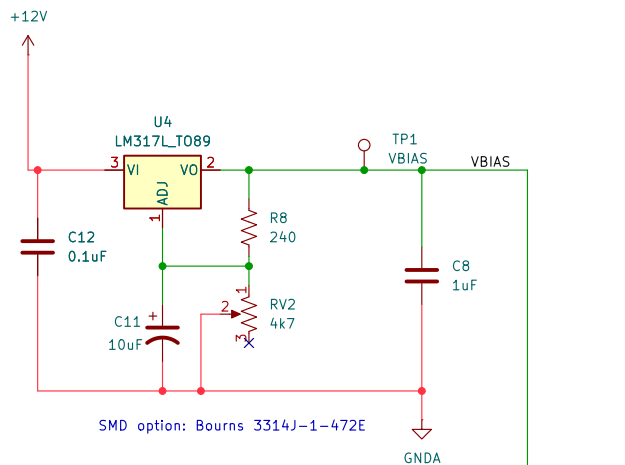
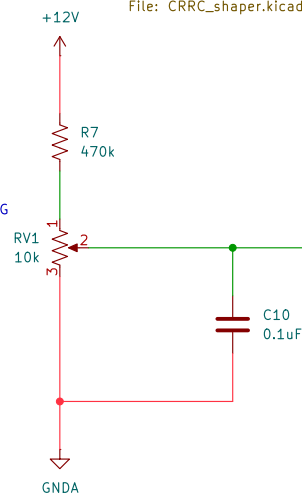
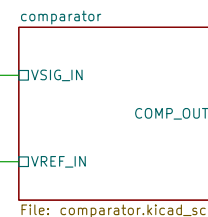
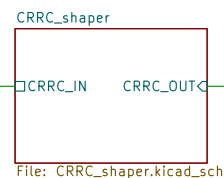
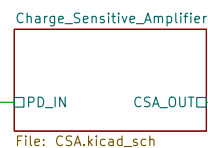




OPTIONAL: multi diodes here



SMD version: 3314J-1-103G

Breadboard circuit exercises

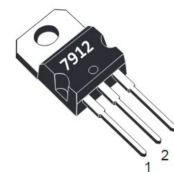
1. Build an inverting amplifier based on the CSA but with an input resistor
2. Use scope & sig gen to measure the voltage gain
3. replace input with a biased photodiode (experiment with visible and IR)
4. Build CRRC shaping stage – choose the capacitors!
5. Observe pulse shapes at CSA and CRRC outputs
6. Build Comparator circuit
7. Observe IR light pulses, cosmic rays (hopefully!), LED lighting PWN frequency, etc

breadboard_power

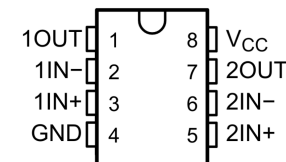
File: breadboard_power.kicad_sch

Exclude from board (for SMD design)

