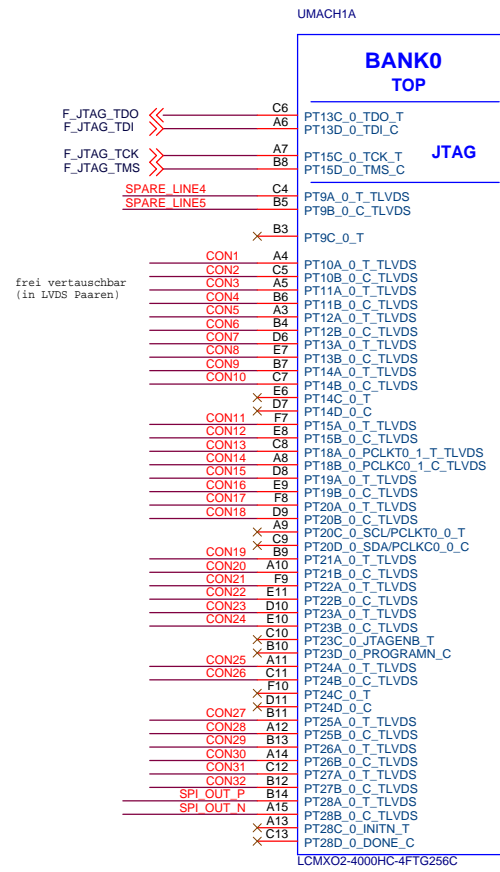
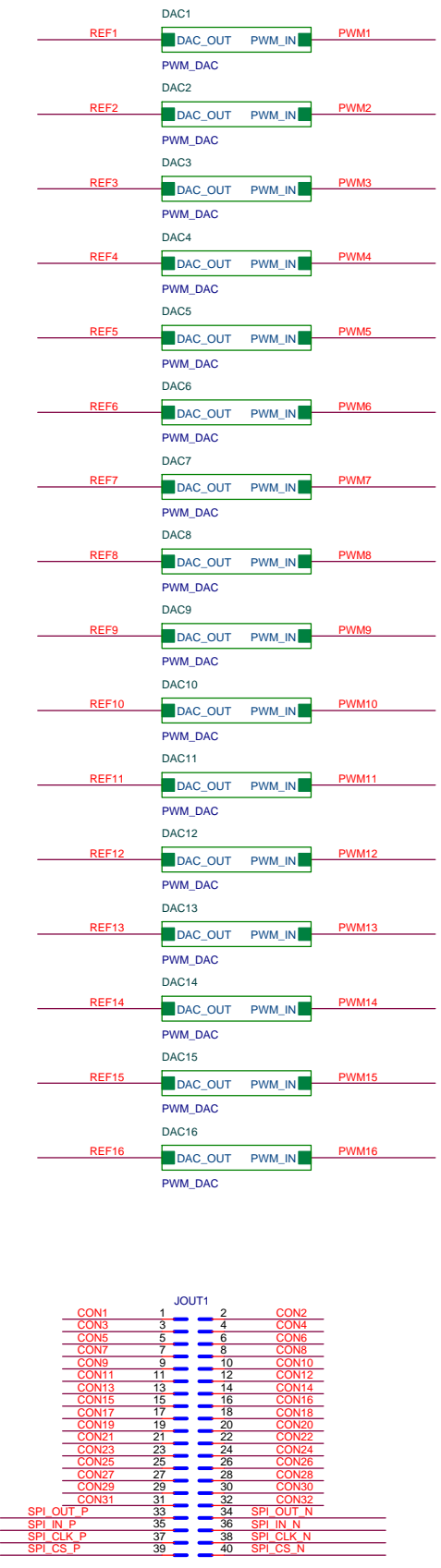
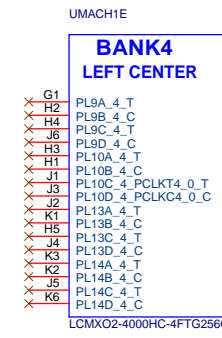
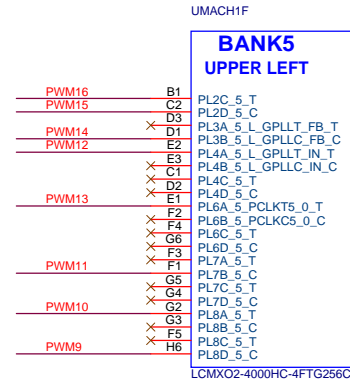
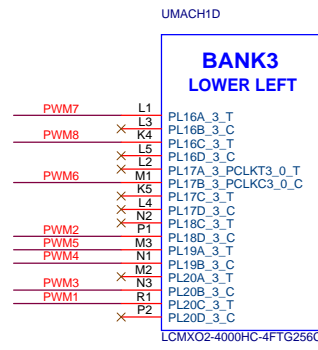


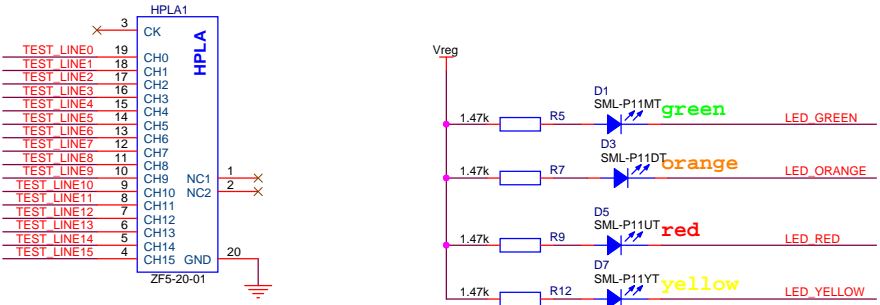
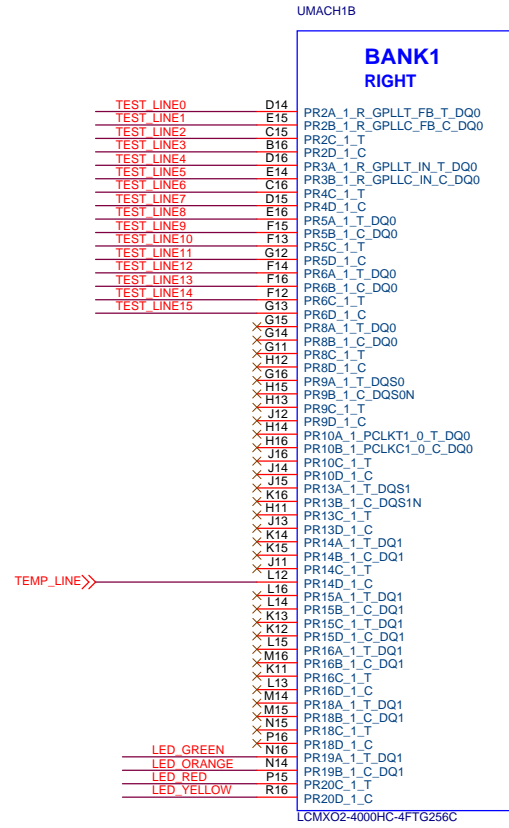
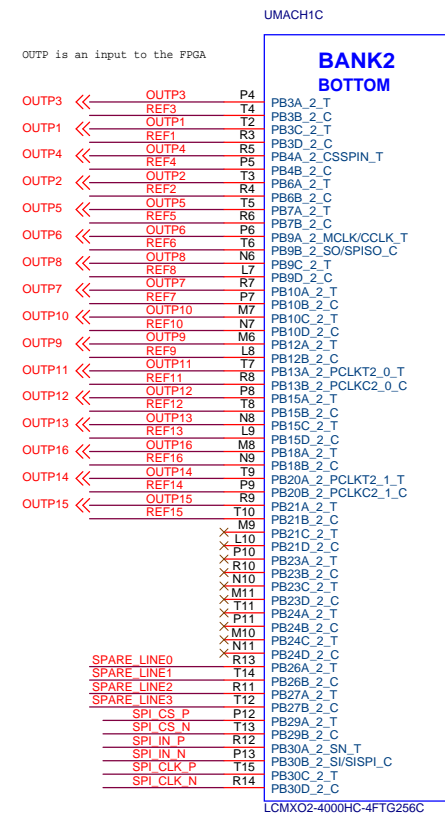
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01_ERNI-Connector

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 Modified: Wednesday, December 05, 2012 Size: A3 Page: 1 / 35
 Designer: M.Traxler Layouter: S.Voltz

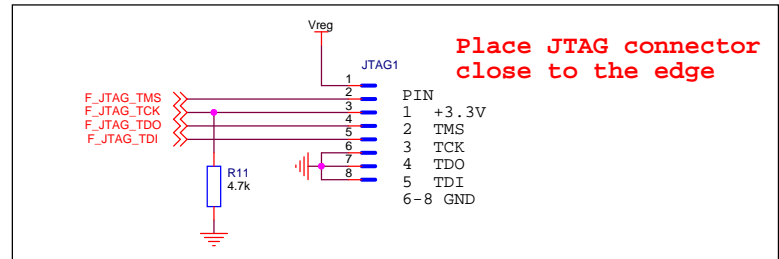
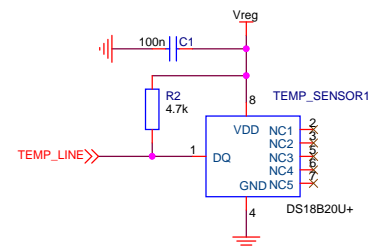


Bottom side: All LVDS receiver can have a termination resistors.



Nur bestücken nach Rücksprache mit Entwickler

| SPARE_LINE0 | 1 | 2 | SPARE_LINE1 |
|-------------|---|---|-------------|
| SPARE_LINE2 | 3 | 4 | SPARE_LINE3 |
| SPARE_LINE4 | 5 | 6 | SPARE_LINE5 |

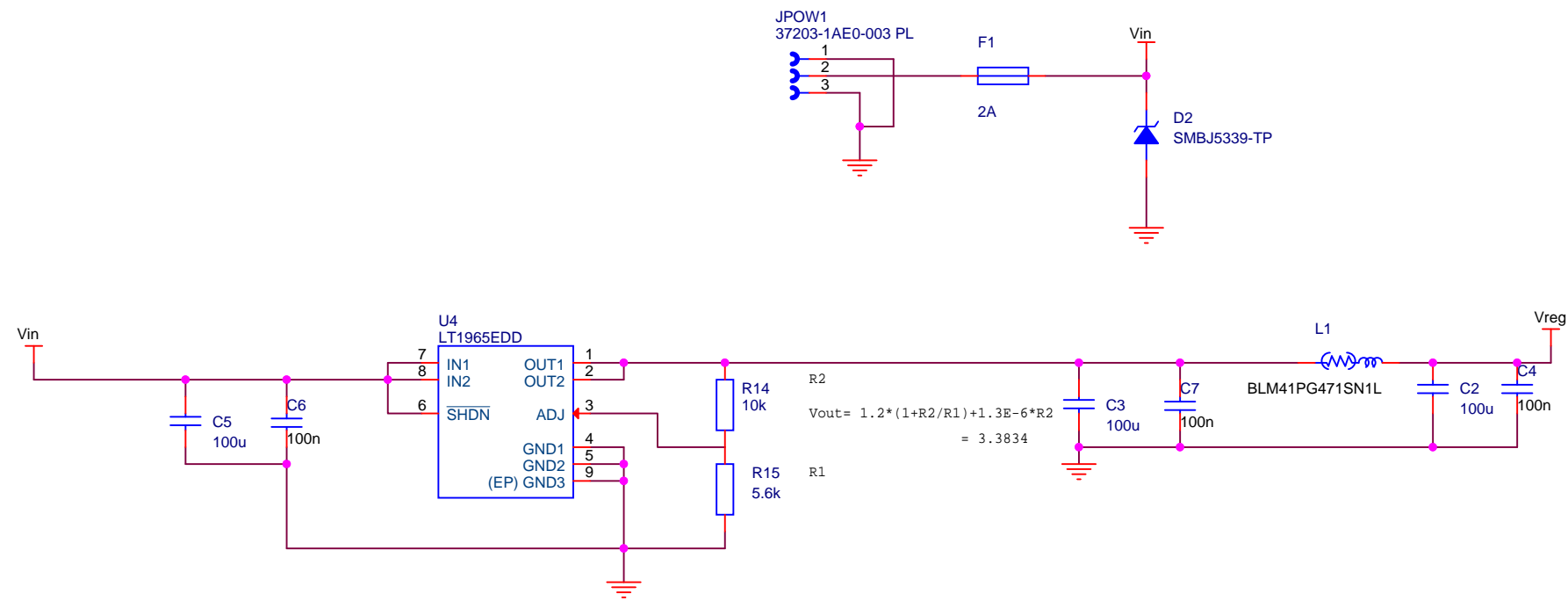
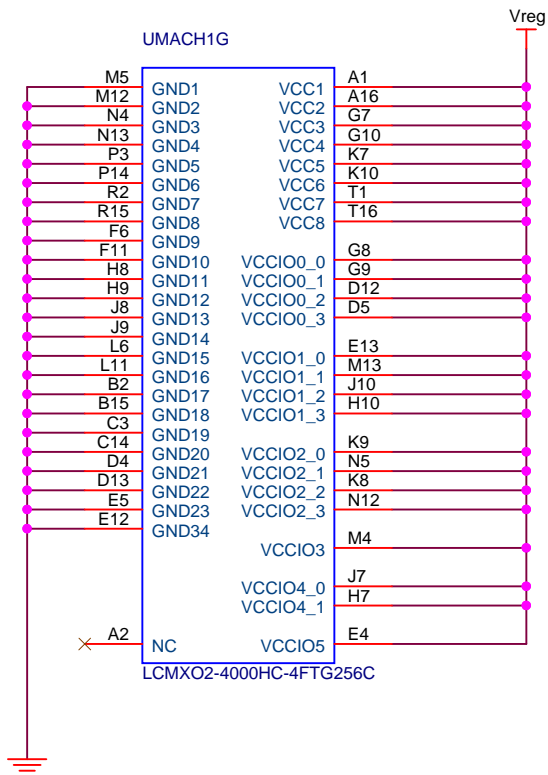


