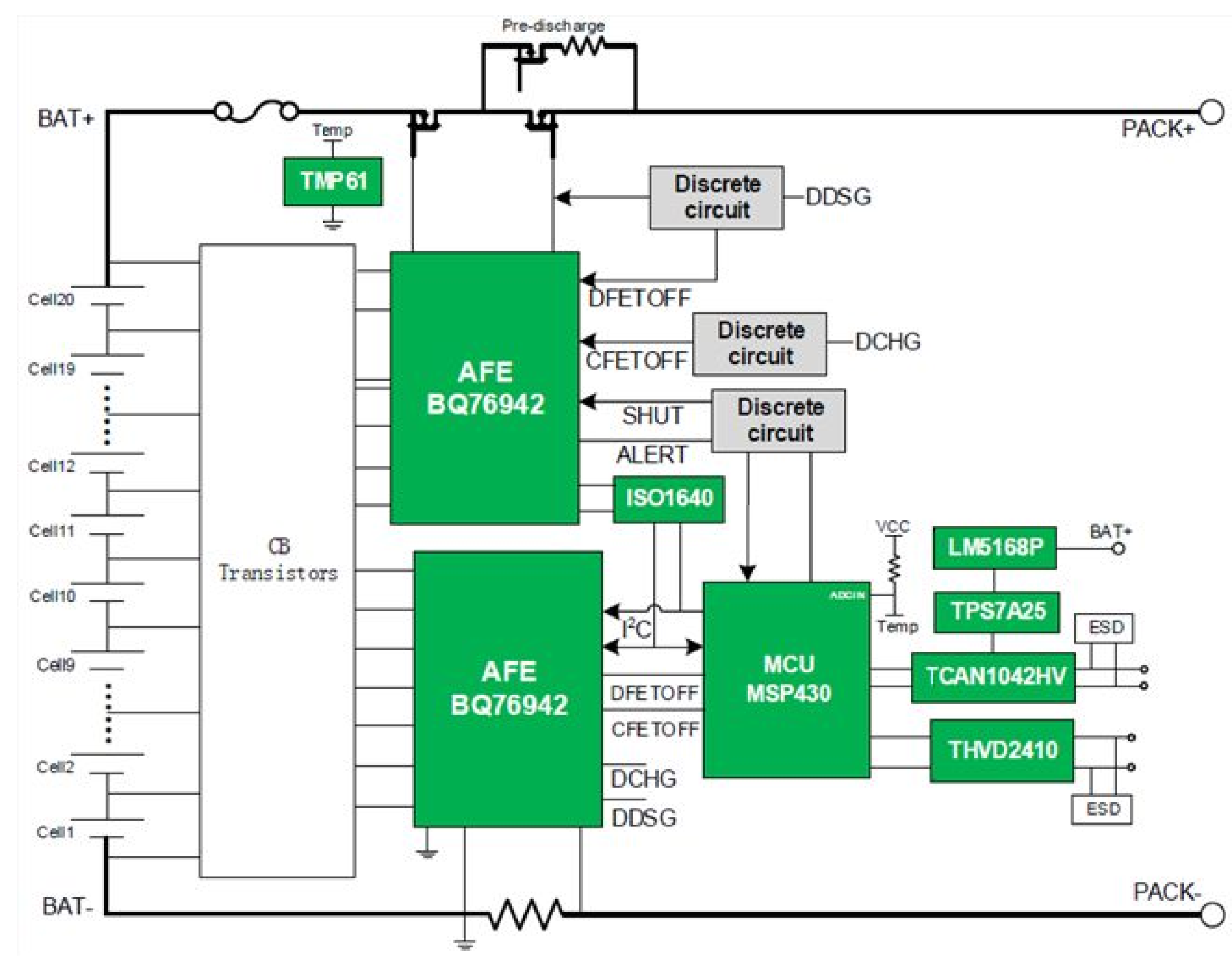


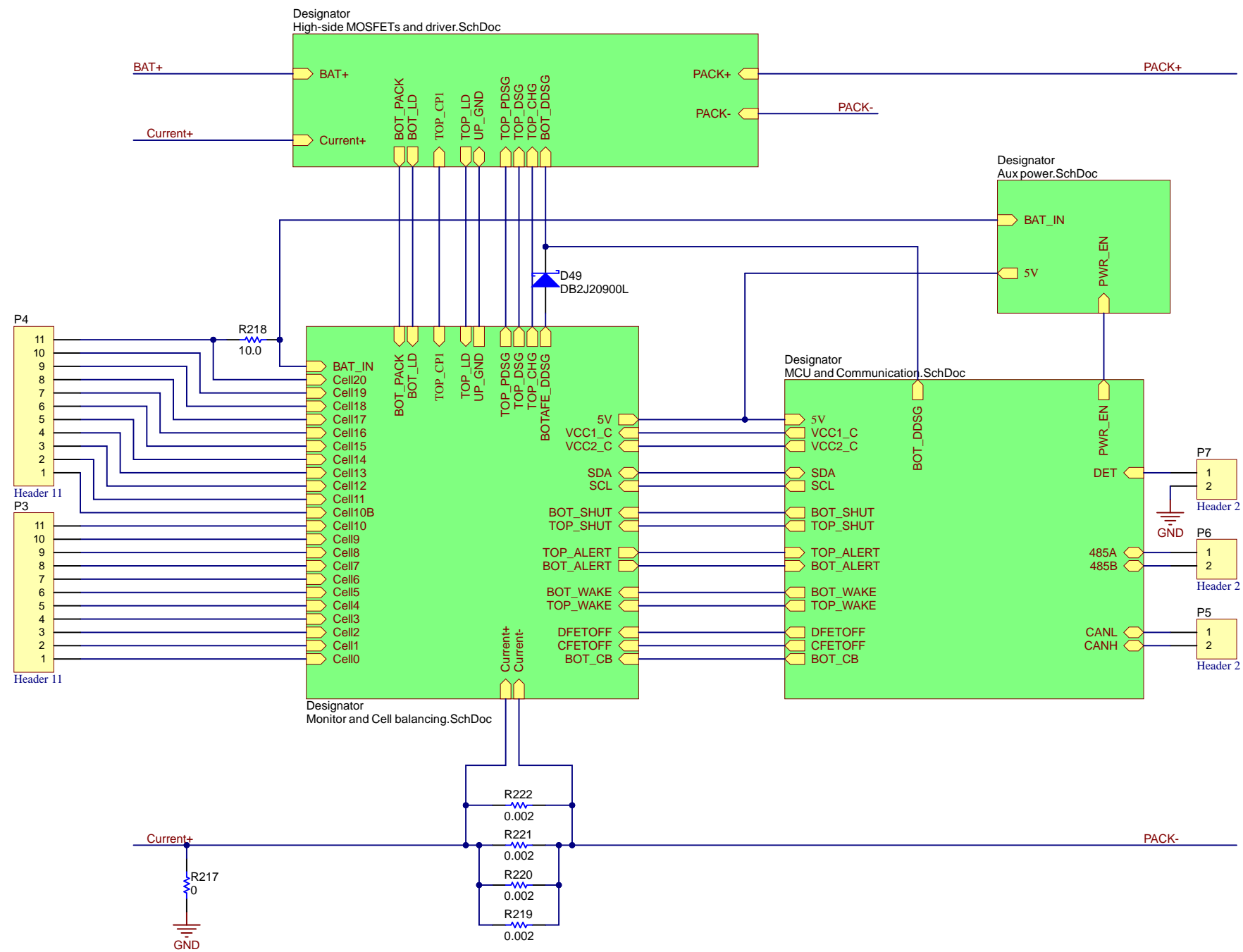
Revision History				
Rev	ECN #	Approved Date	Approved by	Notes
N/A	N/A	N/A	N/A	N/A



