

10.4 Mounting the Sensor at the End of a Cable

The main error due to a long wire is caused by the voltage drop across that wire caused by the reverse current biasing the LM135 on. Table 2 shows the wire AWG and the length of wire that would cause 1°C error.

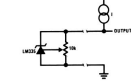
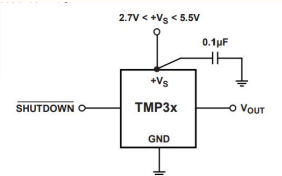
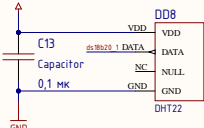


Figure 34. Cable Connected Temperature Sensor

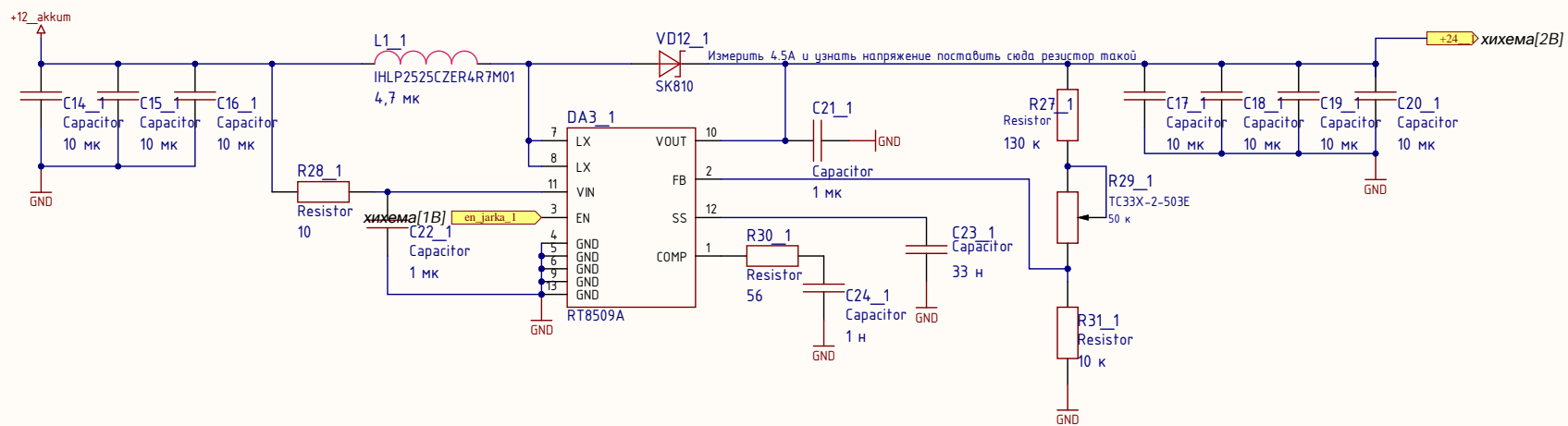


Конт	Цепь
A1	Сеть акси
A2	Сеть акси
A3	Сеть мотор
A4	Основной рс
A5	Основной рс
A6	Резервный рс
A7	Резервный рс
A8	концевик норм откр
A9	на нм навод потенциалоп
A10	питание для датчика tmp36
A11	выход tmp36 сета
A12	третья часть дсав
A13	третья часть дсав
A14	первая часть дсав
A15	все питание дсав
A16	Земля

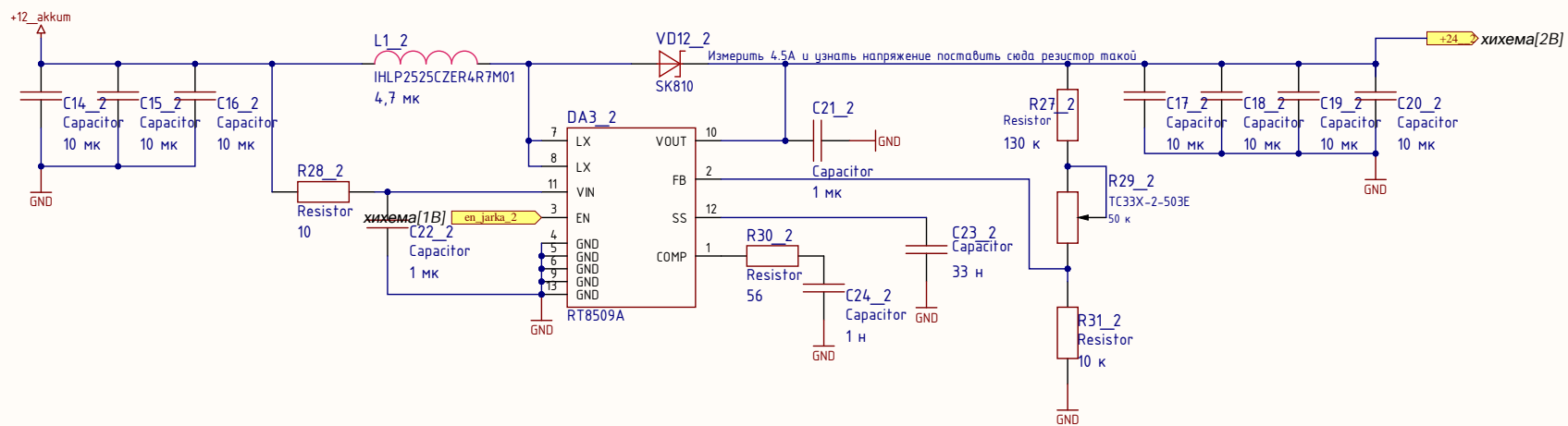
Конт	Цепь
B1	
B2	
B3	
B4	
B5	
B6	
B7	
B8	
B9	
B10	
B11	
B12	
B13	
B14	
B15	Земля
B16	Земля