Place JTAG connector close to the edge

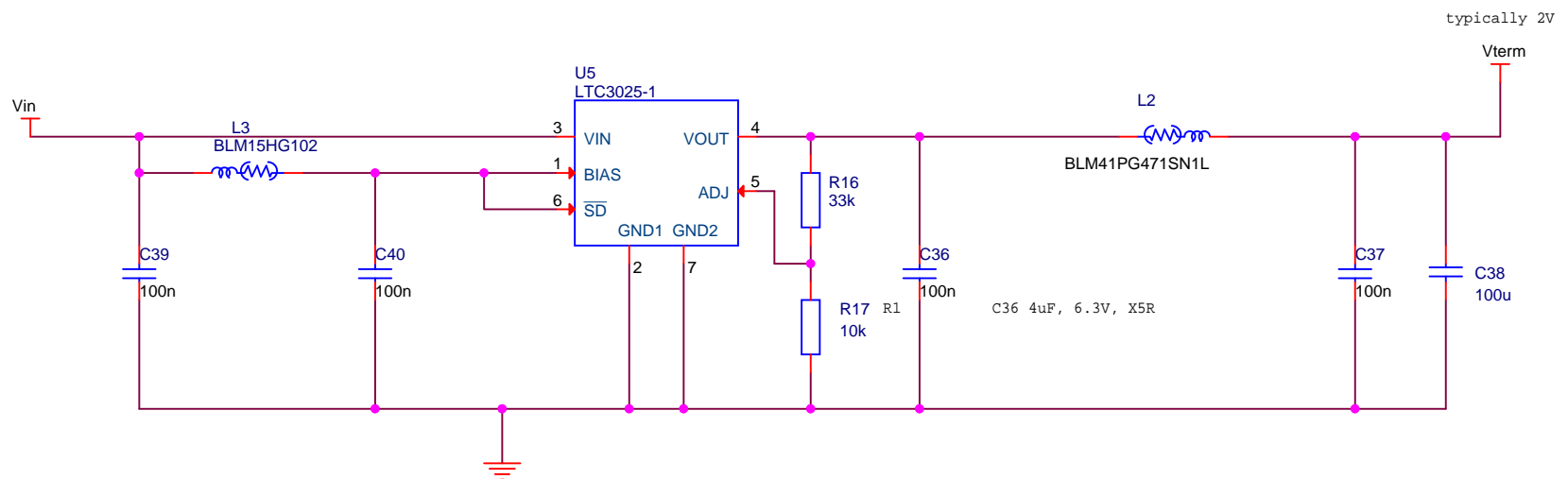
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02_FPGA-Logic

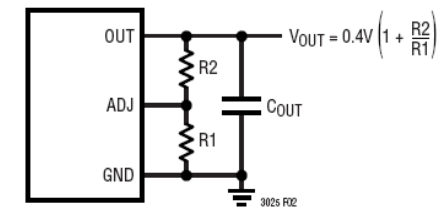
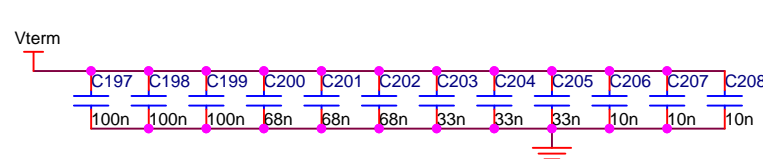
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Modified: Wednesday, December 05, 2012 Size: A2 Page: 2 / 38
Designer: M.Taxler Layouter: S.Voltz



R15 und R16 Werte ändern



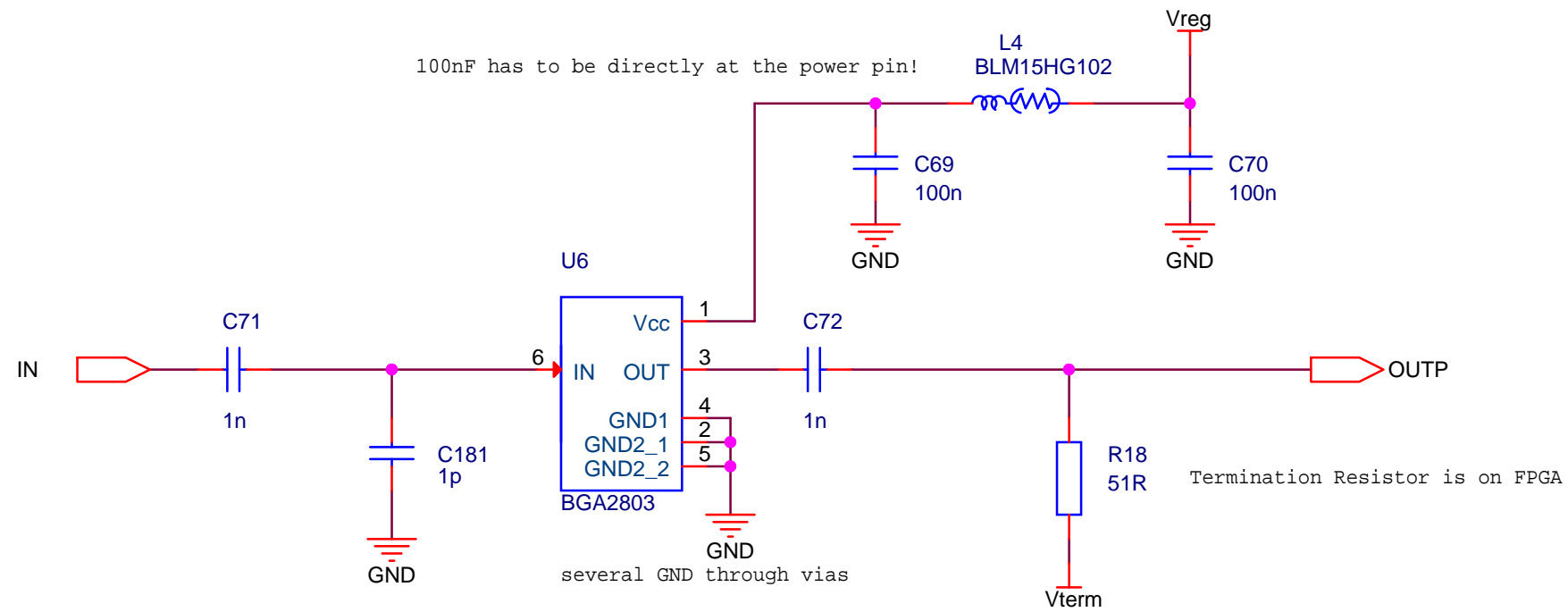
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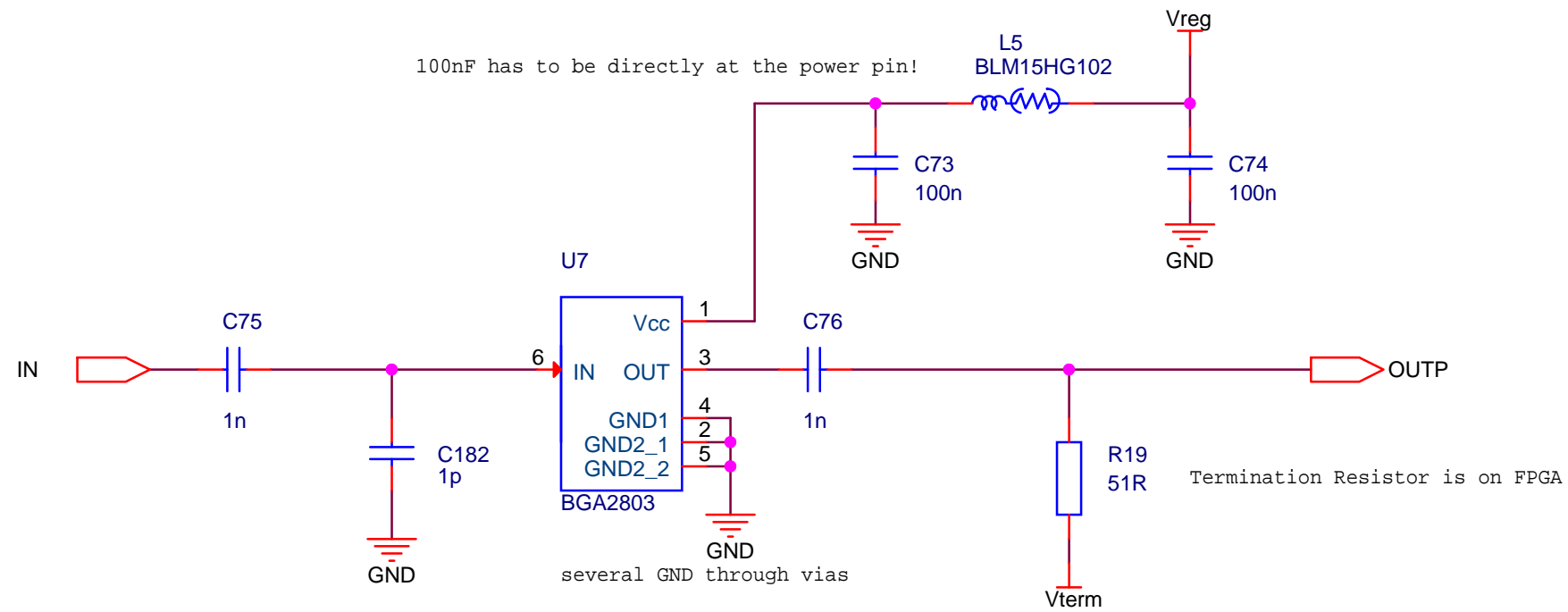
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03_FPGA-Power

