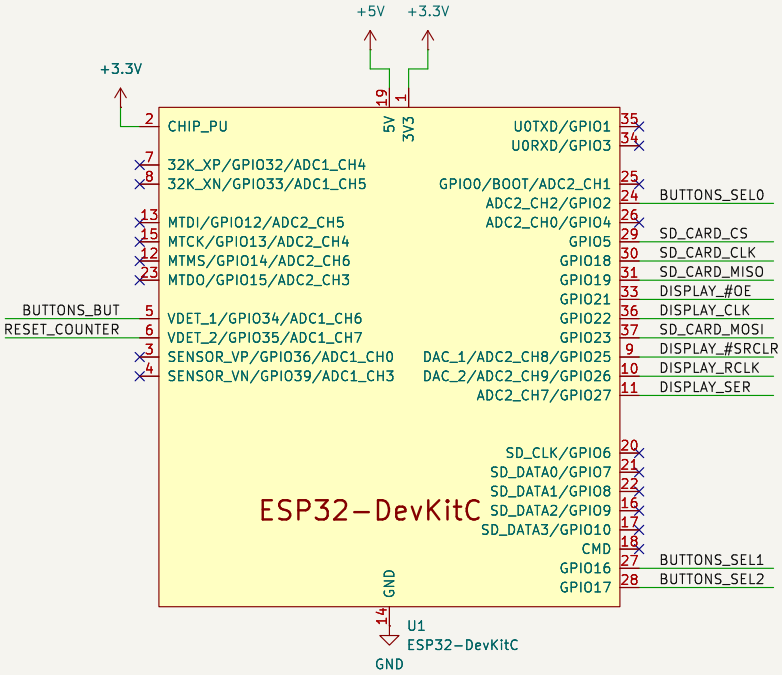
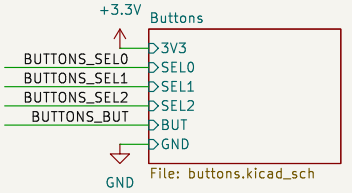
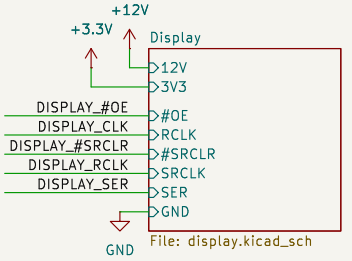
The devkit being used is a different one. and has less pins than the one showed here!!!
(I should create a symbol for the new one, but right now works)

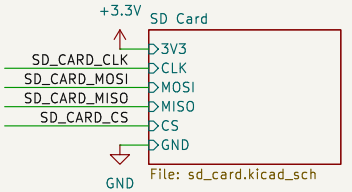
SPI0: GPIO6-11 are usually connected to the SPI flash integrated on the module and therefore should not be used for other purposes.

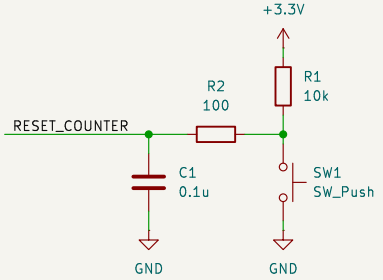
JTAG: GPIO12-15 are usually used for inline debug.

