

Beta radiation detector  
Tim Kuhlbusch

Sheet: /MCU/  
File: mcu.kicad\_sch

**Title: Beta Board**

Size: A4

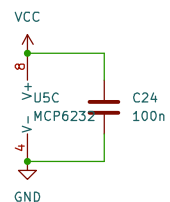
Date: 2023-12-28

Rev: R1.1

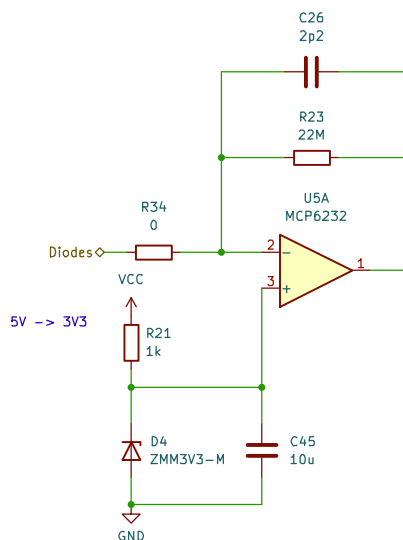
KiCad E.D.A. 8.0.3

Id: 2/4

TODO: Think about voltage reach of OpAmp!  
 TLV272? MCP6232?  
 CJ431 Voltage reference as alternative

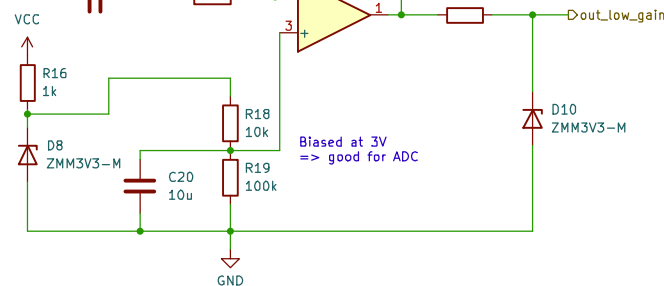
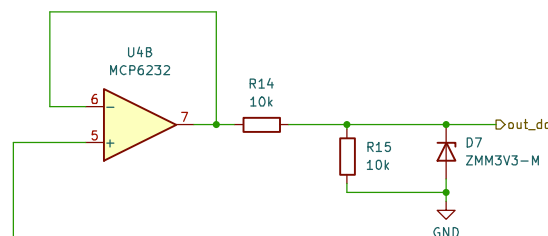


10pF is the smallest  
 basic component at JLC  
 10 MOhm the largest R

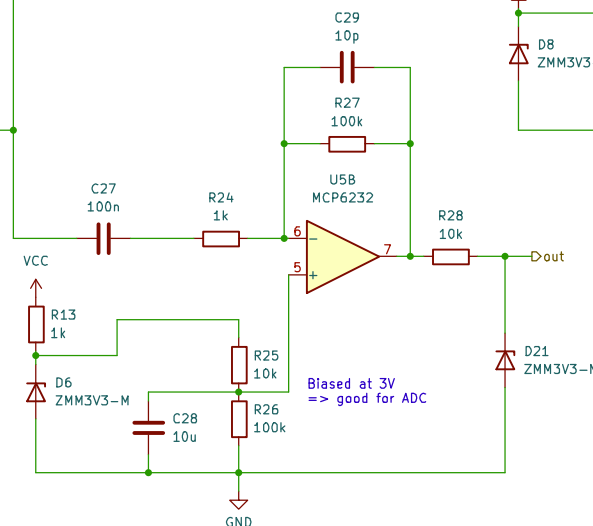


5V -> 3V3

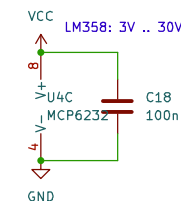
$$R = (5V - 3.3V) / 5 \text{ mA} = 370 \text{ Ohm}$$



Biased at 3V  
 => good for ADC



Biased at 3V  
 => good for ADC



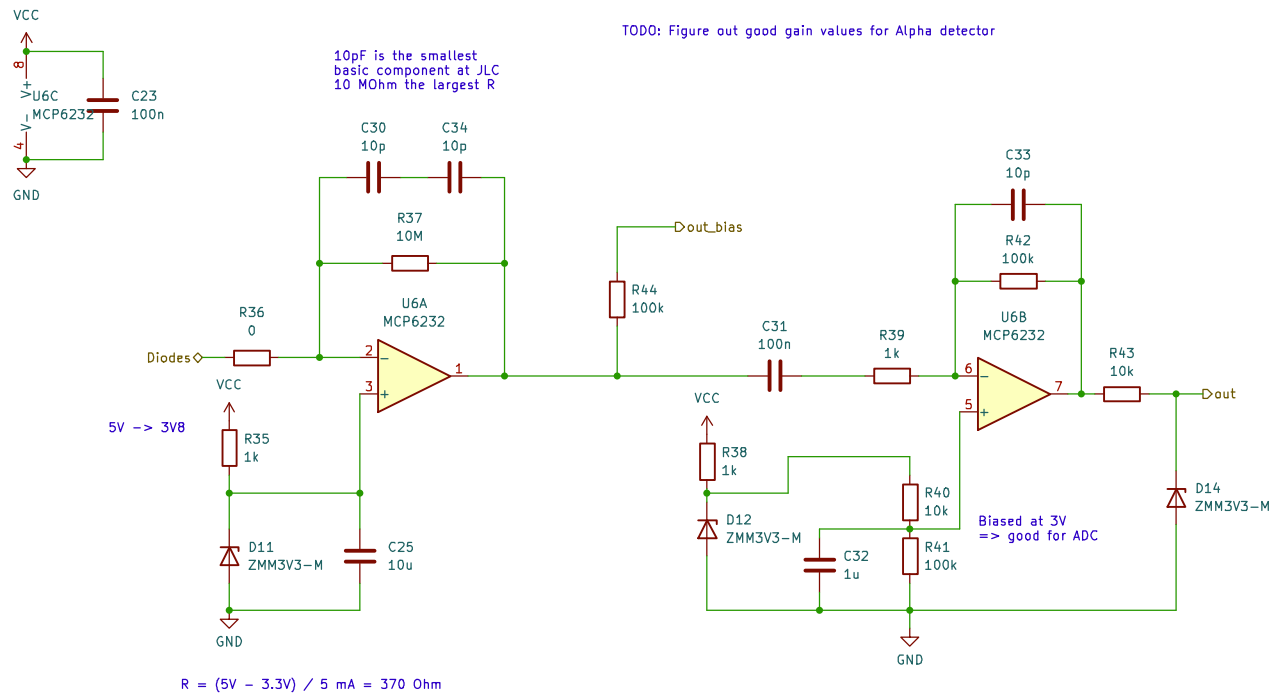
Inspired by:  
[https://github.com/ozel/DIY\\_particle\\_detector/blob/master/hardware/V1.2/documentation/DIY%20particle%20detector%20schematic%20v1-2.pdf](https://github.com/ozel/DIY_particle_detector/blob/master/hardware/V1.2/documentation/DIY%20particle%20detector%20schematic%20v1-2.pdf)

Beta radiation detector  
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Sheet: /particle\_sensor\_array1/  
 File: frontend.kicad\_sch

Title: Beta Board

Size: A4 Date: 2023-12-28 Rev: R1.1  
 KiCad E.D.A. 8.0.3 Id: 4/4



Sheet: /Frontend Alpha/  
File: frontend\_alpha.kicad\_sch

**Title:**

Size: A4

Date:

Rev:

KiCad E.D.A. 8.0.3

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