

TIDA-00239

14 - 70V

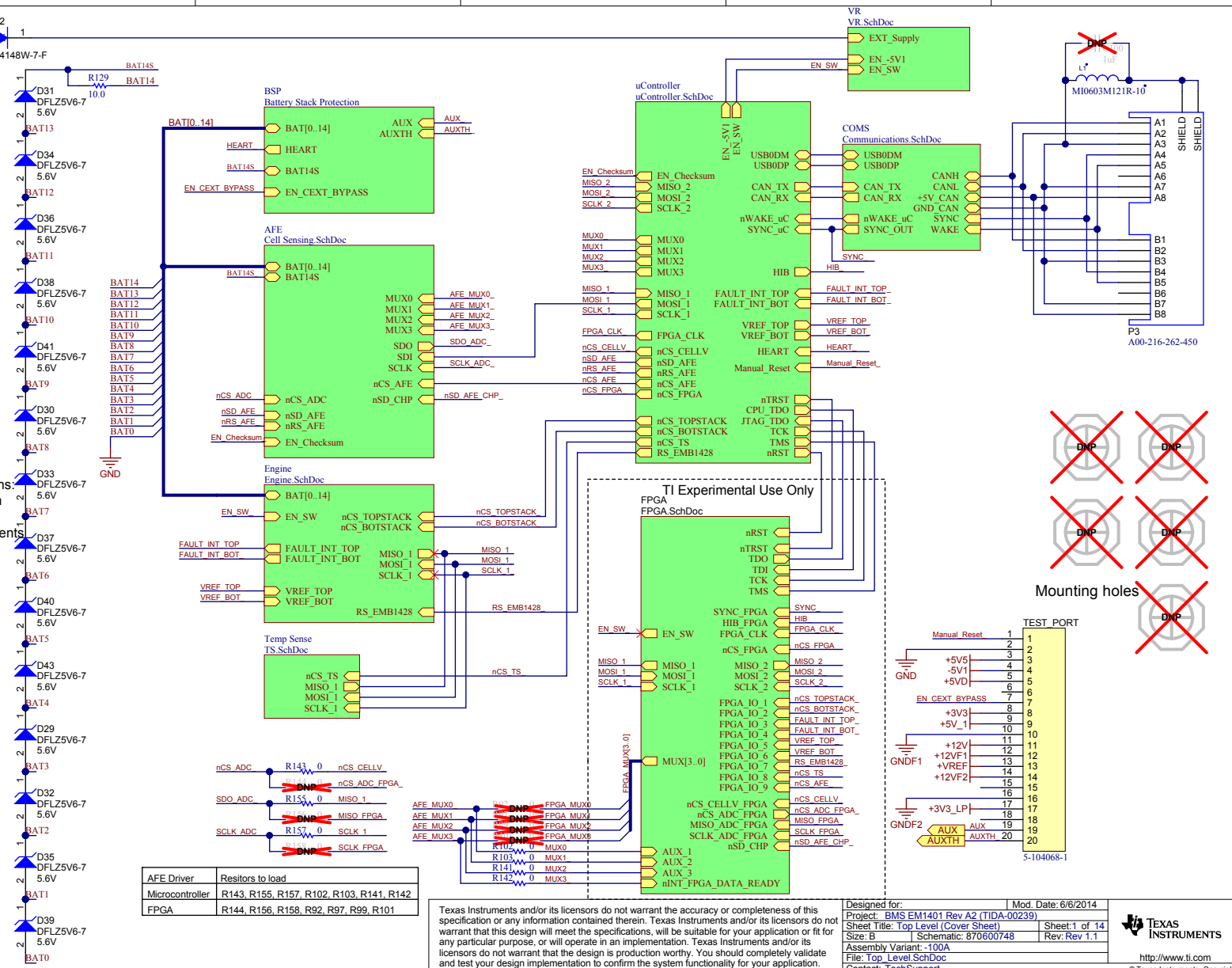
P2 provides way to power local housekeeping supplies from external source. If left unconnected, BAT14 will be automatically connected as source. The switch circuit can be found on the VR page.

BAT#	PartNumber
BAT0	1
BAT1	2
BAT2	3
BAT3	4
BAT4	5
BAT5	6
BAT6	7
BAT7	8
BAT8	9
BAT9	10
BAT10	11
BAT11	12
BAT12	13
BAT13	14
BAT14	15
BAT15	16
BAT16	17
BAT17	18
BAT18	19
BAT19	20
BAT20	BAT1

- The zener diodes are necessary to the system and serve 2 functions:
1. Provide overvoltage protection to the AFE inputs
 2. Provide a path for in-rush currents during hot plug-in

Power Port Definition	
+3V3	3.3V Power Rail
+3V3_LP	3.3V Power Rail
-5V1	-5V Power Rail
-5V2	-5V Power Rail
+5VD	Digital 5V Power Rail
+5V_1	5V Power Rail
+12V	12V Power Rail
GND	Power Ground
AGND	Analog Ground
RGND	Reference Ground
+12VF1	First Floating 12V Power Rail
GNDF1	First Floating Ground
+12VF2	Second Floating 12V Power Rail
GNDF2	Second Floating Ground

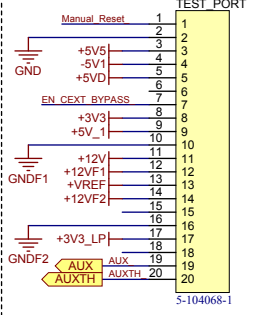
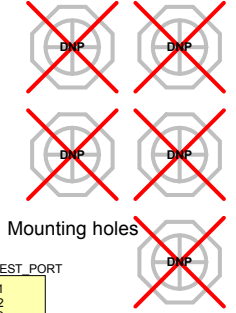
PCB LOGO
Texas Instruments



AFE Driver	Resistors to load
Microcontroller	R143, R155, R157, R102, R103, R141, R142
FPGA	R144, R156, R158, R92, R97, R99, R101

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Designed for:	Mod. Date: 6/6/2014
Project: BMS EM1401 Rev A2 (TIDA-00239)	
Sheet Title: Top Level (Cover Sheet)	Sheet: 1 of 14
Size: B	Rev: Rev 1.1
Assembly Variant: -100A	
File: Top_Level_SchDoc	
Contact: TechSupport	