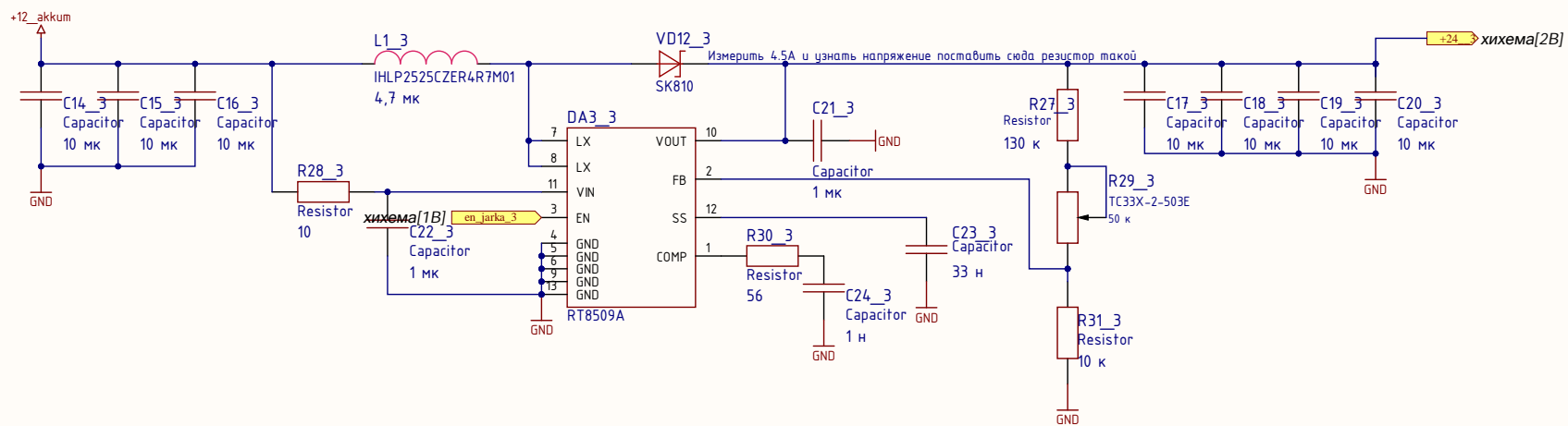
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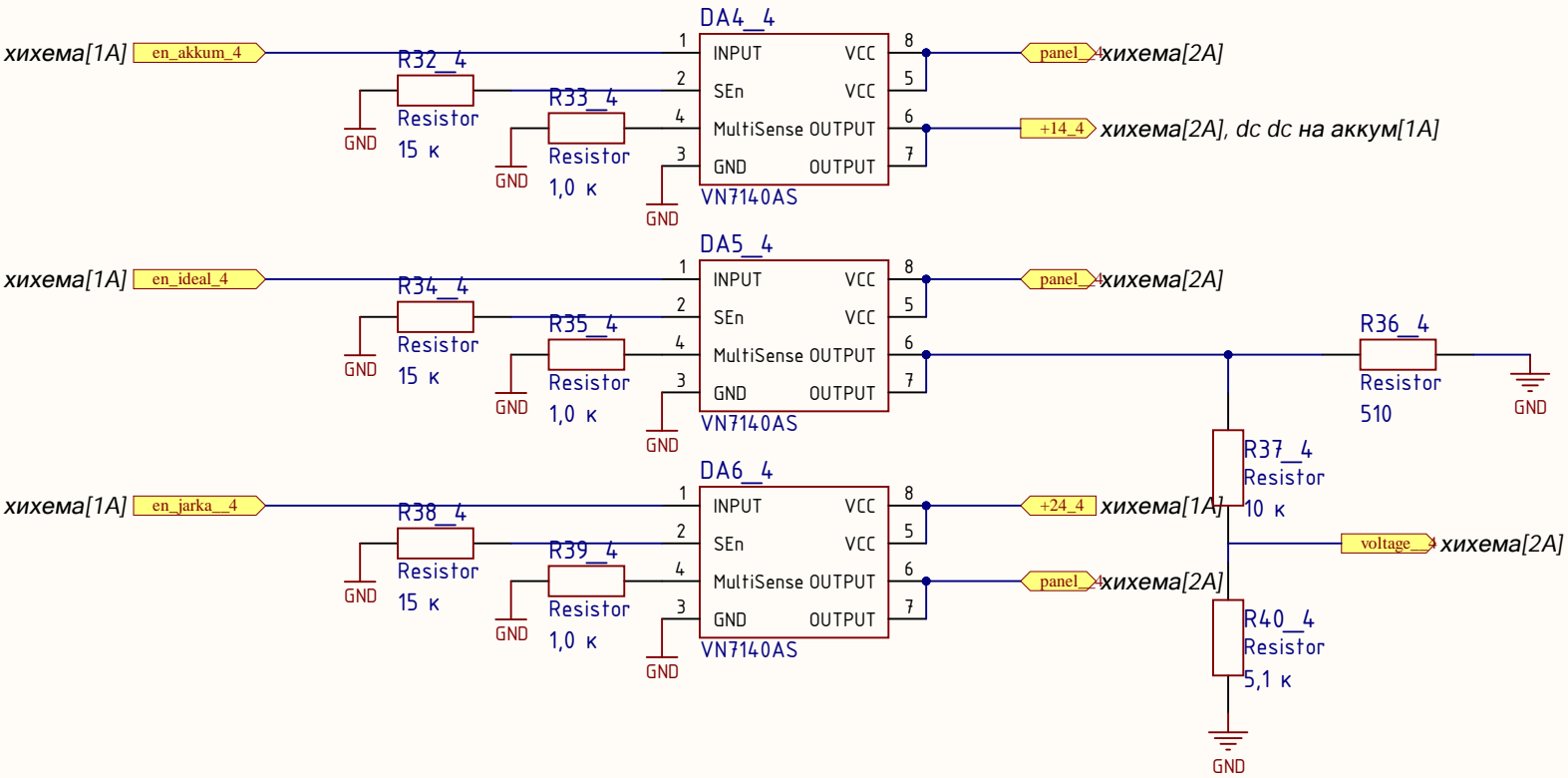
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