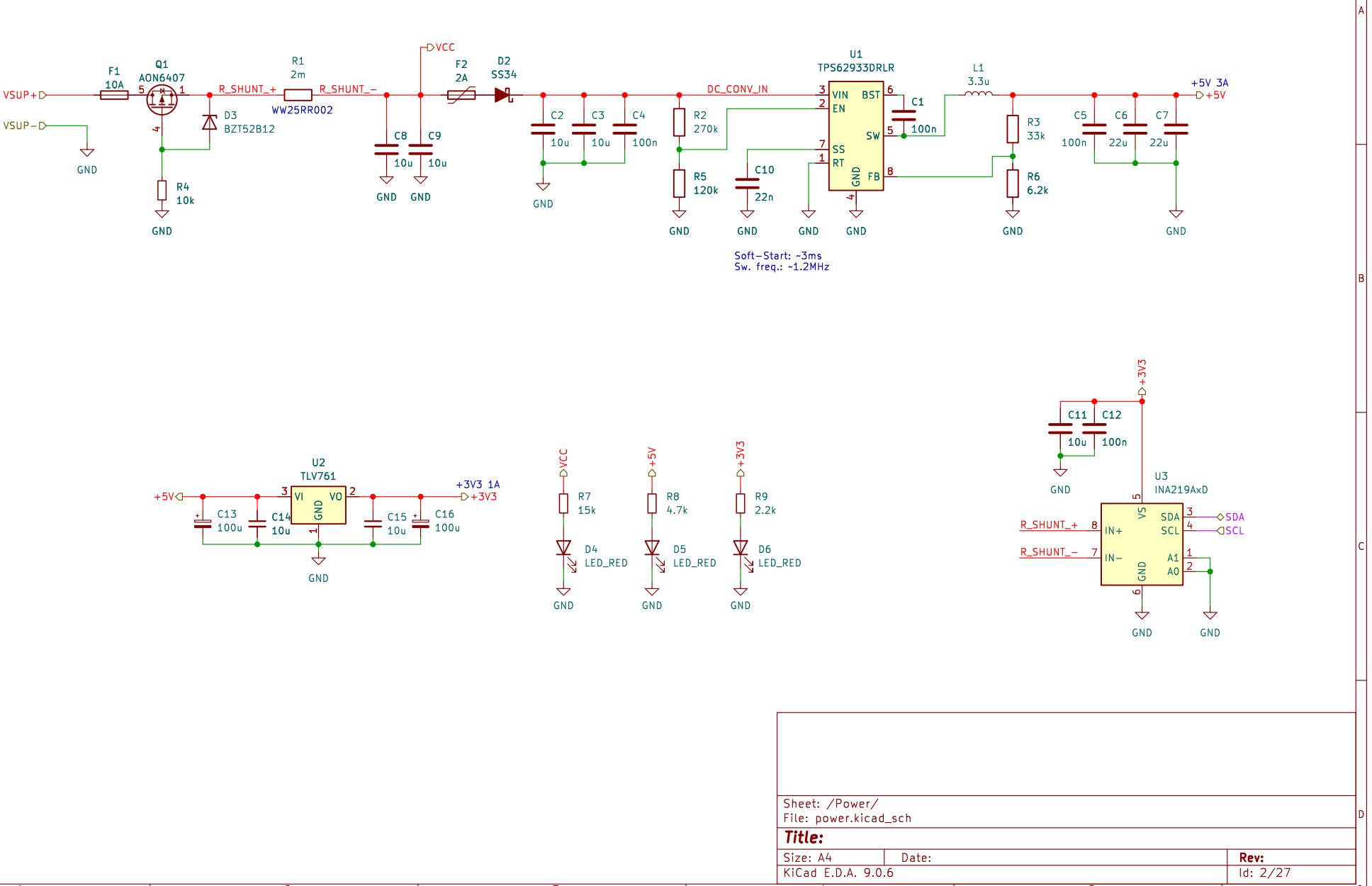
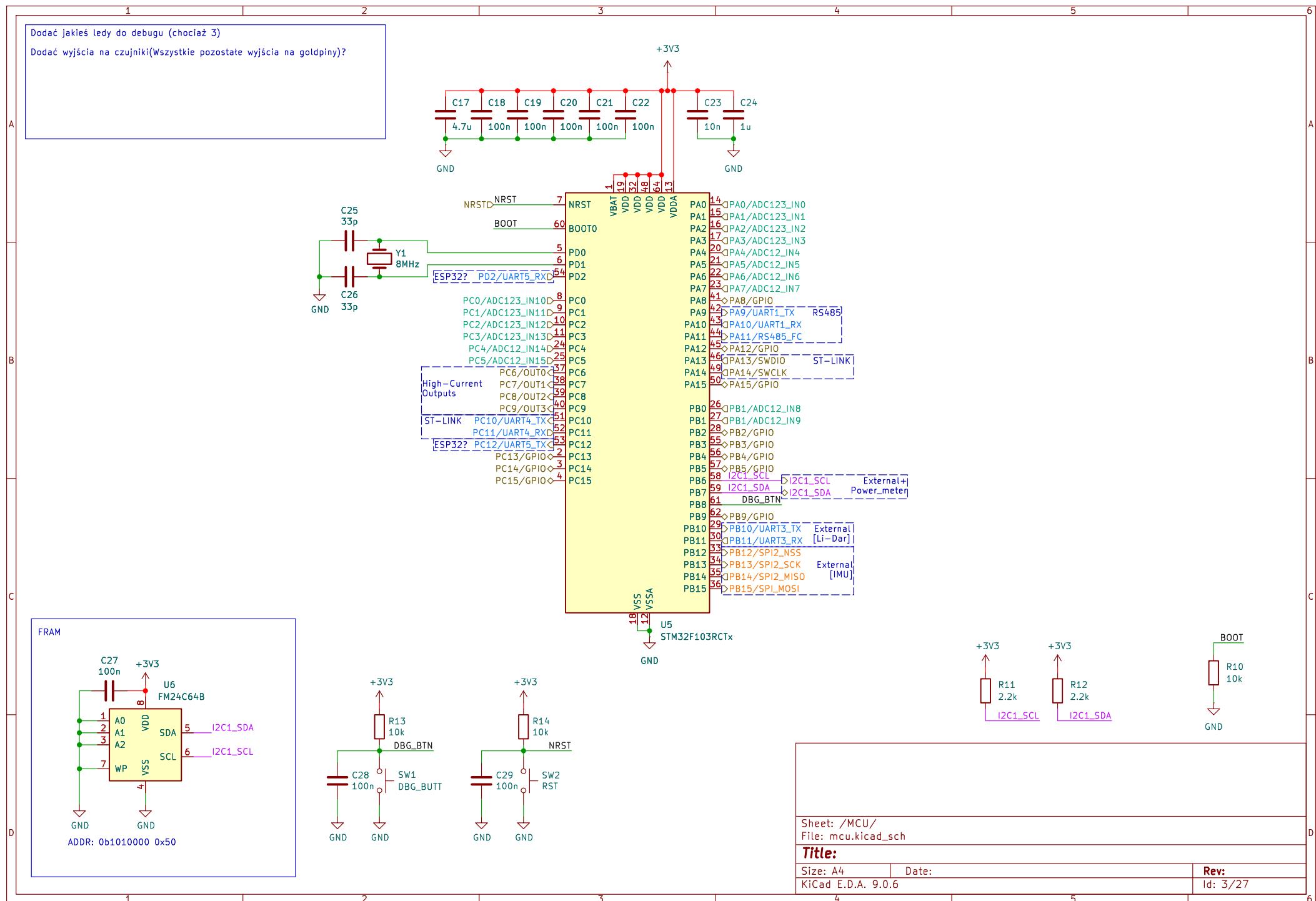