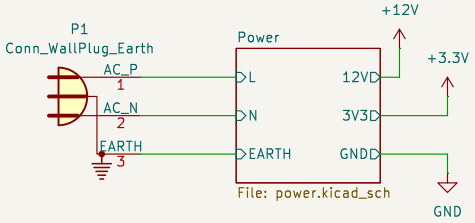








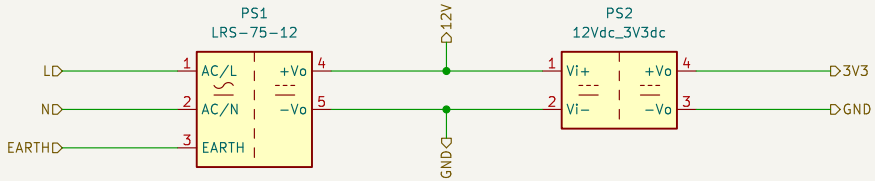




Author: lluc
Associació Cultural TGK
Sheet: /
File: compta-birres.kicad_sch

Title: Root

Size: A4	Date: 2024-09-24	**Rev: 1.4**
KiCad E.D.A. 8.0.5		Id: 1/10



Author: lluc
Associació Cultural TGK
Sheet: /Power/
File: power.kicad_sch

Title: Power

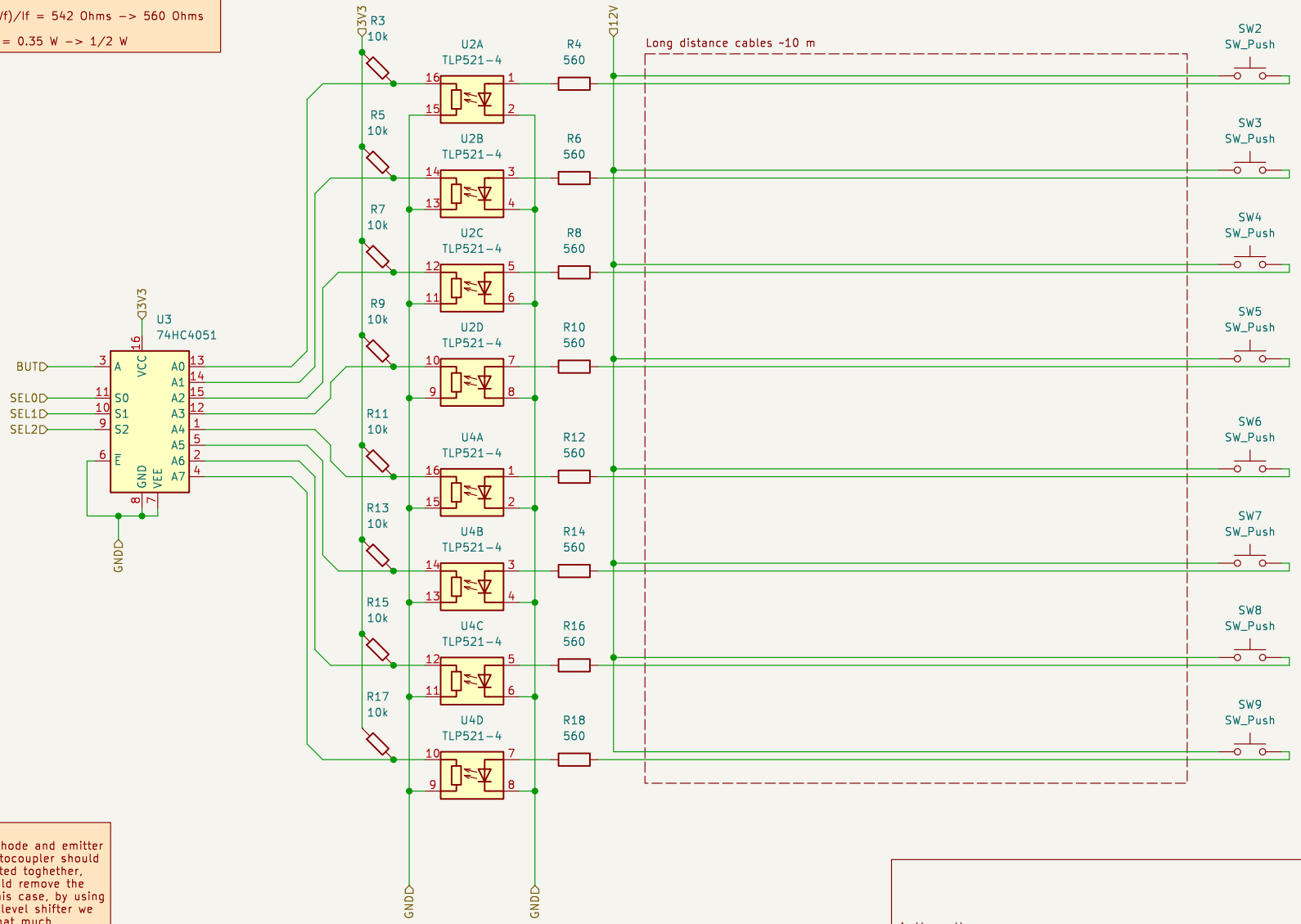
Size: A4	Date: 2024-09-19	**Rev: 1.1**
KiCad E.D.A. 8.0.5		Id: 2/10

Ra (Anode resistor on optocoupler) Calculation:

Vf = 1.15 V
if = 20 mA

Ra = (Vcc - Vf)/If = 542 Ohms -> 560 Ohms

P = Ra * If^2 = 0.35 W -> 1/2 W

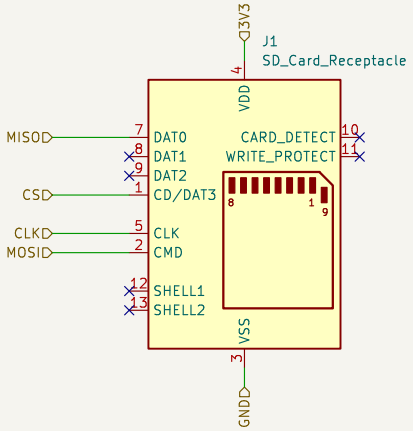


NOTE:
Ideally the cathode and emitter pins of the optocoupler should not be connected toghether, since that would remove the isolation. In this case, by using is as a down-level shifter we do not need that much isolation only the down conversion.
For some isolation we could connect the two grounds far from the IC and not the pins at each button.