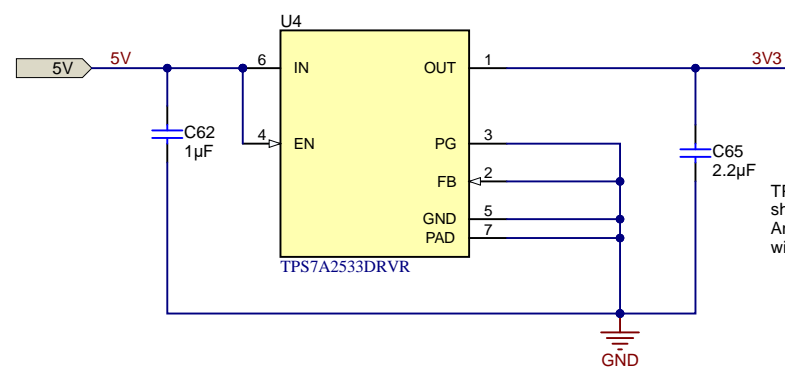
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: N/A	Designed for: Public Release	Mod. Date: 11/10/2022
TID #: TIDA-010247	Project Title: Up to 32s high side N-MOSFET	
Number: TIDA-010247   Rev: E1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: [No Variations]	Sheet: 1 of 7
Drawn By:	File: CoverSheet.SchDoc	Size: B
Engineer: Ryan Tan	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	

