

103AT-2 thermistor -> 3536Ω=55deg celsius
103AT-2 thermistor -> 28000Ω=-3deg celsius

Thermistor calculation 103AT-2
 $R17 = (3.3 * R_{cold} * R_{hot} * ((1 / (3.3 * 0.735)) - (1 / (3.3 * 0.45)))) / (R_{hot} * ((3.3 / (3.3 * 0.45)) - 1) - R_{cold} * ((3.3 / (3.3 * 0.735)) - 1))$
 $14776\Omega = (3.3 * 28000 * 3536 * ((1 / (3.3 * 0.735)) - (1 / (3.3 * 0.45)))) / (3536 * ((3.3 / (3.3 * 0.45)) - 1) - 28000 * ((3.3 / (3.3 * 0.735)) - 1)) \approx 14.7K$
 $R15 = ((3.3 / (3.3 * 0.735)) - 1) / ((1 / R17) + (1 / R_{cold}))$
 $3487\Omega = ((3.3 / (3.3 * 0.735)) - 1) / ((1 / 14776) + (1 / 28000)) \approx 3.48K$

Alternative:

NTCLE100E3103HT1 thermistor -> 3605Ω=50deg celsius
NTCLE100E3103HT1 thermistor -> 37000Ω=-2.5deg celsius

Thermistor calculation NTCLE100E3103HT1
 $R17 = (3.3 * R_{cold} * R_{hot} * ((1 / (3.3 * 0.735)) - (1 / (3.3 * 0.45)))) / (R_{hot} * ((3.3 / (3.3 * 0.45)) - 1) - R_{cold} * ((3.3 / (3.3 * 0.735)) - 1))$
 $12864\Omega = (3.3 * 37000 * 3605 * ((1 / (3.3 * 0.735)) - (1 / (3.3 * 0.45)))) / (3605 * ((3.3 / (3.3 * 0.45)) - 1) - 37000 * ((3.3 / (3.3 * 0.735)) - 1)) \approx 13K$
 $R15 = ((3.3 / (3.3 * 0.735)) - 1) / ((1 / R17) + (1 / R_{cold}))$
 $3468\Omega = ((3.3 / (3.3 * 0.735)) - 1) / ((1 / 13000) + (1 / 37000)) \approx 3.48K$