Author: lluc
Associació Cultural TGK
Sheet: /Buttons/
File: buttons.kicad_sch

Title: Buttons

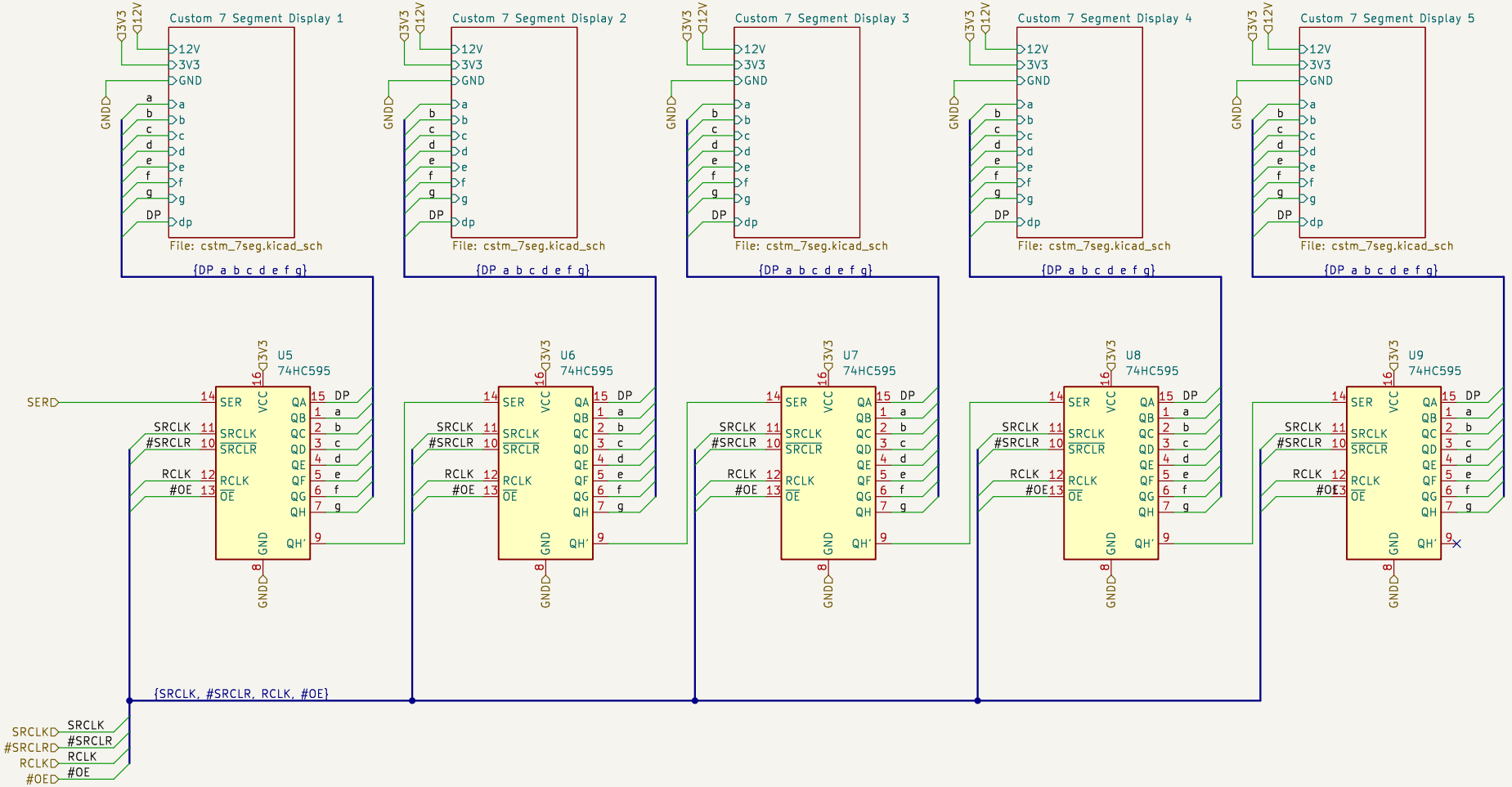
Size: A4	Date: 2024-09-26	**Rev: 1.3**
KiCad E.D.A. 8.0.5		Id: 3/10



Author: lluc
Associació Cultural TGK
Sheet: /SD Card/
File: sd_card.kicad_sch

Title: SD Card

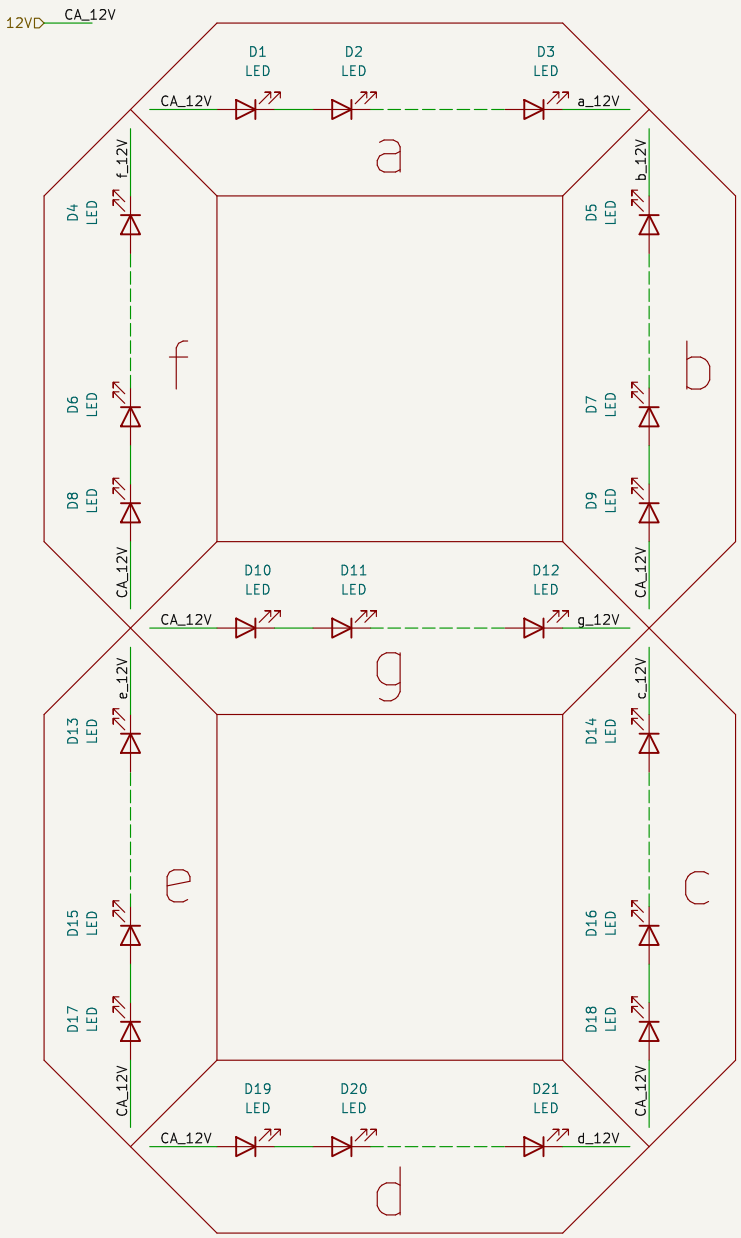
Size: A4	Date: 2024-08-08	**Rev: 1.1**
KiCad E.D.A. 8.0.5		Id: 4/10

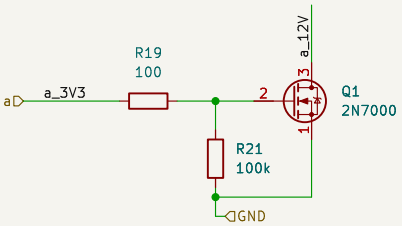


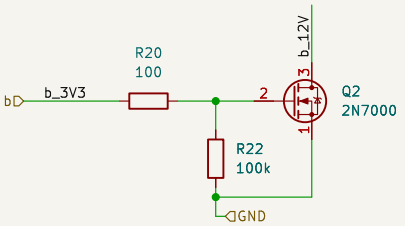
Author: lluc
Associació Cultural TGK
Sheet: /Display/
File: display.kicad_sch