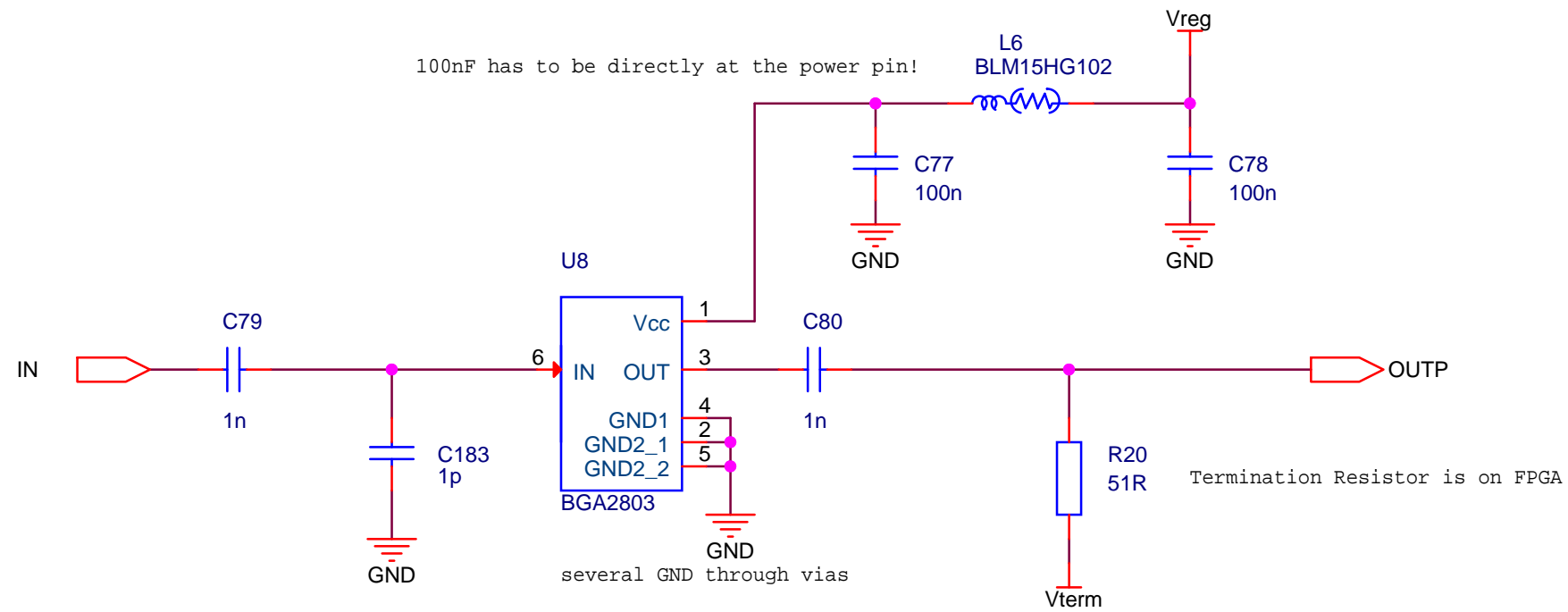
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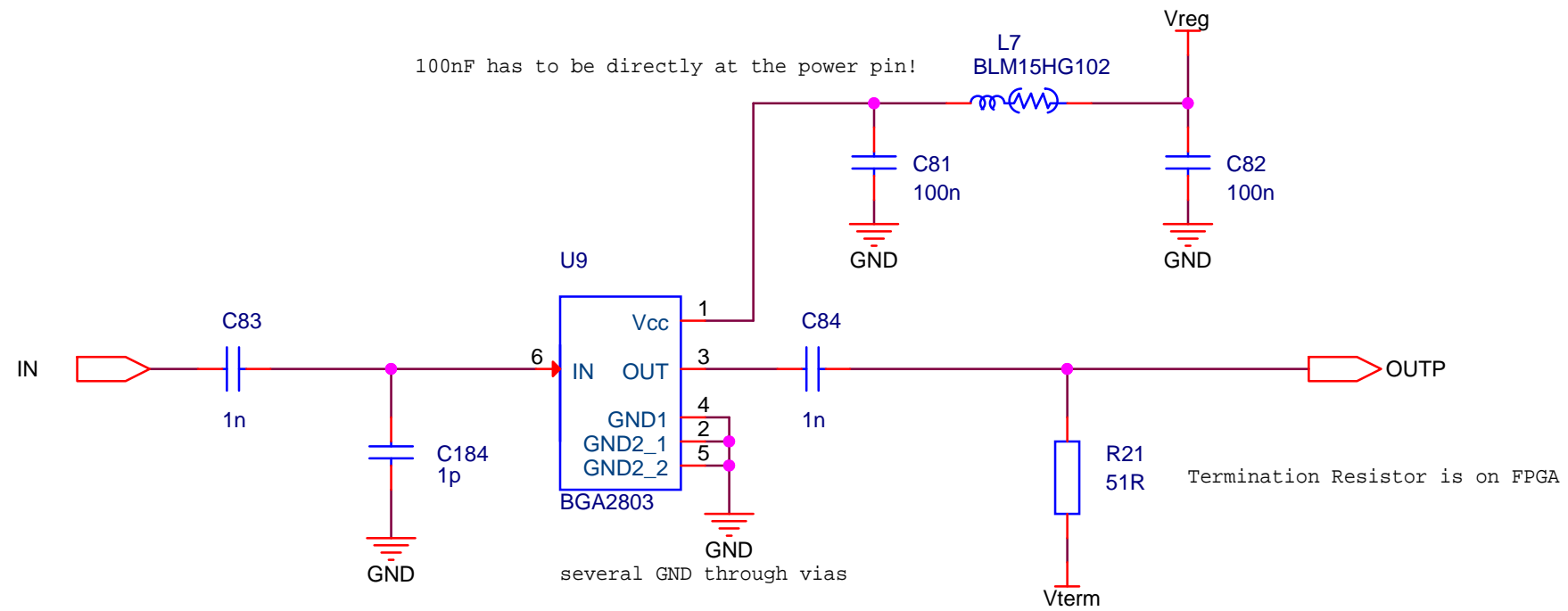
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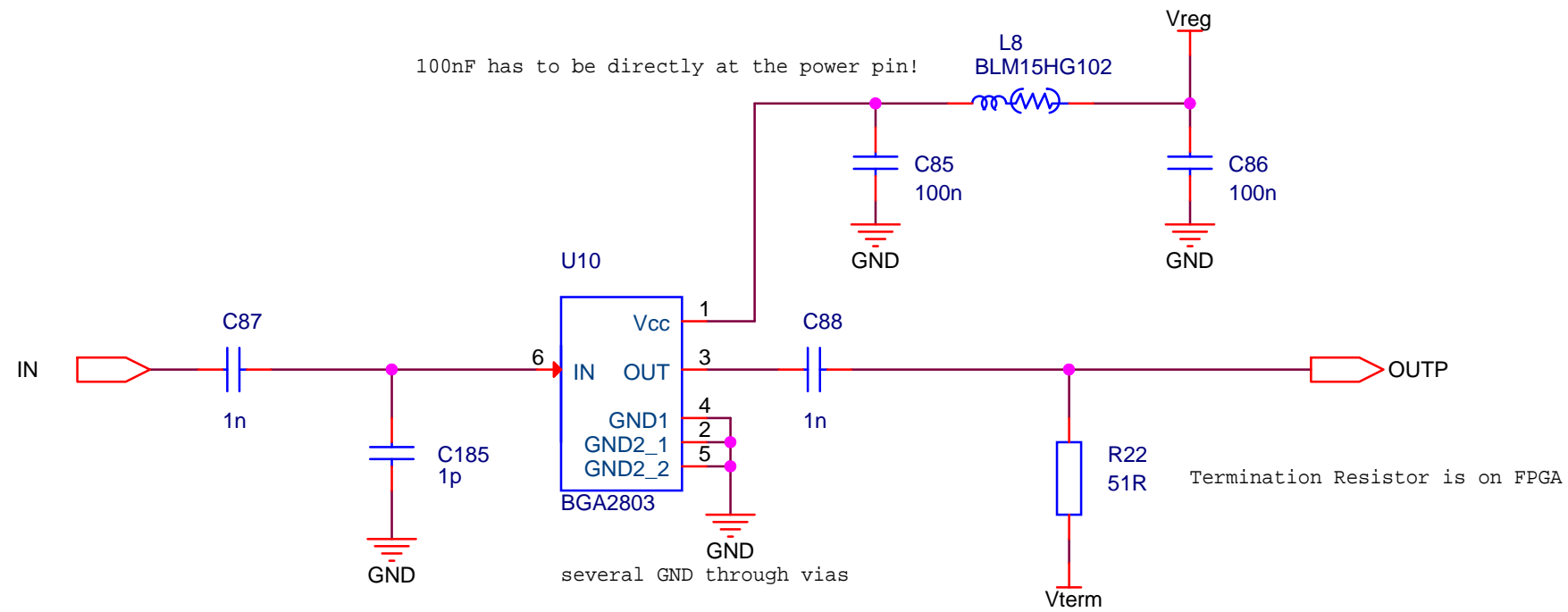
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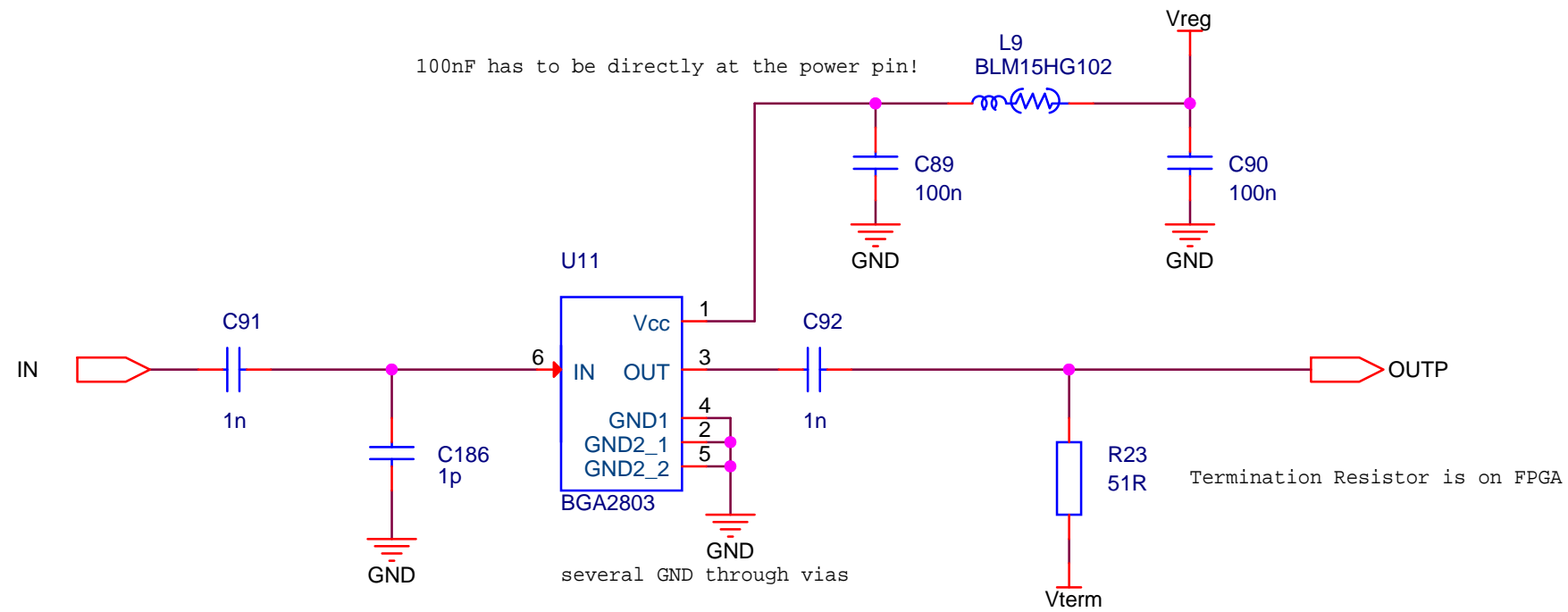
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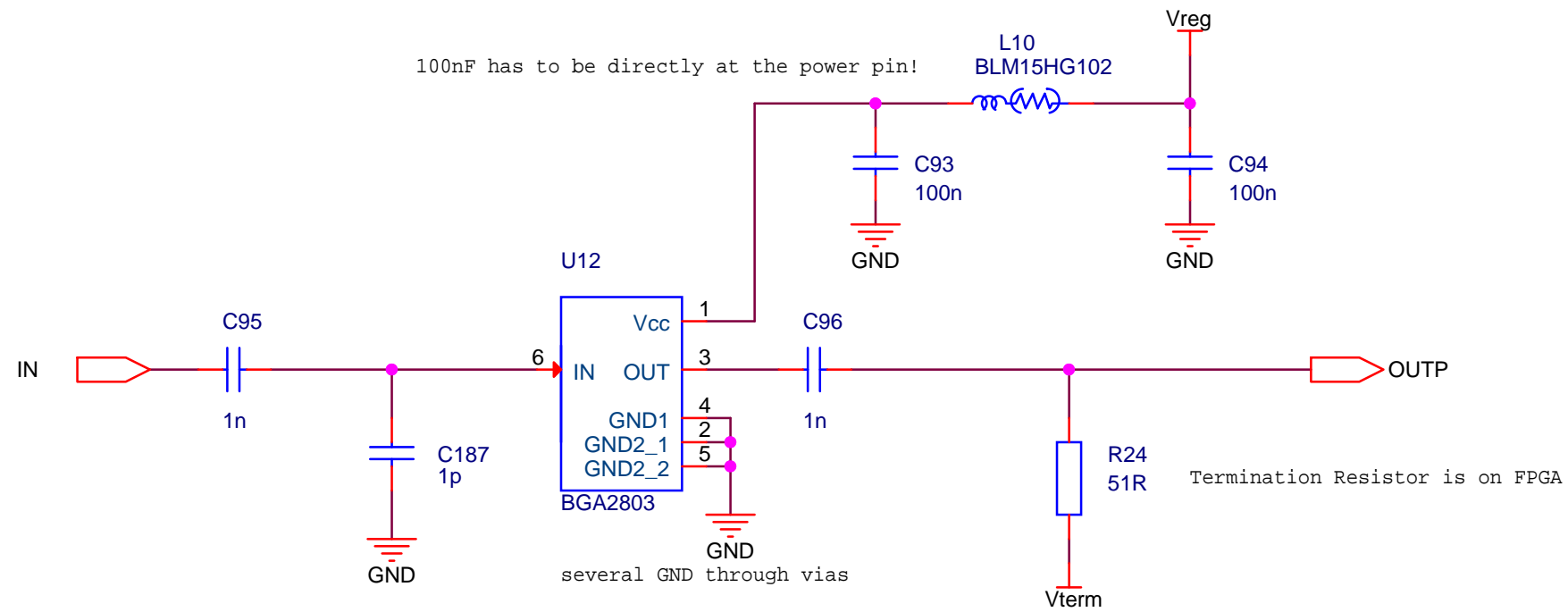
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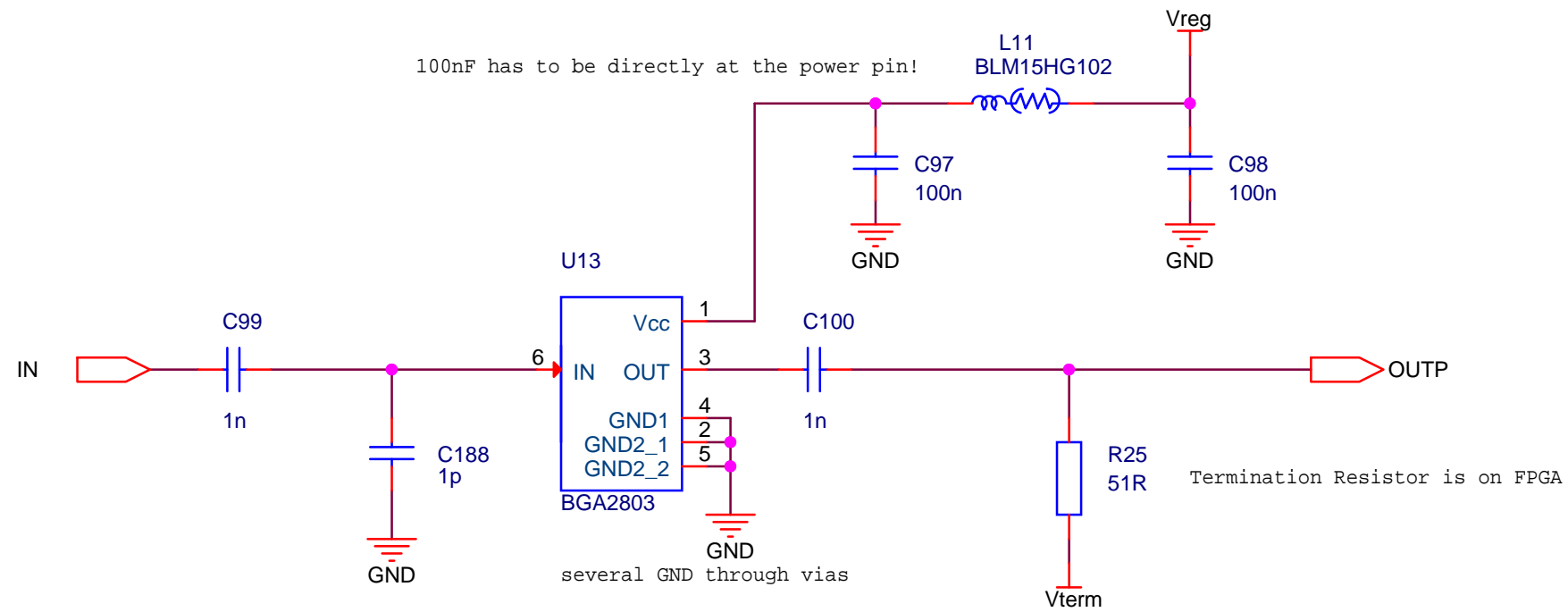
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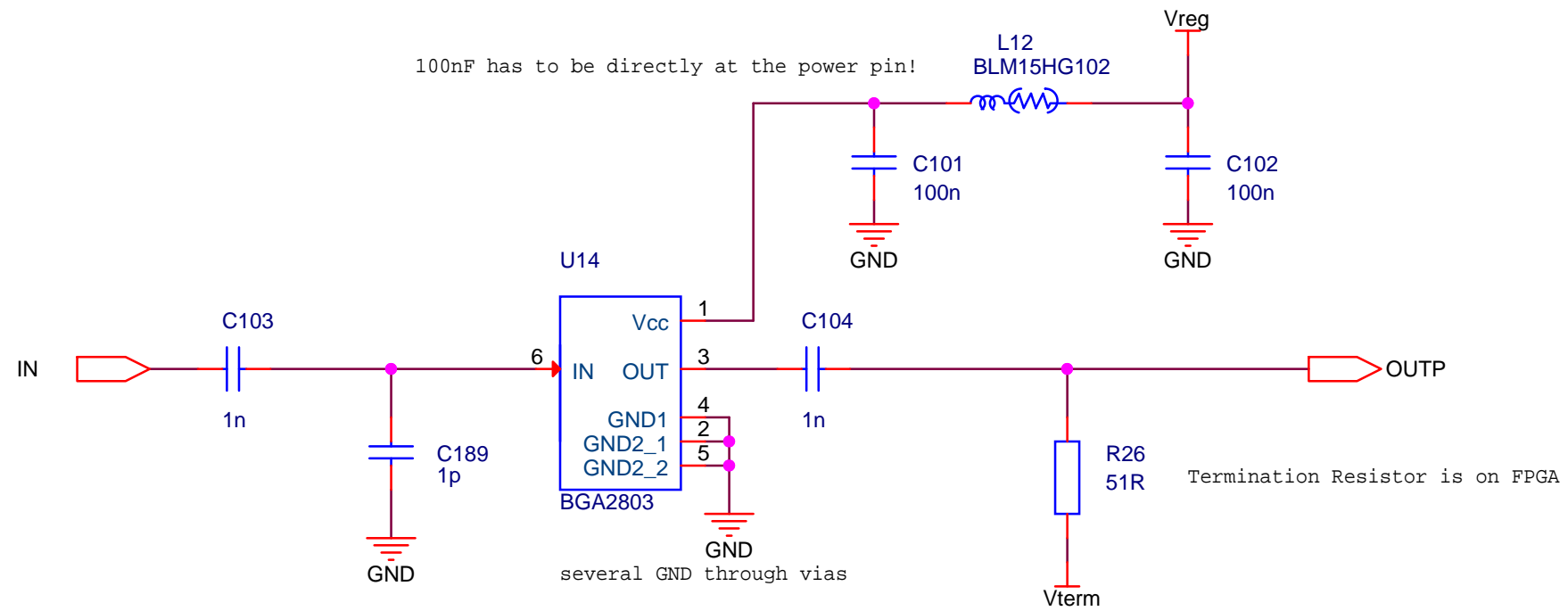


