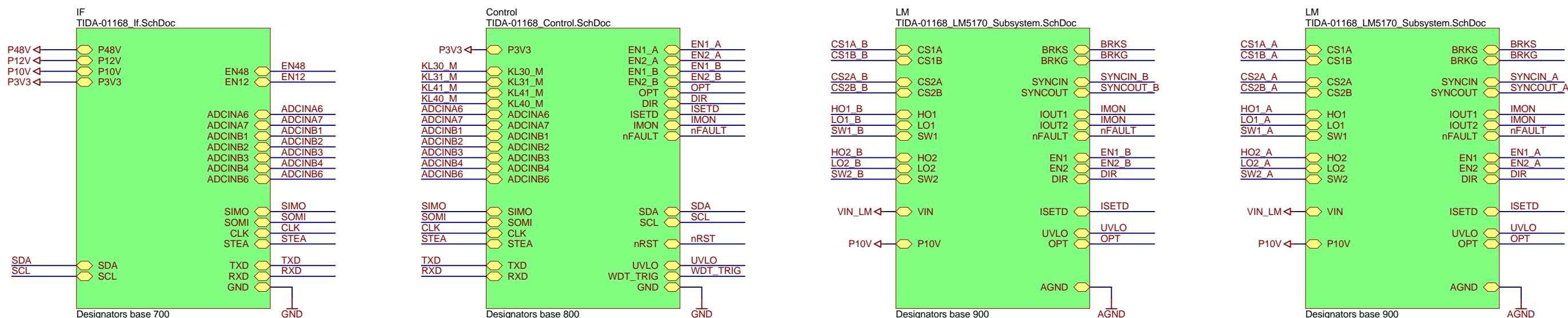
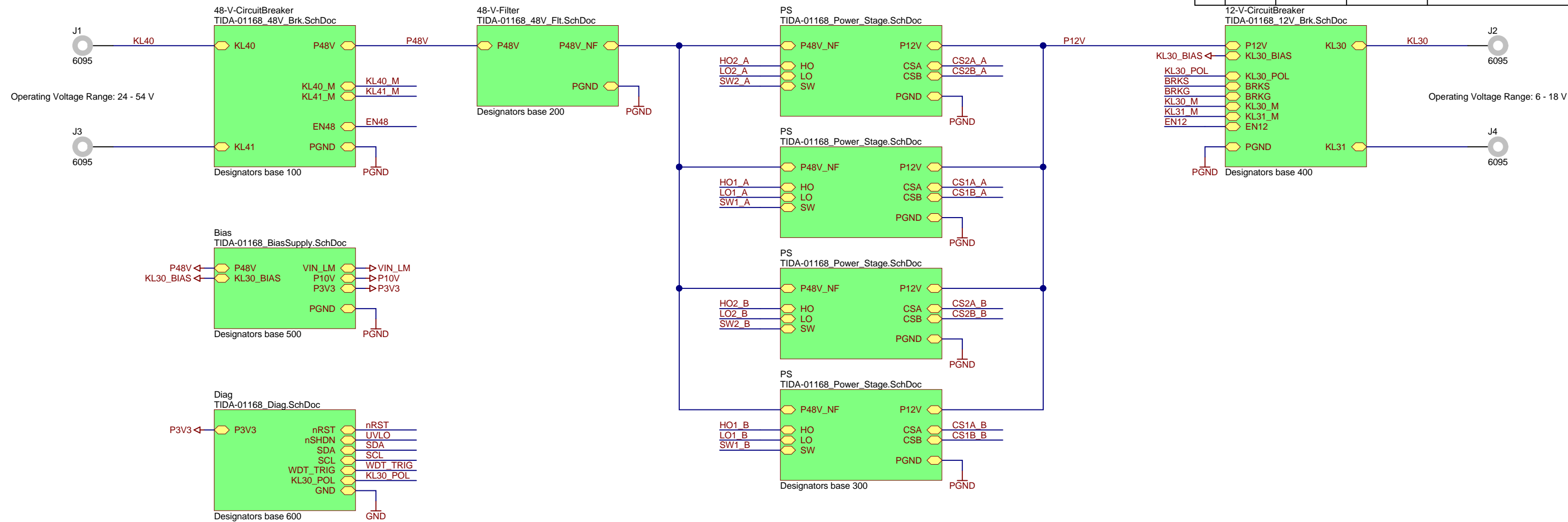
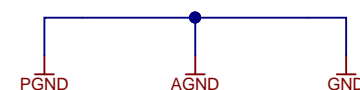