A

B

C

D

A

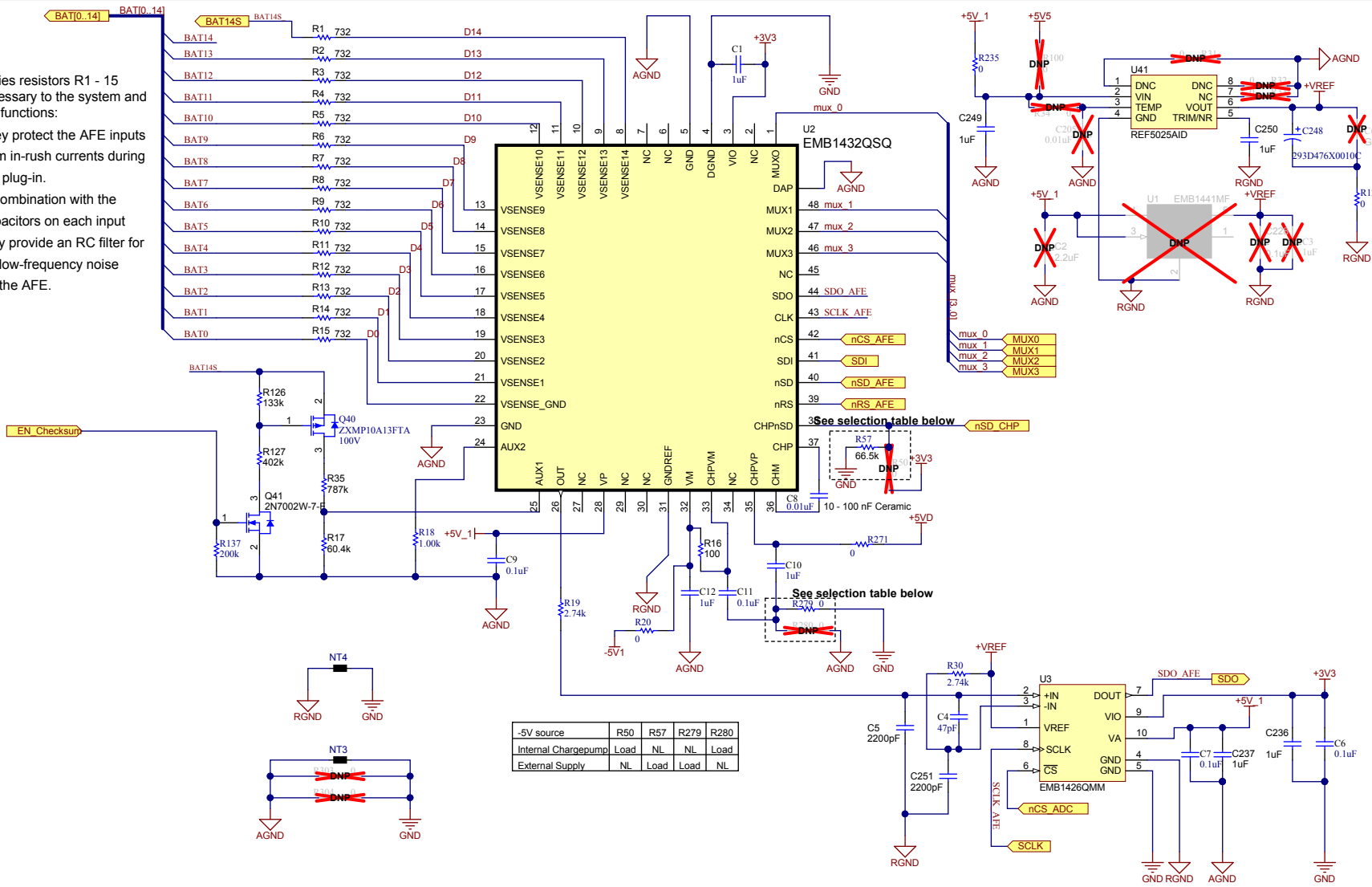
B

C

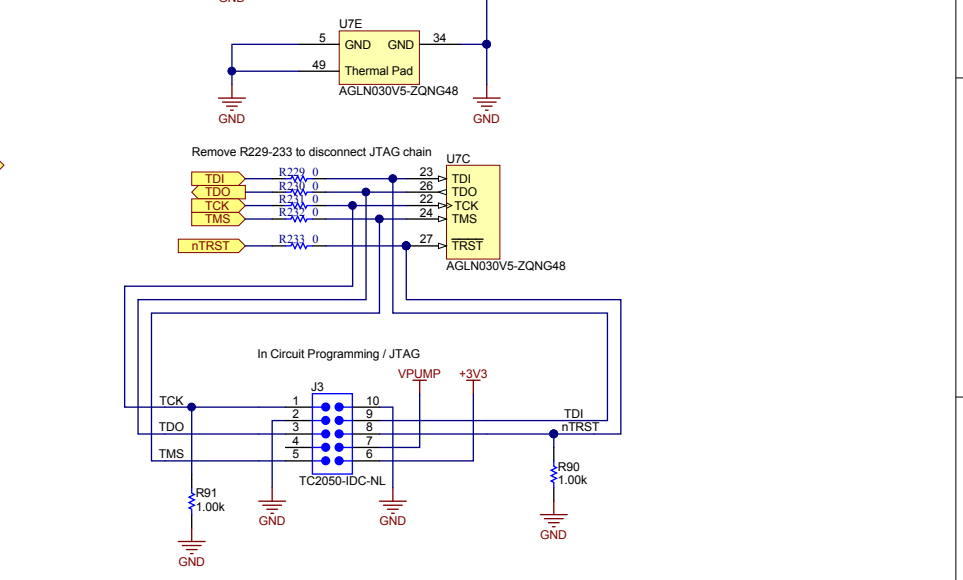
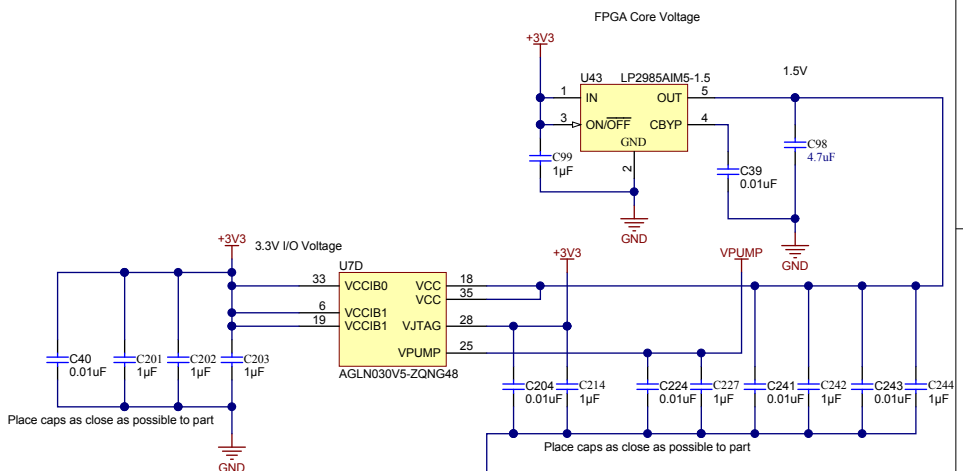
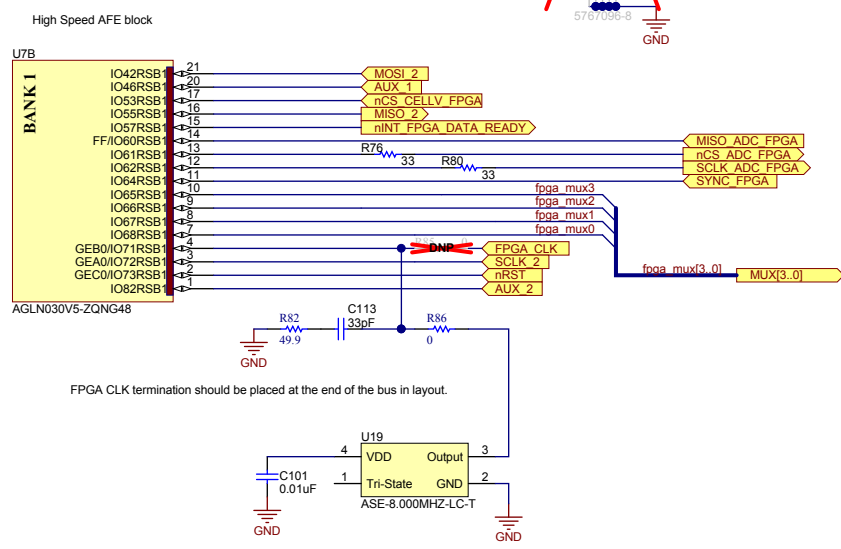
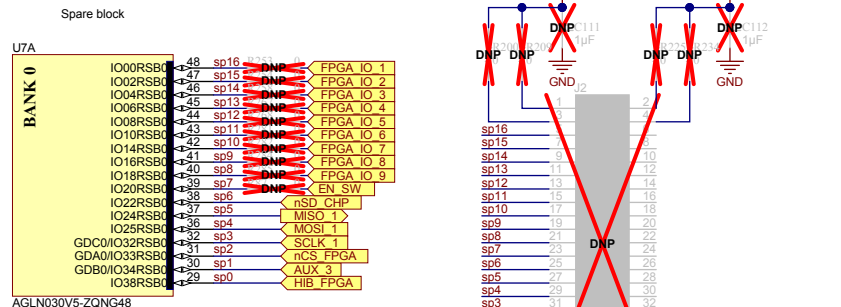
D