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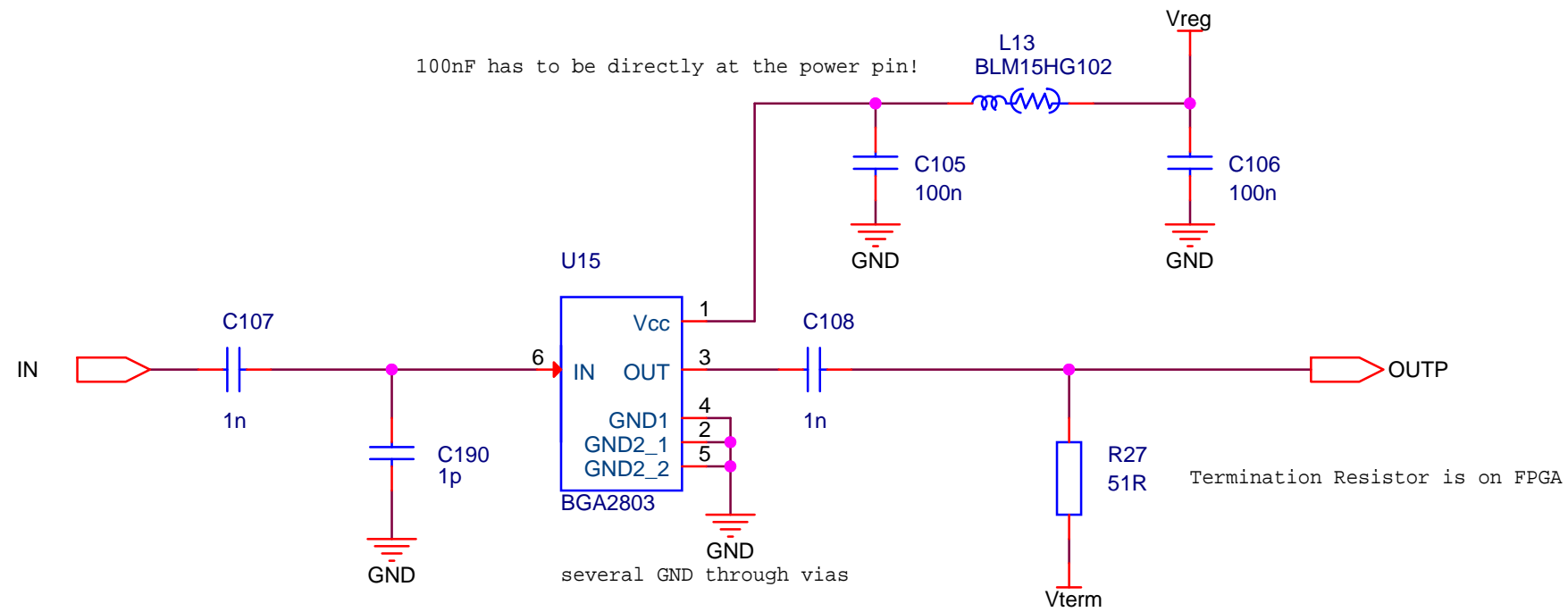