Revision History				
Rev	ECN #	Approved Date	Approved by	Notes
E1	N/A	N/A	N/A	Initial Version
E1	N/A	N/A	N/A	Release Version



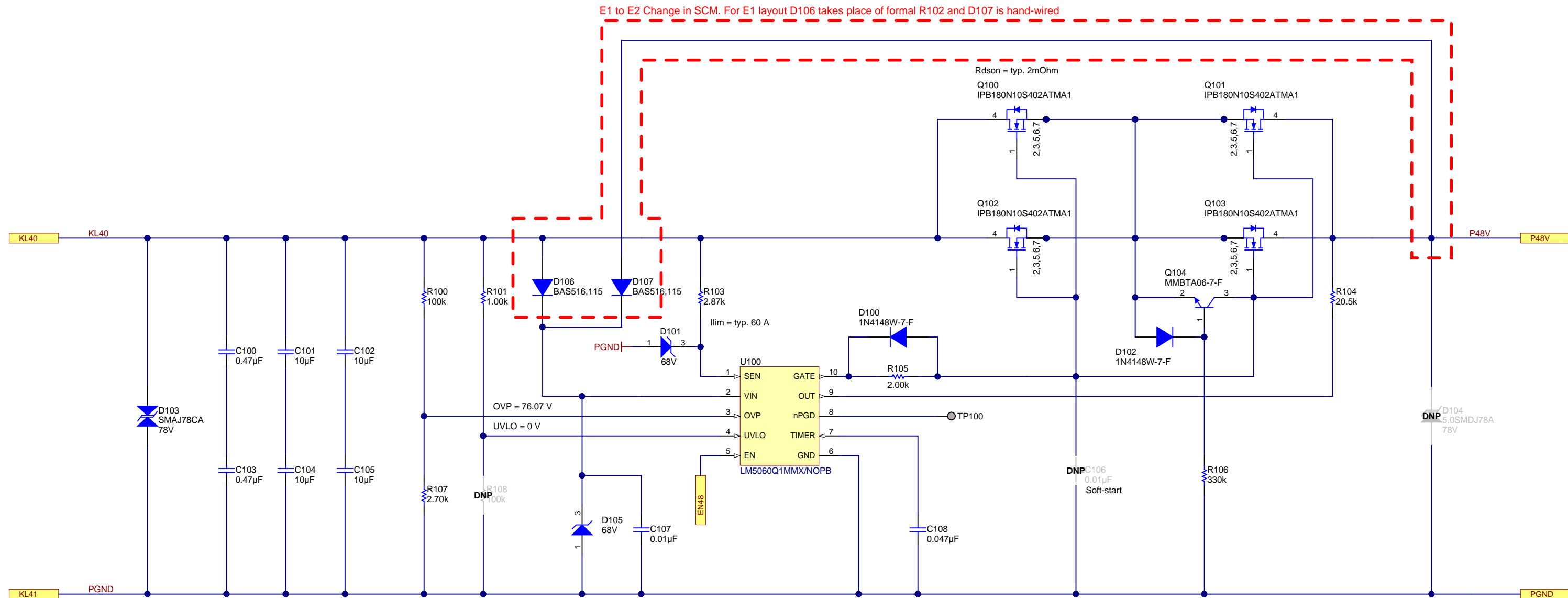
Miscellaneous
TIDA-01168_Hardware.SchDoc



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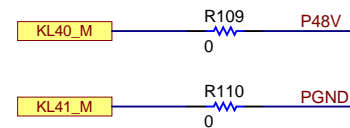
Orderable: N/A	Designed for: Public Release	Mod. Date: 03-Mar-17
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: Block Diagram
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 1 of 11
Drawn By:	File: TIDA-01168_Hierarchy.SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	





E1 to E2 Change in SCM. For E1 layout D106 takes place of formal R102 and D107 is hand-wired