LM7912 T0220 pinout



LM393 pinout



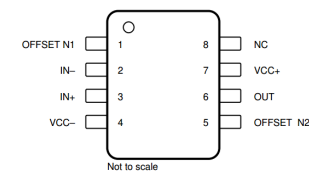
LM317 T092 pinout



LM7812 T0220 pinout



TLE2071 pinout



Breadboard activity schematic

Dan Weatherill

Sheet: /

File: detector.kicad_sch

Title: UK Instrumentation Summer School

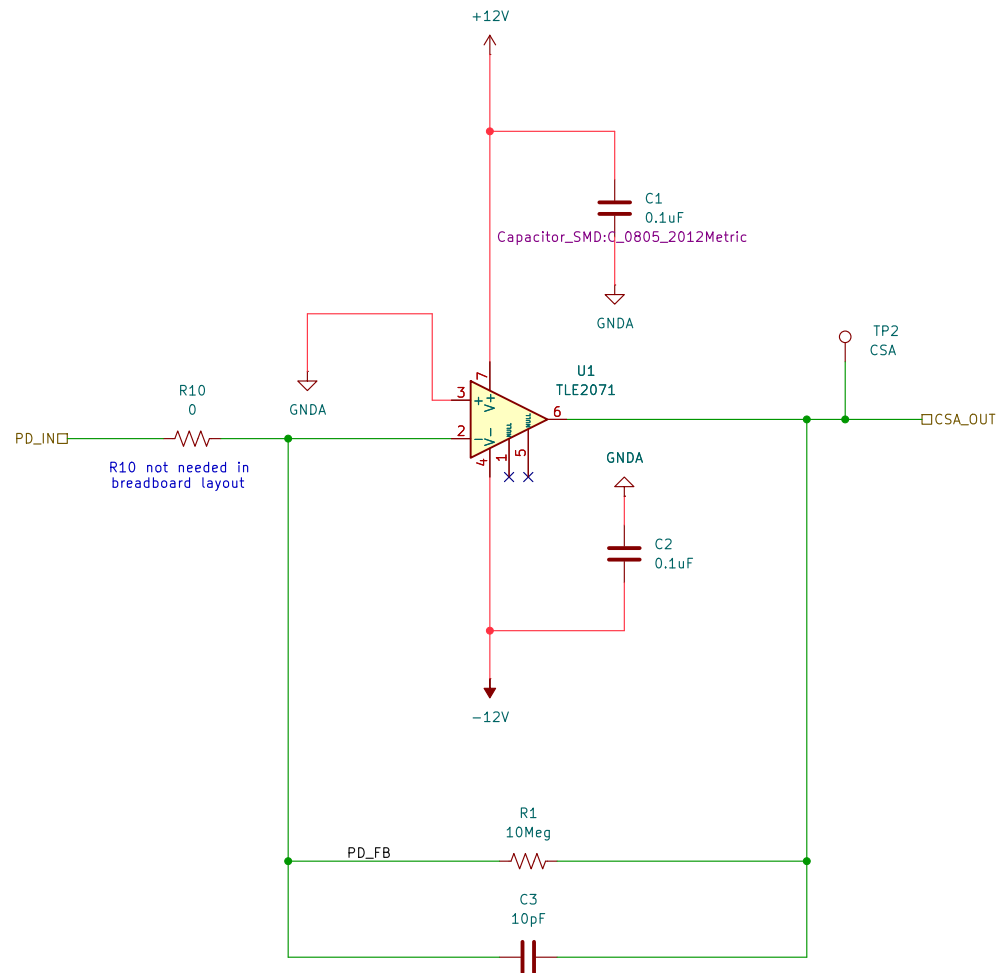
Size: A4

Date: 2024-07-02

Rev: 2026

KiCad E.D.A. 10.0.3

Id: 1/6



Breadboard activity schematic

Dan Weatherill

Sheet: /Charge_Sensitive_Amplifier/

File: CSA.kicad_sch

Title: UK Instrumentation Summer School

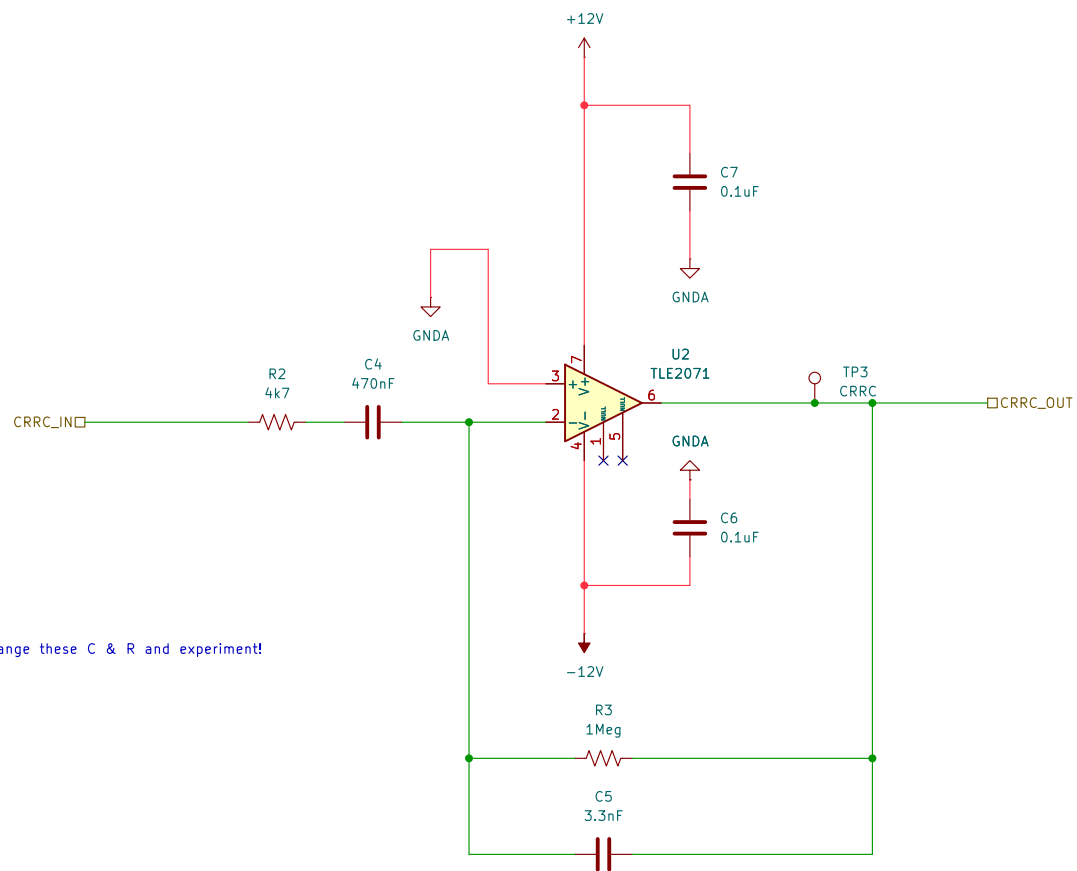
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Date: 2024-07-02