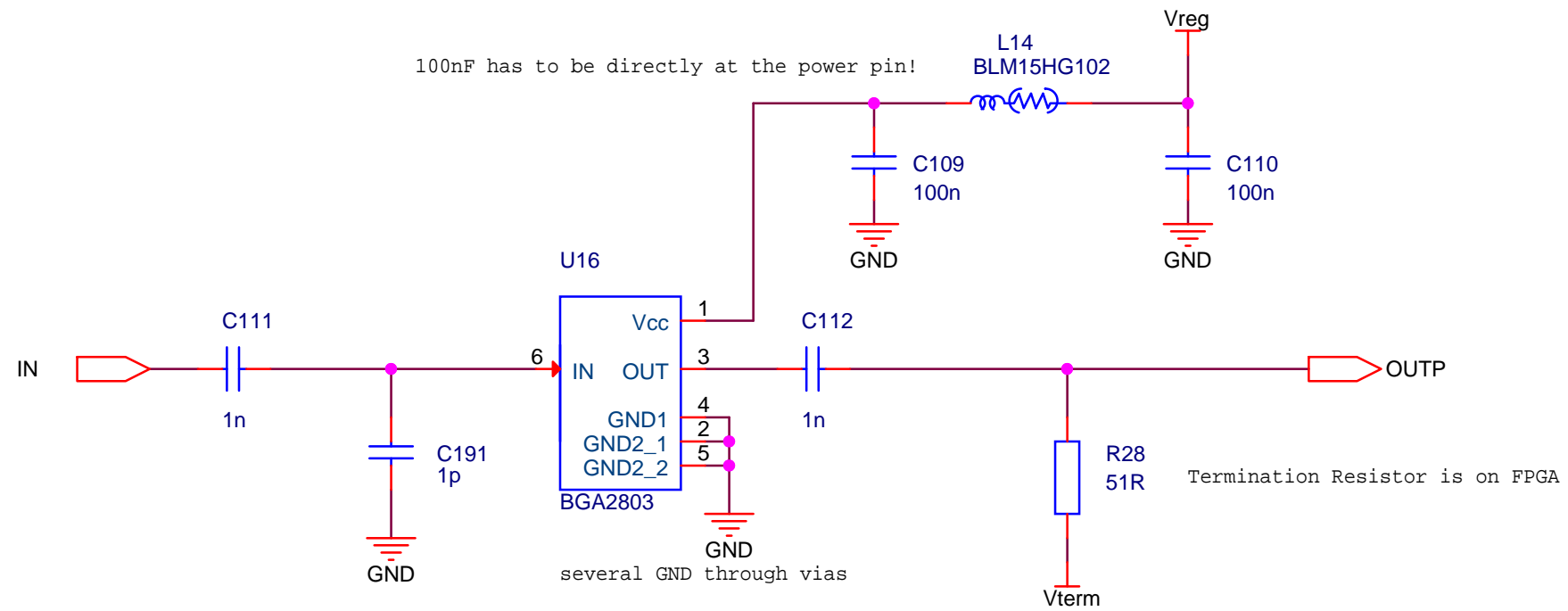
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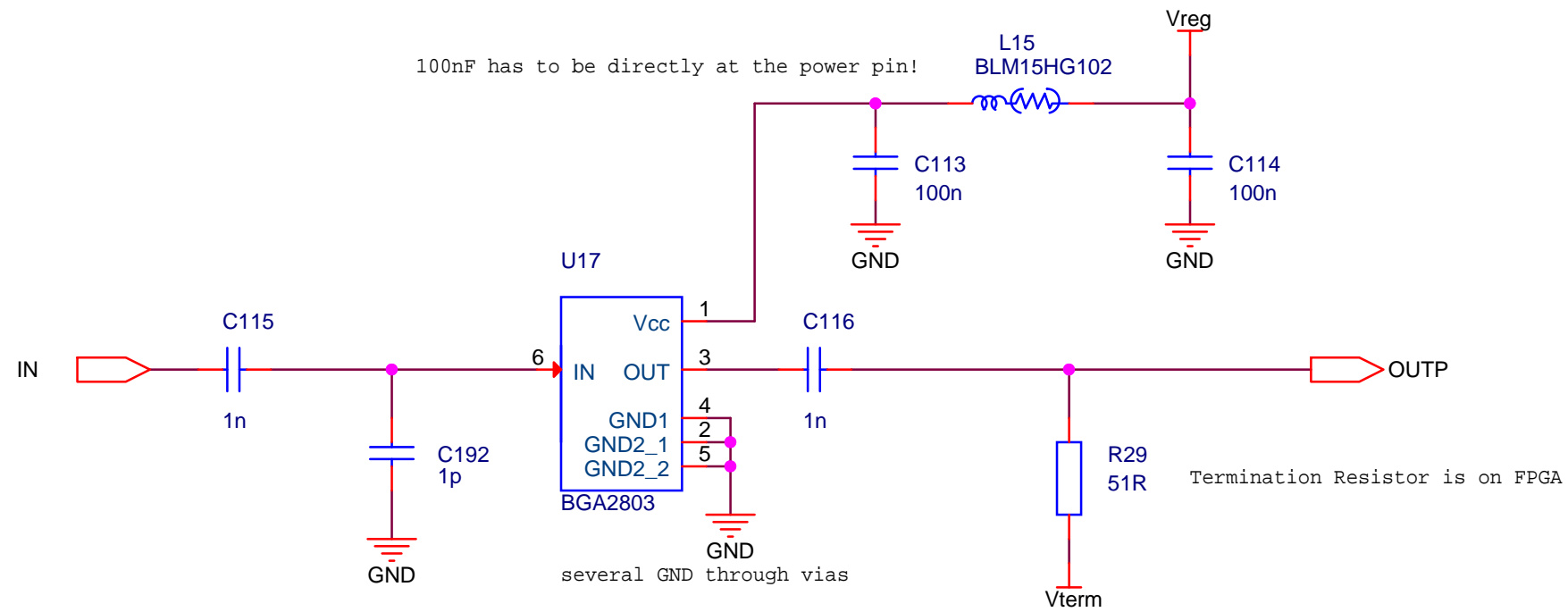
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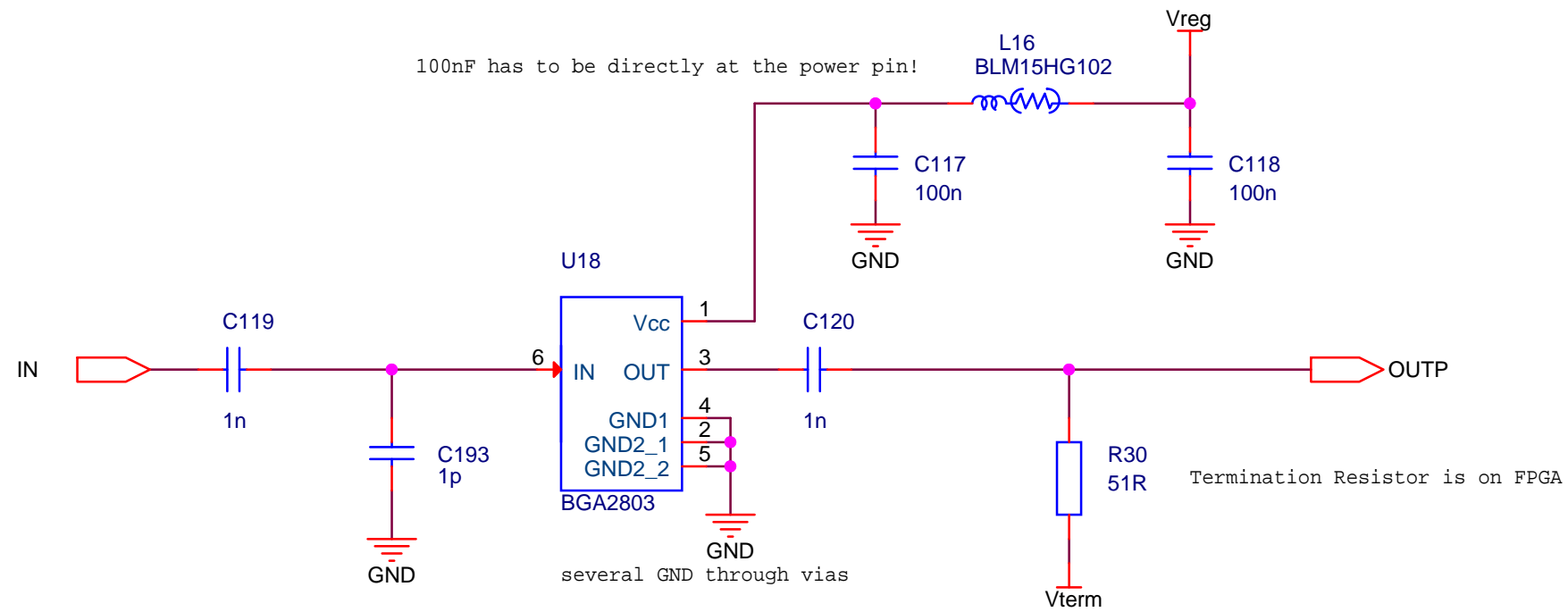
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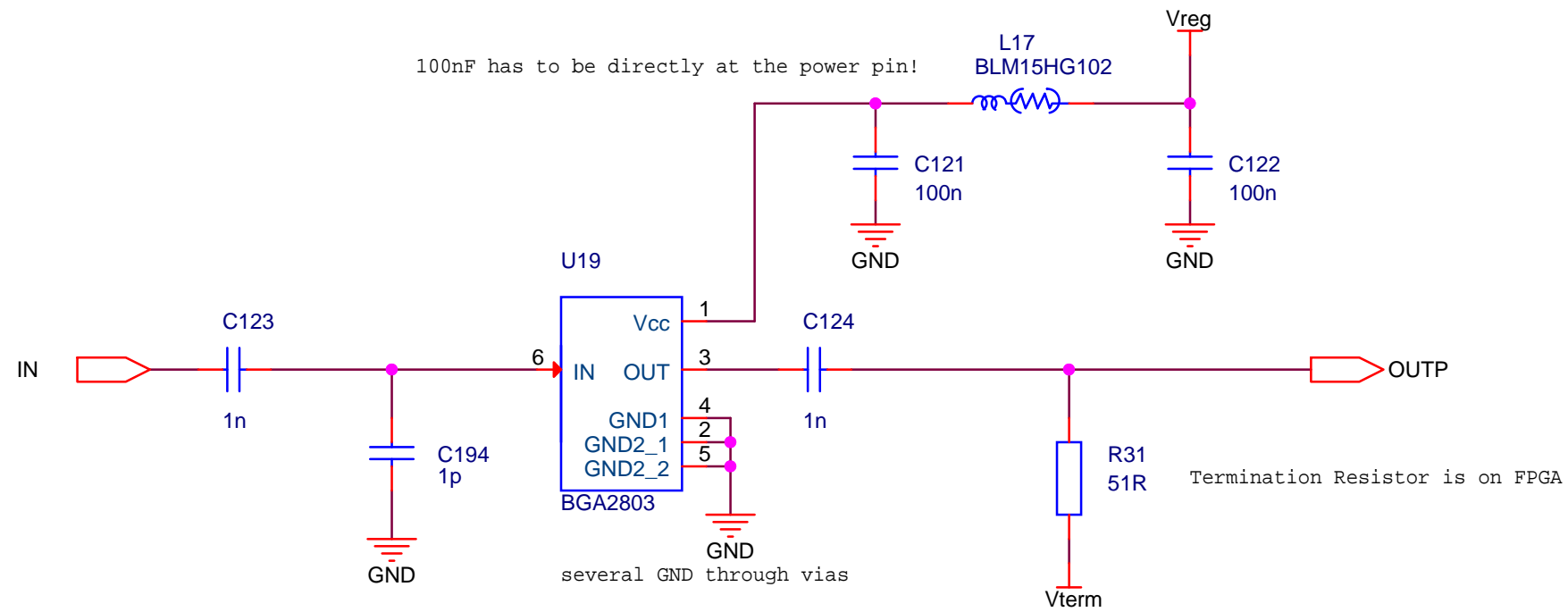
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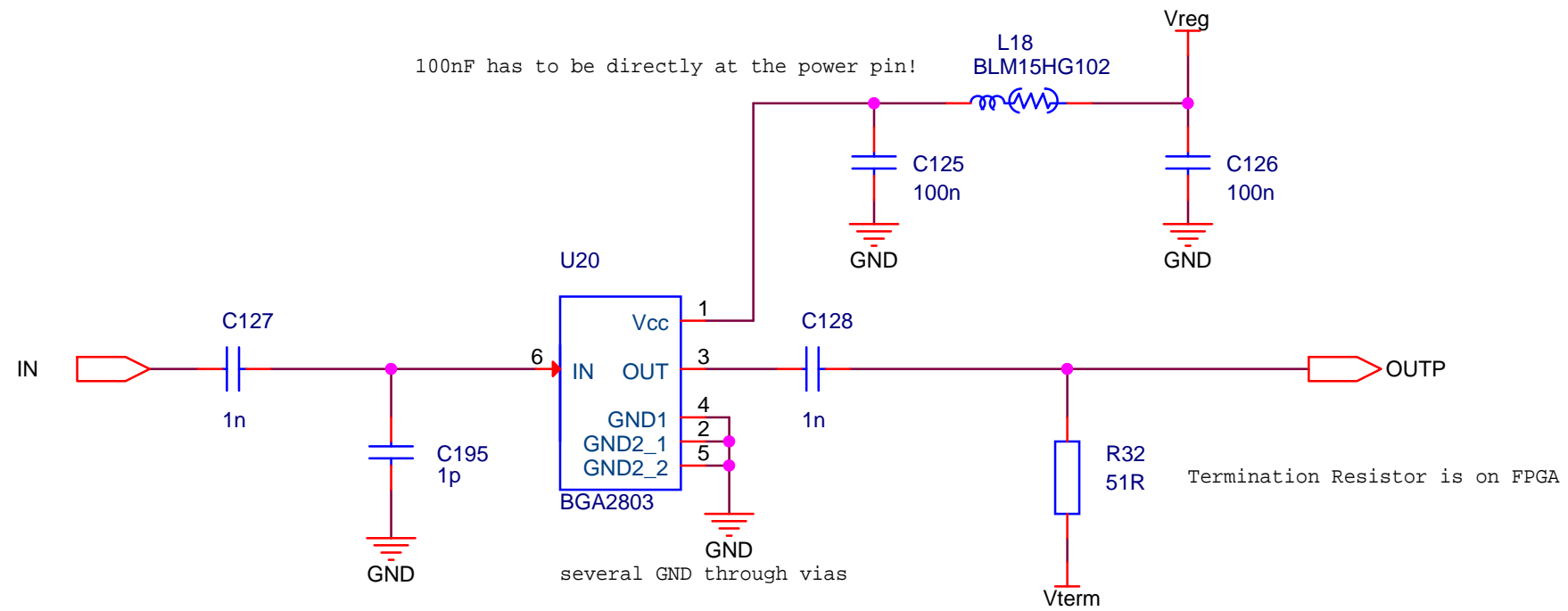
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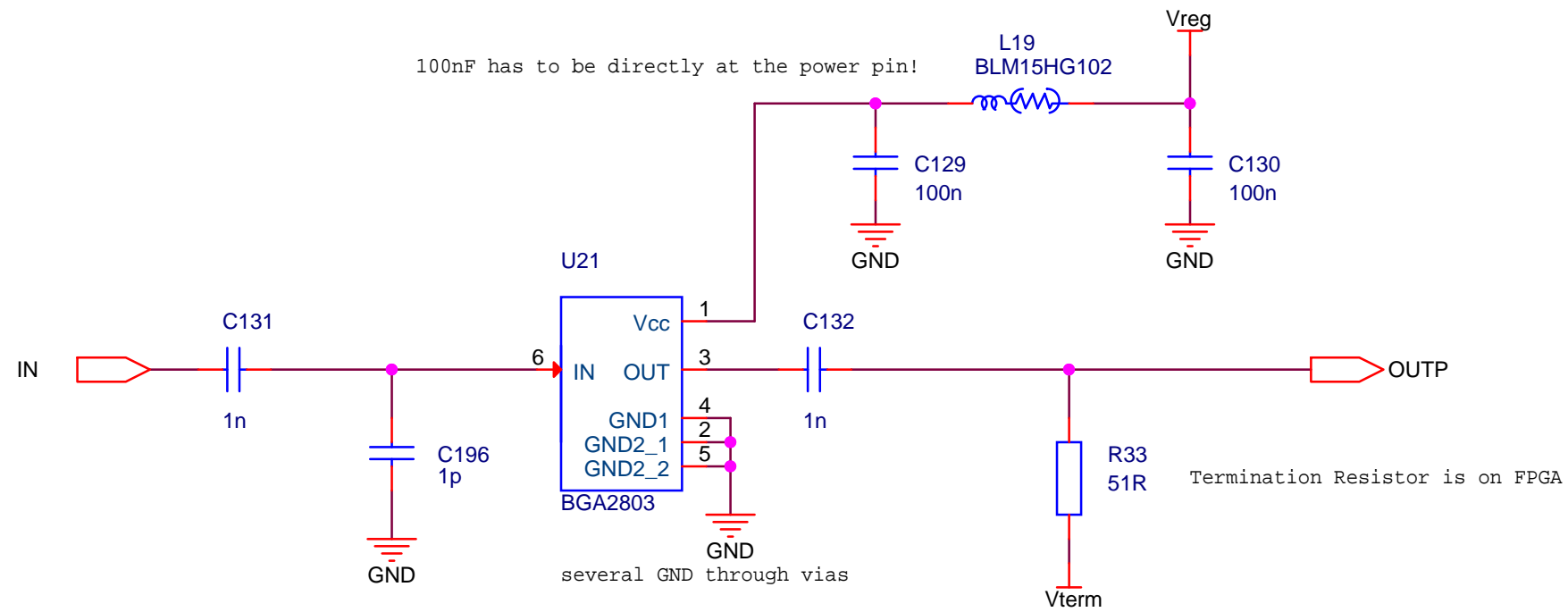
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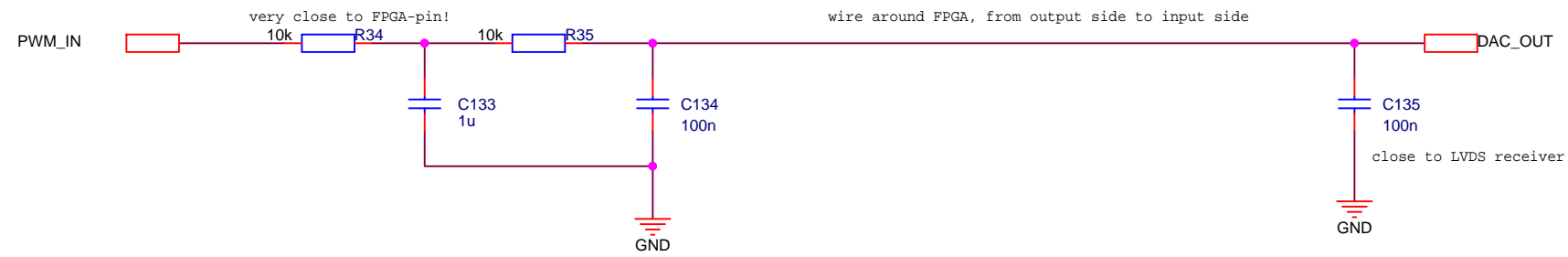
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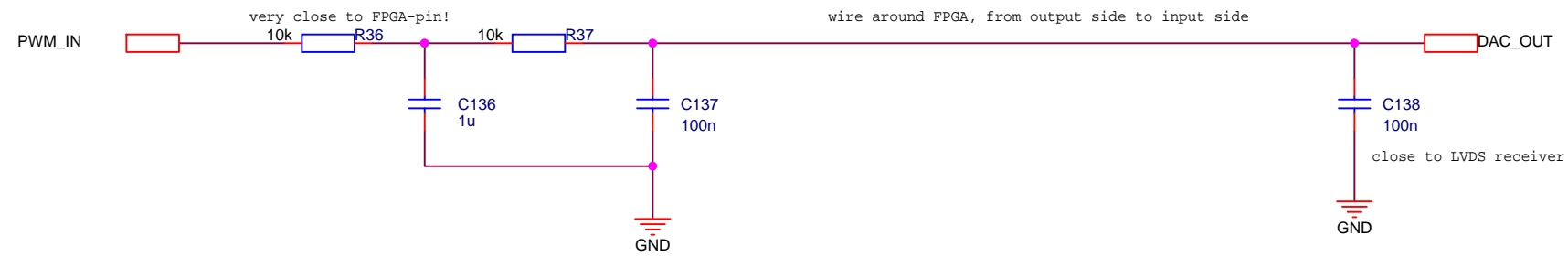
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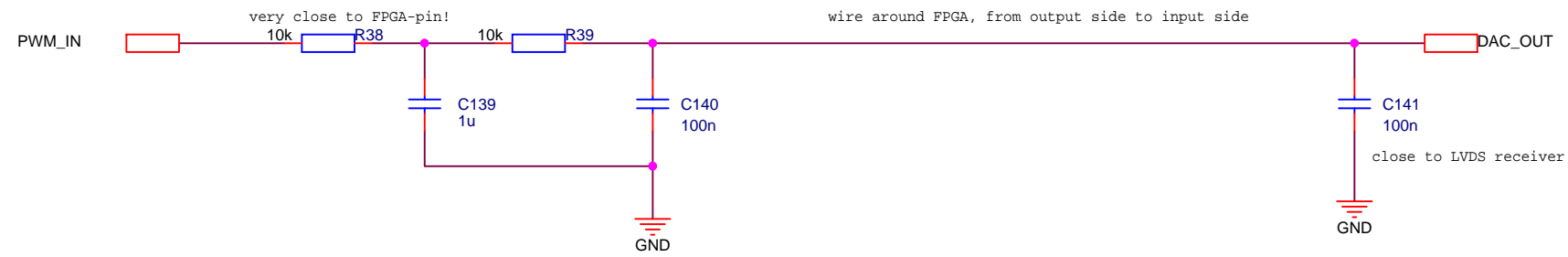
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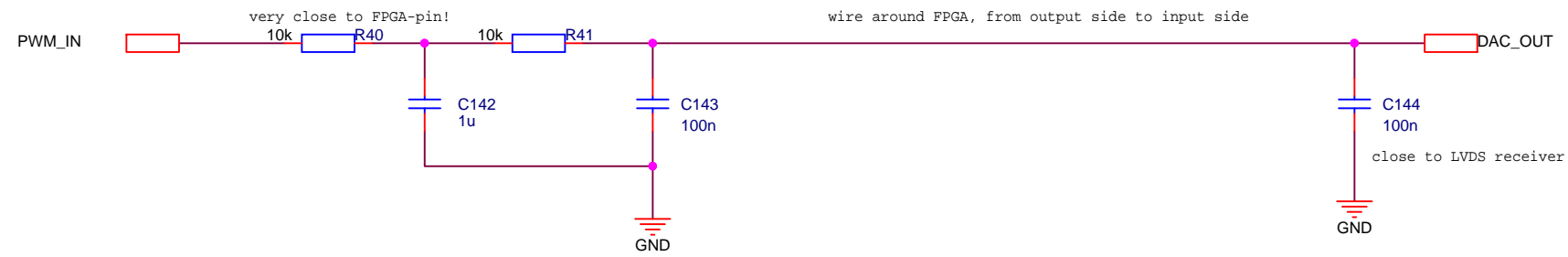
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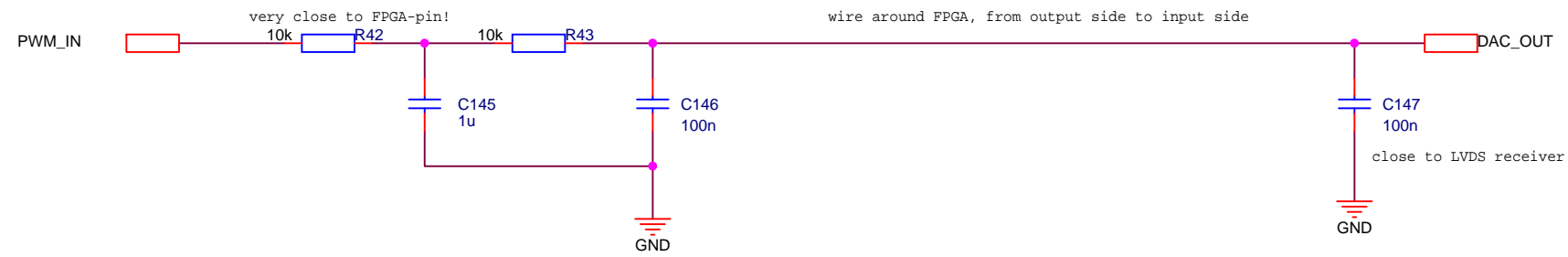
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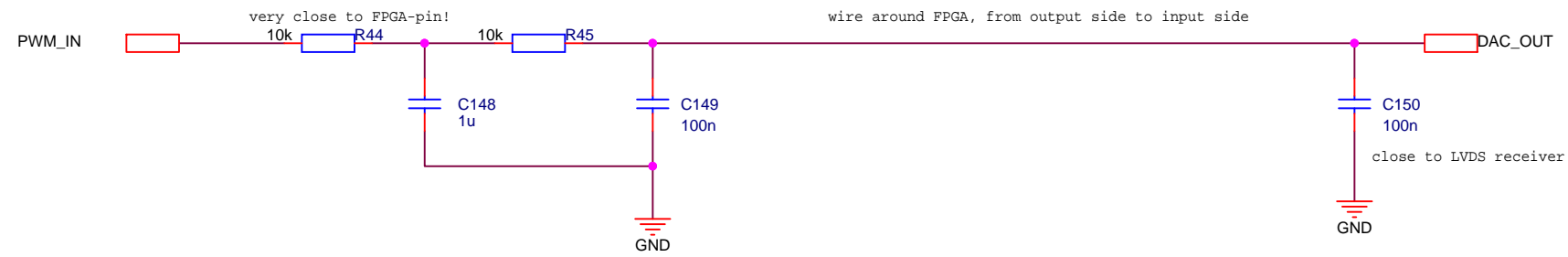


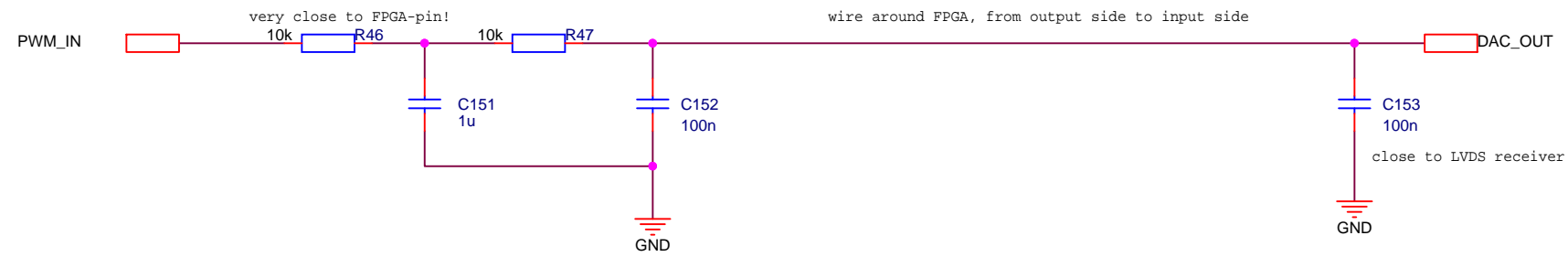
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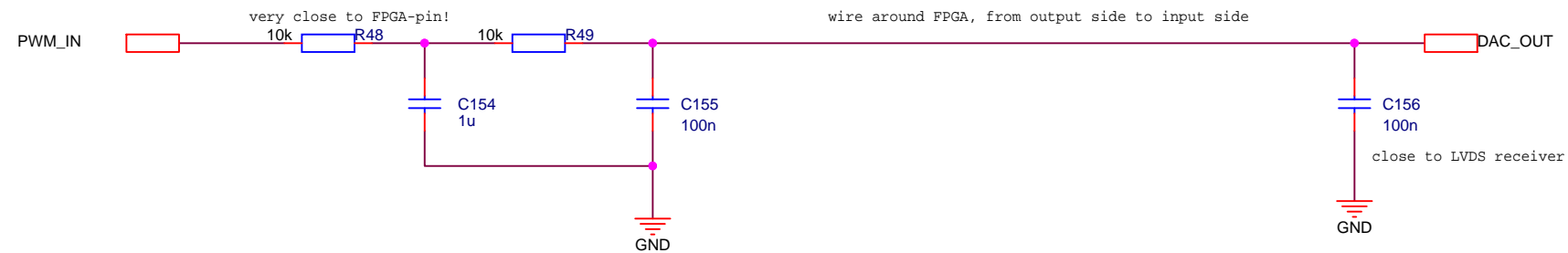