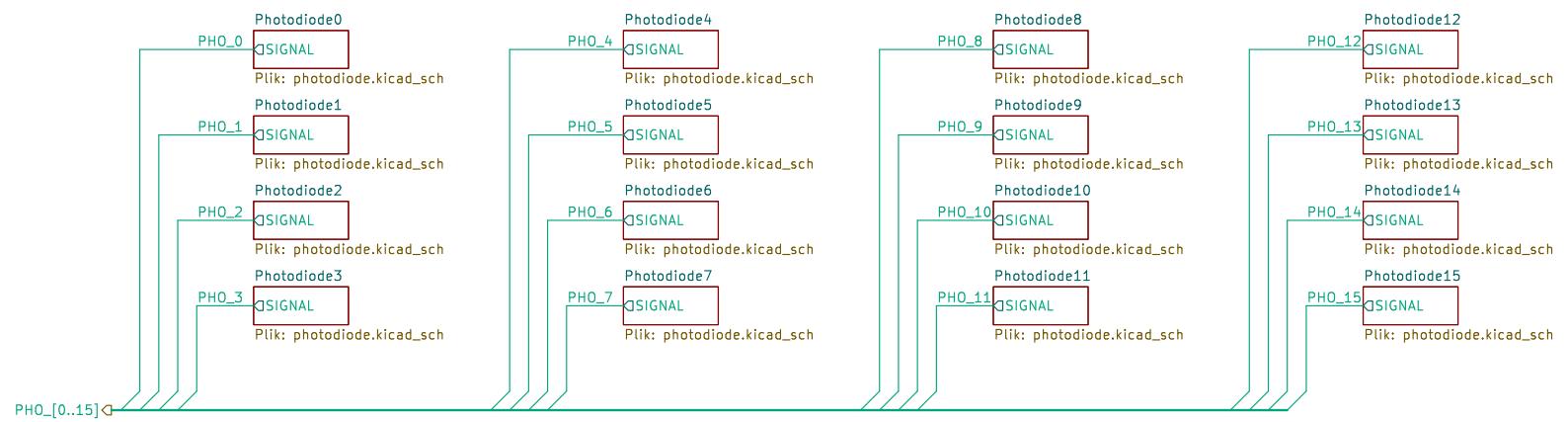
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Chyba gotowe, dodać opisy schematu





A



B

C

D

A

B

C

D

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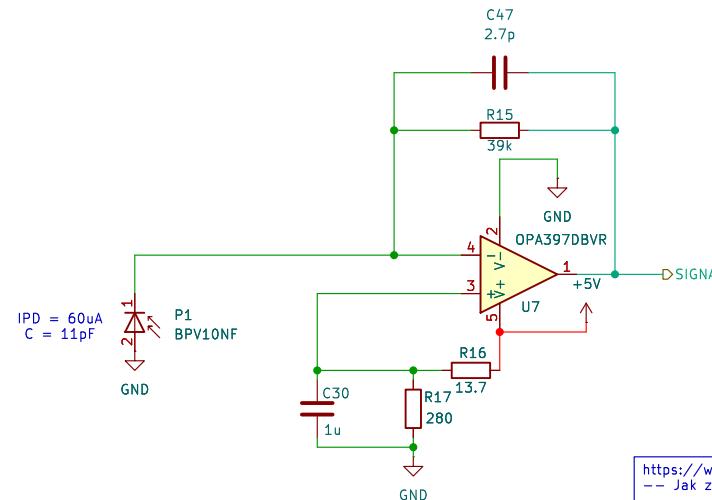
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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



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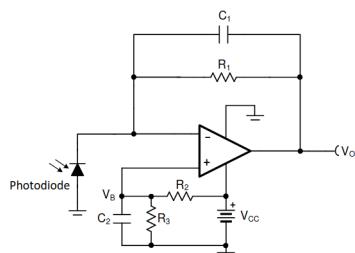


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500 μ V max
Drift	5 μ V/ $^{\circ}$ C max
Noise	15nV/ \sqrt{Hz} at 10kHz

Sheet: /Photodiodes/Photodiode0/
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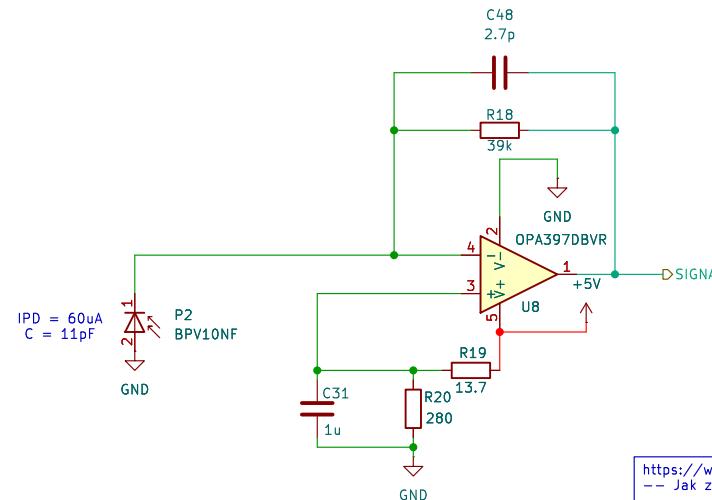
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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