Rev: 2026

KiCad E.D.A. 10.0.3

Id: 2/6



Breadboard activity schematic

Dan Weatherill

Sheet: /CRRC_shaper/

File: CRRC_shaper.kicad_sch

Title: UK Instrumentation Summer School

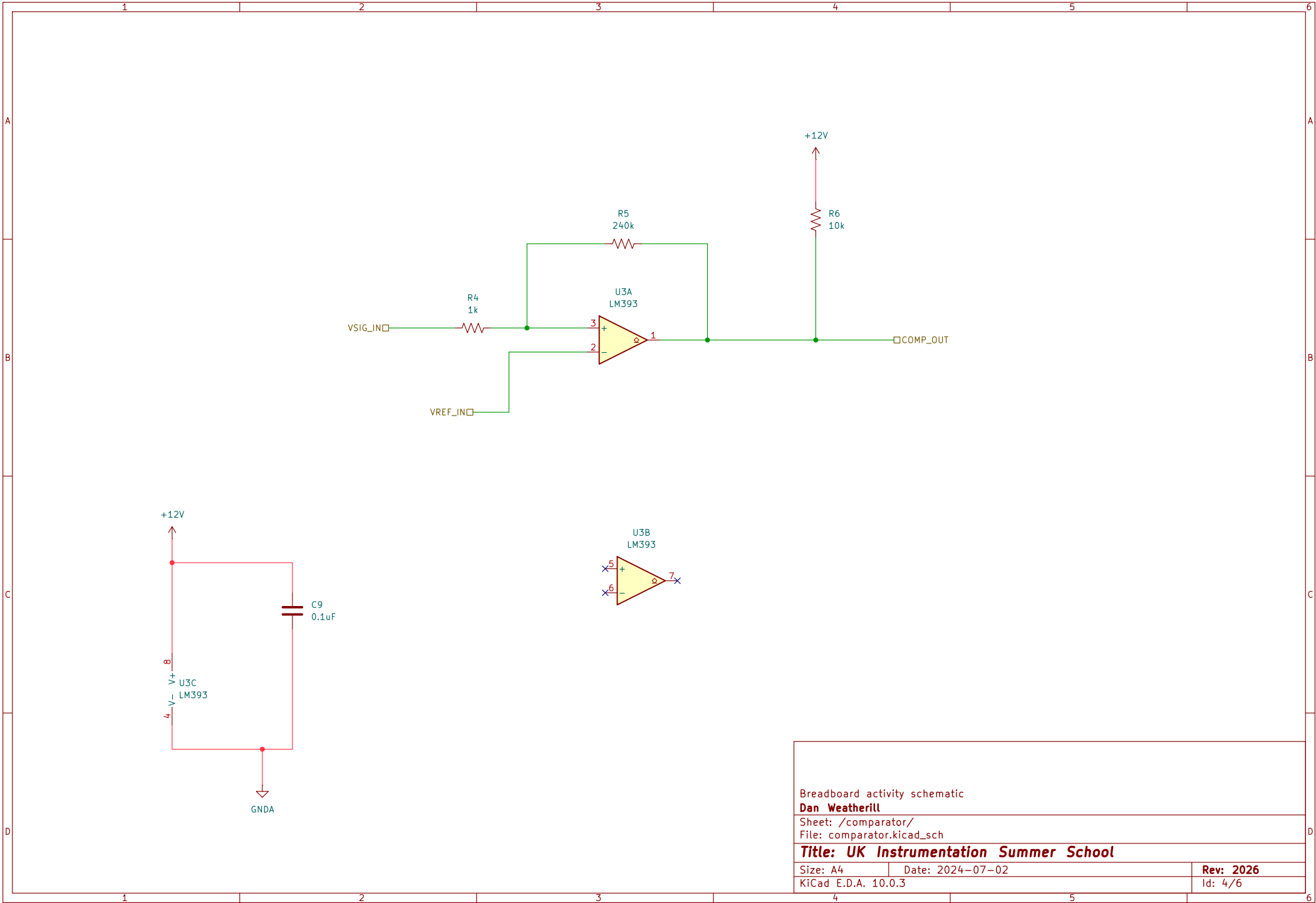
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Date: 2024-07-02