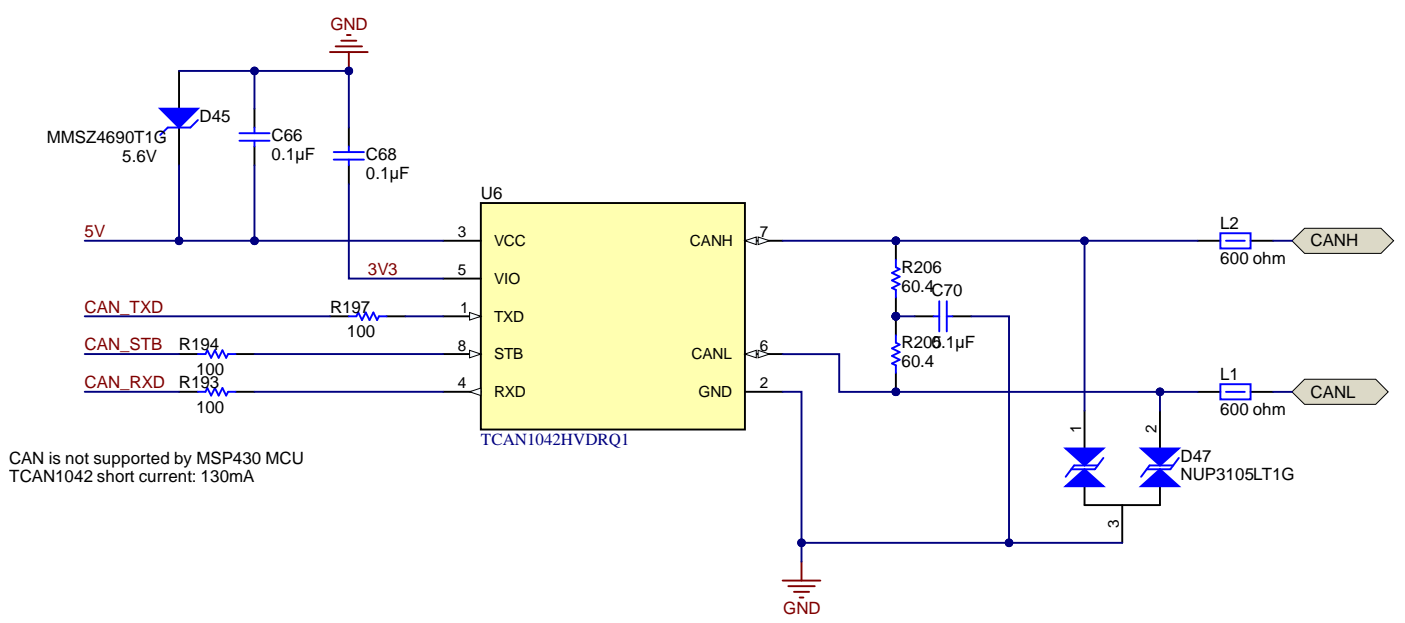




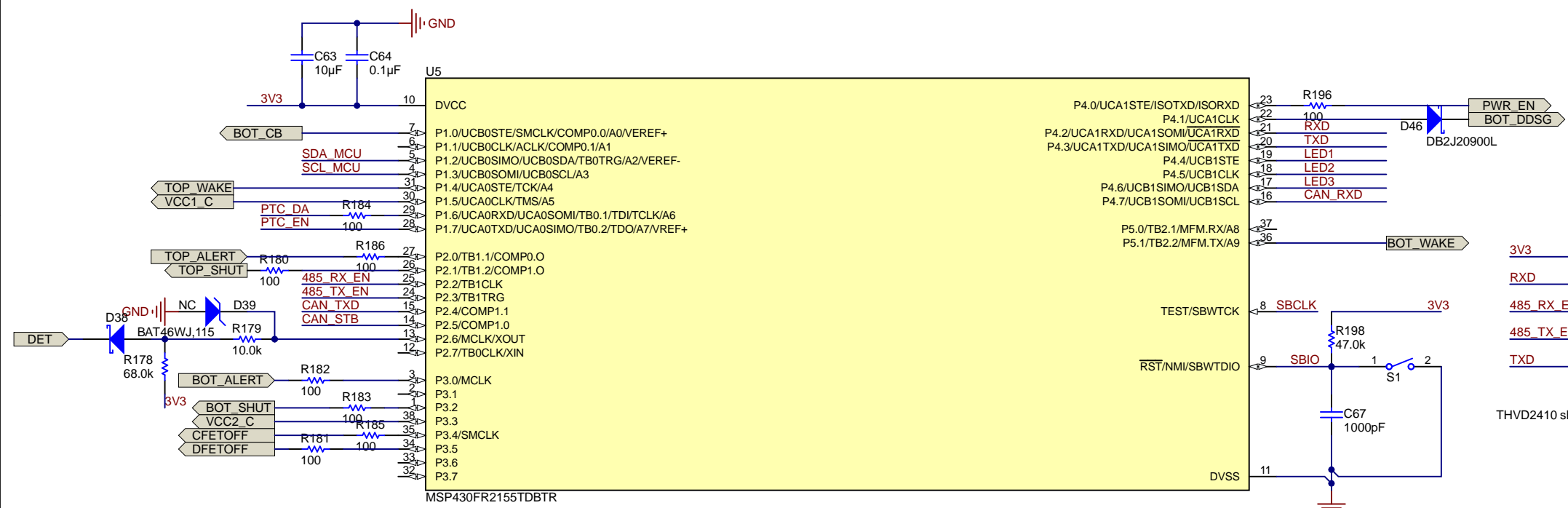
Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.