Drawn by Peter Verweij

TU Delft

Sheet: /Solarconverter/

File: Solarconverter.sch

Title: Solarconverter

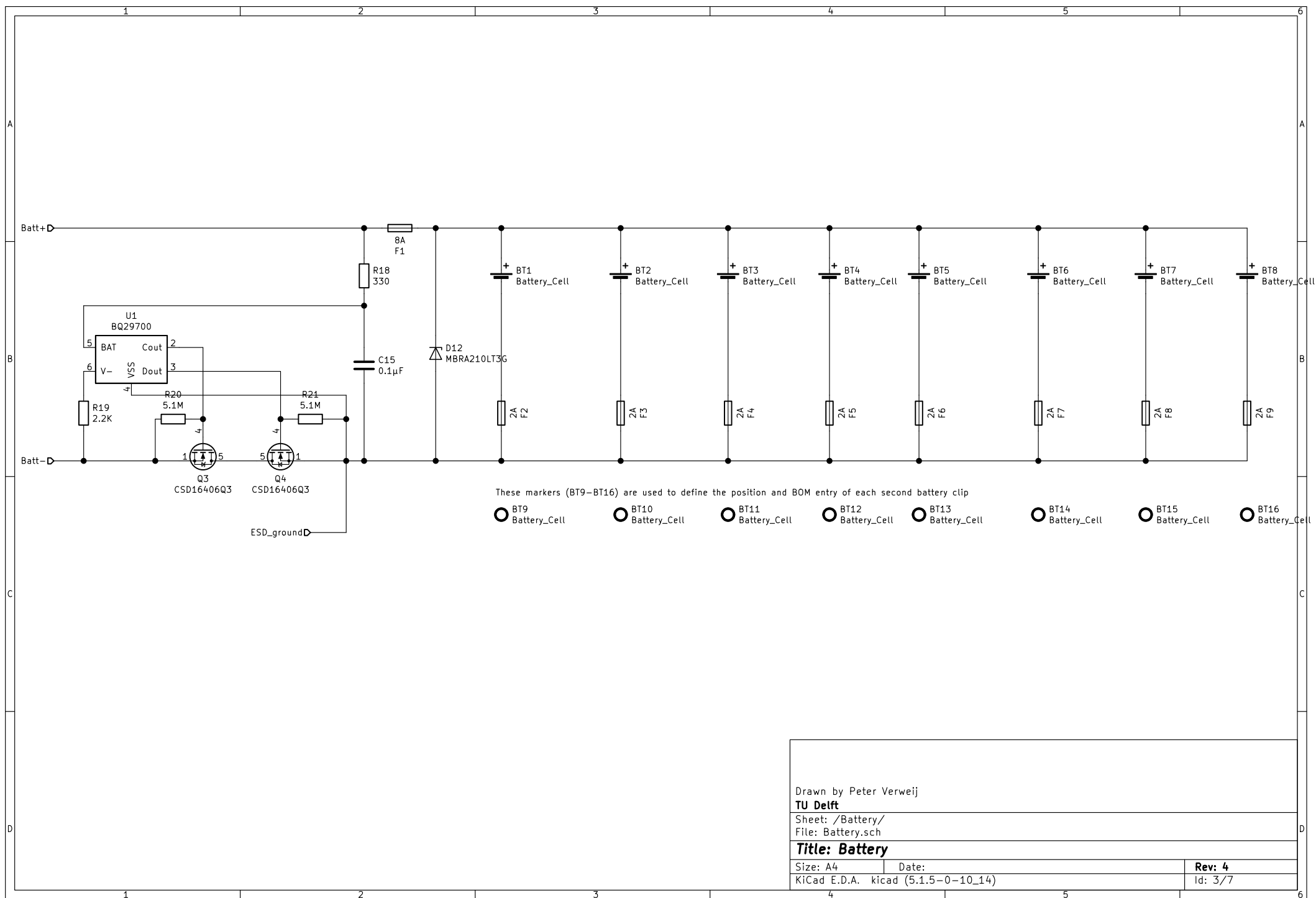
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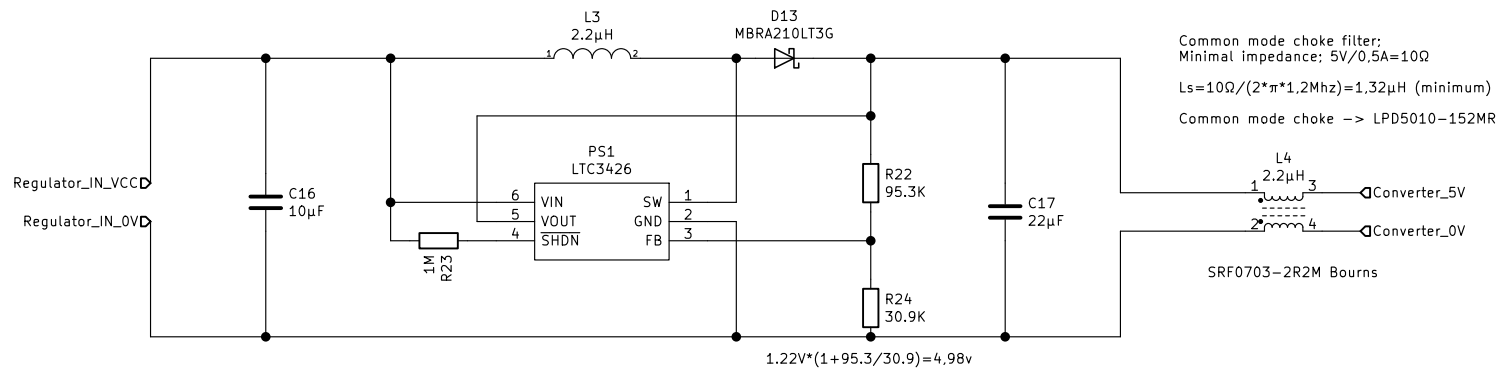
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Title: 5V regulator