The series resistors R1 - 15 are necessary to the system and serve 2 functions:

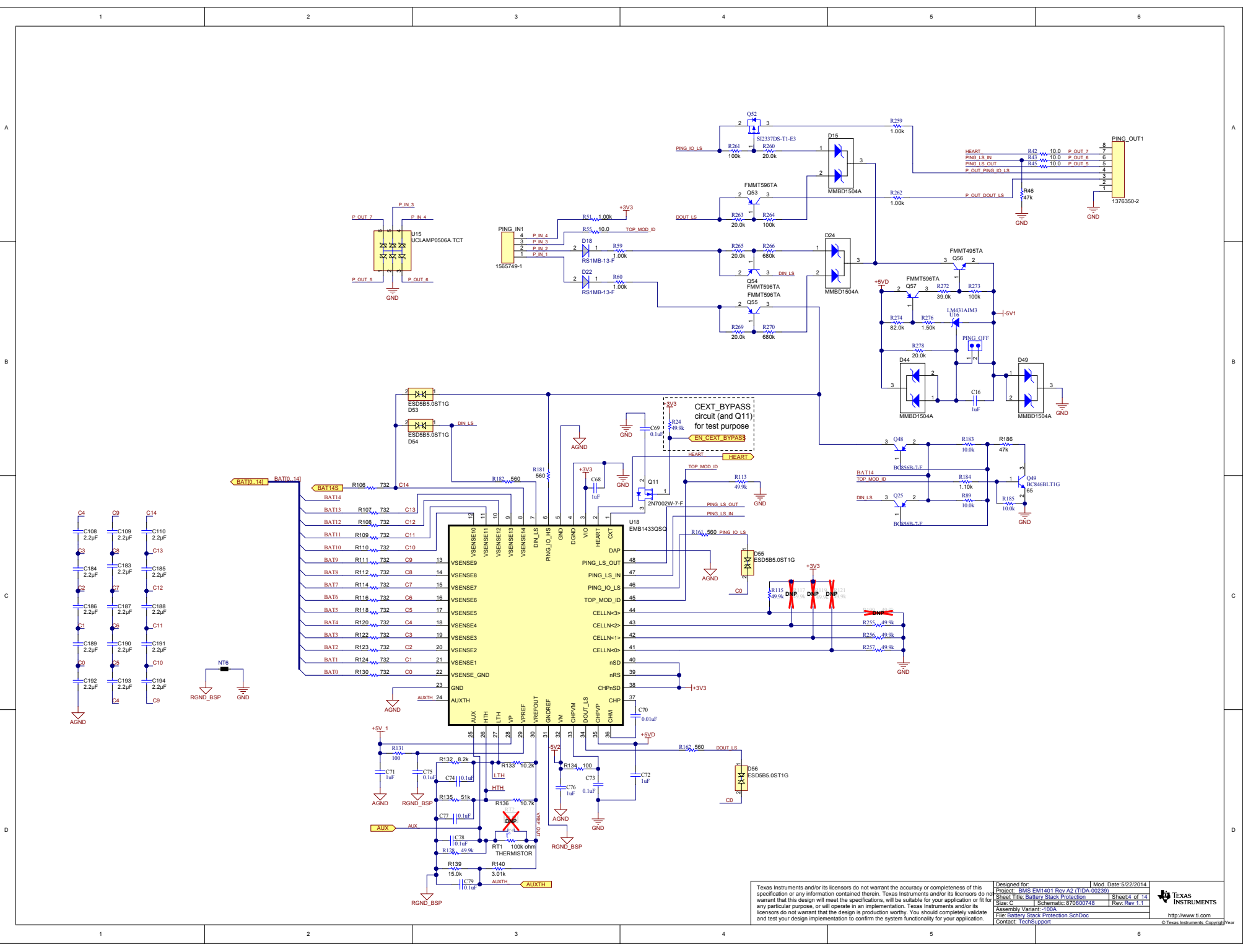
1. They protect the AFE inputs from in-rush currents during hot plug-in.
2. In combination with the capacitors on each input they provide an RC filter for low-frequency noise for the AFE.