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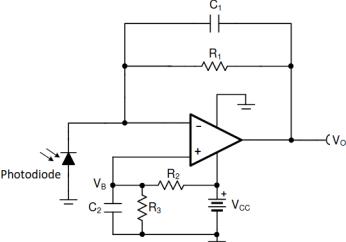


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500μV max
Drift	5μV/°C max
Noise	15nV/√Hz at 10kHz

Sheet: /Photodiodes/Photodiode1/
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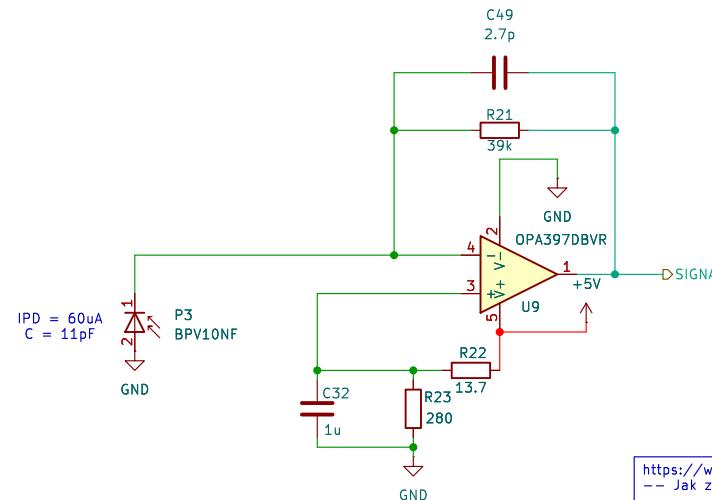
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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



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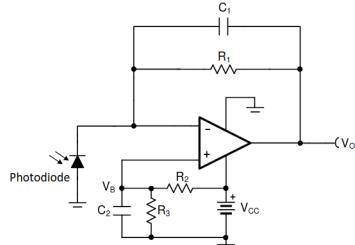


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500 μ V max
Drift	5 μ V/ $^{\circ}$ C max
Noise	15nV/ \sqrt{Hz} at 10kHz

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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$

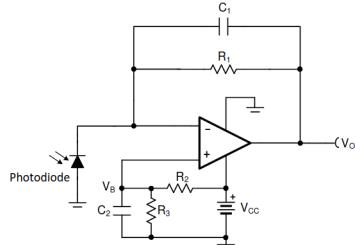
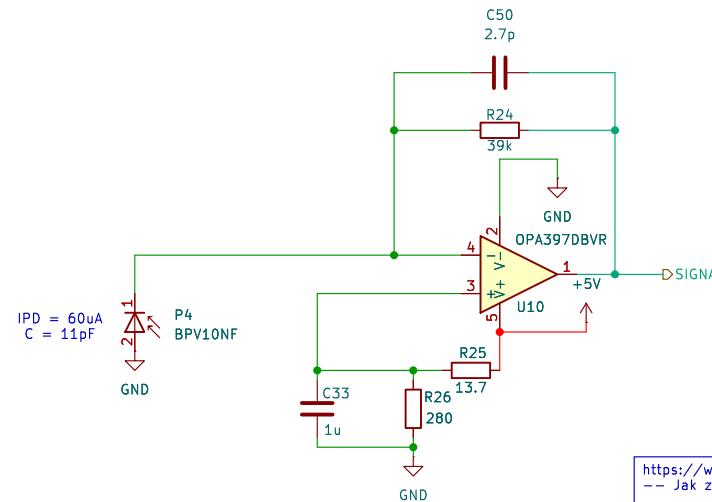


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500 μ V max
Drift	5 μ V/ $^{\circ}$ C max
Noise	15nV/ \sqrt{Hz} at 10kHz

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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$

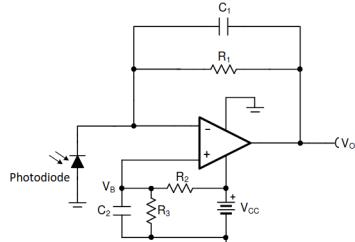
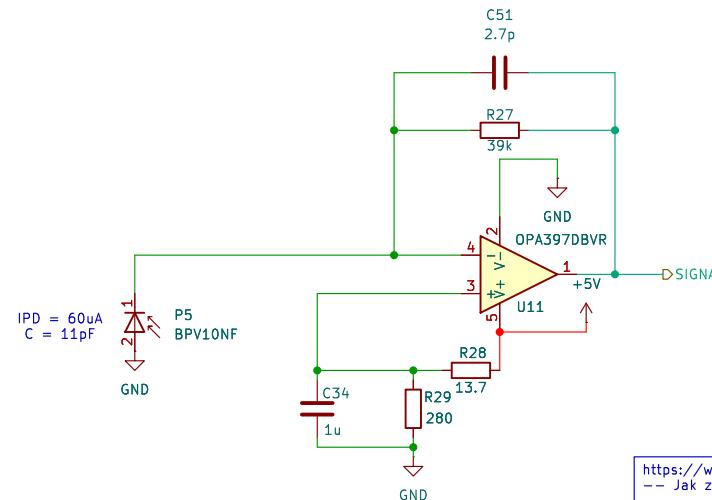


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500 μ V max
Drift	5 μ V/ $^{\circ}$ C max
Noise	15nV/ \sqrt{Hz} at 10kHz

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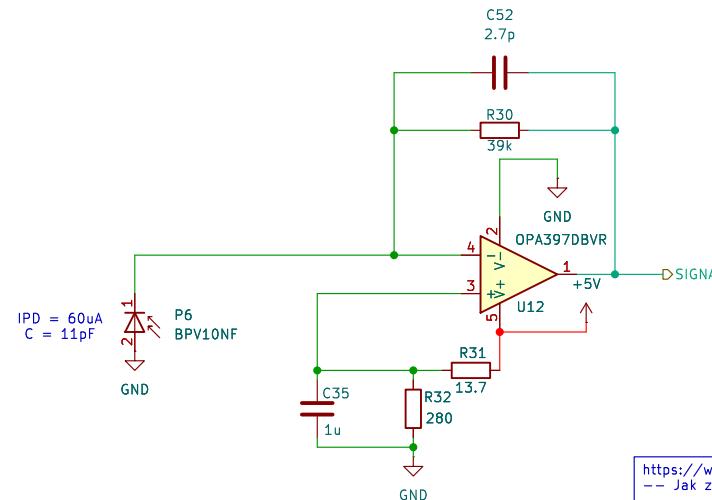
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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