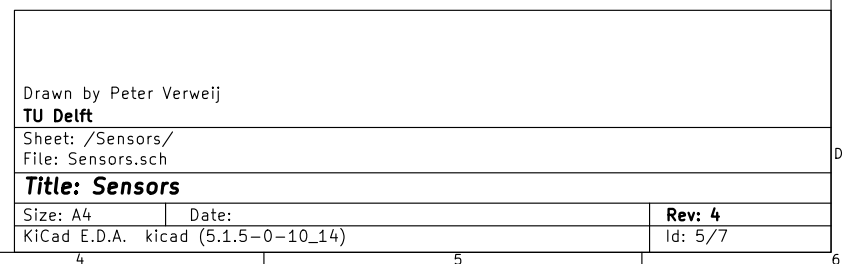
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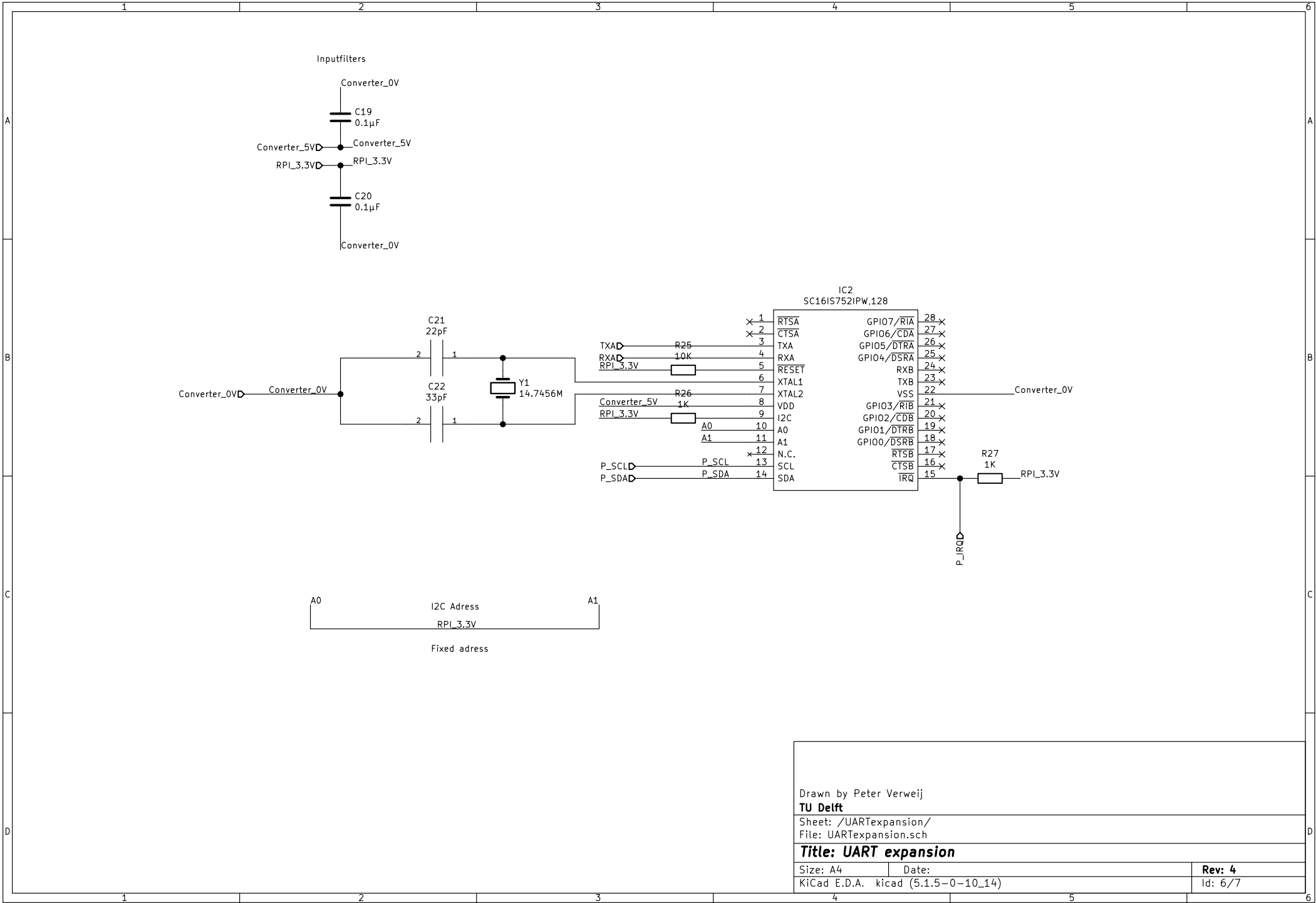
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