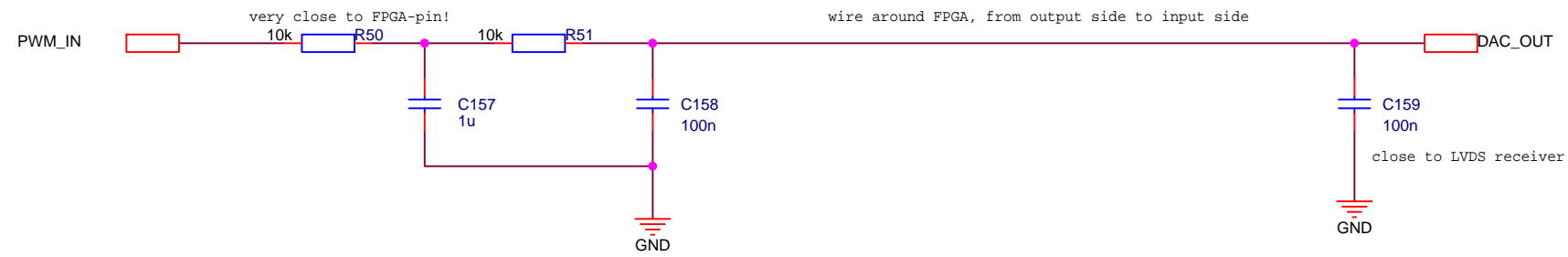
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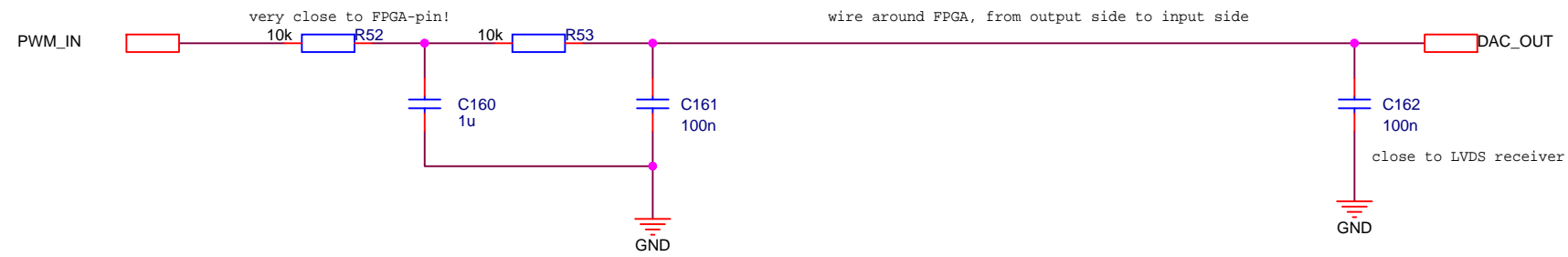




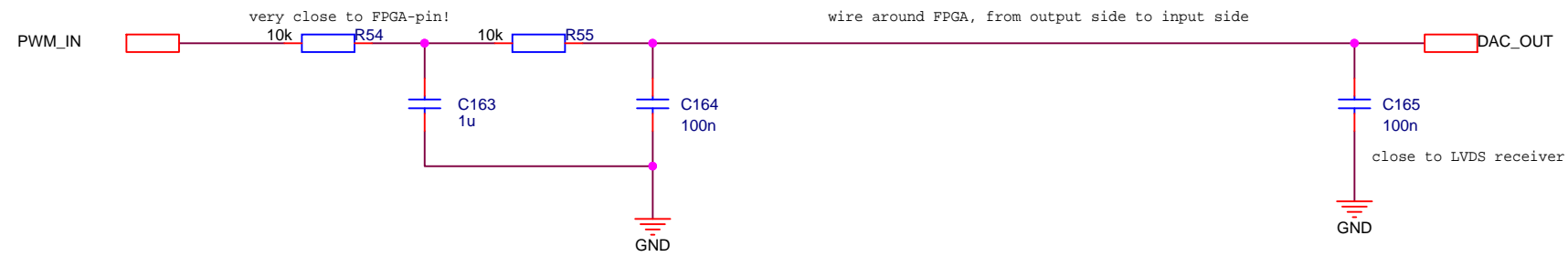


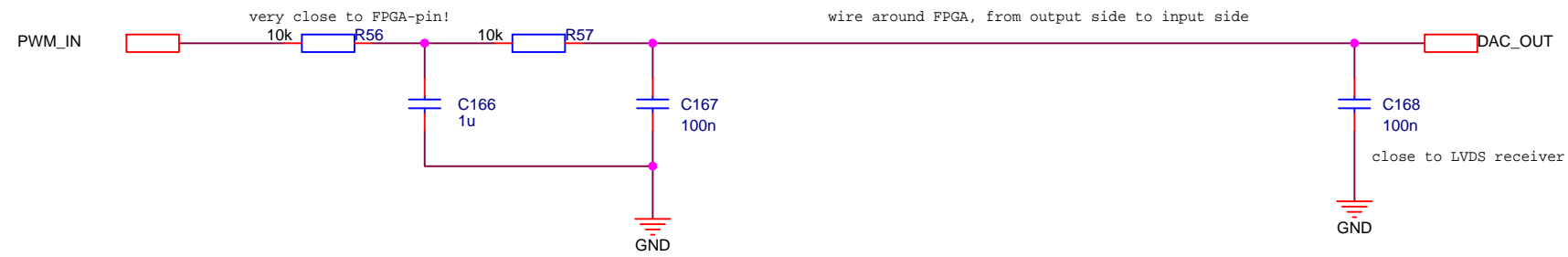


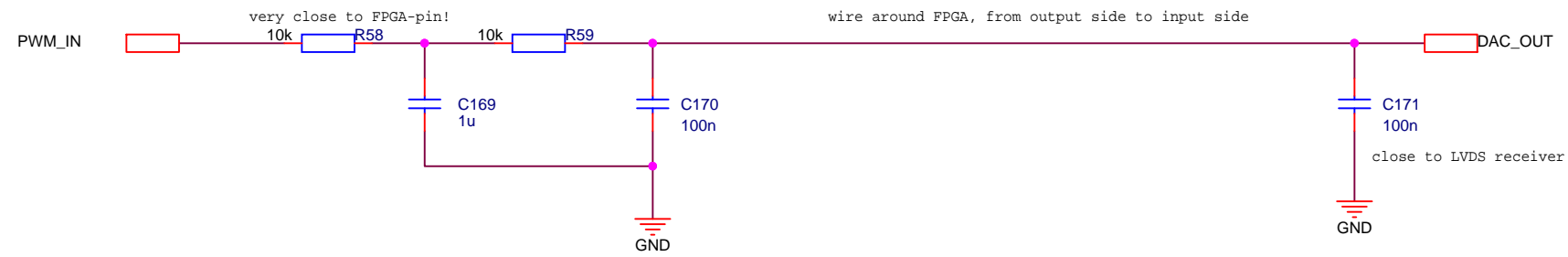
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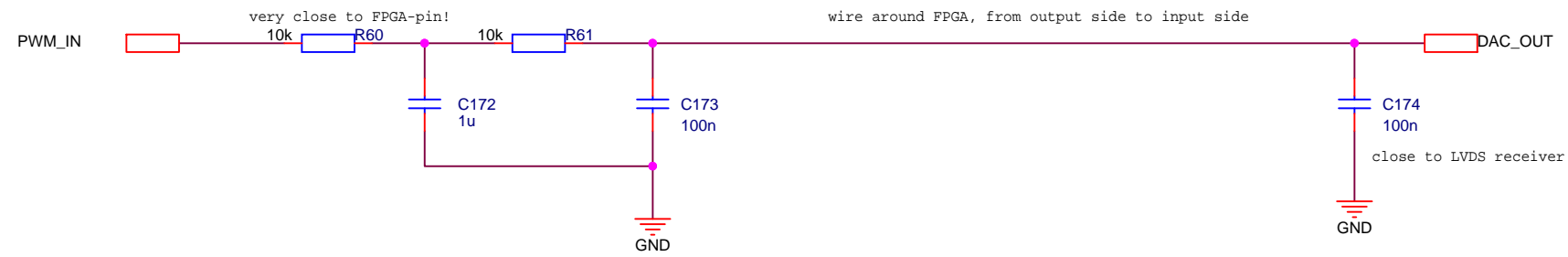
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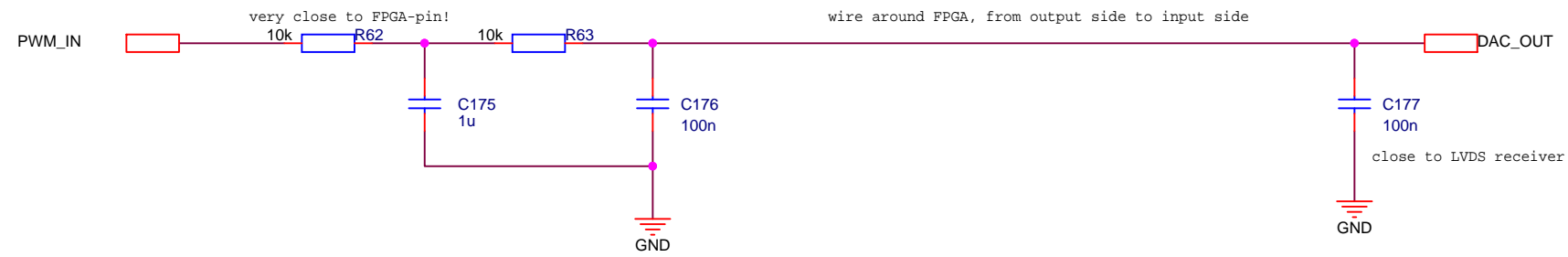


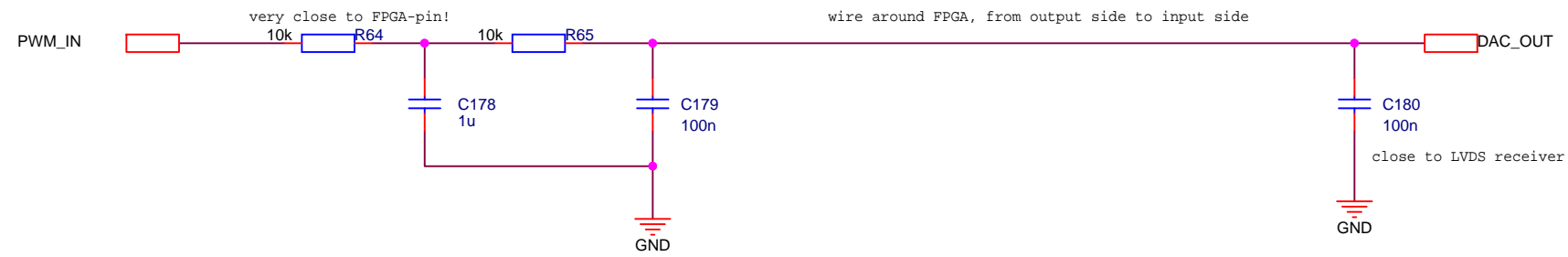


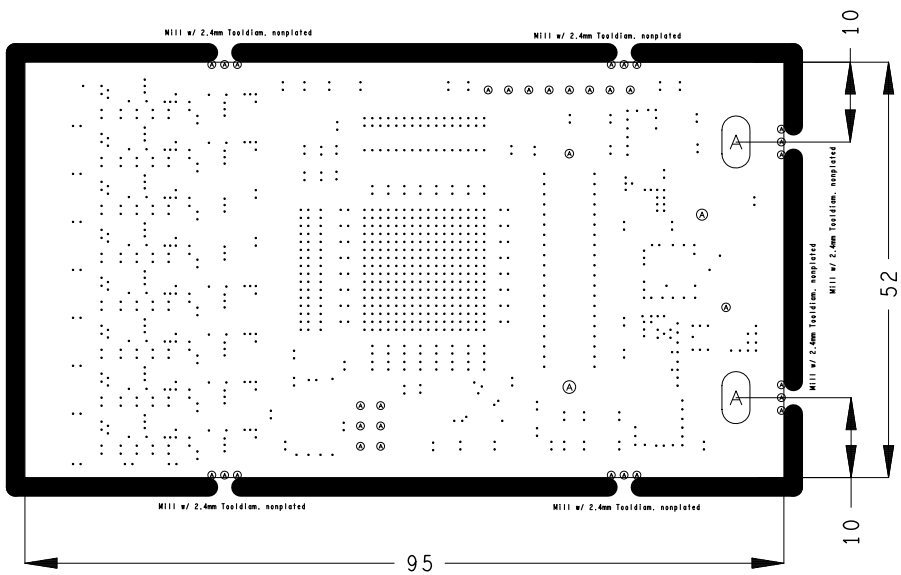
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| Designer: M. Traxler | | Size: A3 Page: 33 / 35 Layouter: S. Voltz | |