-5V source	R50	R57	R279	R280
Internal Chargepump	Load	NL	NL	Load
External Supply	NL	Load	Load	NL



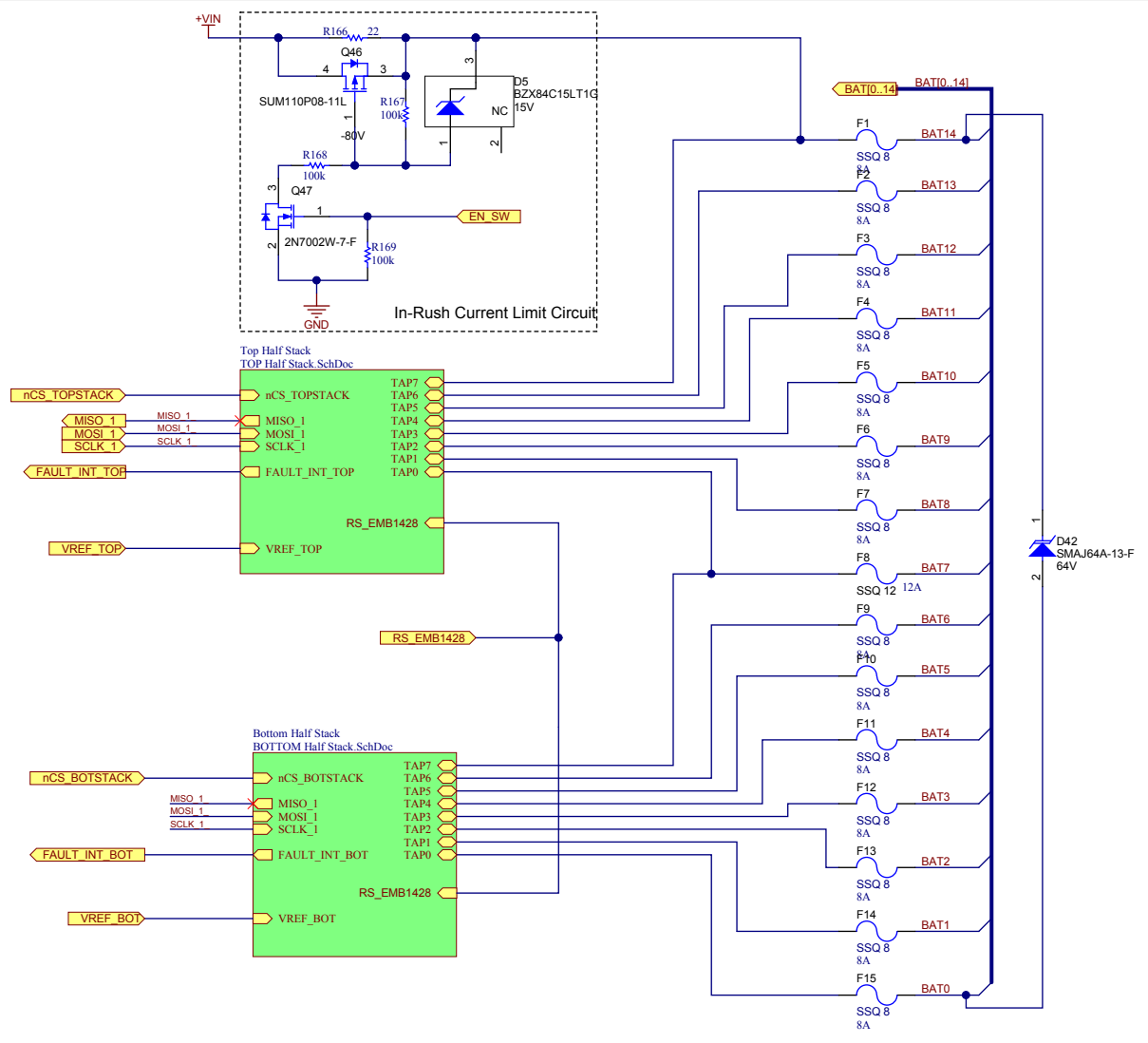
TI Experimental Use Only
The circuits on this page are not used by customers