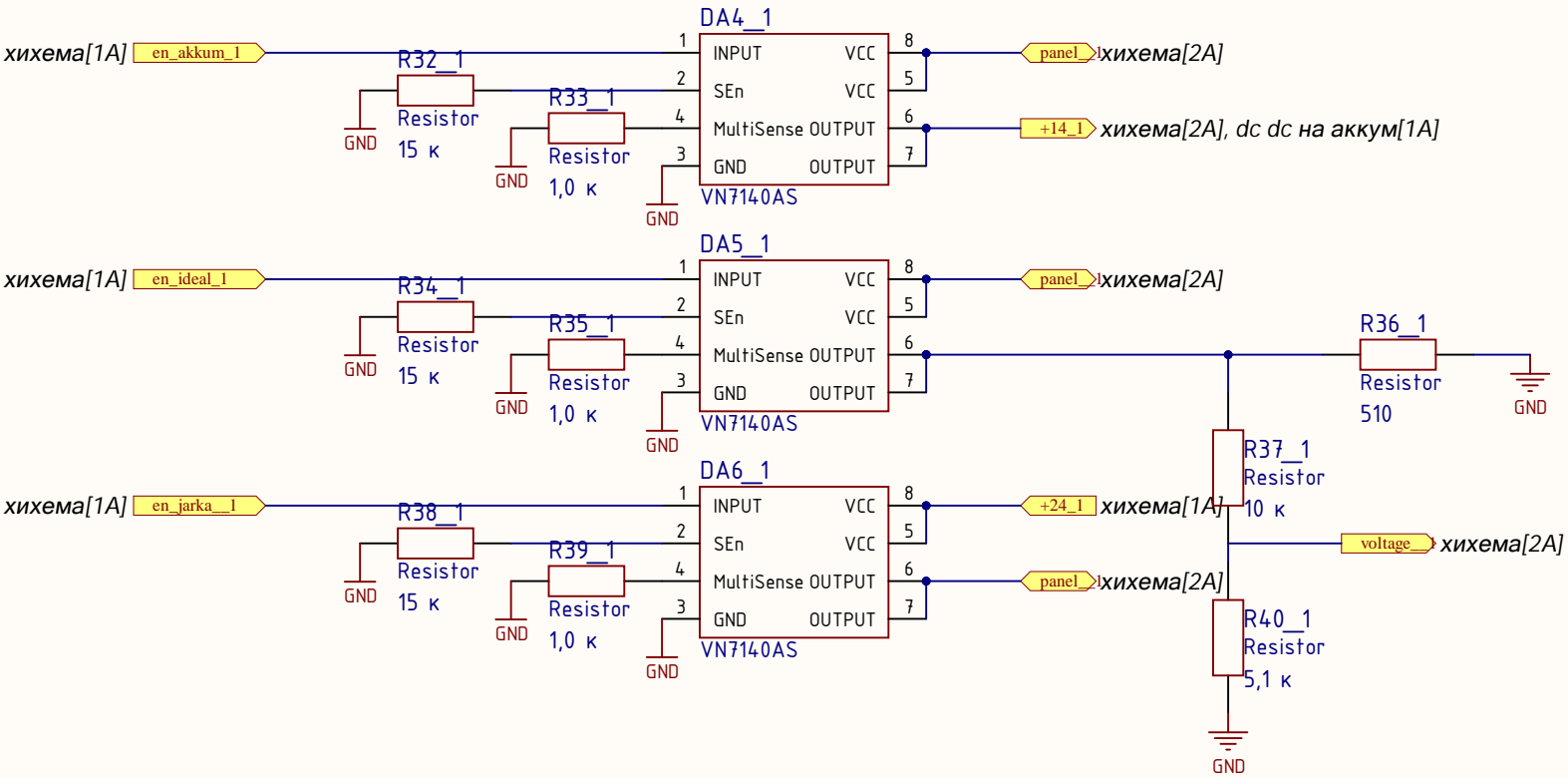
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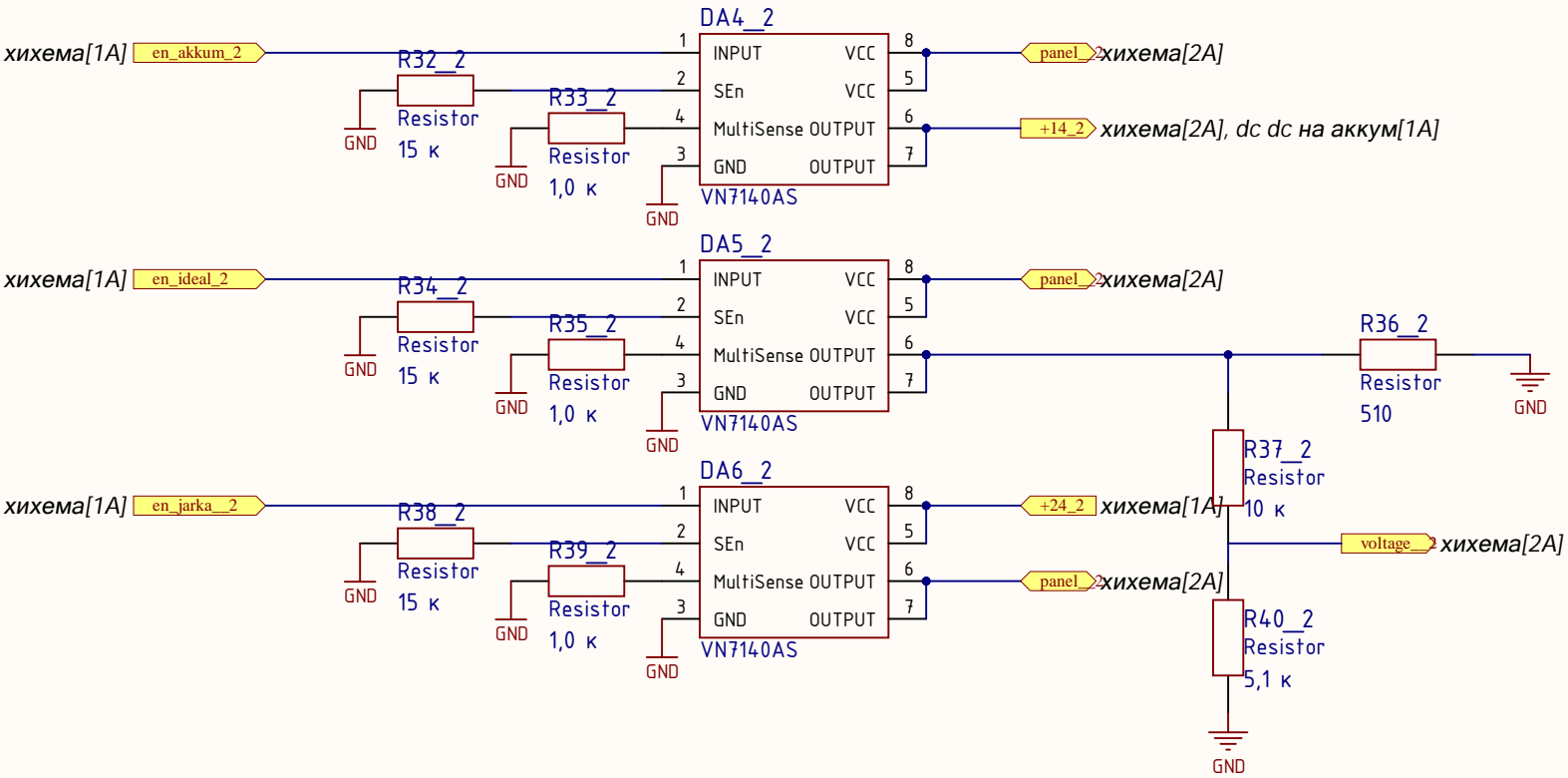
