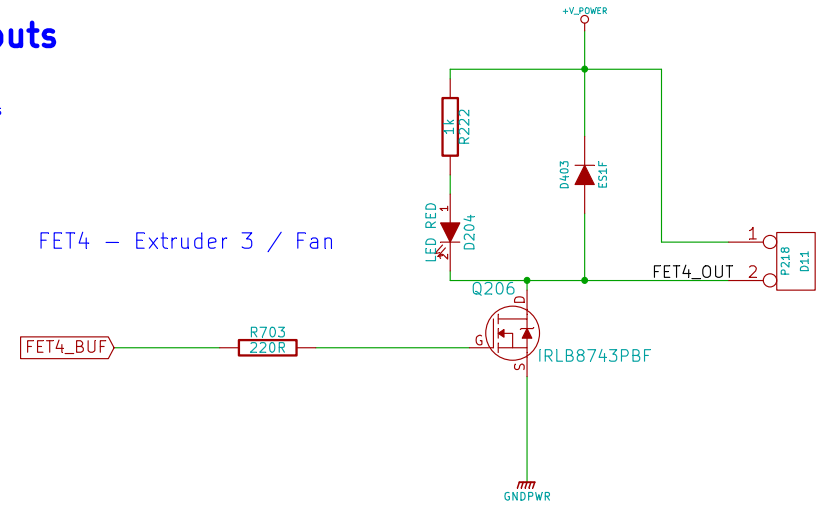
# MOSFET Outputs

Non-inverting drivers  
(active high)

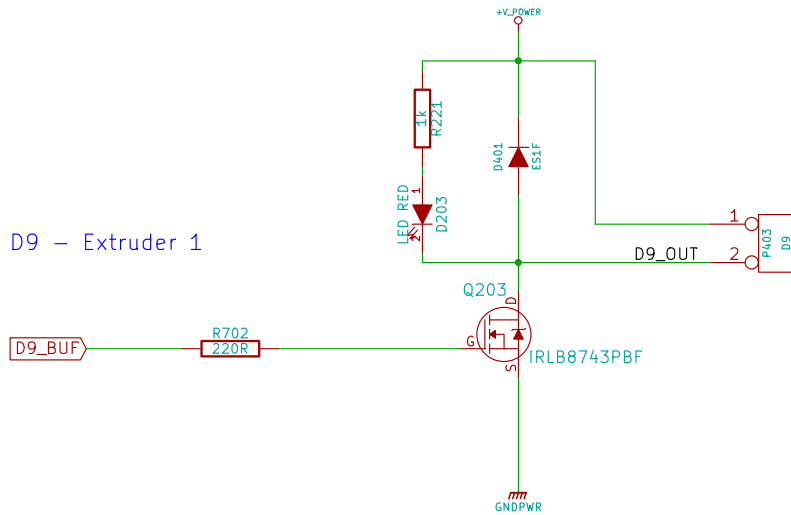
D8 – Heatbed



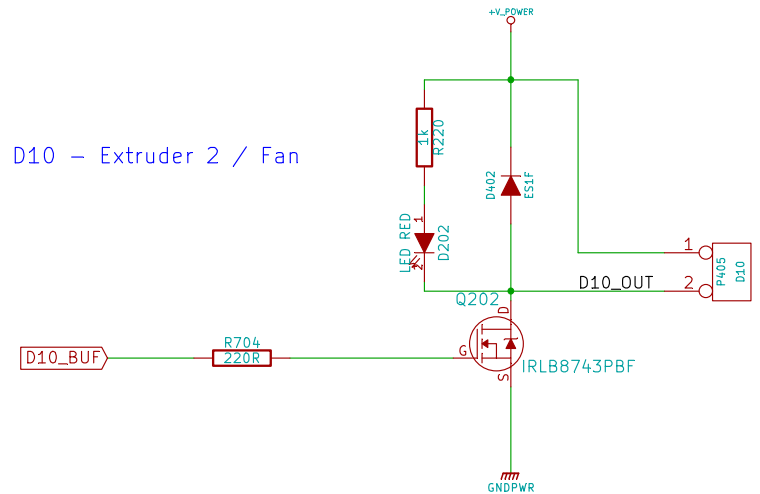
FET4 – Extruder 3 / Fan



D9 – Extruder 1



D10 – Extruder 2 / Fan



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Derived from RAMPS 1.4 [reprap.org/wiki/RAMPS1.4](http://reprap.org/wiki/RAMPS1.4)