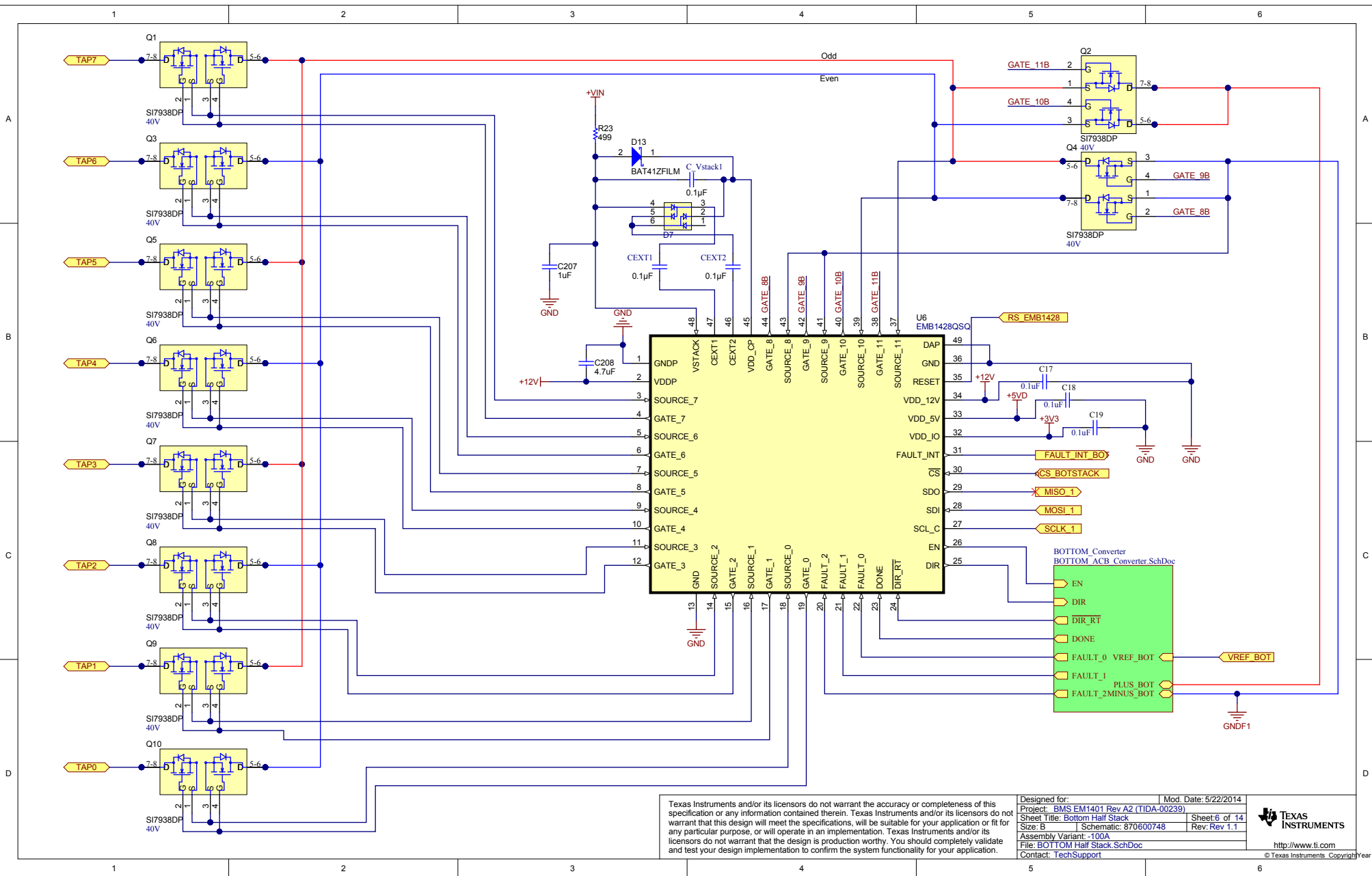


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Designed for:	Mod. Date: 5/22/2014
Project: BMS EM1401 Rev A2 (TIDA-02939)	Sheet Title: Battery Stack Protection
Sheet Title: Battery Stack Protection	Sheet4 of 14
Size: C	Schematic: 870600748
Assembly Variant: 1006	Rev: Rev 1.1
File: Battery Stack Protection SchDoc	
Contact: TechSupport	