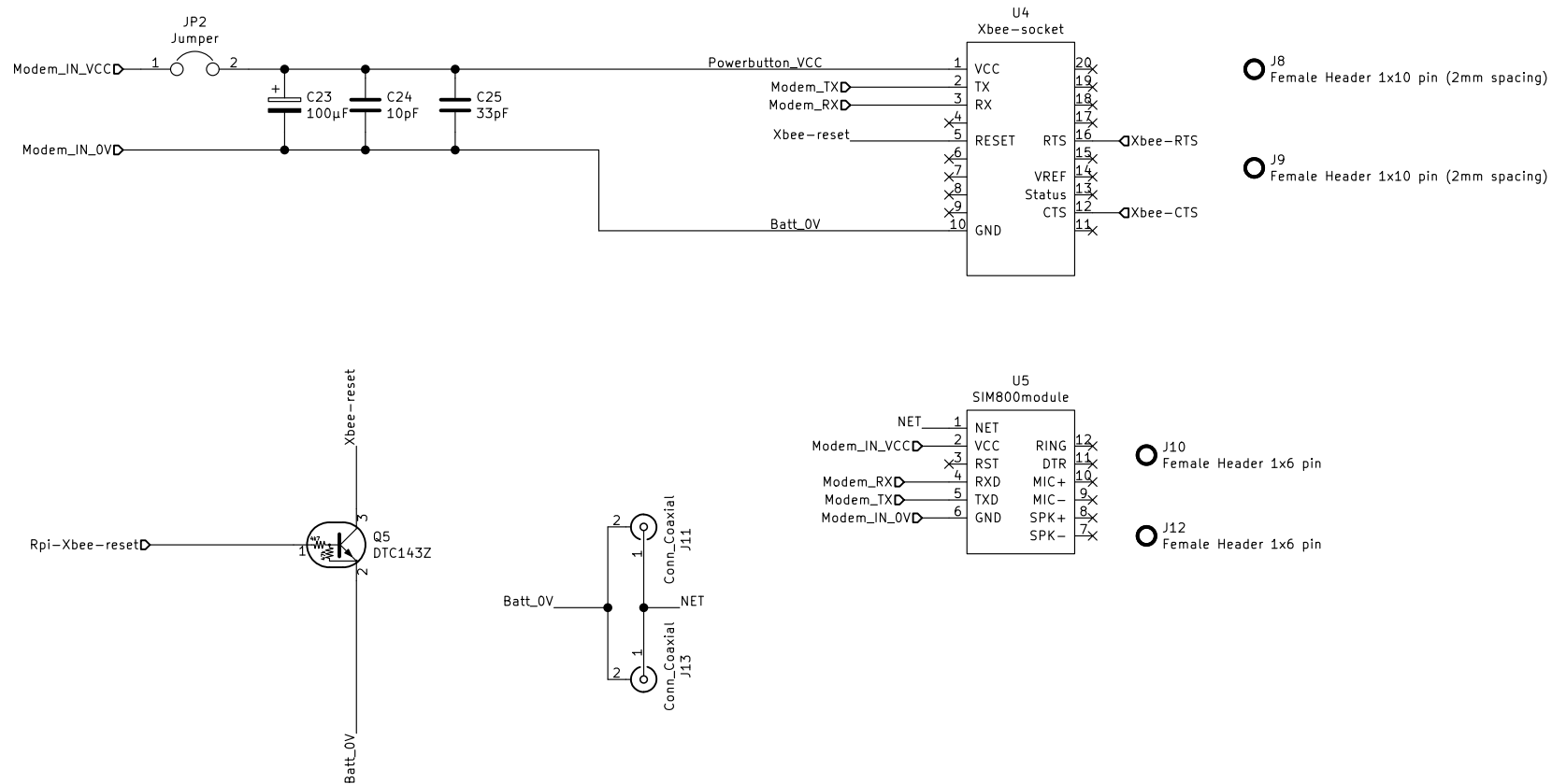
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Sheet: /Modem_sockets/

File: Modemsockets.sch

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