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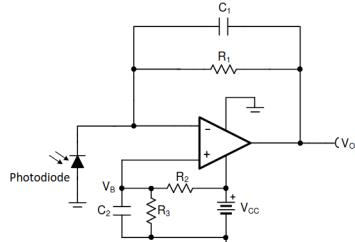


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2}$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500 μ V max
Drift	5 μ V/ $^{\circ}$ C max
Noise	15nV/ \sqrt{Hz} at 10kHz

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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$

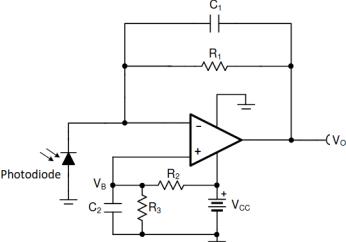
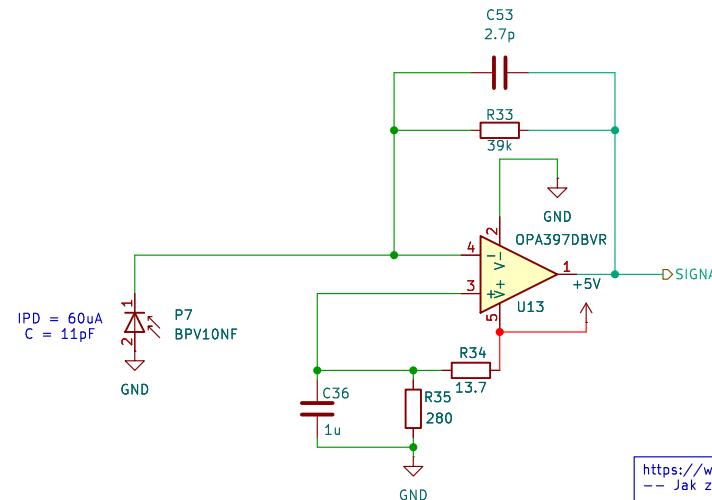


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500 μ V max
Drift	5 μ V/ $^{\circ}$ C max
Noise	15nV/ \sqrt{Hz} at 10kHz

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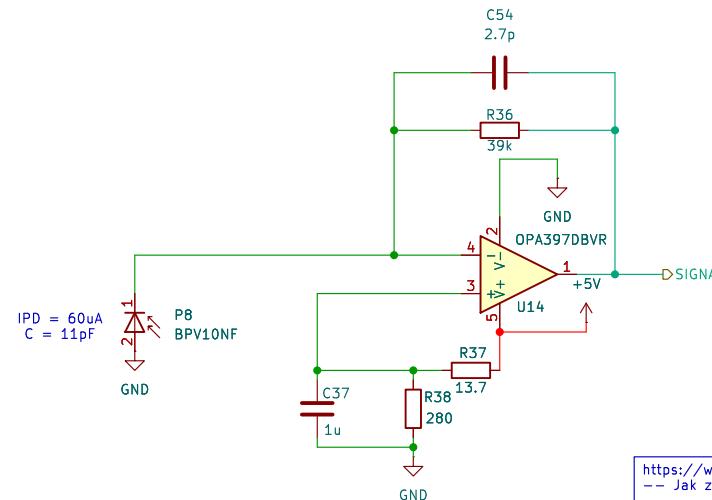
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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



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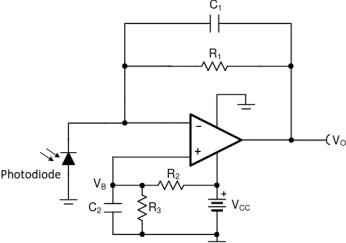


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500μV max
Drift	5μV/°C max
Noise	15nV/√Hz at 10kHz

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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$

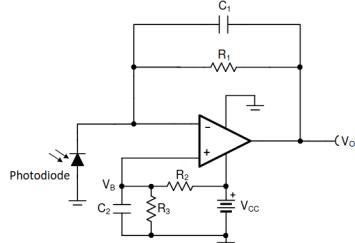
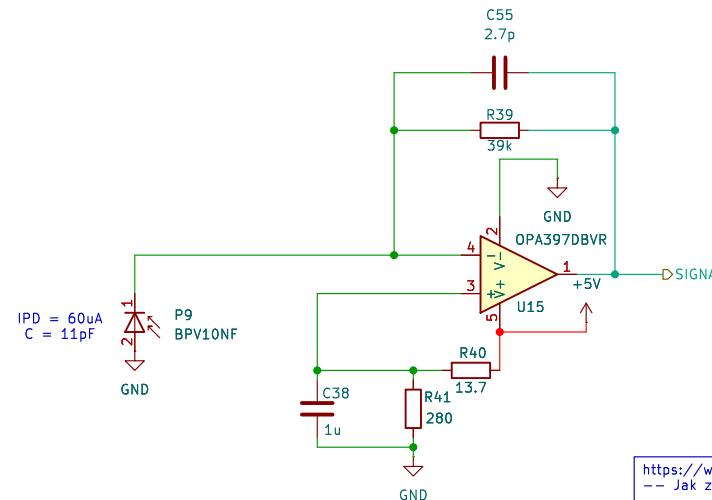


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current 75fA max
Offset voltage 500 μ V max
Drift 5 μ V/ $^{\circ}$ C max
Noise 15nV/ \sqrt Hz at 10kHz

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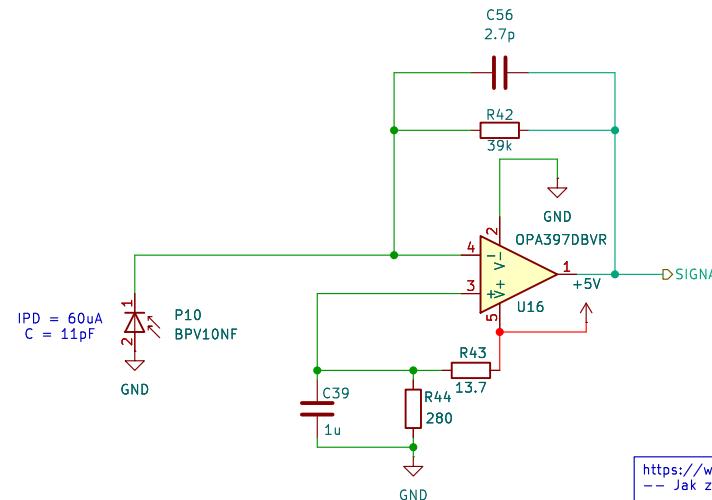
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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



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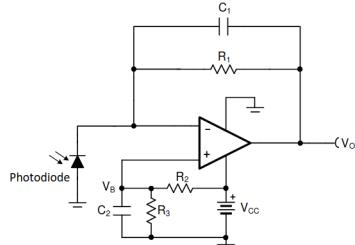