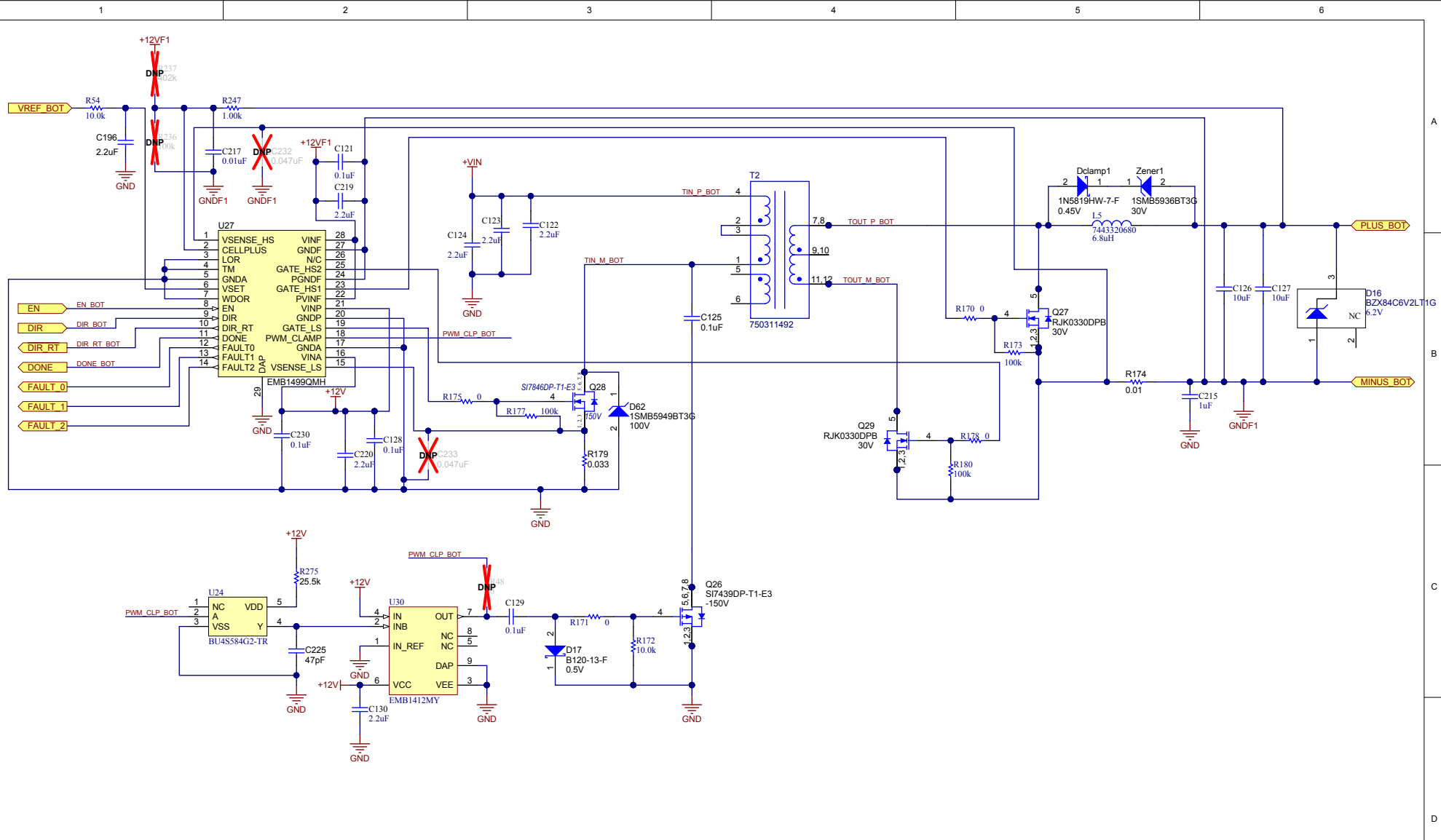


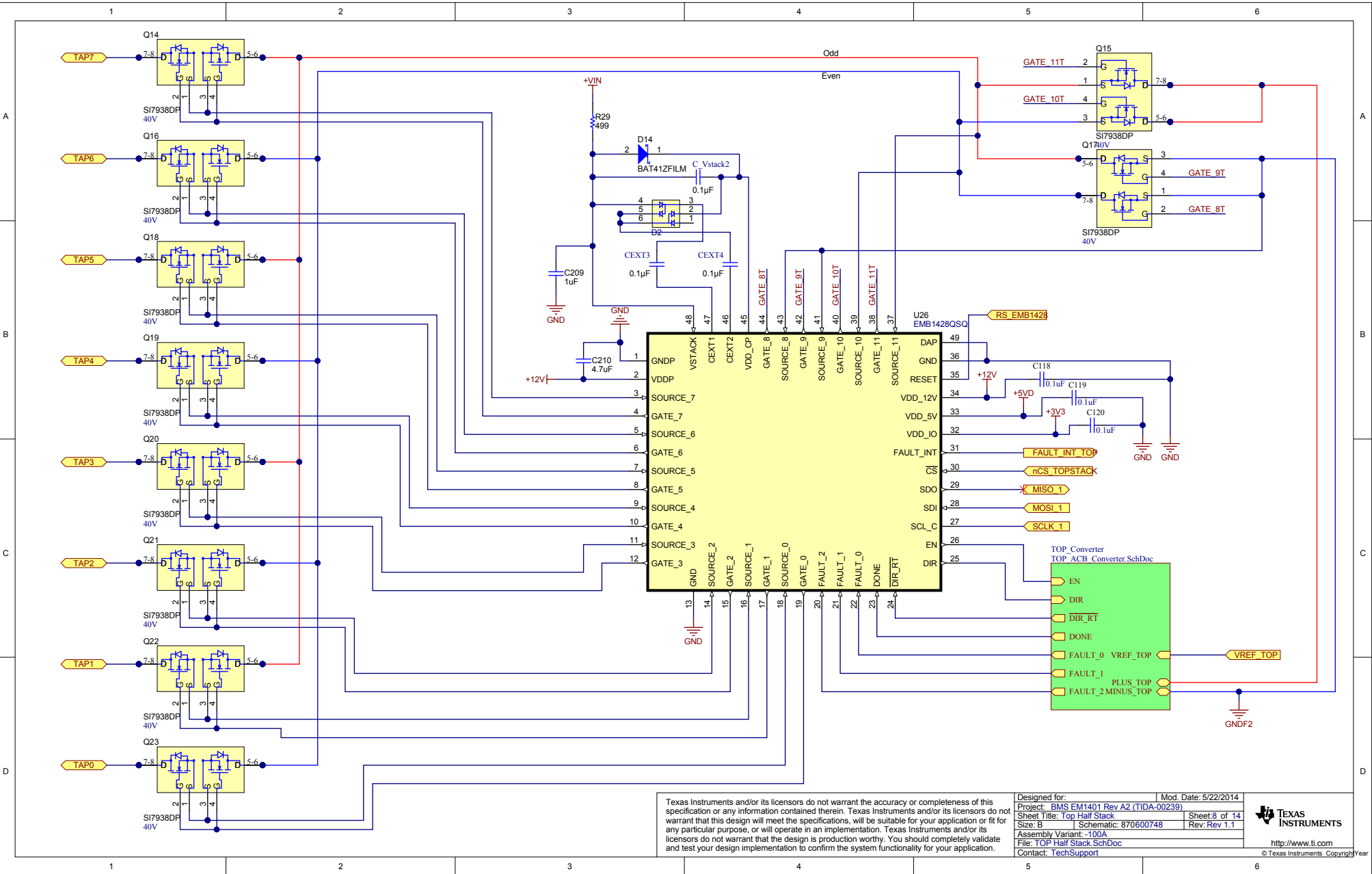




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Designed for:	Mod. Date: 5/22/2014
Project: BMS EM1401 Rev A2 (TIDA-00239)	
Sheet Title: Bottom Half Stack	Sheet 6 of 14
Size: B	Schematic: 870600748
Rev: Rev 1.1	
Assembly Variant: -100A	
File: BOTTOM_Half_Stack_SchDoc	
Contact: TechSupport	

