

A

A

B

B

C

C

D

D

MPPT Solar Converter

SOLAR CAR 2021

REV 1

Title COVER		Badgerloop Electrical 133 Engineering Research Building 1500 Engineering Drive Madison, Wi 53706	
Engineer: Shelby Riggleman	Revision:1	Date: 1/1/2022 Time: 2:23:55 PM Sheet 1 of 8	

Connectors

A

A

B

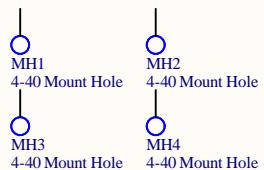
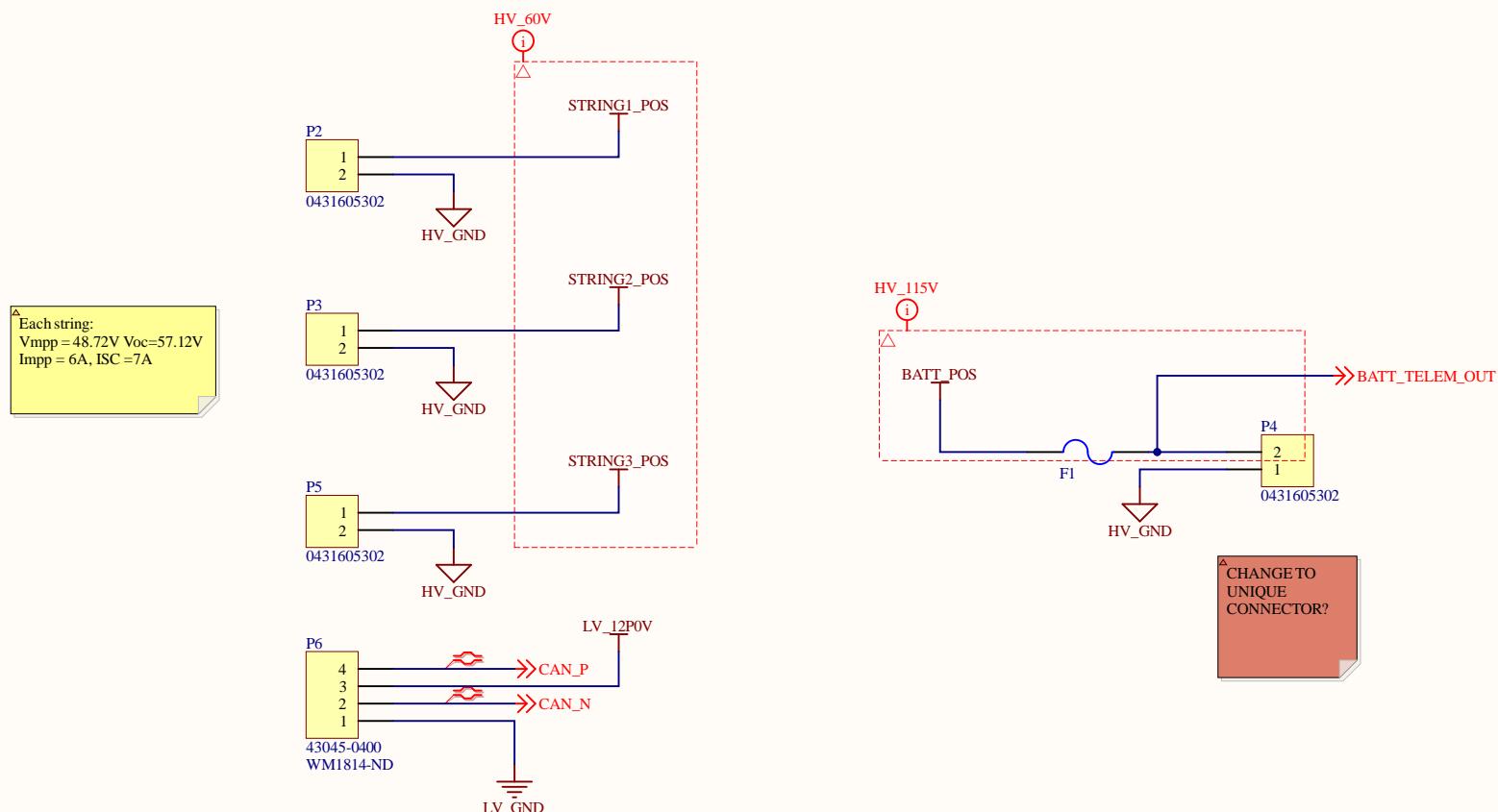
B