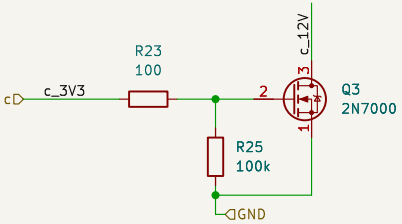
Title: Display

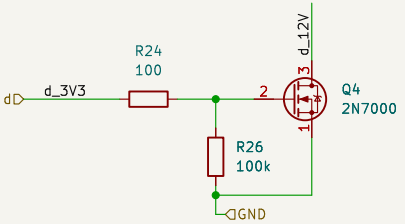
Size: A4	Date: 2024-09-24	**Rev: 1.3**
KiCad E.D.A. 8.0.5		Id: 5/10

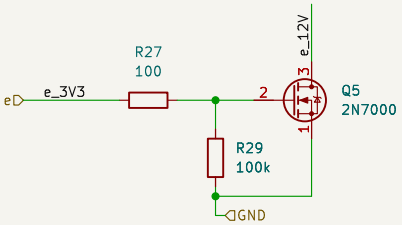


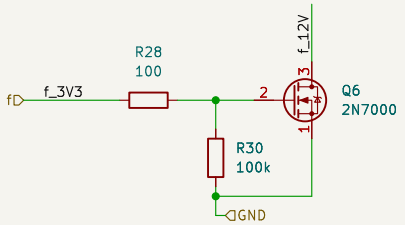


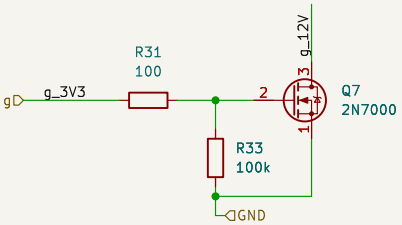


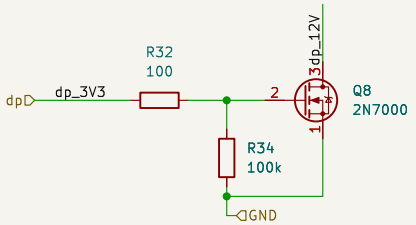










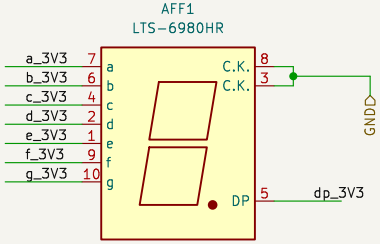


Choosing the MOSFET

The led strips consume around 10 W/m @ 12Vdc, since the length of each segment will be around 10 cm that means each segment will consume ~1W.
At 12Vdc this is a current of ~83mA rounding that number to 100mA we can choose the suitable MOSFET (2N7000).
This is a logic level MOSFET, meaning it can be turned on/off directly with 3.3V logic levels.

The DP will not be used for this application, so the DP_12V net migth be left floating.
If this is the case, a big resistor should be placed there.

An other option is to leave the dp_3V3 output of the 74HC595 floating.