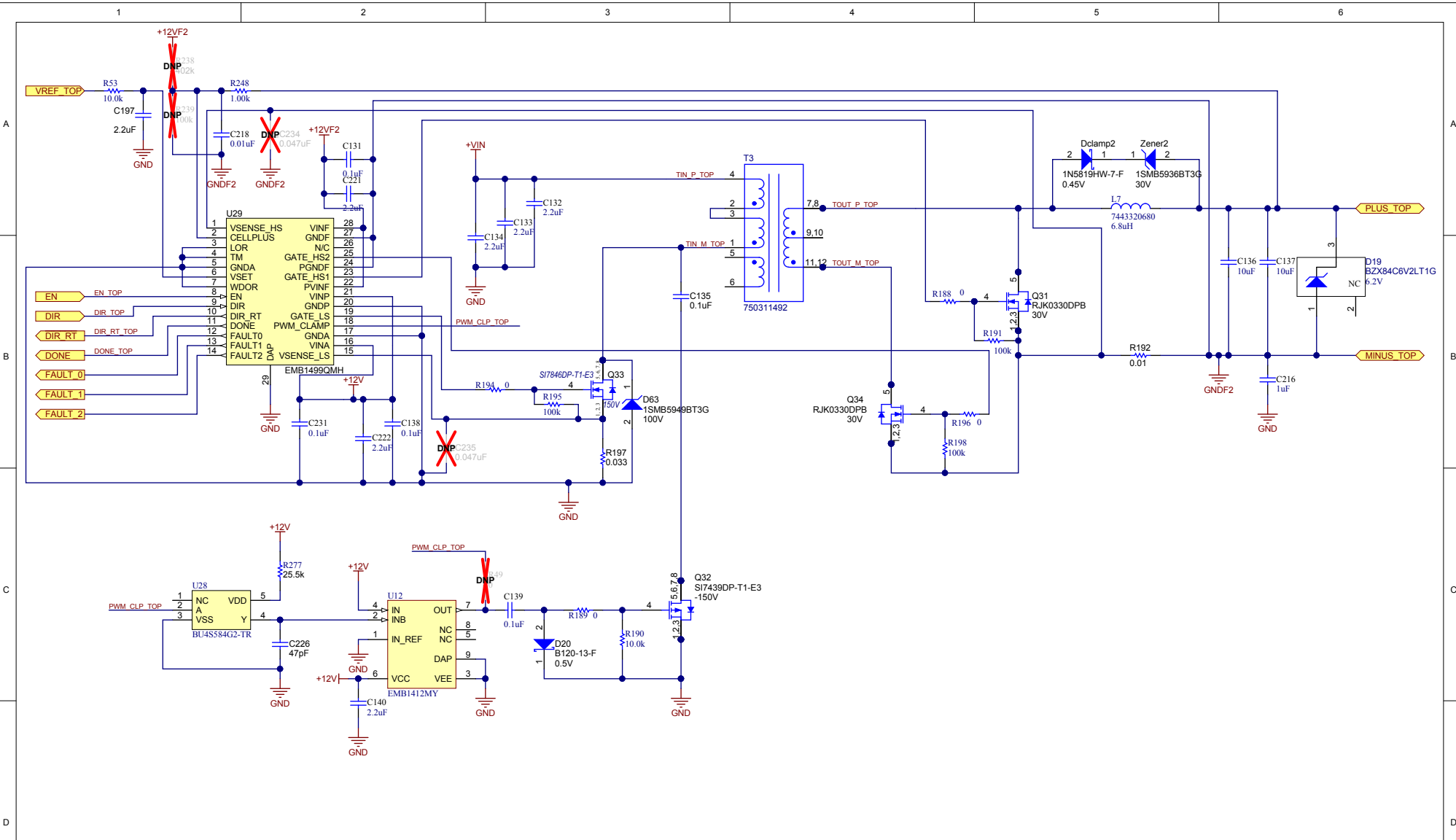


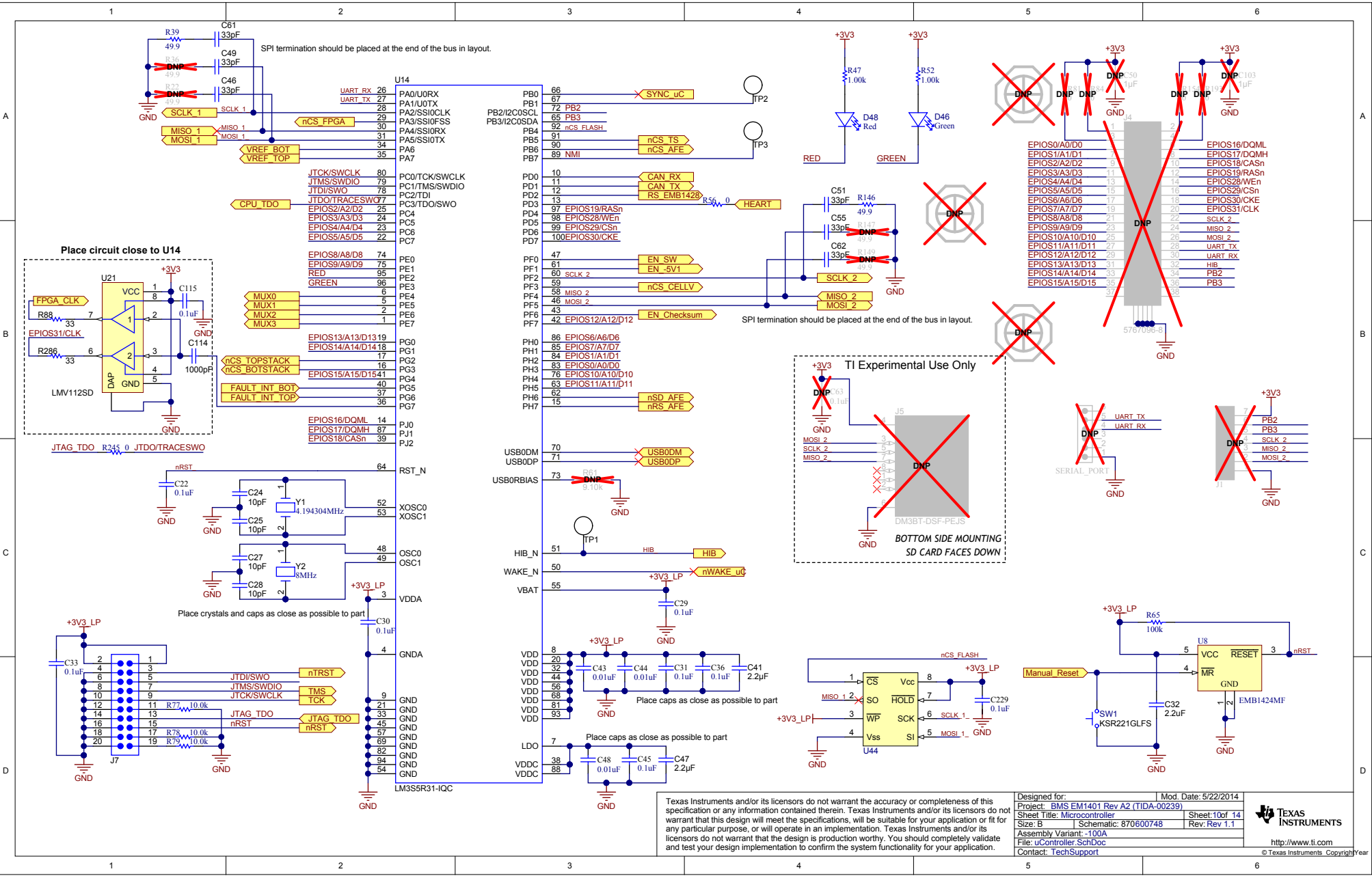


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Designed for:	Mod. Date: 5/22/2014
Project: BMS EM1401 Rev A2 (TIDA-00239)	
Sheet Title: Top Half Stack	Sheet 8 of 14
Size: B	Schematic: 870600748
Assembly Variant: -100A	Rev: Rev 1.1
File: TOP Half Stack SchDoc	
Contact: TechSupport	