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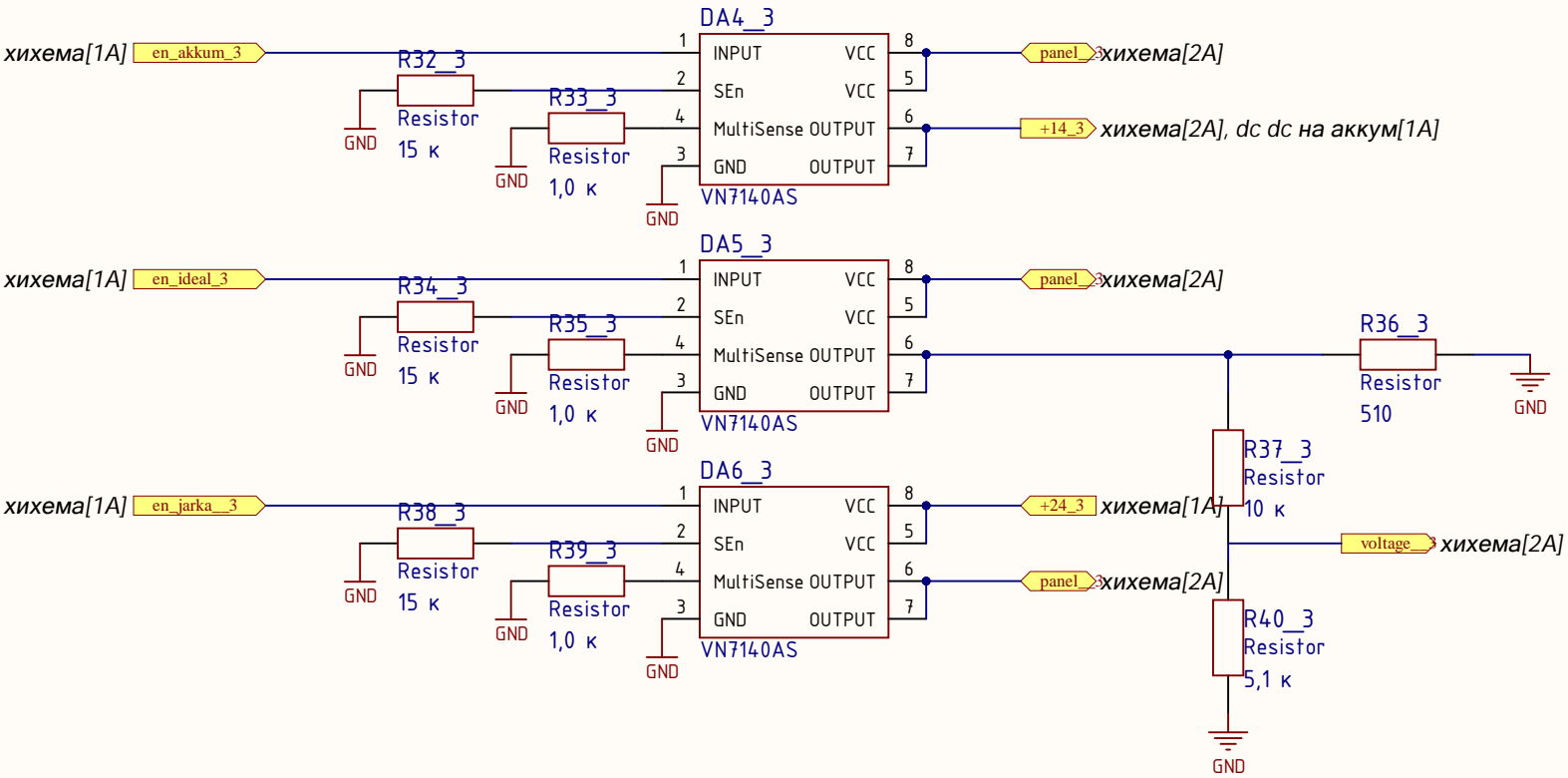
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File:	C:\Users\...\switches.SchDoc	Drawn By:



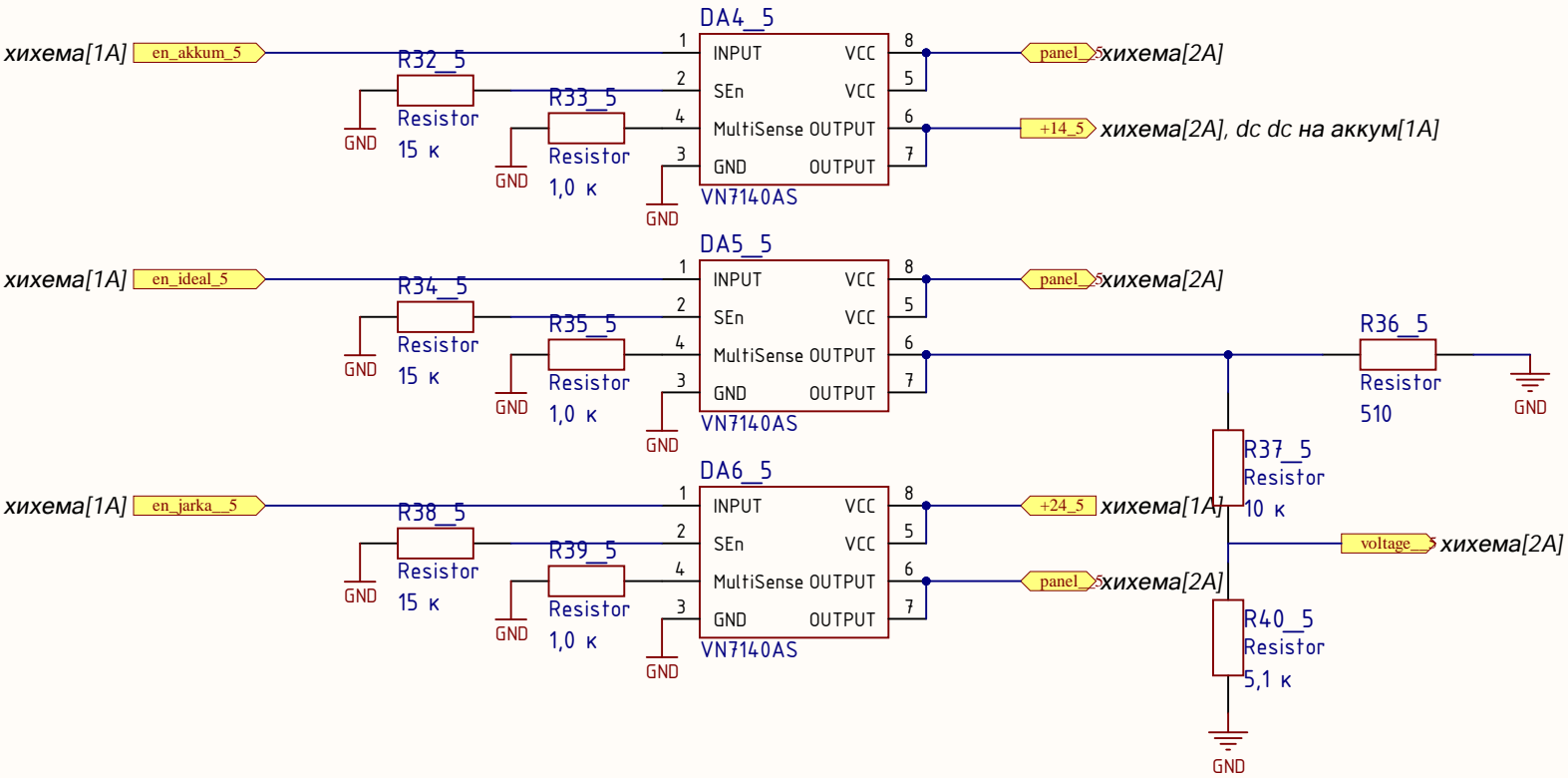
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File:	C:\Users\...\switches.SchDoc	Drawn By:



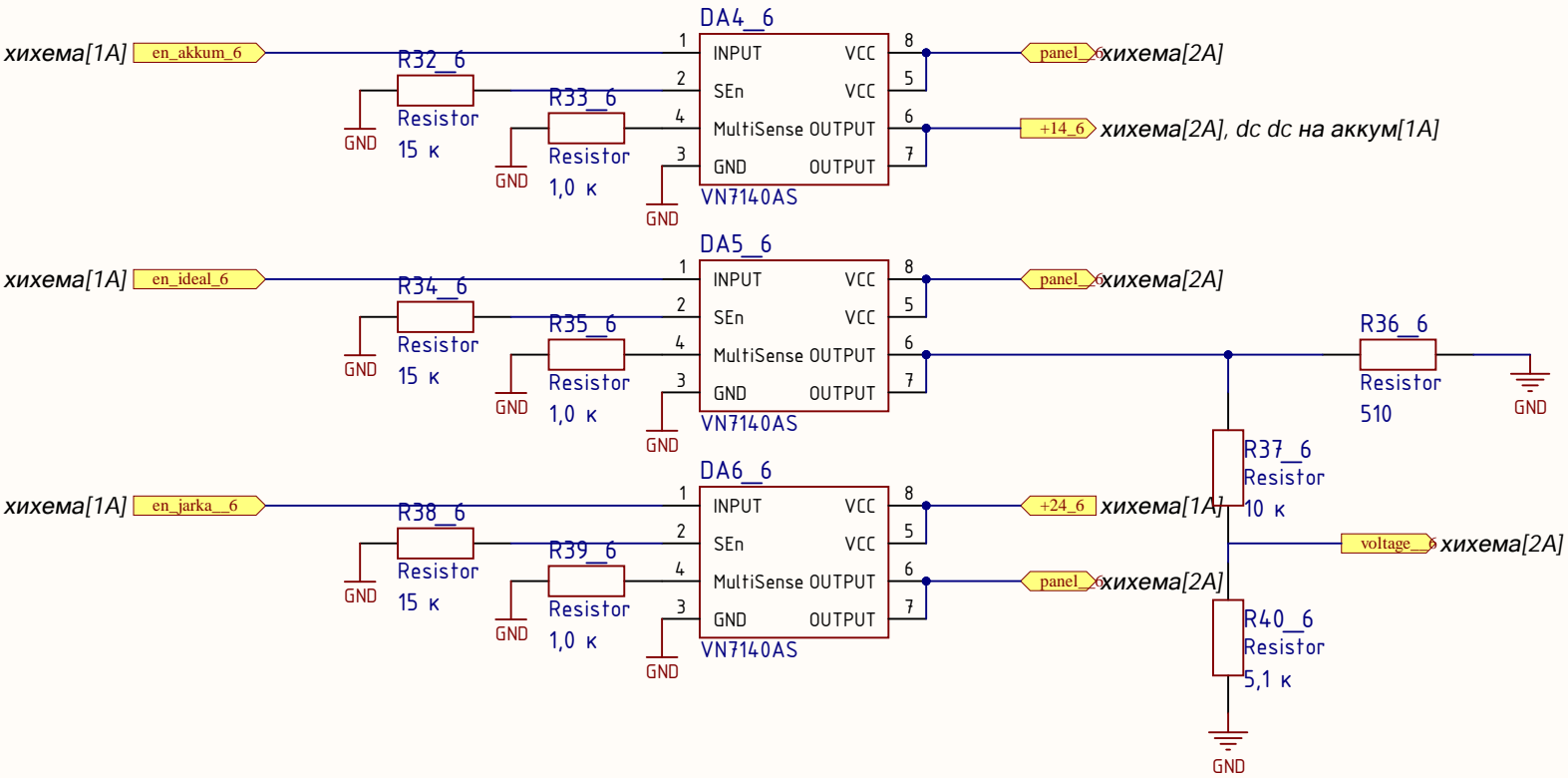
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Date:	12.24.2024	Sheet of
File:	C:\Users\...\switches.SchDoc	Drawn By:



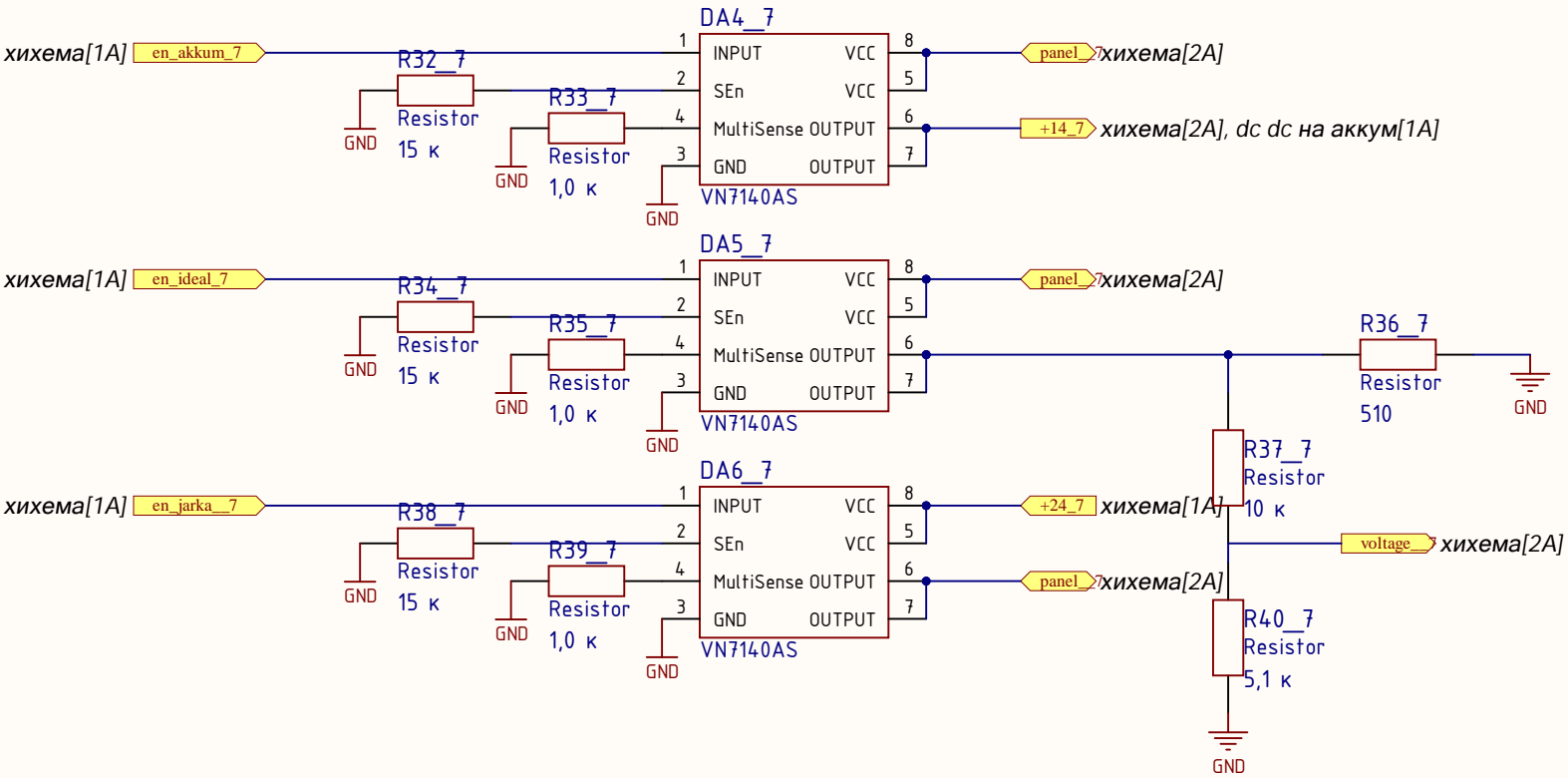
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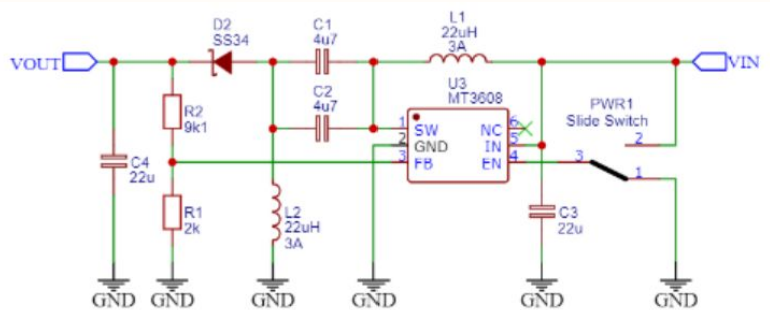
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Title		
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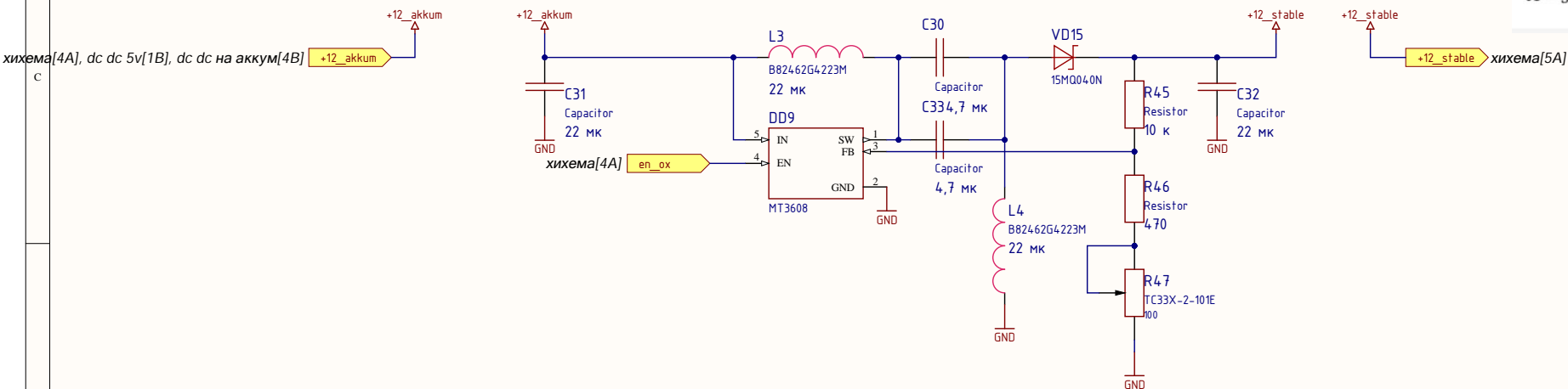