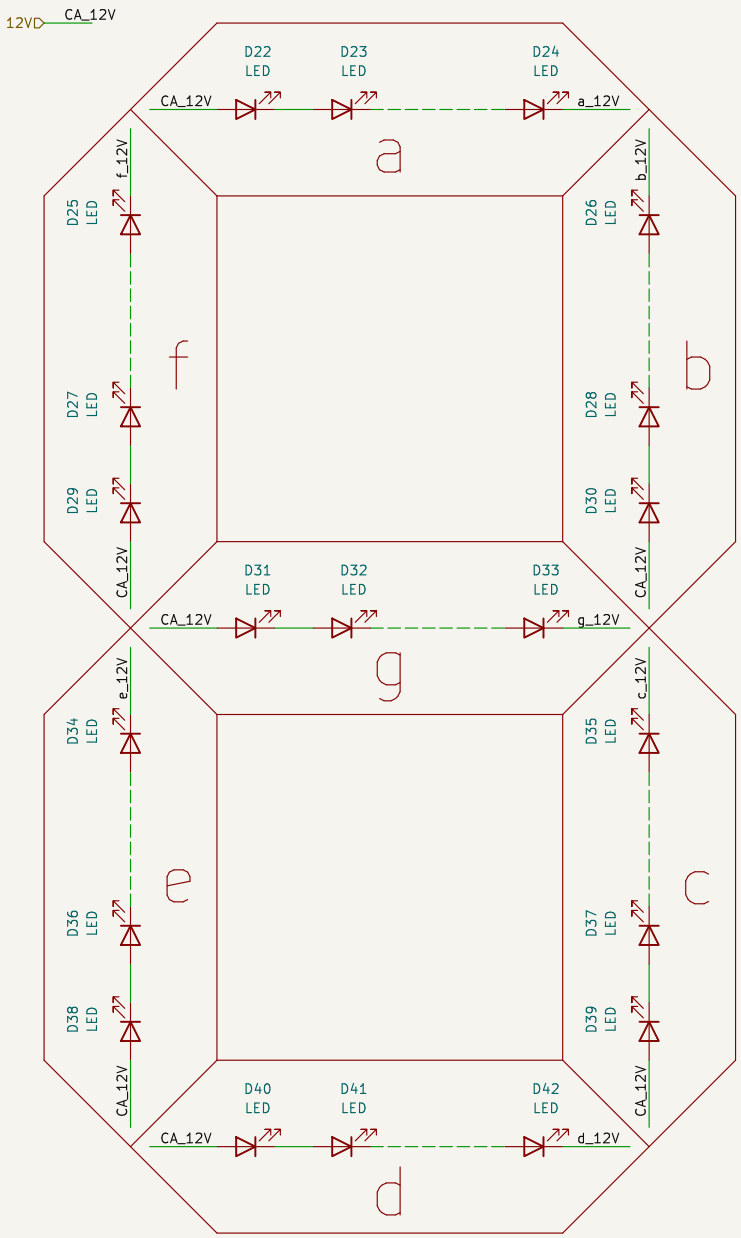


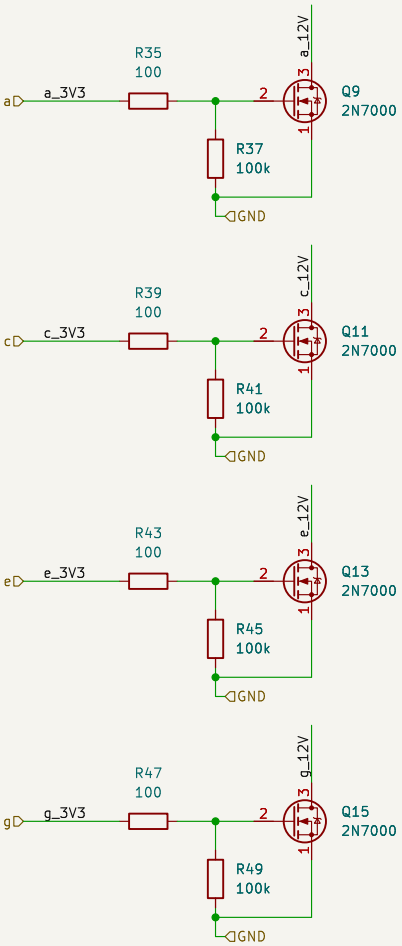
** Optional **
The regular 0.56" 7-segment display will be placed facing backwards so people from behind can see the displaying number.

Author: lluc
Associació Cultural TGK
Sheet: /Display/Custom 7 Segment Display 1/
File: cstm_7seg.kicad_sch

Title: Custom 7 Segment Display

Size: A4	Date: 2024-09-24	**Rev: 1.2**
KiCad E.D.A. 8.0.5		Id: 6/10





Choosing the MOSFET

The led strips consume around 10 W/m @ 12Vdc, since the length of each segment will be around 10 cm that means each segment will consume ~1W. At 12Vdc this is a current of ~83mA rounding that number to 100mA we can choose the suitable MOSFET (2N7000). This is a logic level MOSFET, meaning it can be turned on/off directly with 3.3V logic levels.

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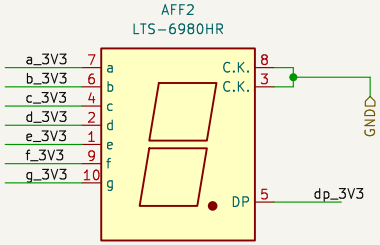
An other option is to leave the dp_3V3 output of the 74HC595 floating.

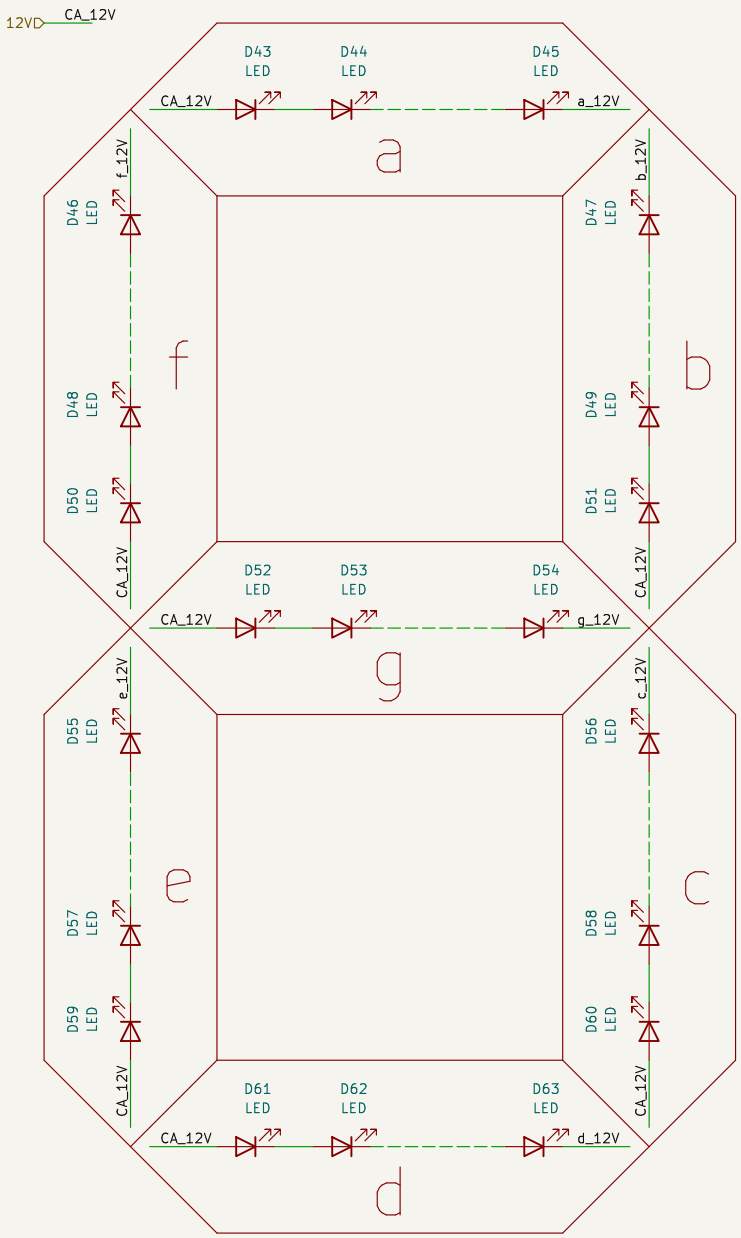


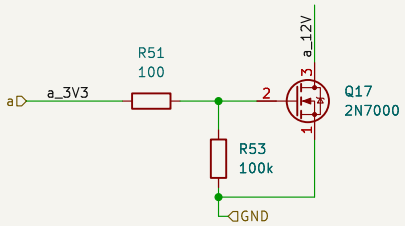
** Optional **
The regular 0.56" 7-segment display will be placed facing backwards so people from behind can see the displaying number.