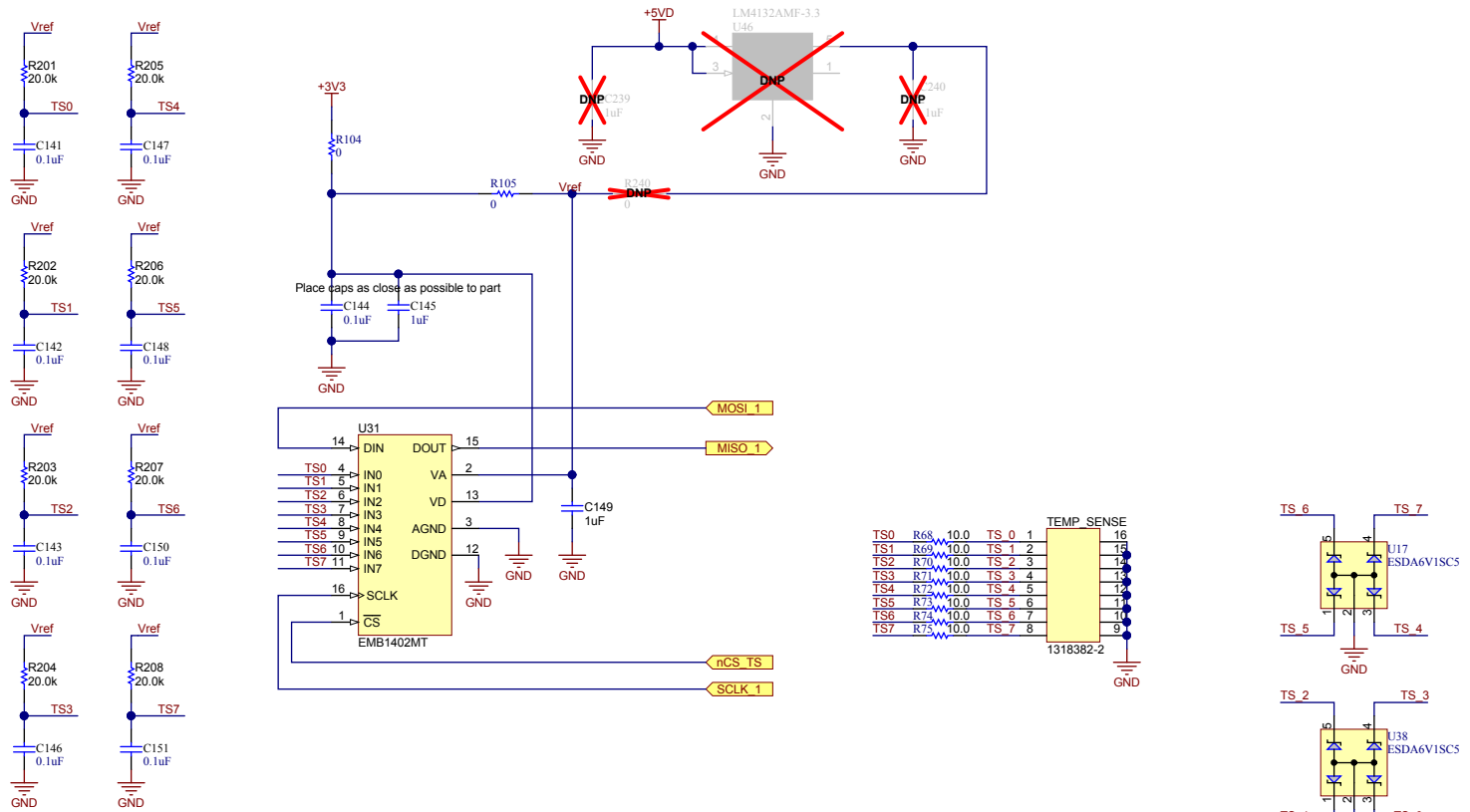




Designed for: Mod. Date: 5/22/2014
 Project: BMS EM1401 Rev A2 (TIDA-00239)
 Sheet Title: Microcontroller Sheet 10 of 14
 Size: B Schematic: 870600748 Rev: Rev 1.1
 Assembly Variant: -100A
 File: uController_SchDoc
 Contact: TechSupport

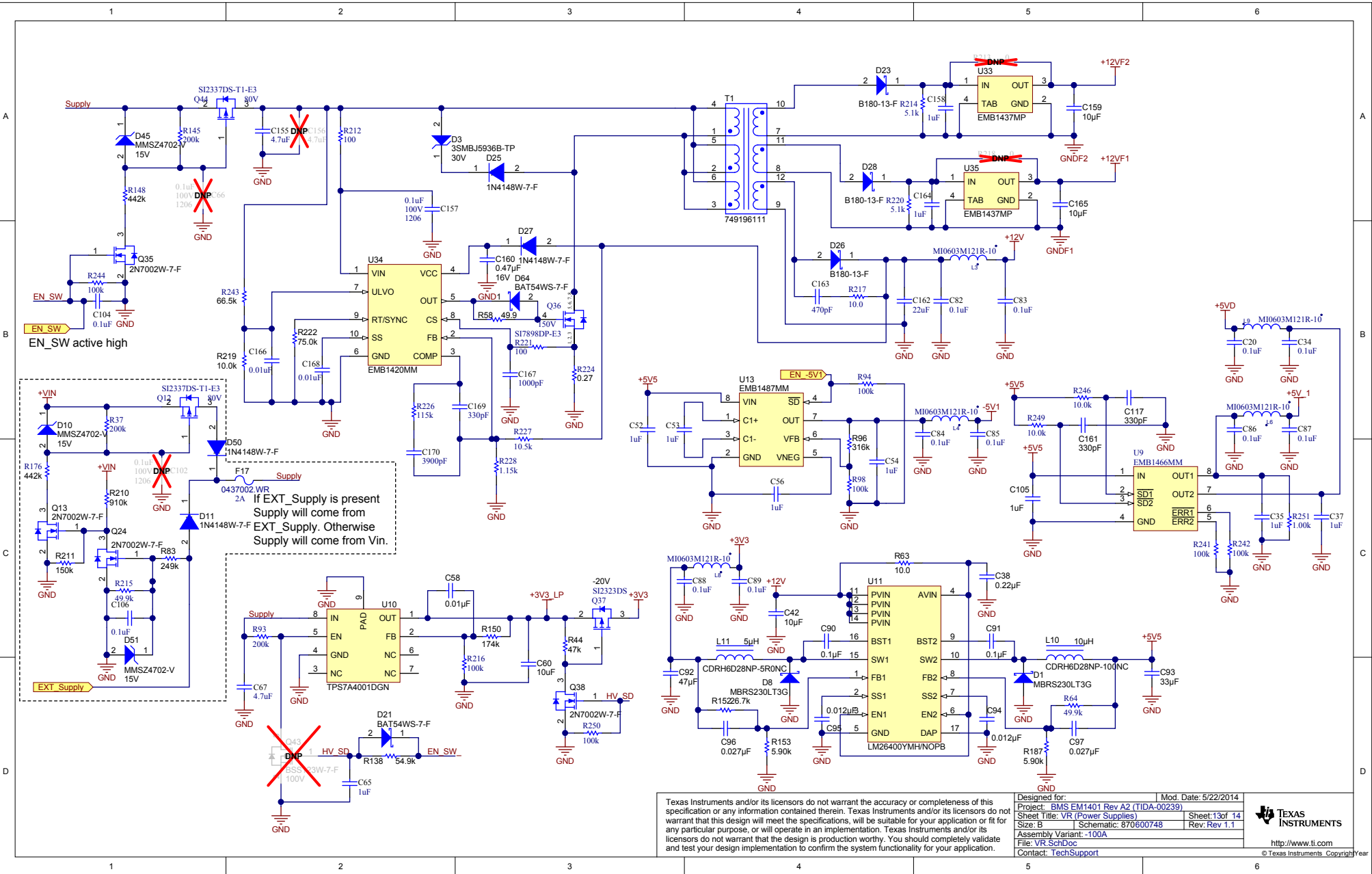
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Designed for:	Mod. Date: 5/22/2014
Project: BMS EM1401 Rev A2 (TIDA-00239)	
Sheet Title: Temp Sense	Sheet: 12 of 14
Size: B	Rev: Rev 1.1
Assembly Variant: -100A	
File: TS_Sch1.Doc	
Contact: TechSupport	



Designed for: _____ Mod. Date: 5/22/2014
 Project: BMS EM1401 Rev A2 (TIDA-00239)
 Sheet Title: VR (Power Supplies) Sheet 13 of 14
 Size: B Schematic: 870600748 Rev: Rev 1.1
 Assembly Variant: -100A
 File: VR_Sch1.Doc
 Contact: TechSupport

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