DRILL CHART: TOP to BOTTOM
ALL UNITS ARE IN MILLIMETERS

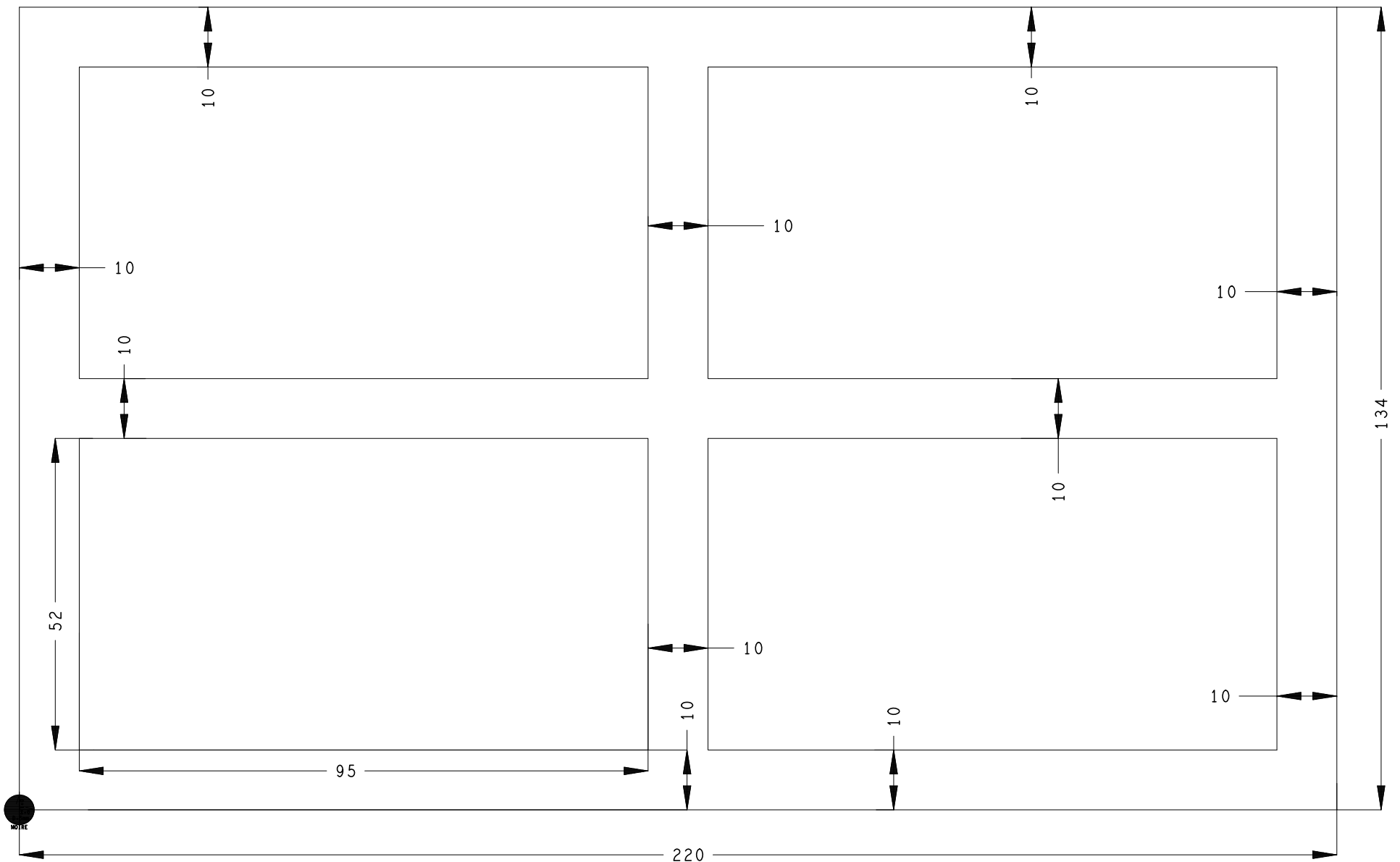
| FIGURE | SIZE | PLATED | QTY |
|--------|---------|------------|-----|
| . | 0.2 | PLATED | 987 |
| • | 0.4 | PLATED | 1 |
| ⊙ | 1.0 | PLATED | 14 |
| ⊙ | 1.0 | NON-PLATED | 18 |
| ⊙ | 1.1 | NON-PLATED | 2 |
| ⊙ | 1.4 | NON-PLATED | 1 |
| ⊙ | 1.6 | NON-PLATED | 1 |
| ⊙ | 2.4 | NON-PLATED | 12 |
| A | 6.5x3.5 | NON-PLATED | 2 |

TOTAL HOLES: 1038

Jobname PANDA-DIRC-WASA2 Date 11.2012 Designer M.Traxler Layouter S.Voltz

Layer Nickname

Drd



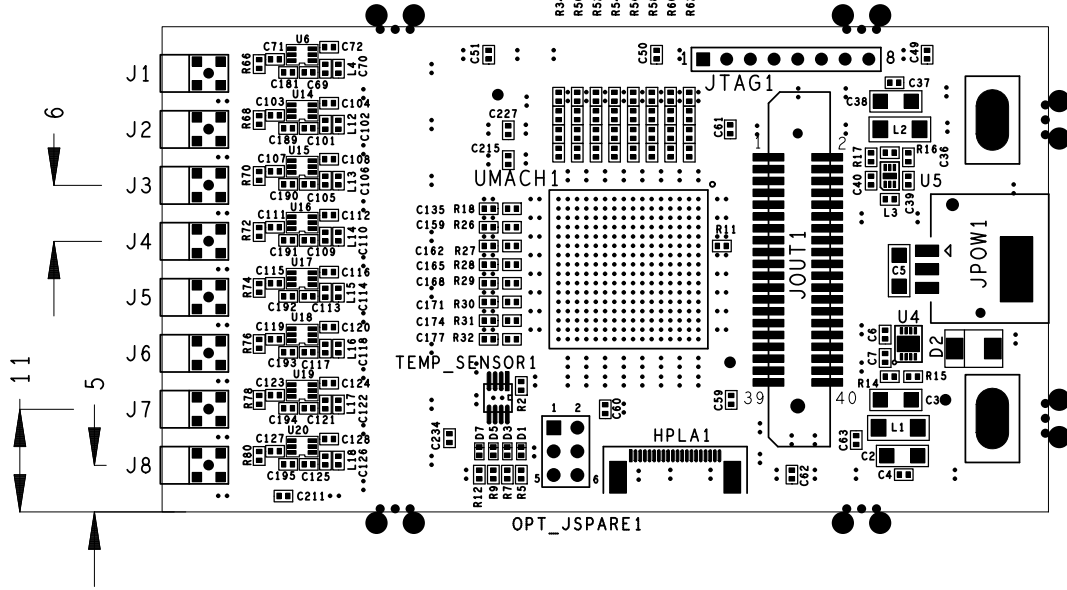
| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

Fab

GSI-Da
PANDA_DIRC_WASA2
MT/SV/11.2012 AST

R34 C133 R35 C134
R50 C157 R51 C158
R52 C160 R53 C161
R54 C163 R55 C164
R56 C166 R57 C167
R58 C169 R59 C170
R60 C172 R61 C173
R62 C175 R63 C176

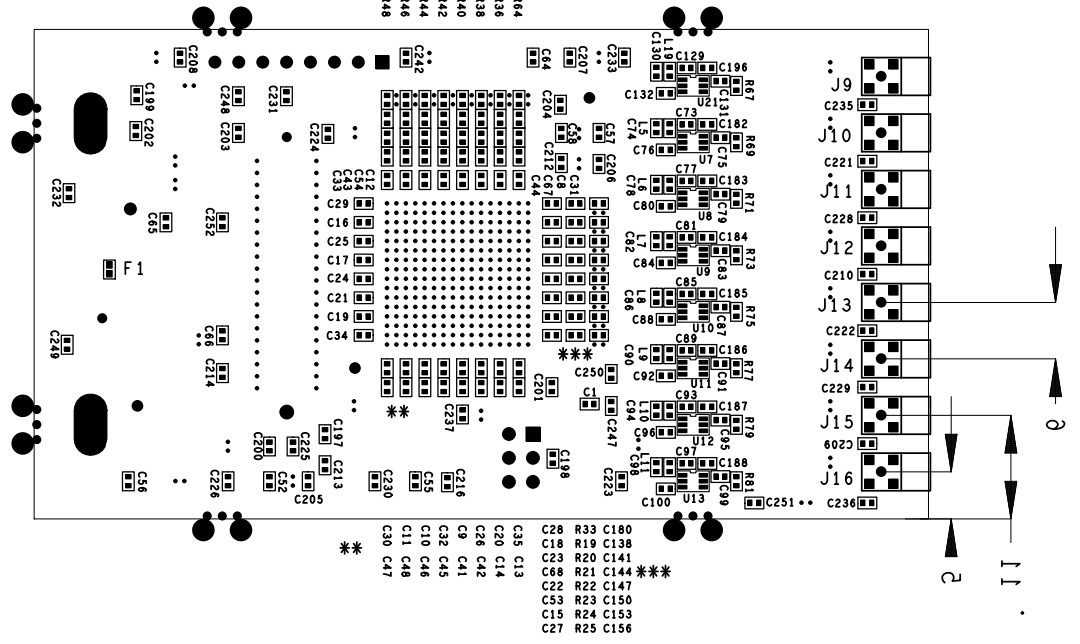


| | | | |
|------------------|---------|-----------|----------|
| Jobname | Date | Designer | Layouter |
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

As t

GSI-Darmstadt
 PANDA DIRC WASA2
 MT/SV711.2012 ASB



- C179 R85 C178 R84
- C137 R87 C136 R36
- C140 R39 C139 R38
- C143 R41 C142 R40
- C146 R43 C145 R42
- C149 R45 C148 R44
- C152 R47 C151 R46
- C155 R49 C154 R48

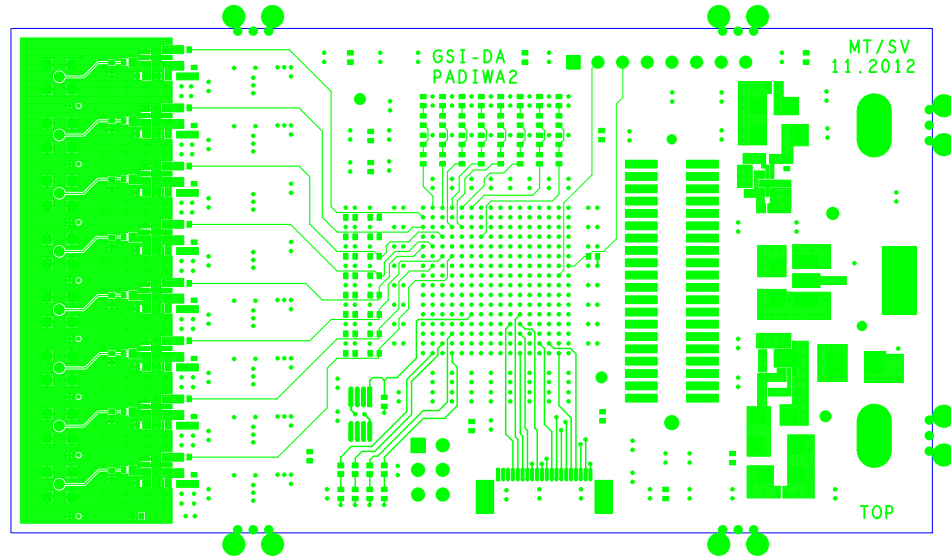
- C28 R33 C180
- C18 R19 C138
- C14 C13
- C20 C14
- C26 C42
- C8 C41
- C32 C45
- C10 C46
- C11 C48
- C30 C47
- *
- *
- *
- C53 R23 C150
- C15 R24 C153
- C27 R25 C156