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500 μ V max
Drift	5 μ V/ $^{\circ}$ C max
Noise	15nV/ \sqrt{Hz} at 10kHz

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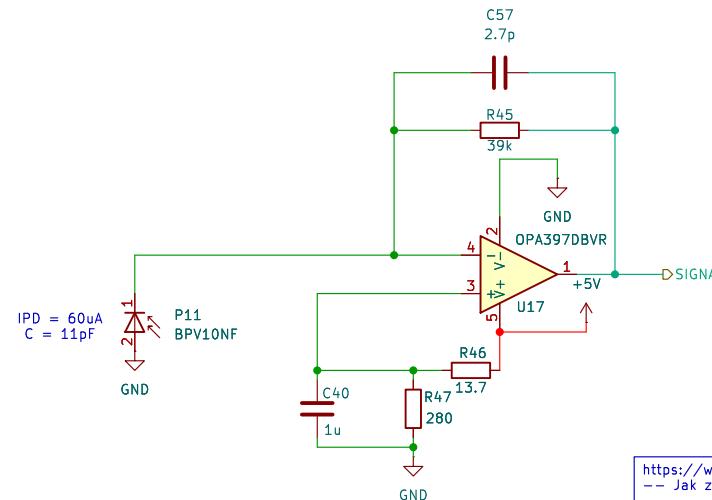
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Id: 13/27

Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



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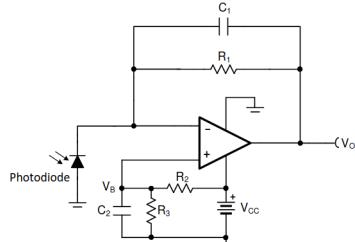


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500 μ V max
Drift	5 μ V/ $^{\circ}$ C max
Noise	15nV/ \sqrt{Hz} at 10kHz

Sheet: /Photodiodes/Photodiode10/
File: photodiode.kicad_sch

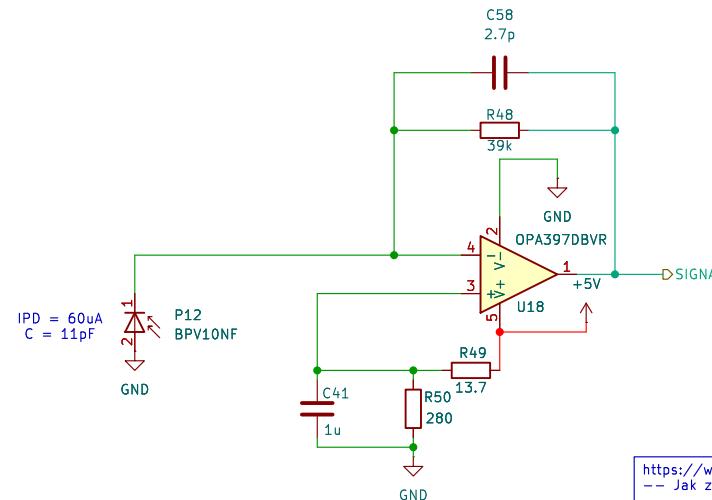
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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



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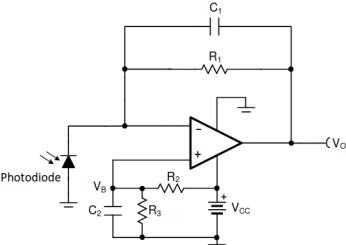


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500μV max
Drift	5μV/°C max
Noise	15nV/√Hz at 10kHz

Sheet: /Photodiodes/Photodiode11/
File: photodiode.kicad_sch

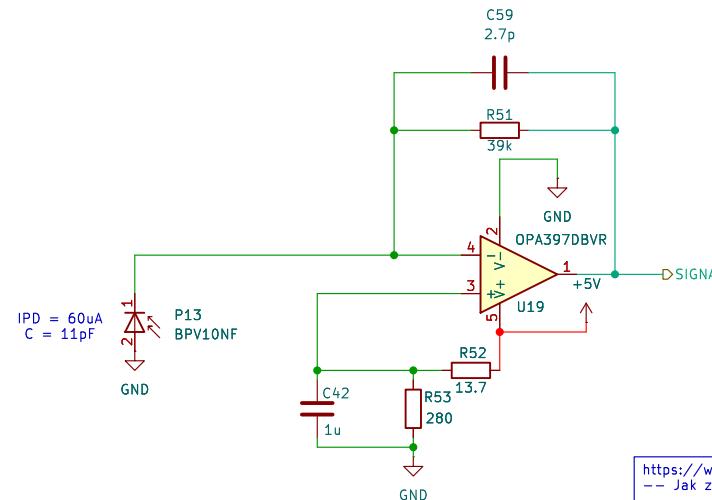
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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



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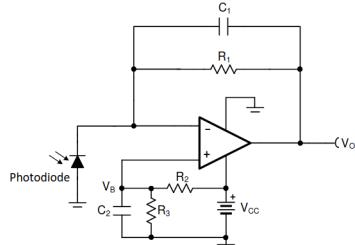


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500μV max
Drift	5μV/°C max
Noise	15nV/√Hz at 10kHz

Sheet: /Photodiodes/Photodiode12/
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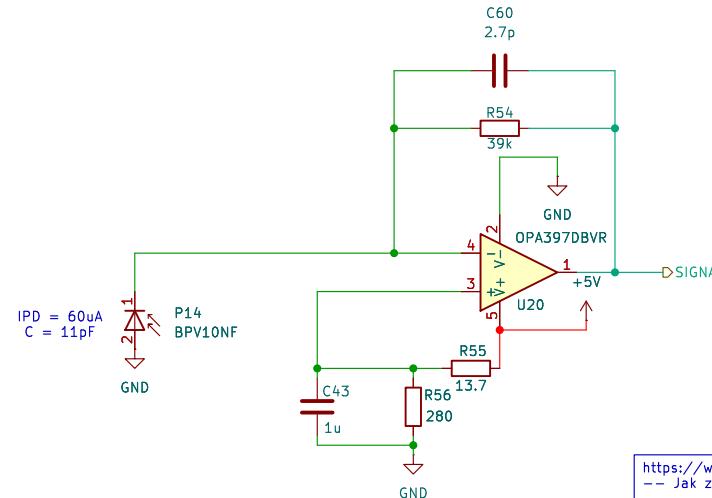
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Id: 16/27

Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$



<https://www.ti.com/lit/an/sboa061/sboa061.pdf?ts=1763493301204>
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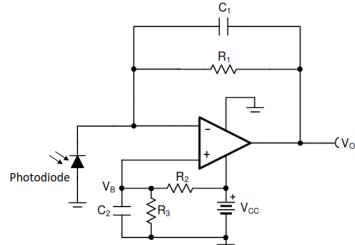


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2}$$

(2)

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500 μ V max
Drift	5 μ V/ $^{\circ}$ C max
Noise	15nV/ \sqrt{Hz} at 10kHz

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KiCad E.D.A. 9.0.6

Rev:
Id: 17/27

Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$

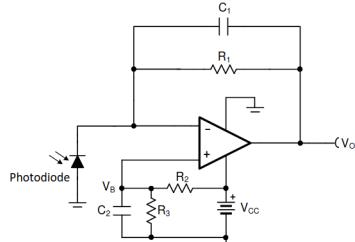
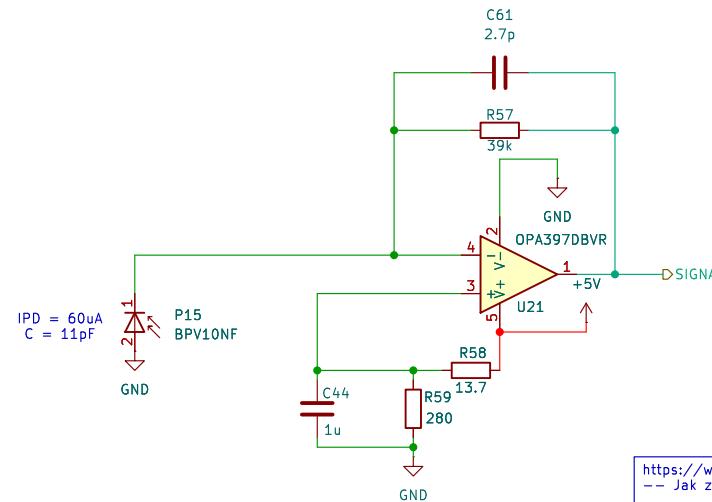


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current 75fA max
Offset voltage 500 μ V max
Drift 5 μ V/ $^{\circ}$ C max
Noise 15nV/ \sqrt{Hz} at 10kHz

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Można zastanowić się nad zmianą wartości rezystora R1, ale to po zmianie procka i sprawdzeniu czy będzie działać. Obecnie jest zakres 0.1V–2.4V (chyba)

$$\frac{V_{OUT(MAX)} - V_{OUT(MIN)}}{I_{IN(MAX)}} = R_1 \rightarrow \frac{4.9V - .1V}{90\mu A} = 53333.3\Omega \rightarrow 53.6k\Omega$$

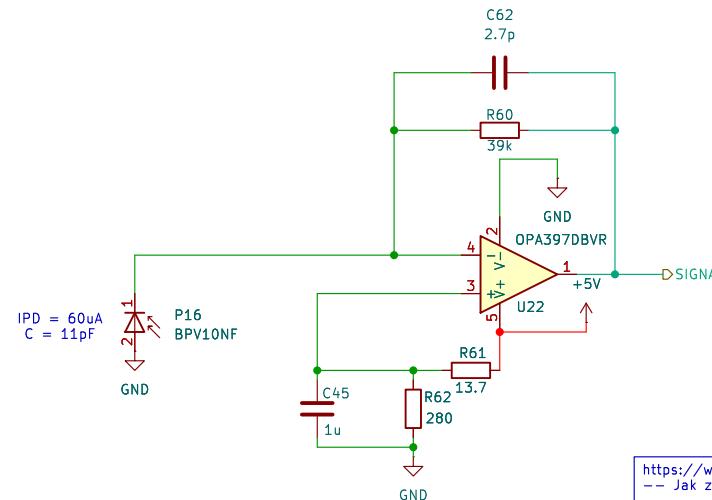


Figure 4: A bias voltage is applied to the op amp's non-inverting input to prevent saturation at the negative power supply

The output transfer function including the bias voltage is:

$$V_{OUT} = i_{PD}R_1 + V_B = i_{PD}R_1 + V_{CC} \frac{R_3}{R_3 + R_2} \quad (2)$$

KEY OPA128 SPECIFICATIONS

Bias current	75fA max
Offset voltage	500μV max
Drift	5μV/°C max
Noise	15nV/√Hz at 10kHz

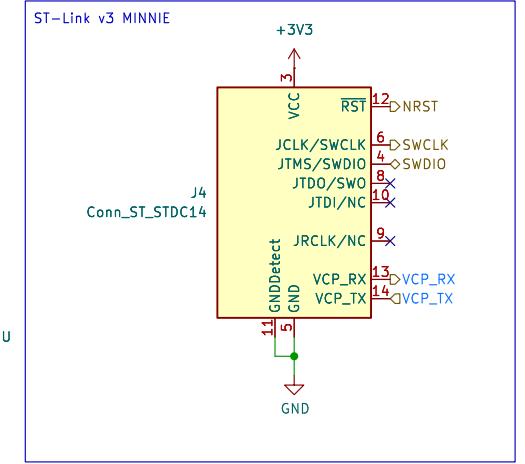
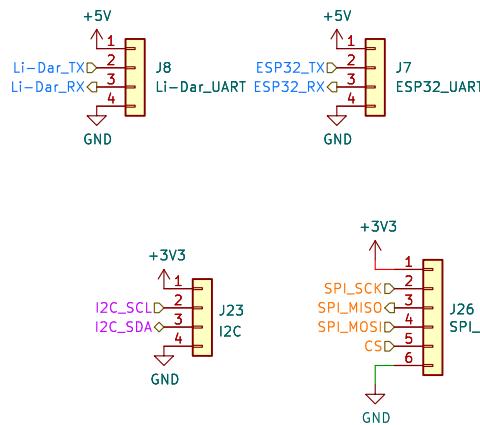
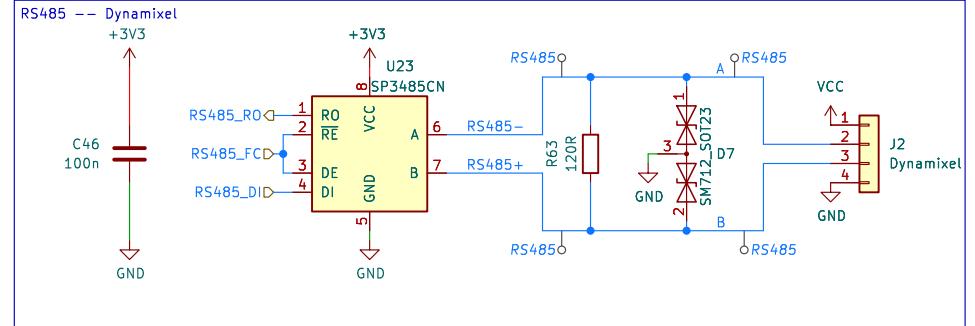
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Rev:
Id: 19/27