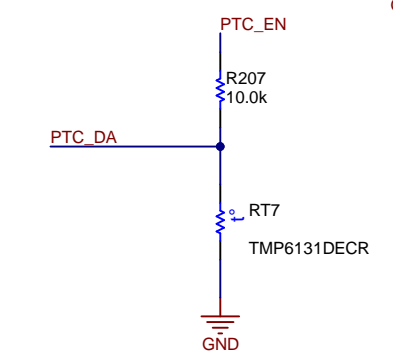
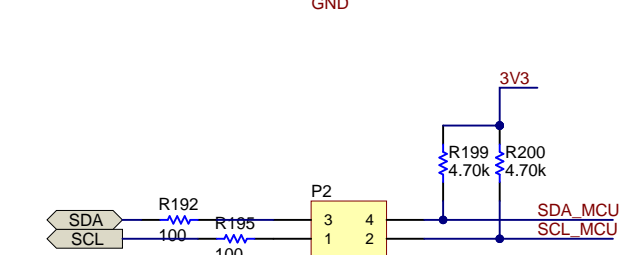
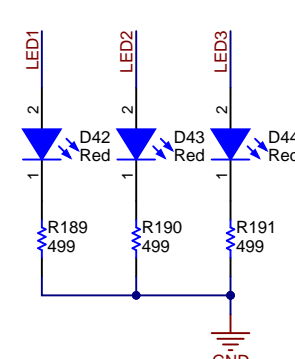
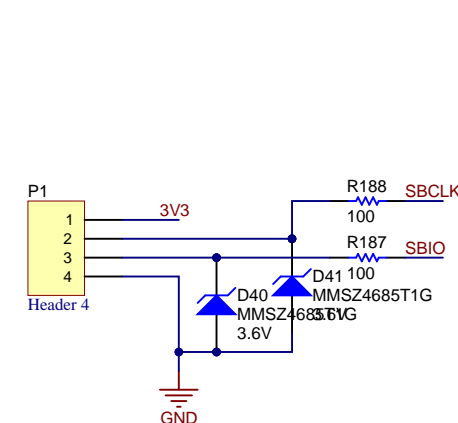
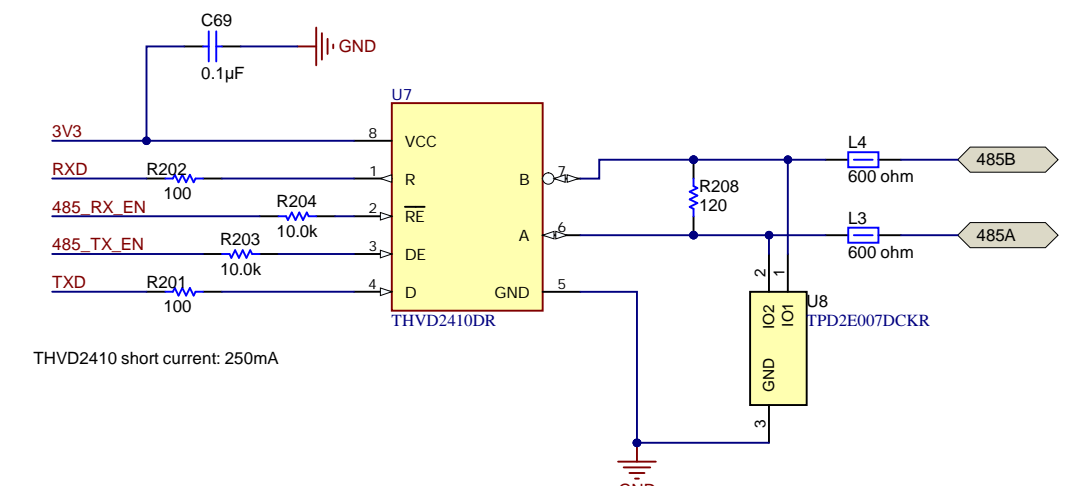
TPS7A25 is a 300mA LDO with low IQ. If THVD2410 output short, it will sink 250mA and 3.3V can't drop. Another solutions are TLV76733(1A), TPS7A26(0.5A), P2P with TPS7A25