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Asp

Jobname PANDA-DIRC-WASA2 11.2012
 Designer M.Traxler
 Layouter S.Volts

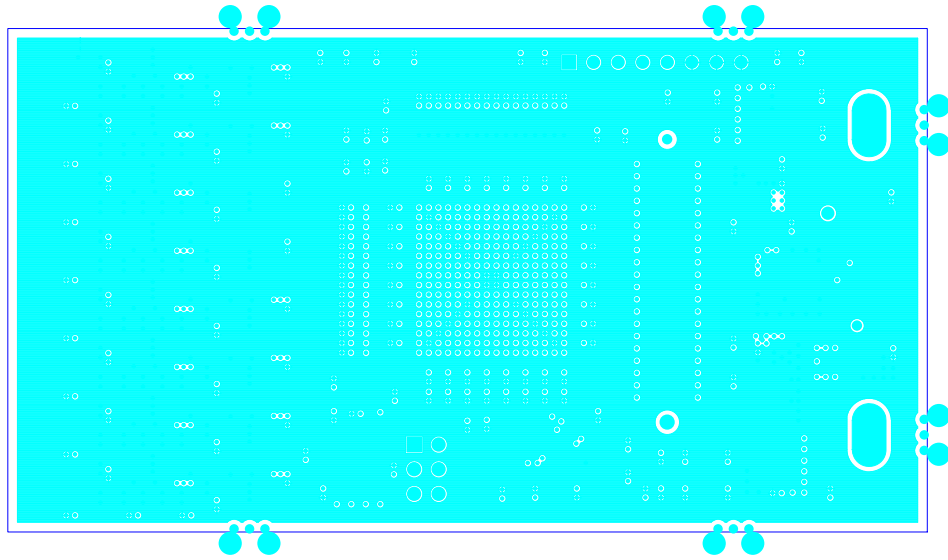
Signals



| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname
Top

GND-Plane

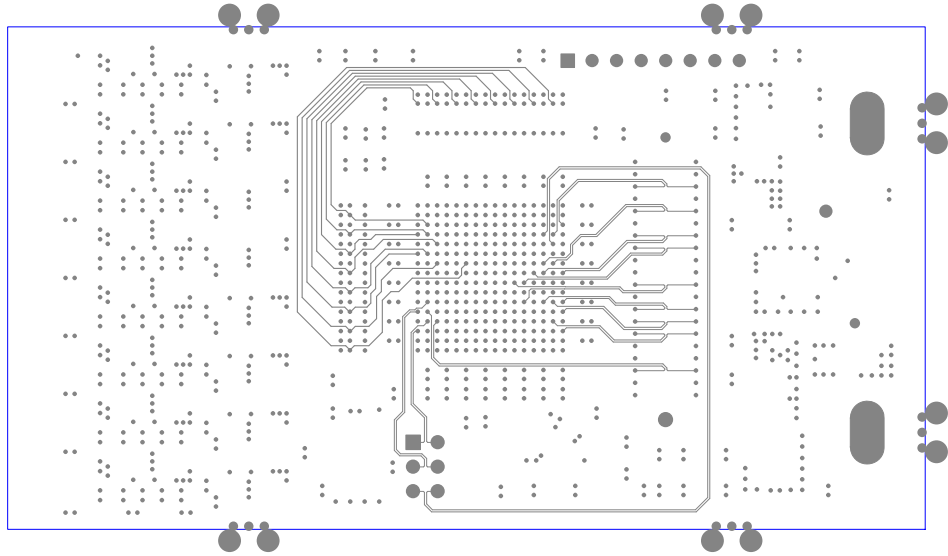


| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

I01

Diff.Pairs

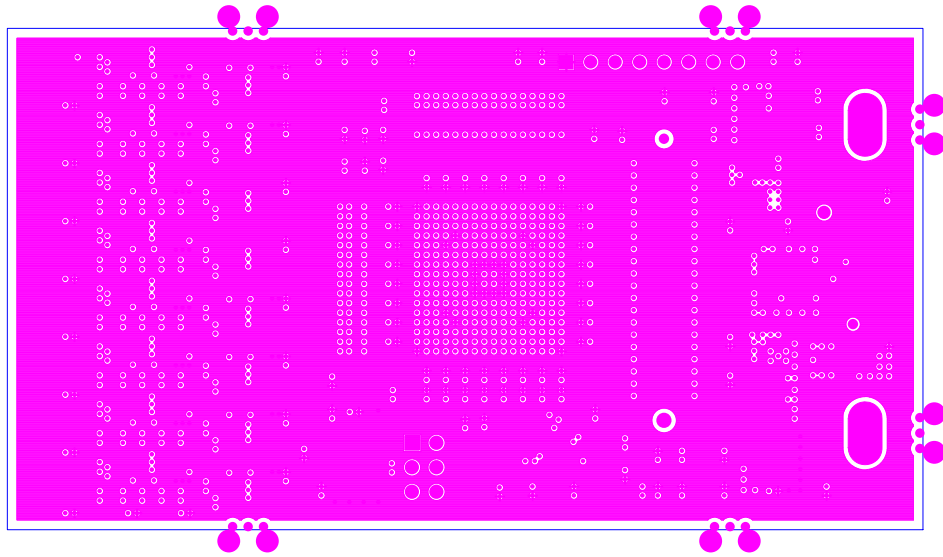


| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

I02

VREG-Plane

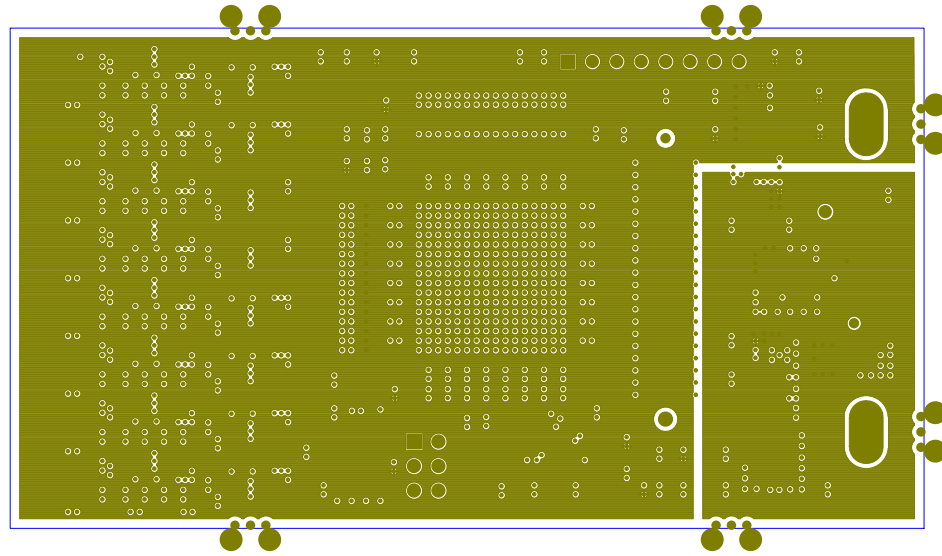


| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

I03

VTERM-Plane, VIN-Plane

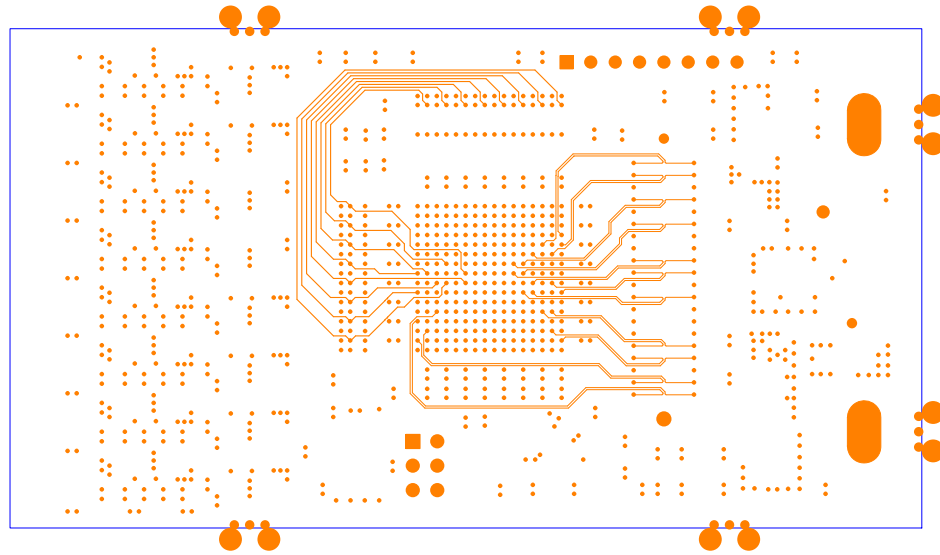


| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

I04

Diff.Pairs

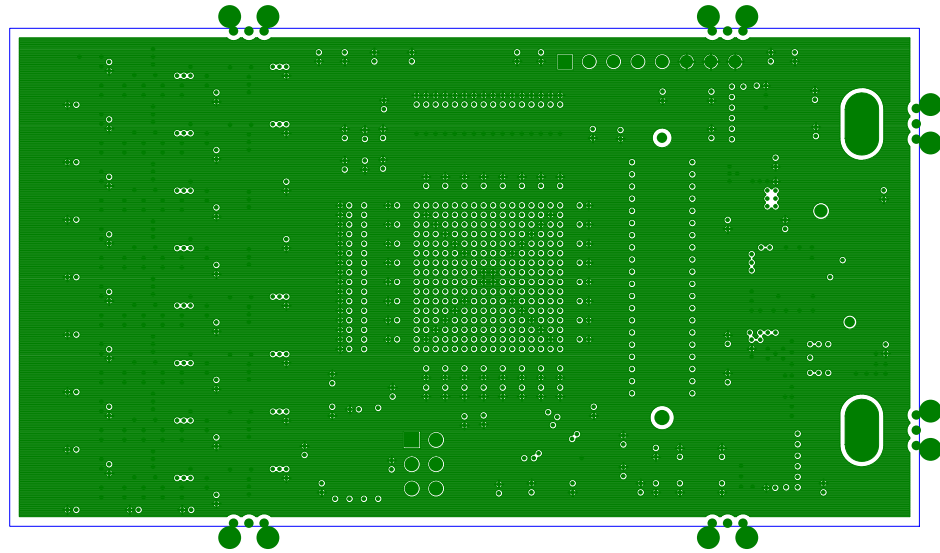


| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

I05

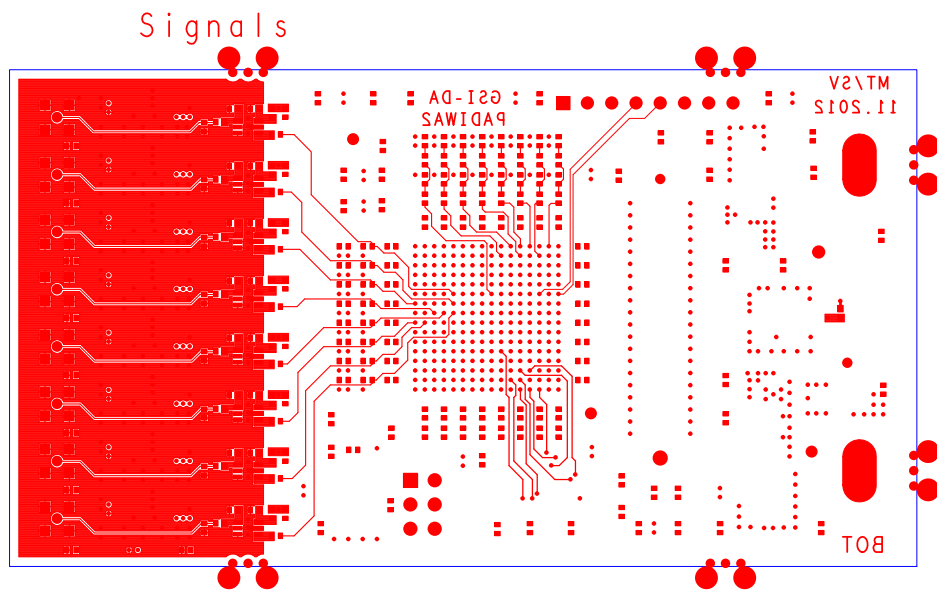
GND-Plane



| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

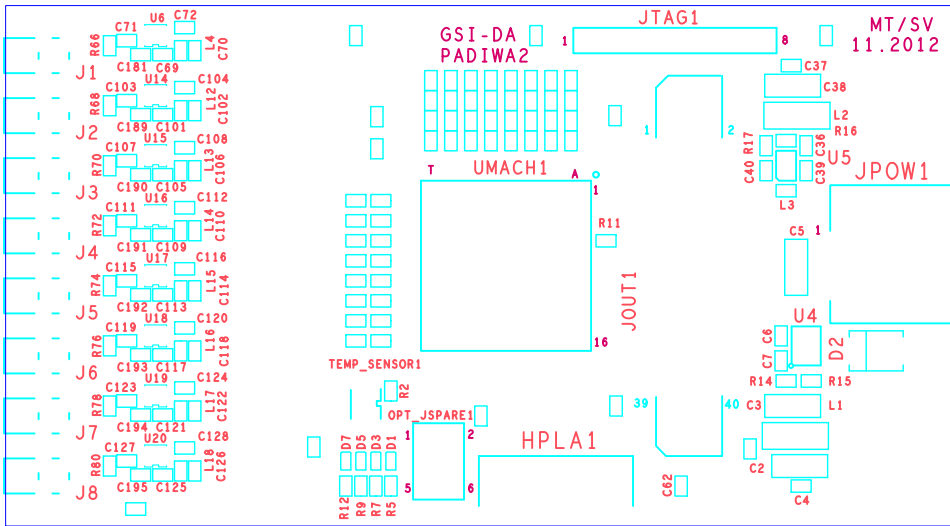
I06



| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

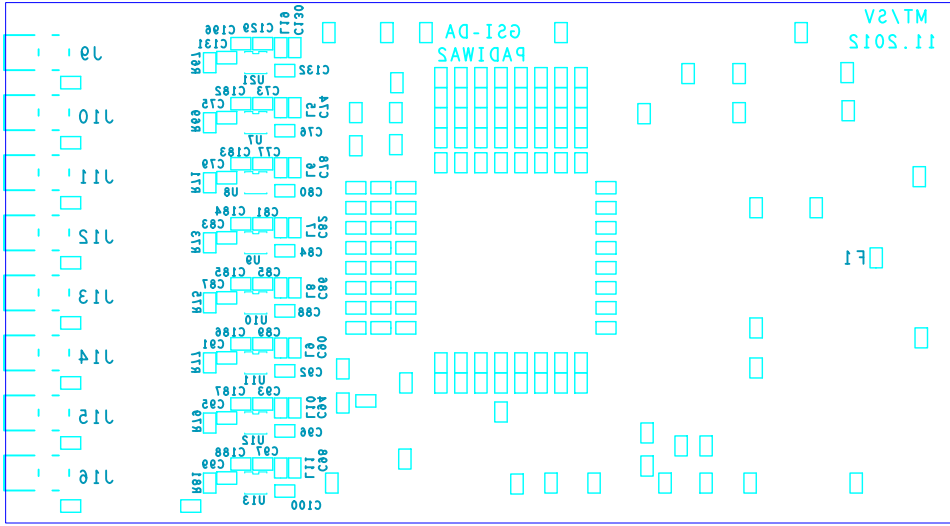
Bot



| | | | |
|------------------|---------|-----------|----------|
| Jobname | Date | Designer | Layouter |
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname


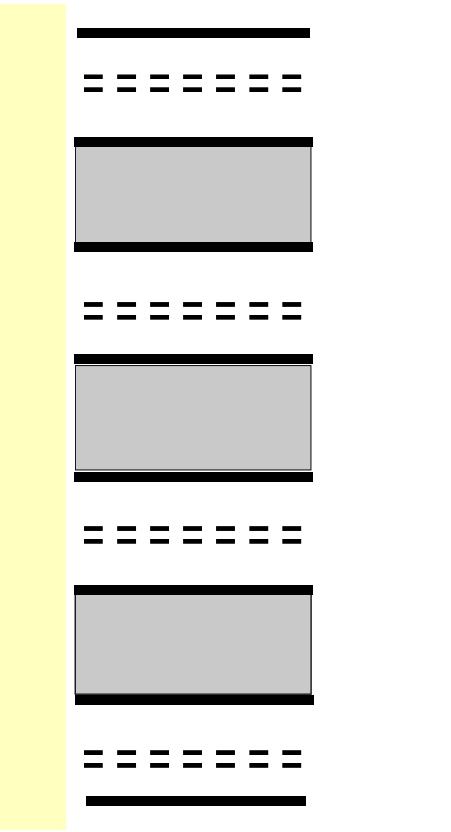
Sst



| Jobname | Date | Designer | Layouter |
|------------------|---------|-----------|----------|
| PANDA-DIRC-WASA2 | 11.2012 | M.Traxler | S.Voltz |

Layer Nickname

Ssb

| LAGENAUFBAU (Impedanz) | | | | |  | | | | | | |
|----------------------------------|------------------|-----------------------------------------------------------------------------------------------------------|-----------|----------------|-------------------------------------------------------------------------------------|--------------------|--------------------|-------------|--------------------------------------------------------|-----|--|
| 8 - Lagen Kern: mm Cu / µm | | | | | | | | | | | |
| WE-Artikel Nr.: | | | | | 8 - Lagen | | | | | | |
| KUNDE: | | GSI PADIWA2 | | | | | | | | | |
| LAGENBEZEICHNUNG | | AUFBAU | | | BASIS-Material | CU | PREPREG ANZAHL/TYP | ENDDICKE | KUNDEN-FORDERUNG | | |
| KUNDE | WE | | | | | | | [µm] | [µm] | | |
| 1 | TOP/VS |  | | | Folie | 9 µm ¹⁾ | 1x 2113 | 9 | | | |
| | | | | | | | | | | 94 | |
| 2 | 2 | | | | | | | 18 µm | | 18 | |
| | | | | | | | 0,15 mm | | | 150 | |
| 3 | 3 | | | | | | | 18 µm | | 18 | |
| | | | | | | | | | 2x 2116 | 214 | |
| 4 | 4 | | | | | | | 18 µm | | 18 | |
| | | | | | | | 0,51 mm | | | 510 | |
| 5 | 5 | | | | 18 µm | | 18 | | | | |
| | | | | | | 2x 2116 | 214 | | | | |
| 6 | 6 | | | | 18 µm | | 18 | | | | |
| | | | | 0,15 mm | | | 150 | | | | |
| 7 | 7 | | | | 18 µm | | 18 | | | | |
| | | | | | | 1x 2113 | 94 | | | | |
| 8 | BOT/RS | | | | Folie | 9 µm | | 9 | | | |
| | | | | | | | | | | | |
| | Imp | Imp.-Lage | LBBR | ISO | ISO z. Masse | | | | | | |
| | Zdiff | L3/L6 = 100,10 Ohm | 100µm | 120µm | | | | | | | |
| | Zdiffcopl | L3/L6 = 100,30 Ohm | 100µm | 130µm | 150µm | | | | | | |
| | Zo | VS/RS =49,30 Ohm | 150 µm | | | | | | 1) Kupferenddicke Außenlagen nach IPC (35µm Forderung) | | |
| | Zo copl | VS/RS =49,90 Ohm | 130µm | | 150µm | | | | | | |
| | | Material TG 150 hf | | | | | | | | | |
| | | | | | Gesamtdicke Material: | | 1552 | | | | |
| | | Anmerkung: Werte für Prepreg sind Mittelwerte (der genaue Wert ist von den Leiterbildstrukturen abhängig) | | | | | | | | | |
| MATERIALDICKE: | | 1,53 | +/- | 0,16 | mm | Index | Datum: | Bearbeiter: | | | |
| DICKE über galv. Endoberfläche | | 1,60 | +/- | 0,17 | mm | | 05.12.2012 | A.Wodke | | | |
| DICKE über LSM incl.galv.-Kupfer | | 1,64 | +/- | 0,18 | mm | | | | | | |
| Kundenforderung: | | | +/- | | mm | Messsstelle: | | | | | |
| Erstellt am | von | Geprüft am | von | Freigegeben am | von | Revision | | | | | |
| 28.09.2006 | M.Kress | 24.10.2006 | S.Baumann | 25.10.2006 | R.Taurus | 00 | Seite: | 1+ | | | |