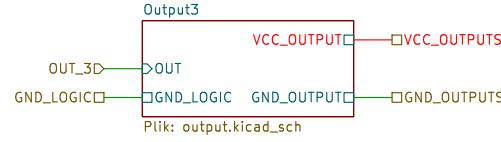
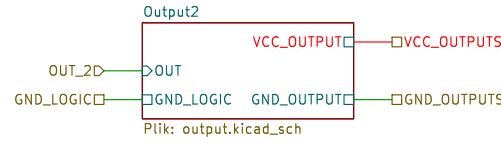
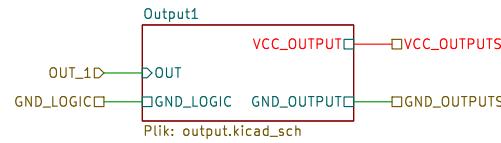
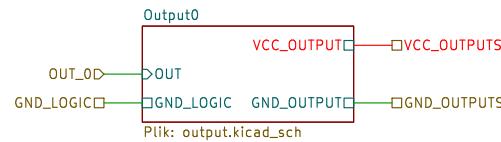
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Rev: 1d: 22/27

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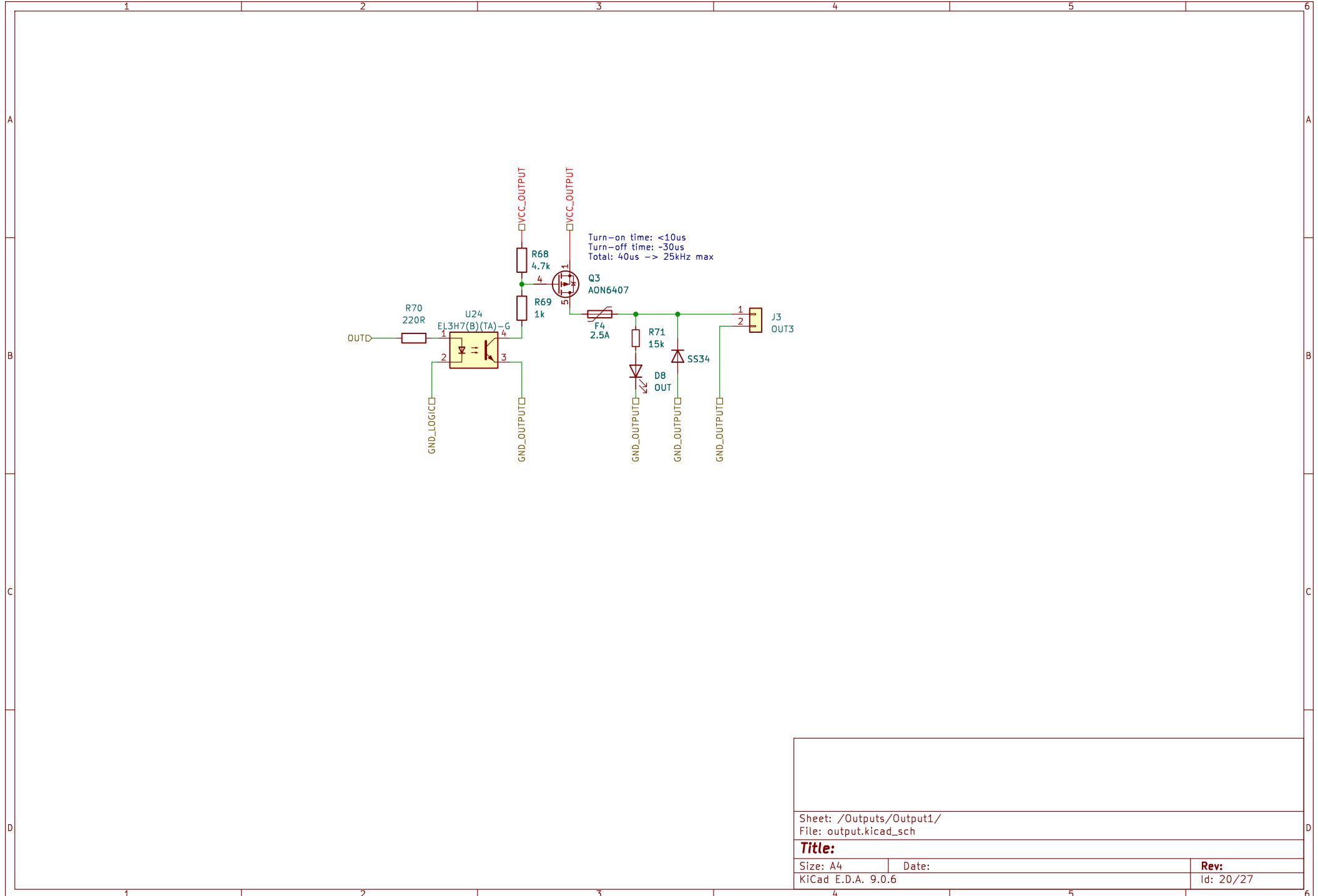
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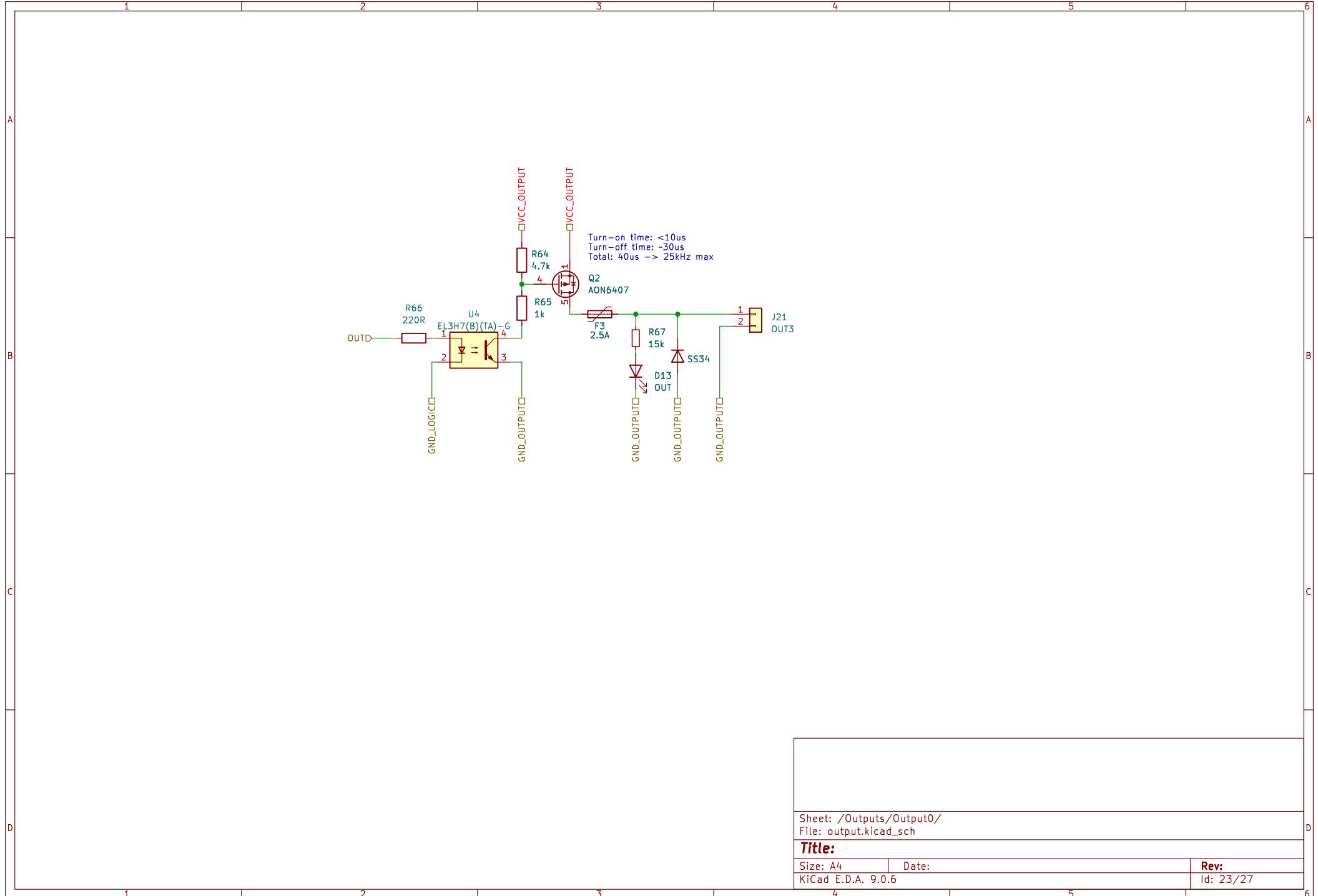
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Id: 22/27