C

C

D

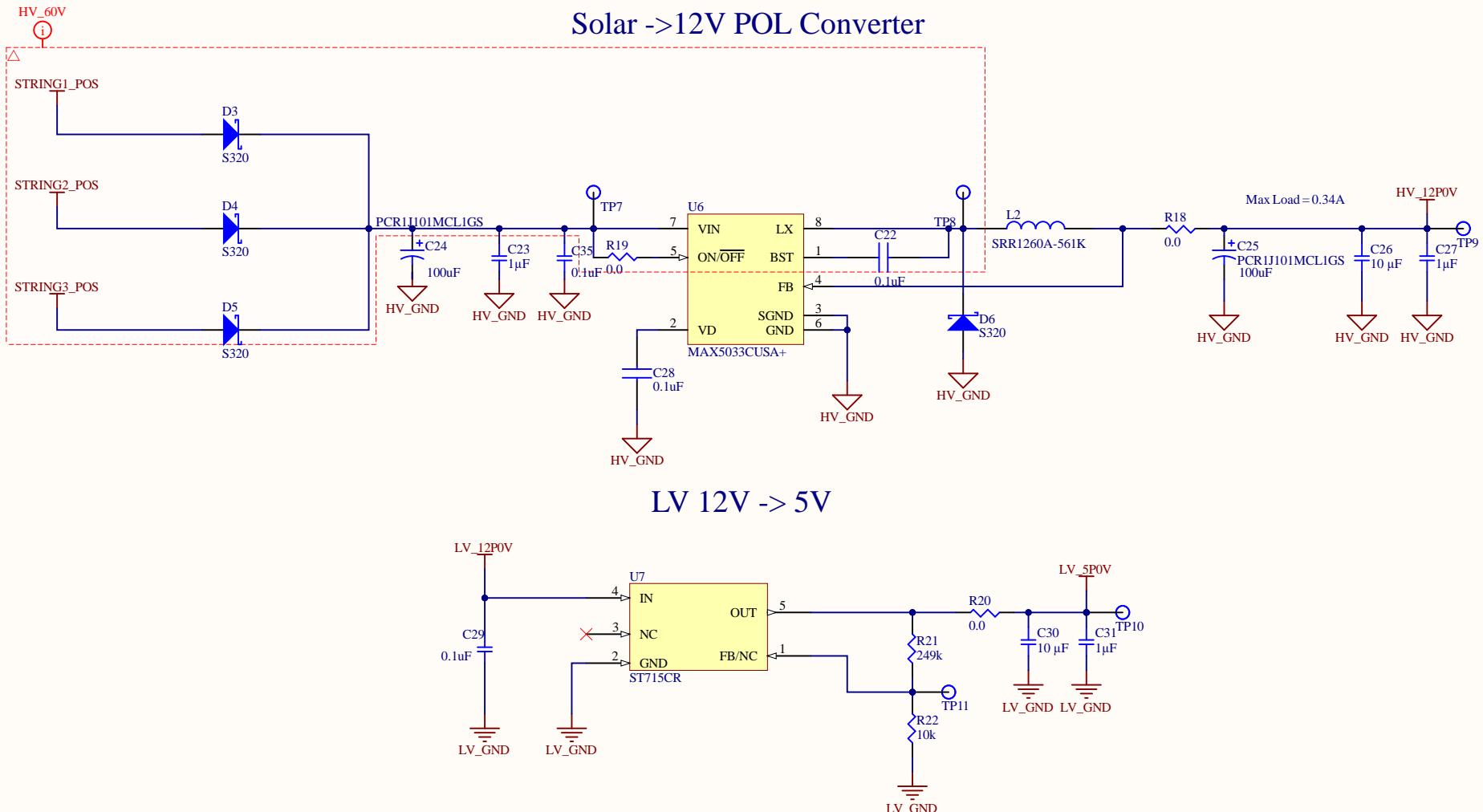
D



Title <i>Connectors</i>	
Engineer: Shelby Riggelman	Revision: 1
Date: 1/1/2022	Time: 2:23:55 PM
File: Connectors.SchDoc	Sheet 2 of 8

