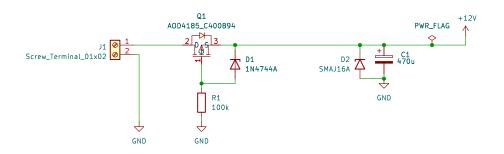
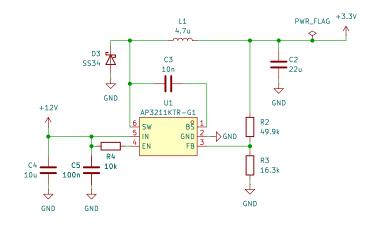
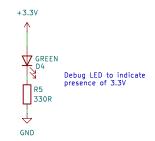


## **POWER SUPPLY**







## **EXPANSION HEADERS**









CDIZ CV	1 _	
SPI3_MISO	2	J6
SPI3_MISU	3	Conn_01x03_Pin
3F13_M031/		

Name: Simon Craig DANIEL Student Number: 25848887

Department of Mechanical and Mechatronic Engineering

Stellenbosch University

Sheet: /Power Supply and Expansion Headers/

File: PowerSupply.kicad\_sch

Title: Power Supply and Expansion Headers

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## **DRIVERS** STEPPER 1 STEPPER 2 STEPPER 3 STEPPER 4 STEPPER 5 (X) (Y) (Z) (Extruder) (SPARE) J17 J18 J19 J21 Conn 01x04 Pin +12V +12V +12V +12V +12V MKS TMC2209 MKS TMC2209 MKS TMC2209 MKS TMC2209 MKS TMC2209 1B 1A 2A 2B 1B 1A 2A 2B 1B 1A 2A 2B 1B 1A 2A 2B 8 VMOT VMOT GND VMOT GND GND GND имот GND VMOT 2 VDD GND GND GND GND GND ENABLE STEP DIR ENABLE STEP DIR ENABLE STEP DIR ENABLE STEP DIR RESET SLEEP RESET SLEEP GND GND GND GND GND MS1 MS2 MS3 MS1 MS2 MS3 MS1 MS2 MS3 PWR\_FLAG ♦ PWR\_FLAG 🛇 PWR\_FLAG ♦ PWR\_FLAG () PWR\_FLAG ♦ Jumper\_2\_Bridged 100n 100n. 100n -100n. 100n C26 C27 C28\* C30 C29 STEP5D-DIR5D- $\rightarrow$ GND +3.3V GND +3.3V GND +3.3V GND +3.3V GND + 3.3V+3.37 R17 100k +12V ↑ +12V +12V D9 SMAJ16A C32 100u D7 SMAJ16A D10 SMAJ16A SMAJ16A SMAJ16A Name: Simon Craig DANIEL Note: In the event that the MKS TMC2209 are unable to be procured, cheap available alternatives such as the A4988 and DRV8825 drivers can be used. If these alternatives are used, then RST Student Number: 25848887 and SLP pins will need to be pulled high using a spare GPIO or with the 3.3V source and the M2 pin will need to be connected to a spare GPIO pin for microstep setting selection. Solder Department of Mechanical and Mechatronic Engineering Stellenbosch University connection points must therefore be included for these pins on the PCB to accommodate this potential need. Sheet: /Stepper Drivers/ File: Stepper.kicad\_sch Title: Stepper Drivers Size: A4 Date: 2025-07-01 Rev: 0.1 KiCad E.D.A. 9.0.2 ld: 3/5