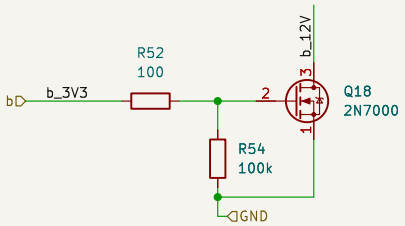
Author: lluc
Associació Cultural TGK
Sheet: /Display/Custom 7 Segment Display 2/
File: cstm_7seg.kicad_sch

Title: Custom 7 Segment Display

Size: A4	Date: 2024-09-24	**Rev: 1.2**
KiCad E.D.A. 8.0.5		Id: 7/10

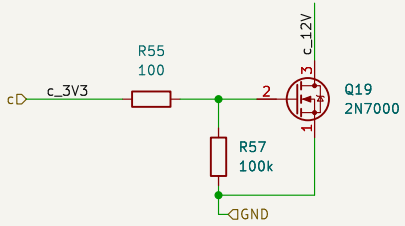


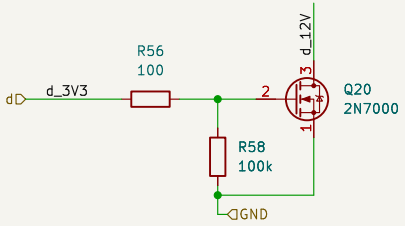


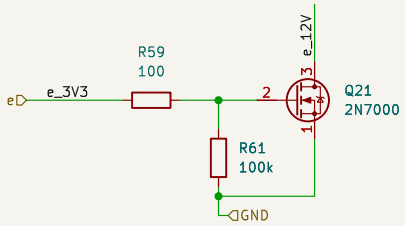


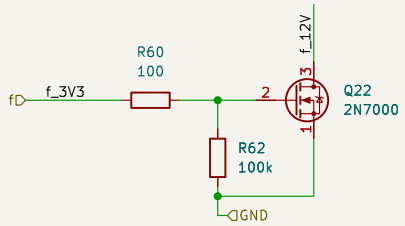
Choosing the MOSFET

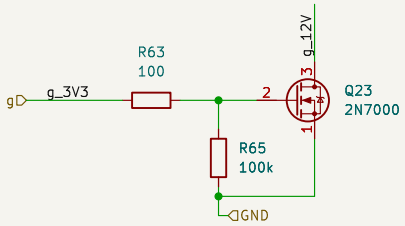
The led strips consume around 10 W/m @ 12Vdc, since the length of each segment will be around 10 cm that means each segment will consume ~1W.
At 12Vdc this is a current of ~83mA rounding that number to 100mA we can choose the suitable MOSFET (2N7000).
This is a logic level MOSFET, meaning it can be turned on/off directly with 3.3V logic levels.

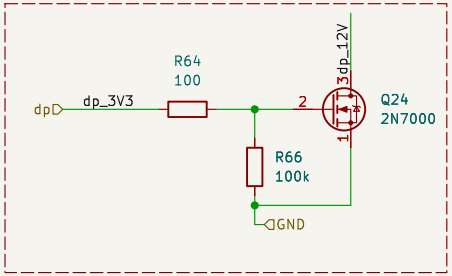






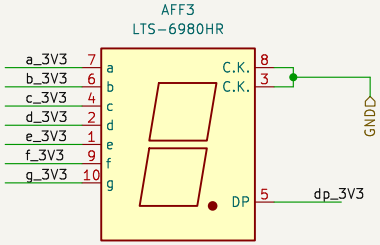






The DP will not be used for this application, so the DP_12V net migth be left floating.
If this is the case, a big resistor should be placed there.

An other option is to leave the dp_3V3 output of the 74HC595 floating.