BADGER
LOOP

Point of Load Converters



Title Nucleo	
Engineer: Shelby Riggleman	Revision: 1
Date: 1/1/2022	Time: 2:23:55 PM
File: POL_converter.SchDoc	Sheet 3 of 8

**BADGER
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Nucleo MCU & CAN

A

B

C

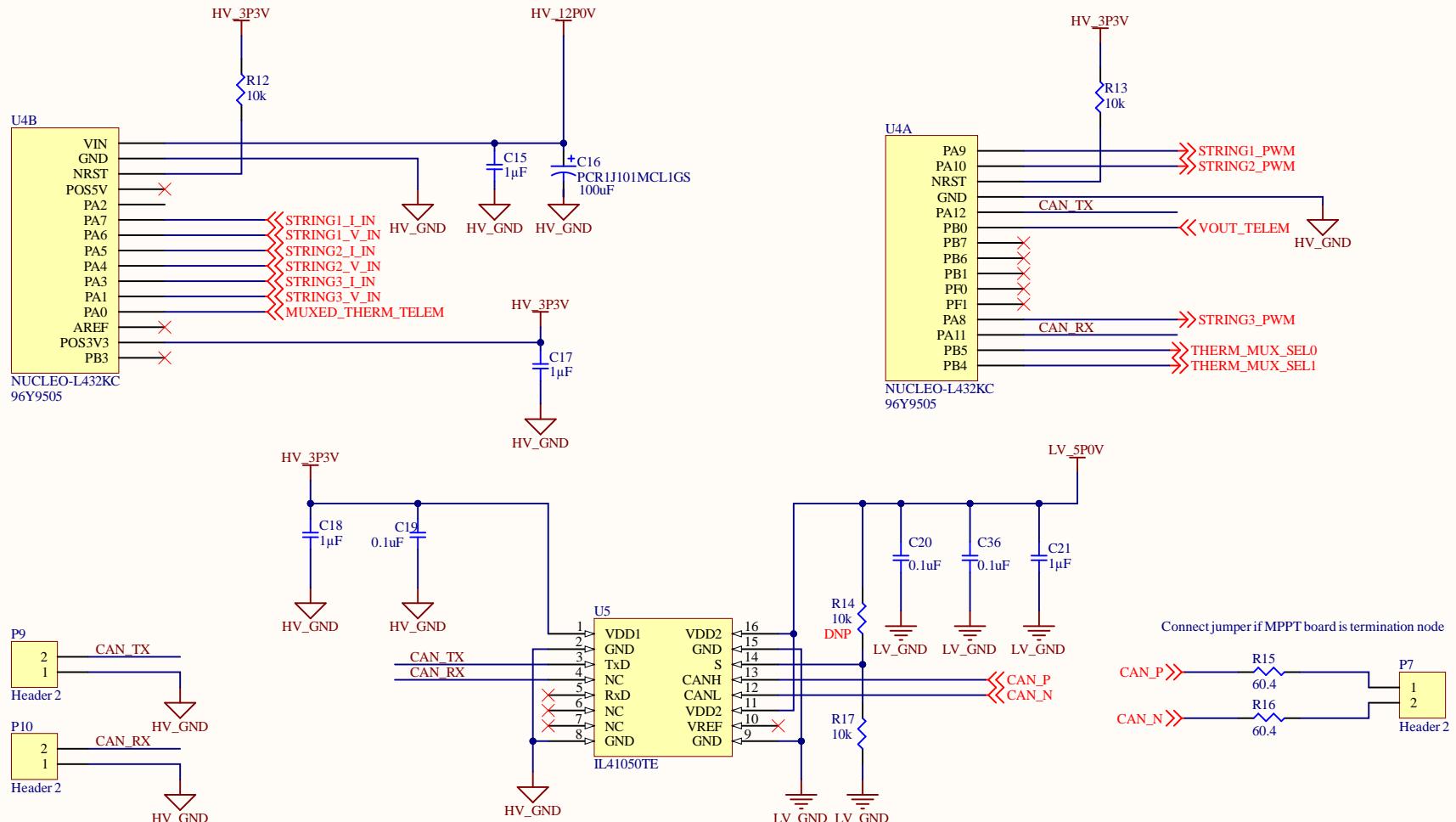
D

A

B

C

D

Title **Nucleo**

Engineer: Shelby Riggleman

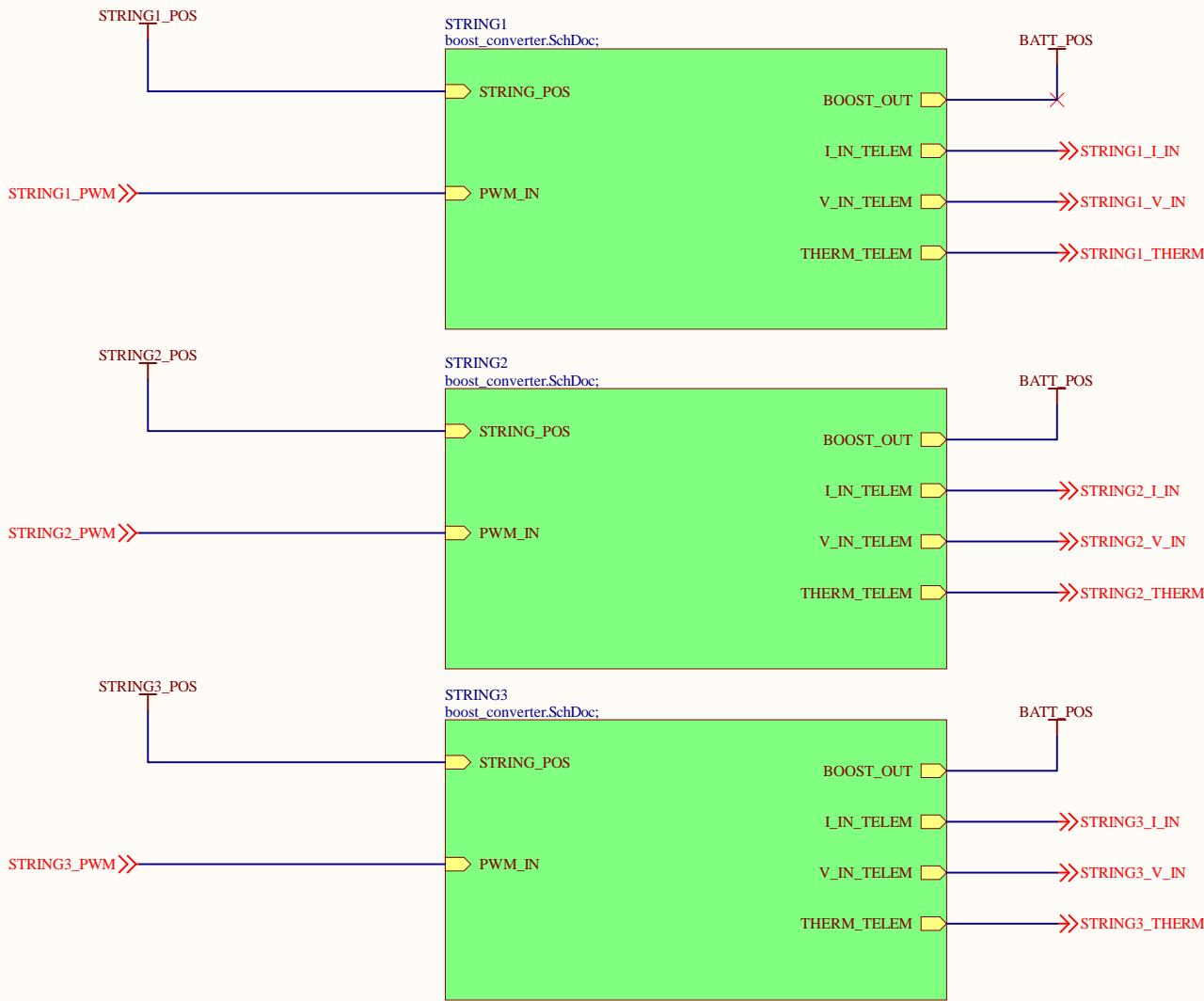
Revision: 1

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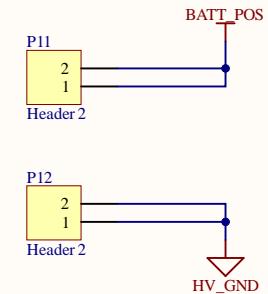
File: Nucleo.SchDoc

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Solar Strings MPPTs



Debug Headers



Title Boost Strings	
Engineer: Shelby Riggelman	Revision: 1
Date: 1/1/2022	Time: 2:23:56 PM
File: solar_boost_strings.SchDoc	Sheet 5 of 8