Rev: 2026

KiCad E.D.A. 10.0.3

Id: 3/6



Breadboard activity schematic

Dan Weatherill

Sheet: /comparator/

File: comparator.kicad_sch

Title: UK Instrumentation Summer School

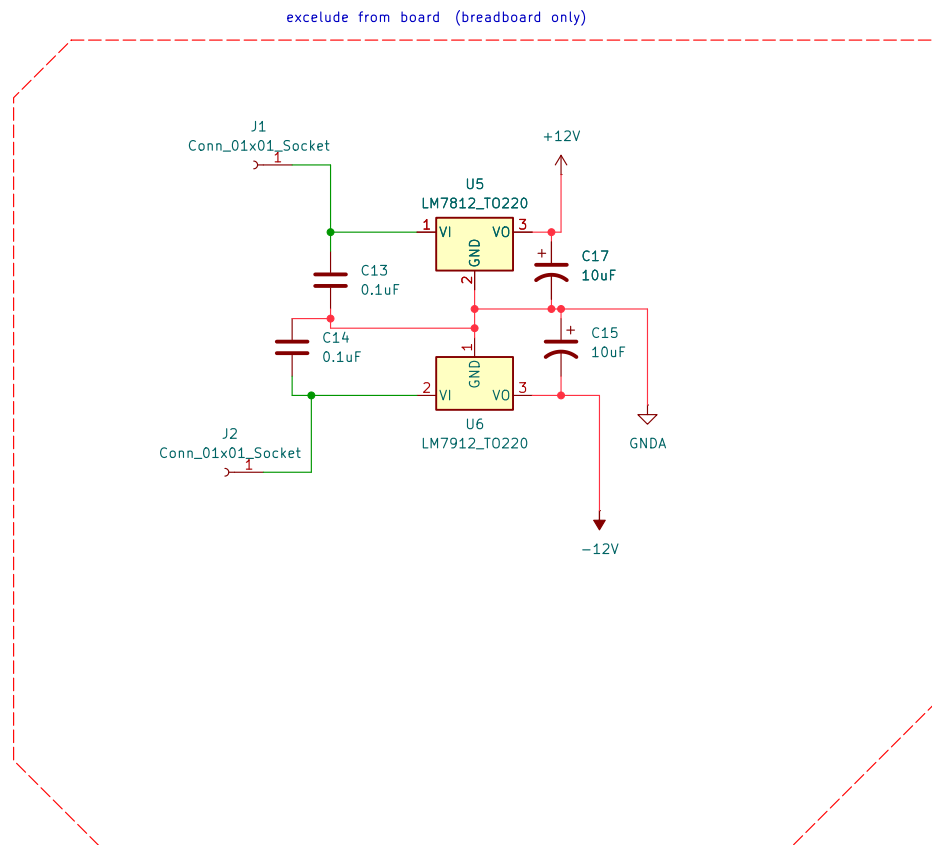
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Date: 2024-07-02