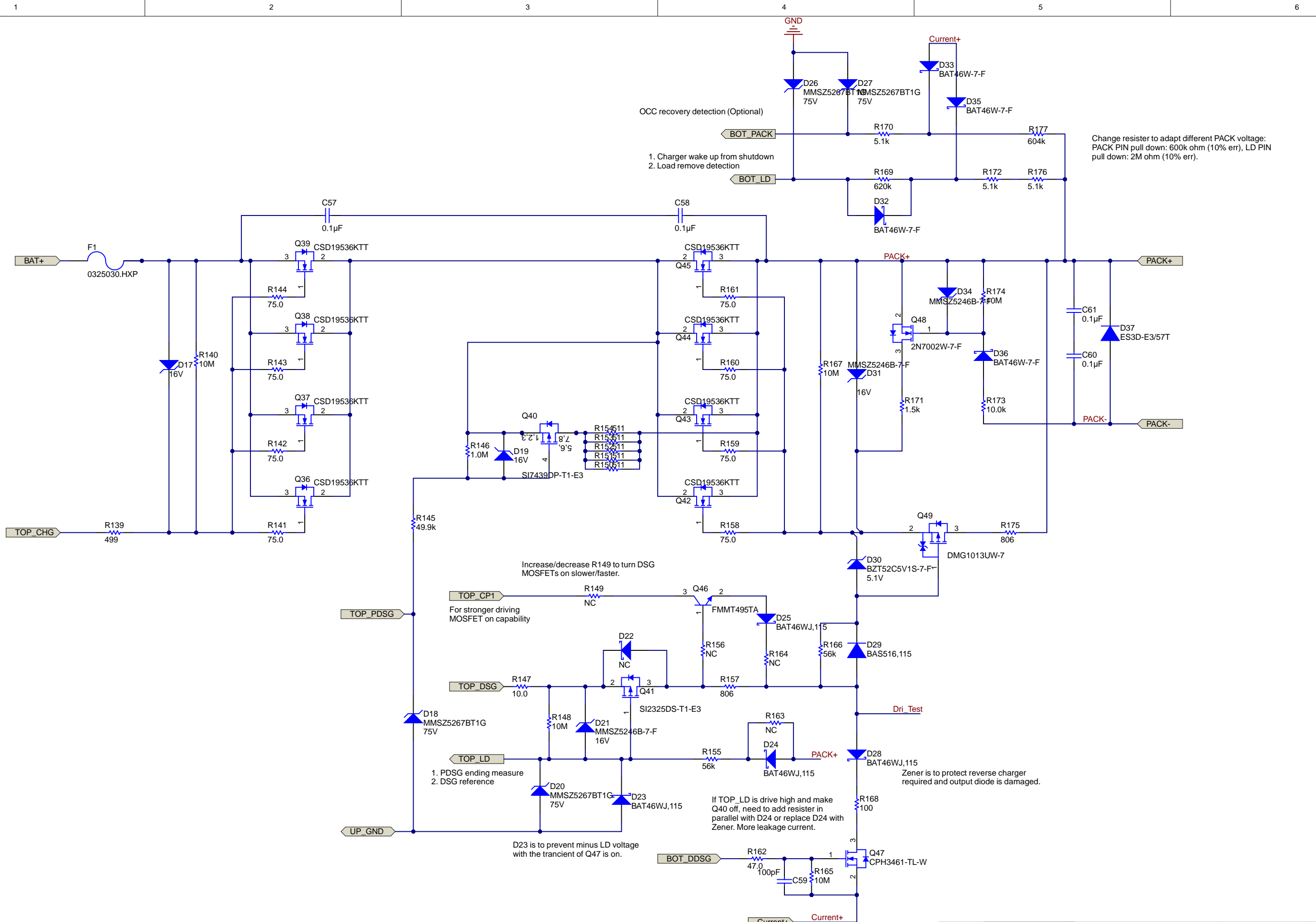


CAN is not supported by MSP430 MCU  
TCAN1042 short current: 130mA



THVD2410 short current: 250mA

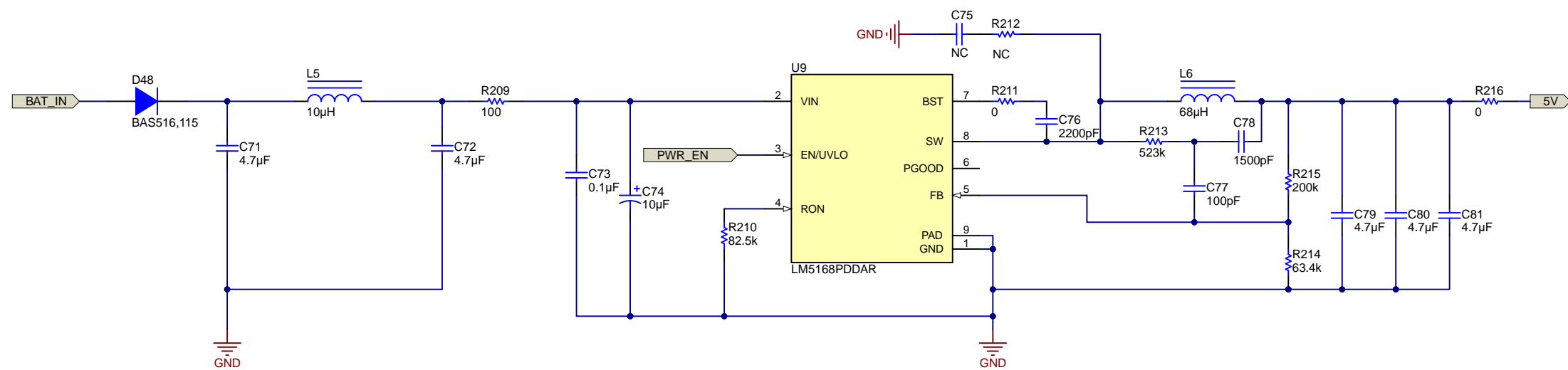




Orderable: N/A	Designed for: Public Release	Mod. Date: 11/21/2022
TID #: TIDA-010247	Project Title: Up to 32s high side N-MOSFET	
Number: TIDA-010247	Rev: E1	Sheet Title:
SVN Rev: Not in version control	Assembly Variant: [No Variations]	Sheet: 4 of 7
Drawn By:	File: High-side MOSFETs and driver.SchDoc	Size: B
Engineer: Ryan Tan	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