File: con\_outputs.sch  
Sheet: /Mosfet Outputs/  
**Title: RAMPS-FD (RAMPS for Arduino Due)**

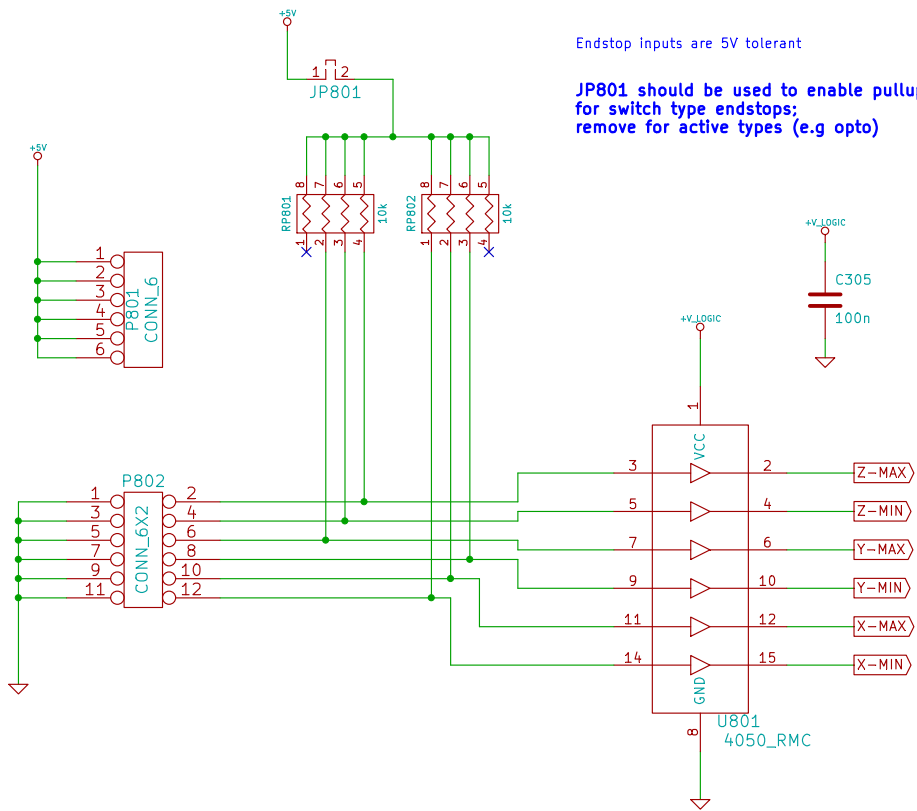
Size: A4 Date: 20 apr 2016  
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable

Rev: v2 Issue B  
Id: 7/10

## Endstops

Endstop Inputs are 5V tolerant

JP801 should be used to enable pullups  
for switch type endstops;  
remove for active types (e.g. opto)



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Derived from RAMPS 1.4 [reprap.org/wiki/RAMPS1.4](http://reprap.org/wiki/RAMPS1.4)