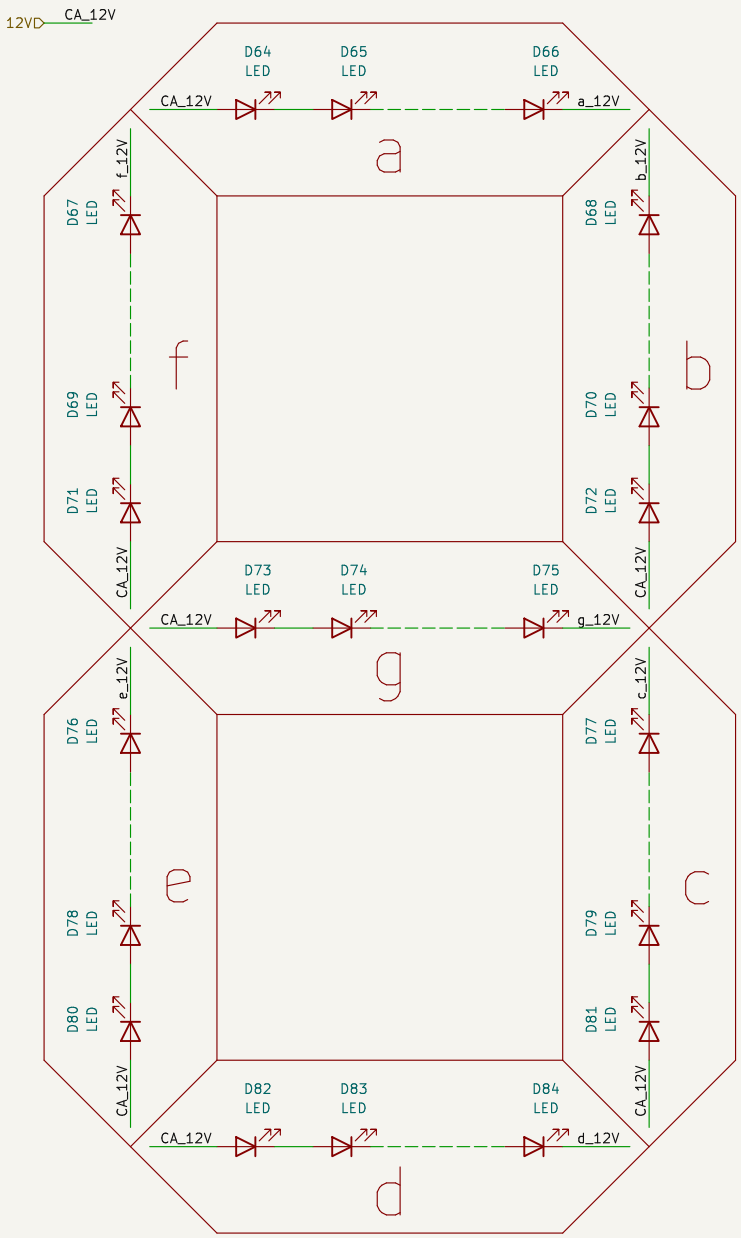


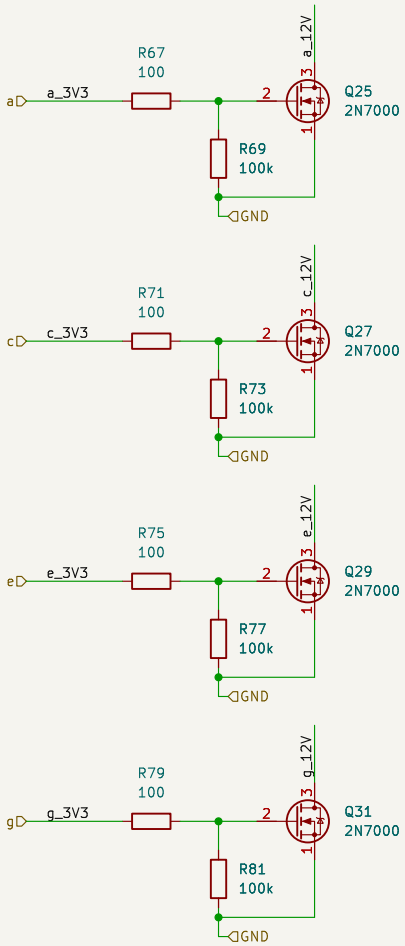
** Optional **
The regular 0.56" 7-segment display will be placed facing backwards so people from behind can see the displaying number.

Author: lluc
Associació Cultural TGK
Sheet: /Display/Custom 7 Segment Display 3/
File: cstm_7seg.kicad_sch

Title: Custom 7 Segment Display

Size: A4	Date: 2024-09-24	**Rev: 1.2**
KiCad E.D.A. 8.0.5		Id: 8/10



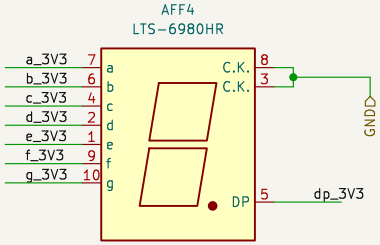


Choosing the MOSFET

The led strips consume around 10 W/m @ 12Vdc, since the length of each segment will be around 10 cm that means each segment will consume ~1W. At 12Vdc this is a current of ~83mA rounding that number to 100mA we can choose the suitable MOSFET (2N7000). This is a logic level MOSFET, meaning it can be turned on/off directly with 3.3V logic levels.

The DP will not be used for this application, so the DP_12V net migth be left floating.
If this is the case, a big resistor should be placed there.

An other option is to leave the dp_3V3 output of the 74HC595 floating.