$$VOUT = 0.6 \cdot \frac{R1 + R2}{R1}$$

Input

$$\left\{ 12 = 0.6 \times \frac{r1 + r2}{r1}, r2 = 10\,000 \right\}$$

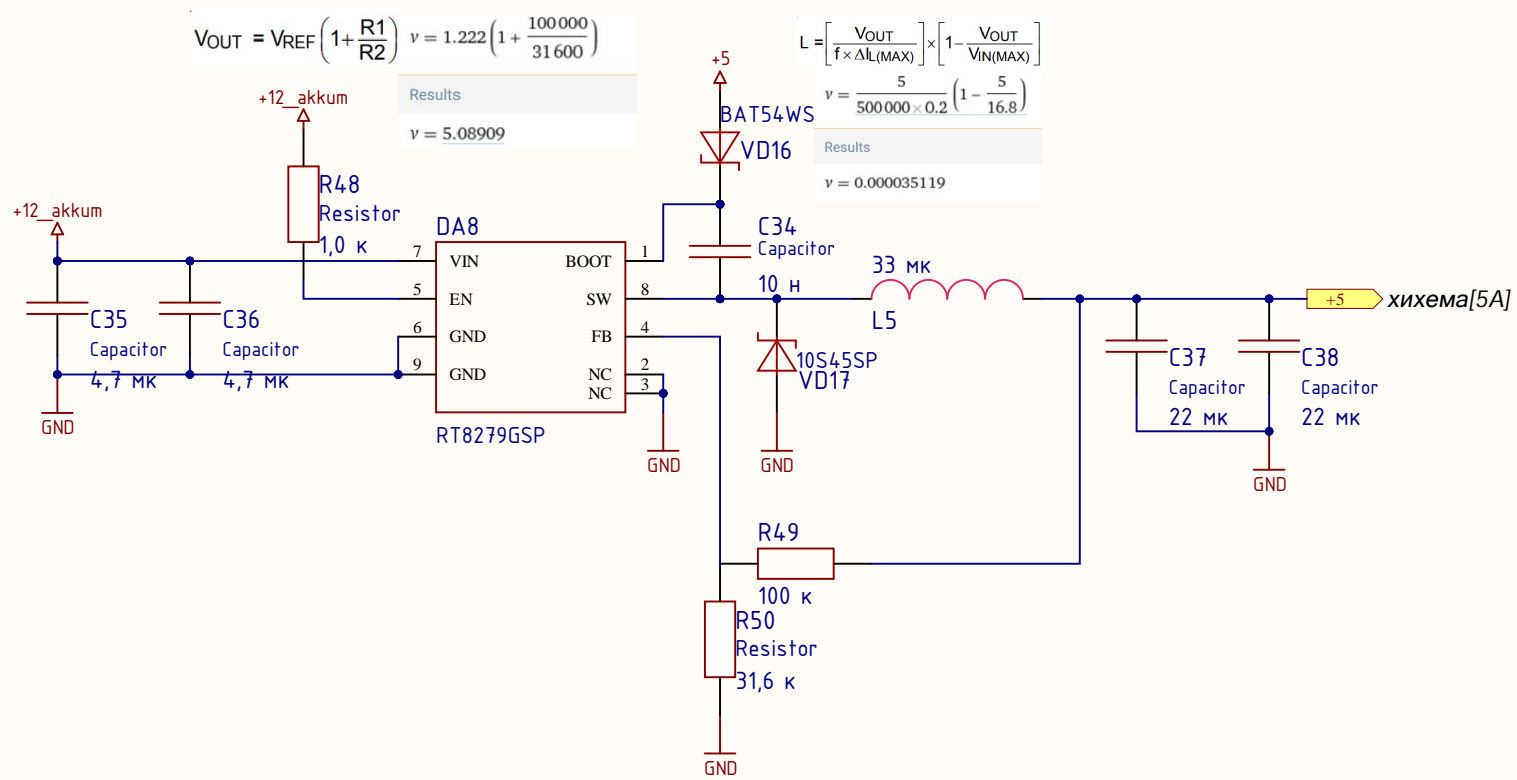
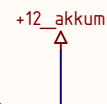
Solution

$$r1 = 526.315, \quad r2 = 10\,000$$


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$$V_{OUT} = V_{REF} \left(1 + \frac{R1}{R2} \right) \quad v = 1.222 \left(1 + \frac{100000}{31600} \right)$$

Results

$v = 5.08909$

$$L = \left[\frac{V_{OUT}}{f \times \Delta L(MAX)} \right] \times \left[1 - \frac{V_{OUT}}{V_{IN(MAX)}} \right]$$

Results

$v = 0.000035119$

Title		
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