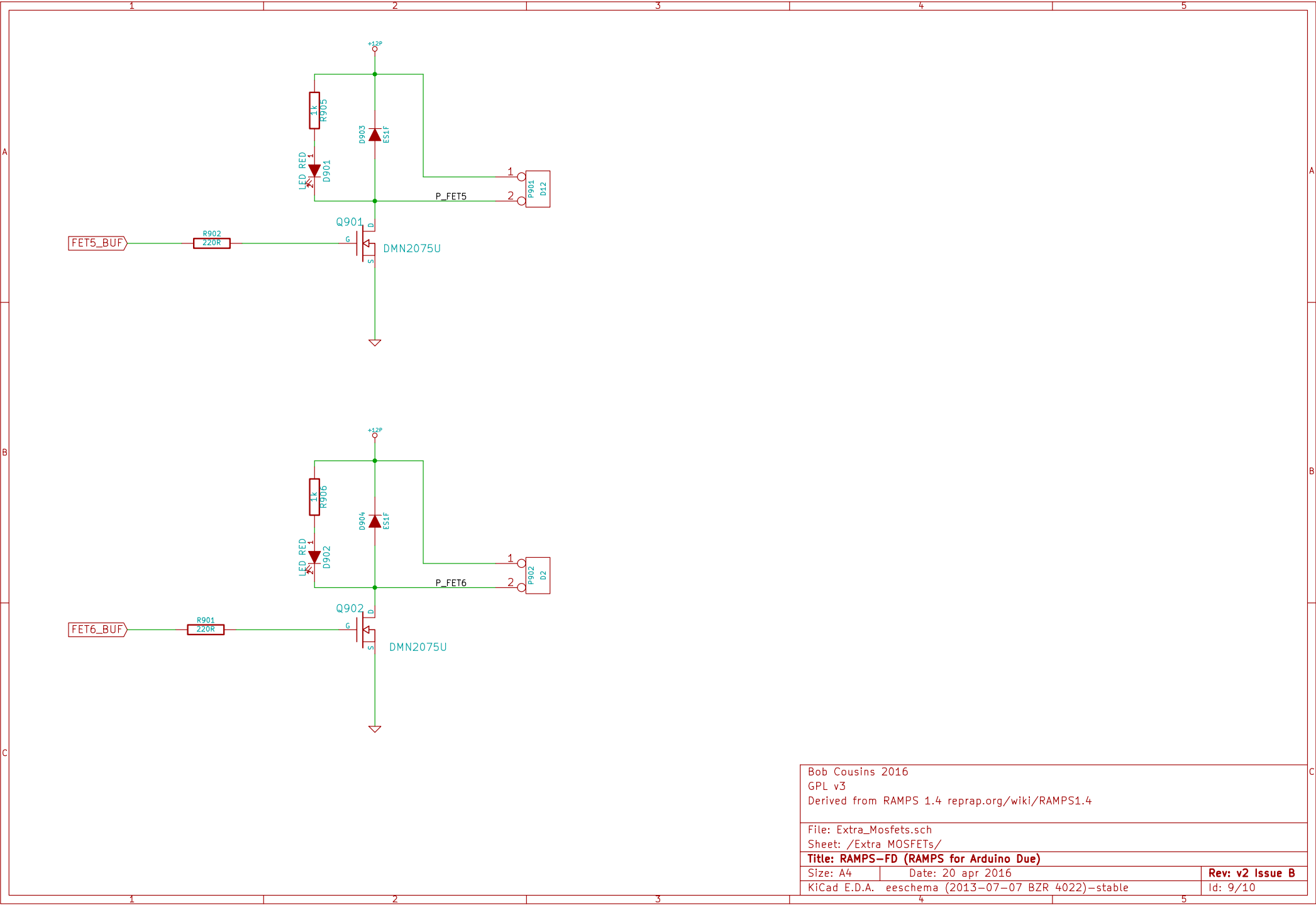
File: con\_inputs.sch  
Sheet: /Endstop Inputs/

**Title: RAMPS-FD (RAMPS for Arduino Due)**

Size: A4 Date: 20 apr 2016  
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable

Rev: v2 Issue B  
Id: 8/10





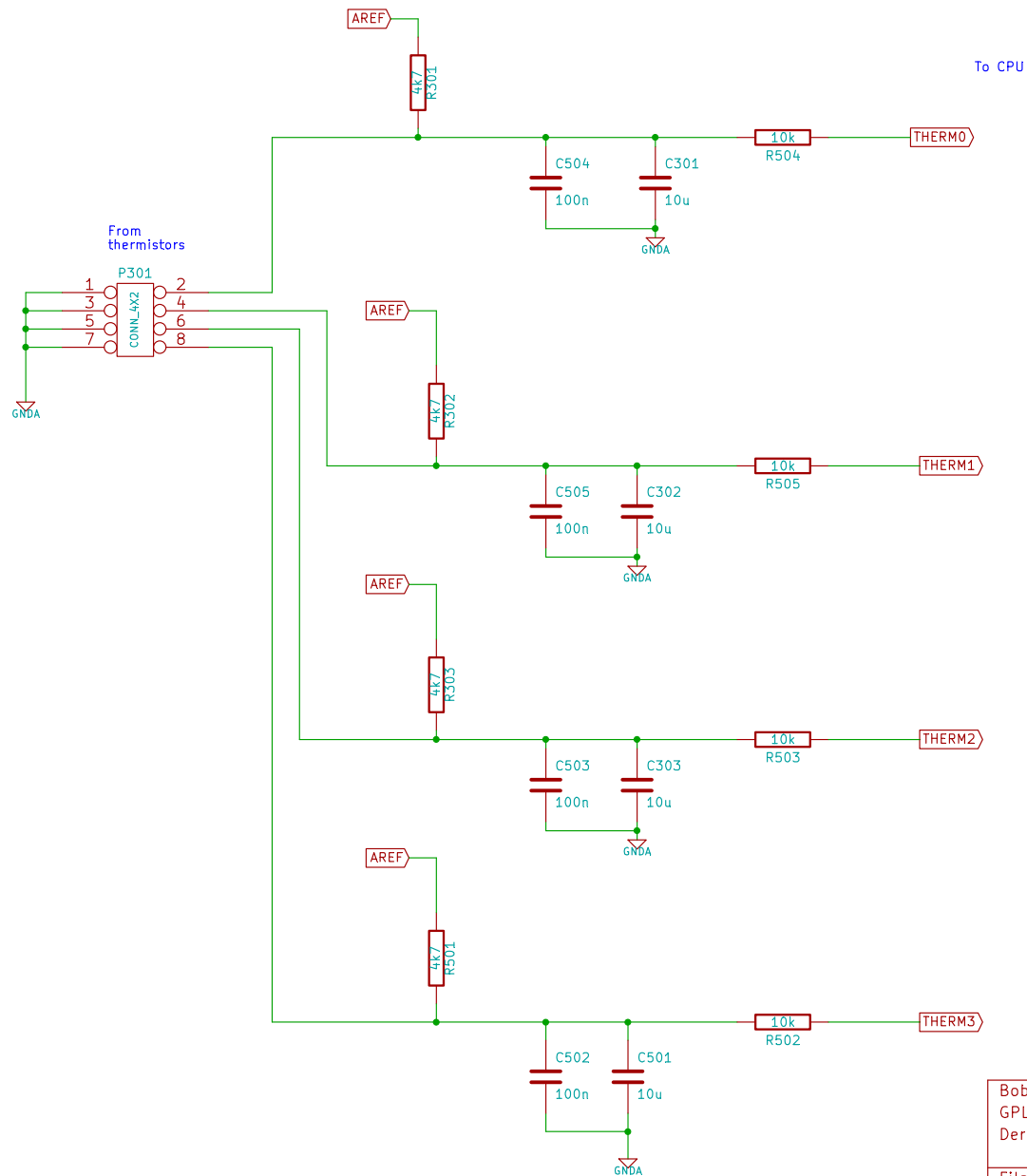
File: Extra\_Mosfets.sch  
Sheet: /Extra MOSFETs/

**Title:** RAMPS-FD (RAMPS for Arduino Due)

Size: A4	Date: 20 apr 2016
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Rev: v2 Issue B  
Id: 9/10

# Thermistor Inputs



To CPU

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File: thermistor\_inputs.sch  
 Sheet: /Thermistor inputs/

**Title: RAMPS-FD (RAMPS for Arduino Due)**

Size: A4	Date: 20 apr 2016	Rev: v2 Issue B
KiCad E.D.A. eeschema (2013-07-07 BZR 4022)-stable		Id: 10/10