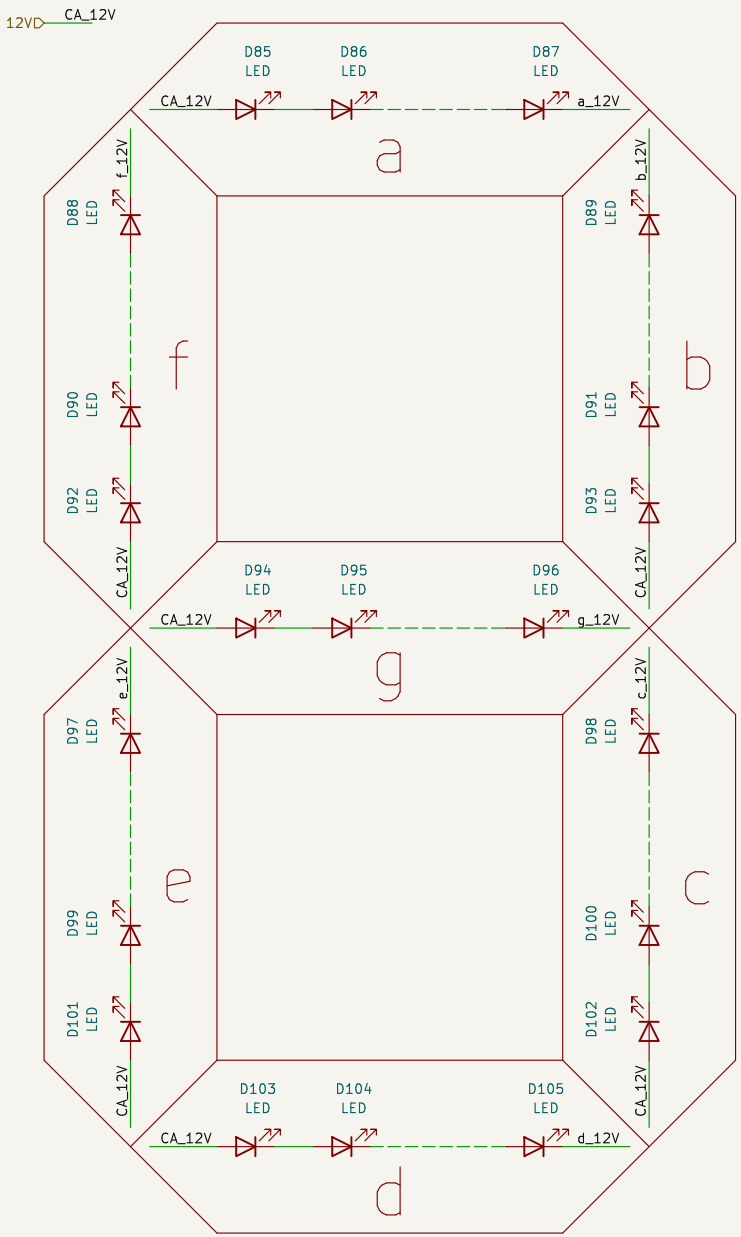


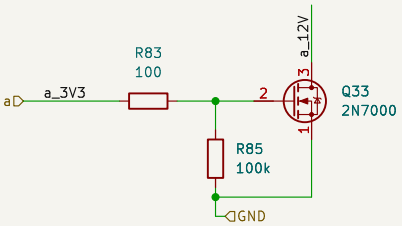
** Optional **
The regular 0.56" 7-segment display will be placed facing backwards so people from behind can see the displaying number.

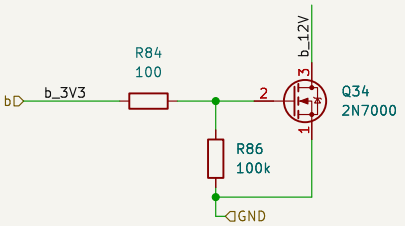
Author: lluc
Associació Cultural TGK
Sheet: /Display/Custom 7 Segment Display 4/
File: cstm_7seg.kicad_sch

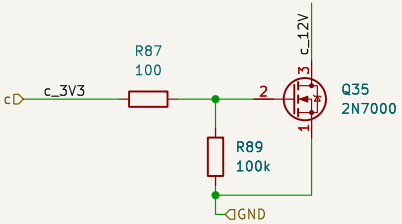
Title: Custom 7 Segment Display

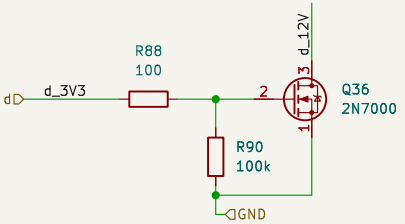
Size: A4	Date: 2024-09-24	**Rev: 1.2**
KiCad E.D.A. 8.0.5		Id: 9/10

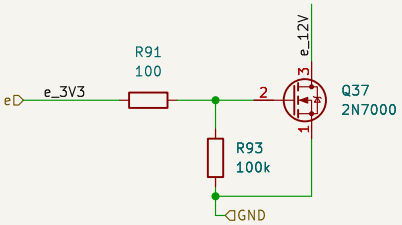


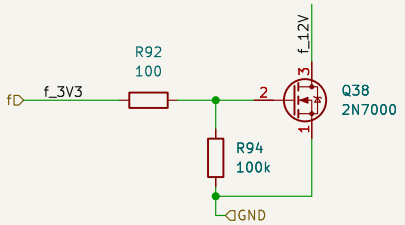


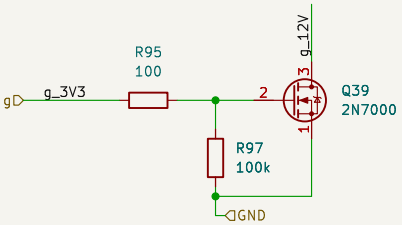


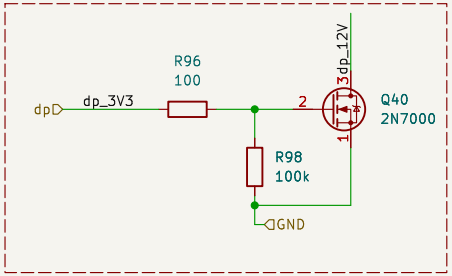










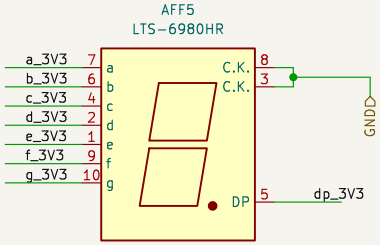


Choosing the MOSFET

The led strips consume around 10 W/m @ 12Vdc, since the length of each segment will be around 10 cm that means each segment will consume ~1W. At 12Vdc this is a current of ~83mA rounding that number to 100mA we can choose the suitable MOSFET (2N7000). This is a logic level MOSFET, meaning it can be turned on/off directly with 3.3V logic levels.

The DP will not be used for this application, so the DP_12V net migth be left floating.
If this is the case, a big resistor should be placed there.

An other option is to leave the dp_3V3 output of the 74HC595 floating.



** Optional **
The regular 0.56" 7-segment display will be placed facing backwards so people from behind can see the displaying number.

Author: lluc
Associació Cultural TGK
Sheet: /Display/Custom 7 Segment Display 5/
File: cstm_7seg.kicad_sch

Title: Custom 7 Segment Display

Size: A4	Date: 2024-09-24	**Rev: 1.2**
KiCad E.D.A. 8.0.5		Id: 10/10