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Solar Boost Converter

A

B

C

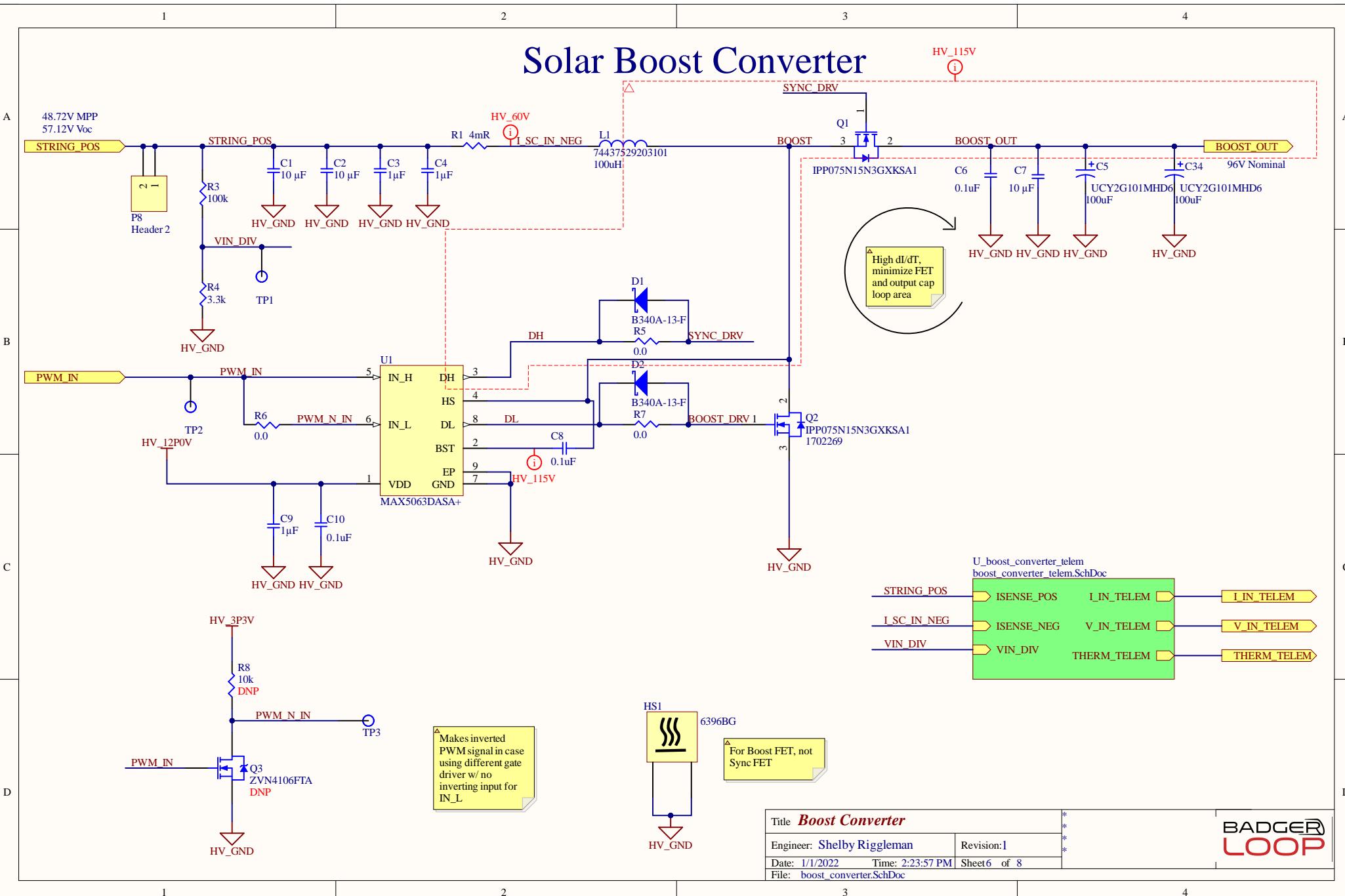
D

A

B

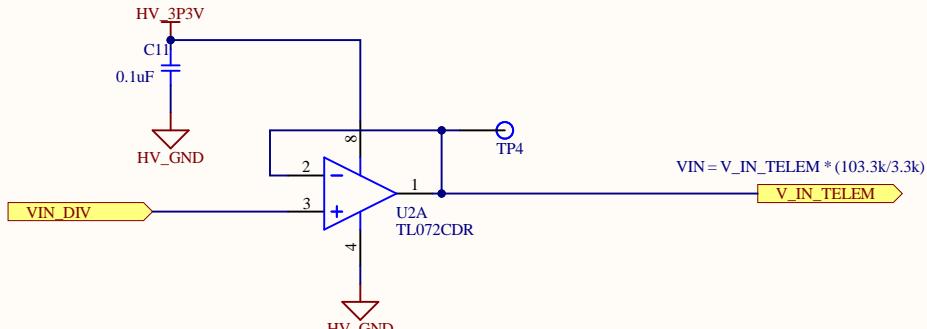
C

D

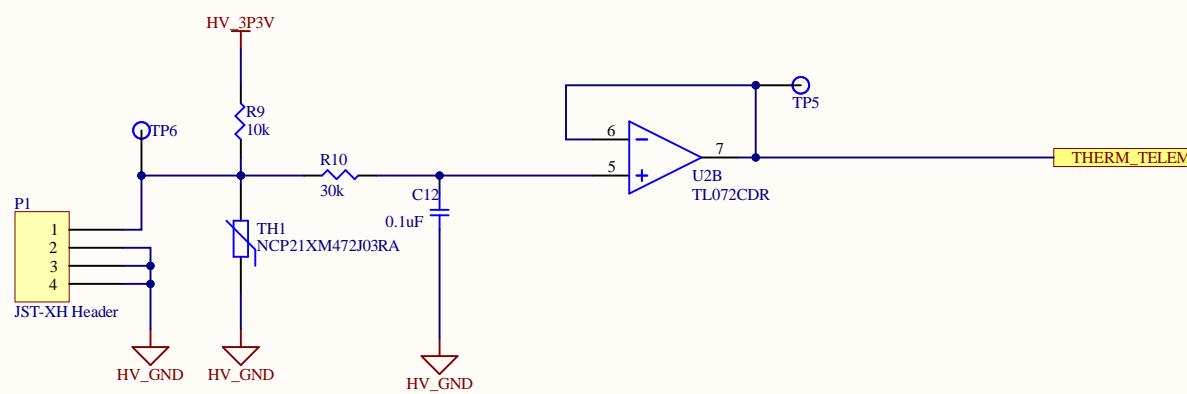


Solar Boost Converter Telemetry