Rev: 2026

KiCad E.D.A. 10.0.3

Id: 4/6



Breadboard activity schematic

Dan Weatherill

Sheet: /breadboard_power/

File: breadboard_power.kicad_sch

Title: UK Instrumentation Summer School

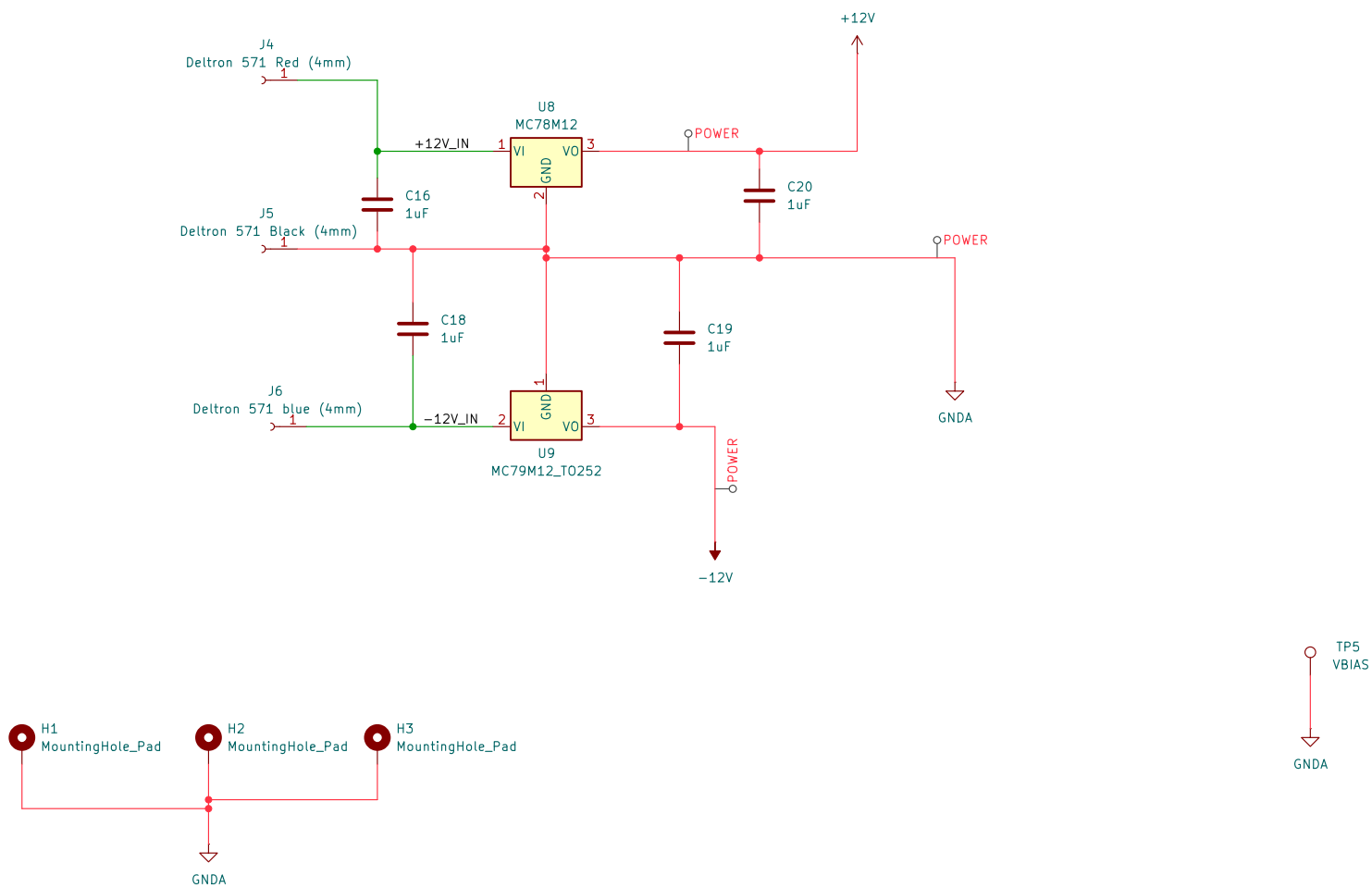
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Date: 2024-07-02

Rev: 2026

KiCad E.D.A. 10.0.3

Id: 5/6



Breadboard activity schematic

Dan Weatherill

Sheet: /PCB_power/

File: PCB_power.kicad_sch

Title: UK Instrumentation Summer School

Size: A4

Date: 2024-07-02

Rev: 2026

KiCad E.D.A. 10.0.3

Id: 6/6