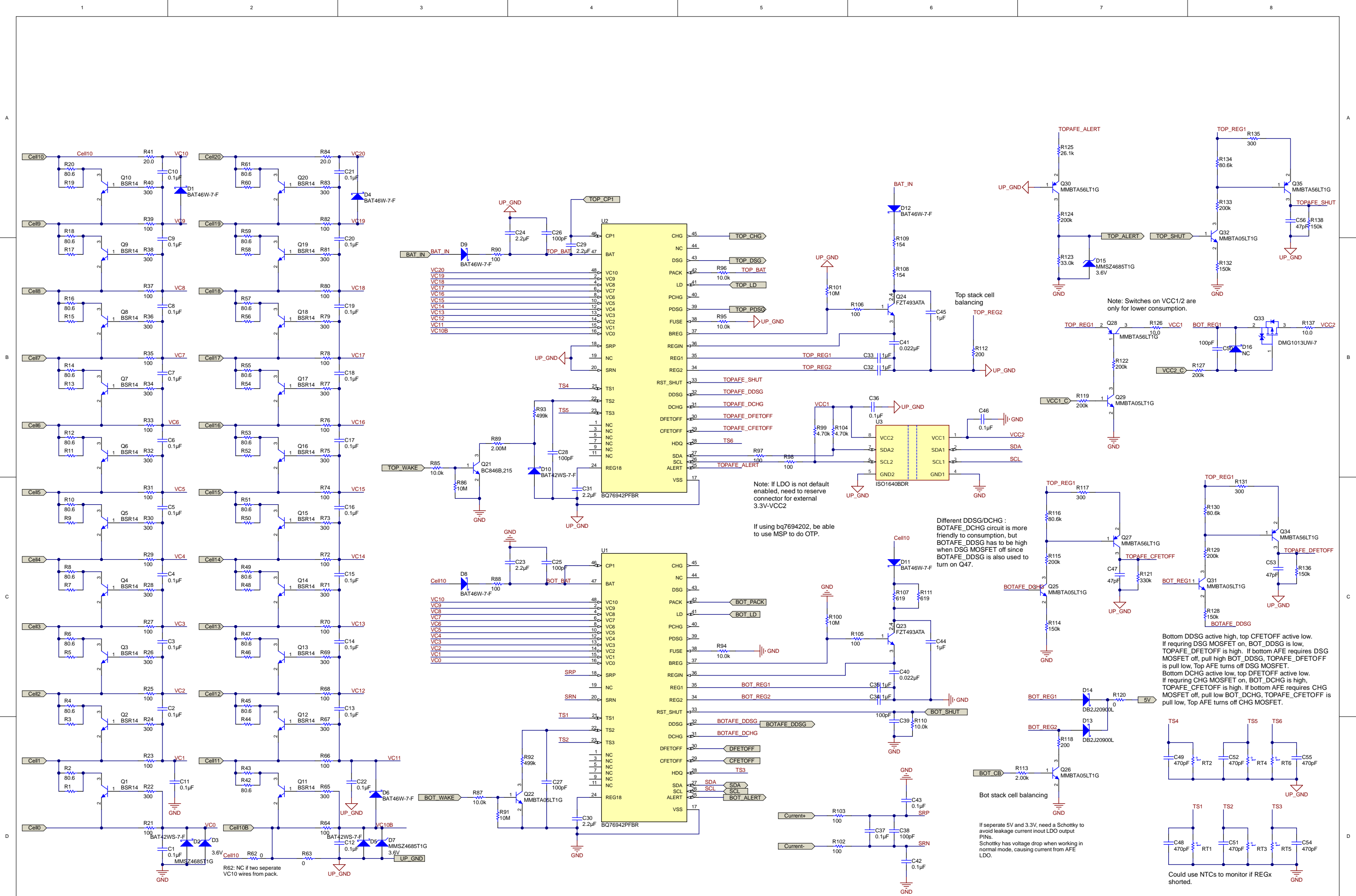




Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.

Orderable: N/A	Designed for: Public Release	Mod. Date: 11/10/2022
TID #: TIDA-010247	Project Title: Up to 32s high side N-MOSFET	
Number: TIDA-010247	Rev: E1	Sheet Title:
SVN Rev: Not in version control	Assembly Variant: [No Variations]	Sheet: 5 of 7
Drawn By:	File: Aux power.SchDoc	Size: B
Engineer: Ryan Tan	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	





Note: If LDO is not default enabled, need to reserve connector for external 3.3V-VCC2

If using bq7694202, be able to use MSP to do OTP.

Different DDSG/DCHG : BOTAFE\_DCHG circuit is more friendly to consumption, but BOTAFE\_DDSG has to be high when DSG MOSFET off since BOTAFE\_DDSG is also used to turn on Q47.

Note: Switches on VCC1/2 are only for lower consumption.

Bottom DDSG active high, top CFETOFF active low. If requiring DSG MOSFET on, BOT\_DDSG is low, TOPAFE\_DFETOFF is high. If bottom AFE requires DSG MOSFET off, pull high BOT\_DDSG, TOPAFE\_DFETOFF is pull low, Top AFE turns off DSG MOSFET.

Bottom DCHG active low, top DFETOFF active low. If requiring CHG MOSFET on, BOT\_DCHG is high, TOPAFE\_CFETOFF is high. If bottom AFE requires CHG MOSFET off, pull low BOT\_DCHG, TOPAFE\_CFETOFF is pull low, Top AFE turns off CHG MOSFET.

Bot stack cell balancing

If separate 5V and 3.3V, need a Schottky to avoid leakage current in/out LDO output pins. Schottky has voltage drop when working in normal mode, causing current from AFE LDO.

Could use NTCs to monitor if RegX shorted.

PCB Number: TIDA-010247  
PCB Rev: E1

PCB  
LOGO  