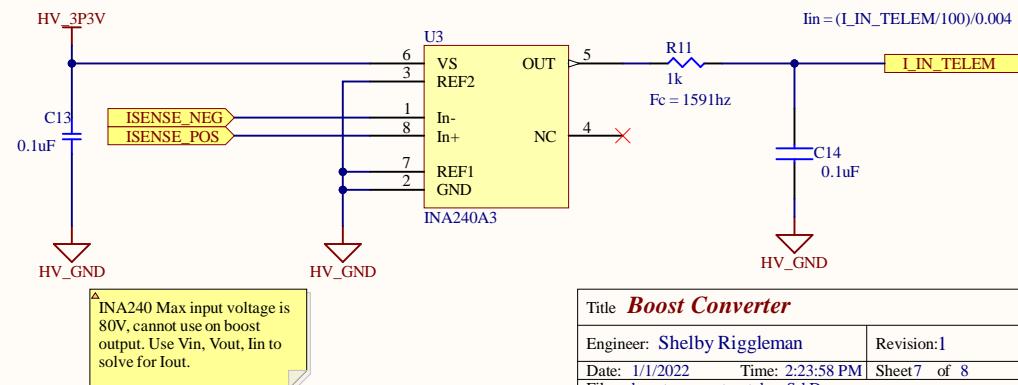
String Input Voltage



Thermistor Output



String Input Current

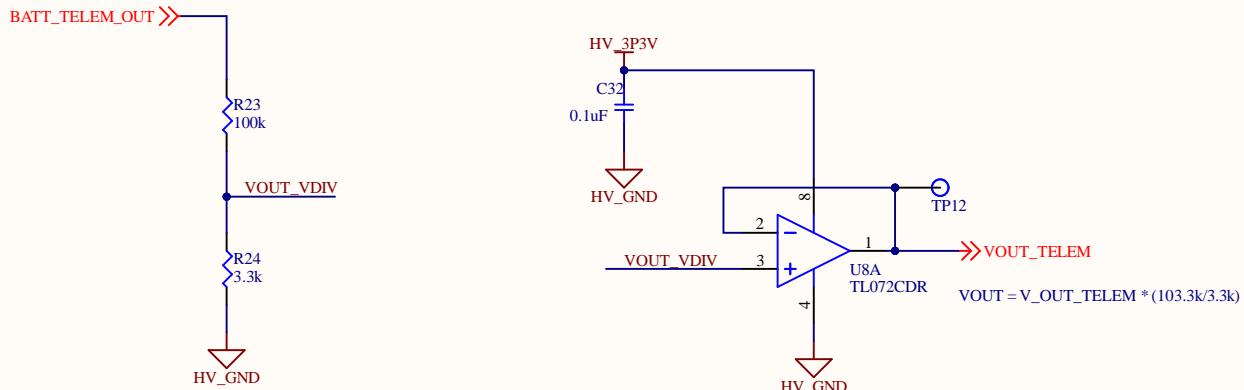


Title Boost Converter	
Engineer: Shelby Riggelman	Revision: 1
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File: boost_converter_telem.SchDoc	Sheet 7 of 8