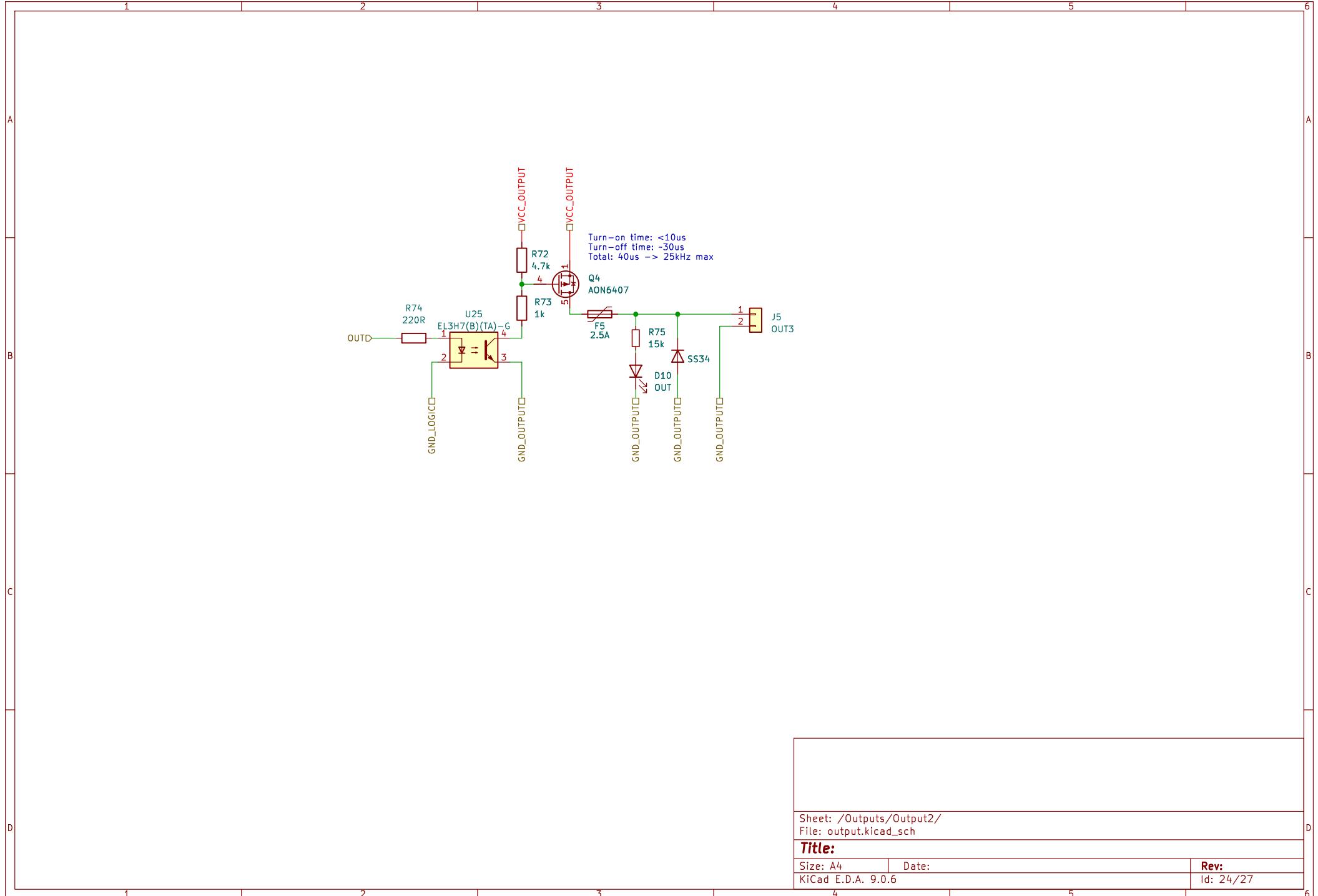


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Id: 23/27



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