Texas Instruments

Variant/Label Table	
Variant	Label Text
001	ChangeMe!
002	ChangeMe!

Orderable:	Designed for: <b>Public Release</b>	Mod. Date: 11/22/2021
TID #: <a href="#">TIDA-010247</a>	Project Title: <a href="#">Up to 32s high side N-MOSFET</a>	
Number: <a href="#">TIDA-010247</a>   Rev: <b>E1</b>	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: <a href="#">[No Variations]</a>	Sheet: <b>7</b> of <b>7</b>
Drawn By:	File: <a href="#">EVM_Hardware.SchDoc</a>	Size: B
Engineer: <a href="#">Ryan Tan</a>	Contact: <a href="http://www.ti.com/support">http://www.ti.com/support</a>	

Texas Instruments and/or its licensors do not warrant the accuracy or completeness of this specification or any information contained therein. Texas Instruments and/or its licensors do not warrant that this design will meet the specifications, will be suitable for your application or fit for any particular purpose, or will operate in an implementation. Texas Instruments and/or its licensors do not warrant that the design is production worthy. You should completely validate and test your design implementation to confirm the system functionality for your application.



## IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATA SHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to [TI's Terms of Sale](#) or other applicable terms available either on [ti.com](http://ti.com) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

TI objects to and rejects any additional or different terms you may have proposed.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265  
Copyright © 2022, Texas Instruments Incorporated