**BADGER
LOOP**

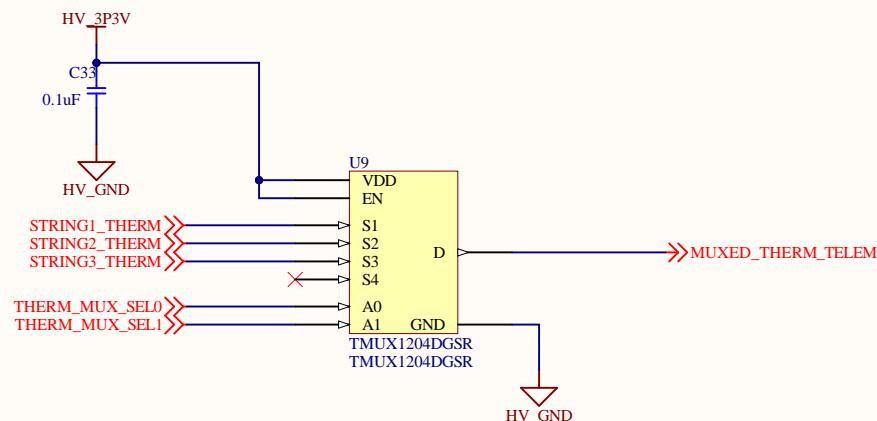
Global Telemetry

Output (Battery) Voltage



$$VOUT = V_{OUT_TELEM} * (103.3k / 3.3k)$$

String Thermistor Telem (Muxed)



Title Nucleo	
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