Kelvin connection, check the PCB layout

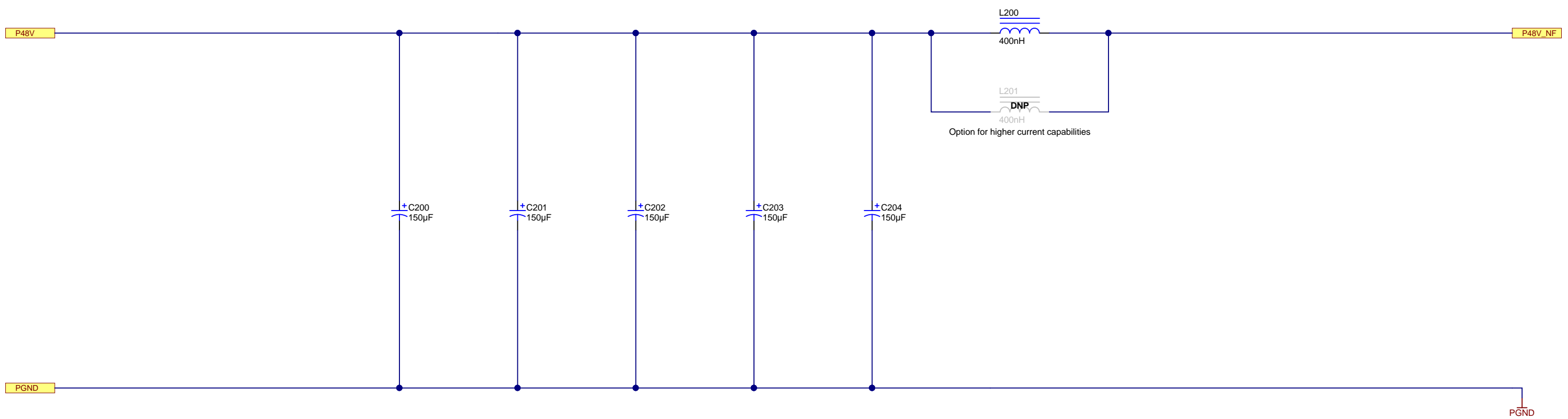


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Orderable: N/A	Designed for: Public Release	Mod. Date: 19-Mar-17
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: 48-V Circuit Breaker
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 2 of 11
Drawn By:	File: TIDA-01168_48V_Brk.SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	



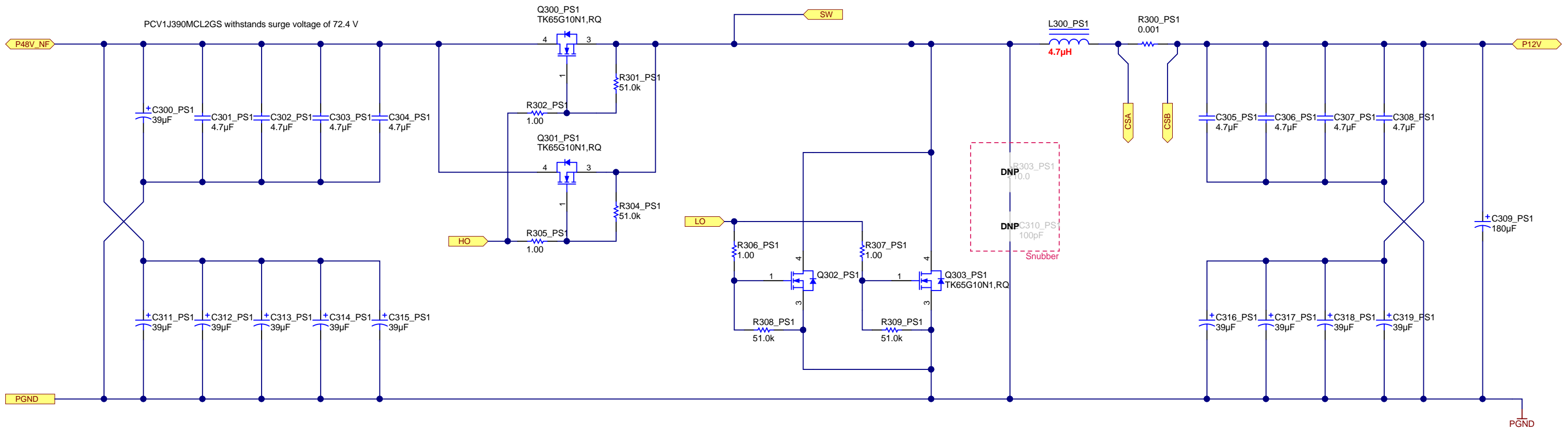
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Orderable: N/A	Designed for: Public Release	Mod. Date: 26-Jan-17
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: 48-V Filter
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 3 of 11
Drawn By:	File: TIDA-01168_48V_Flt.SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	

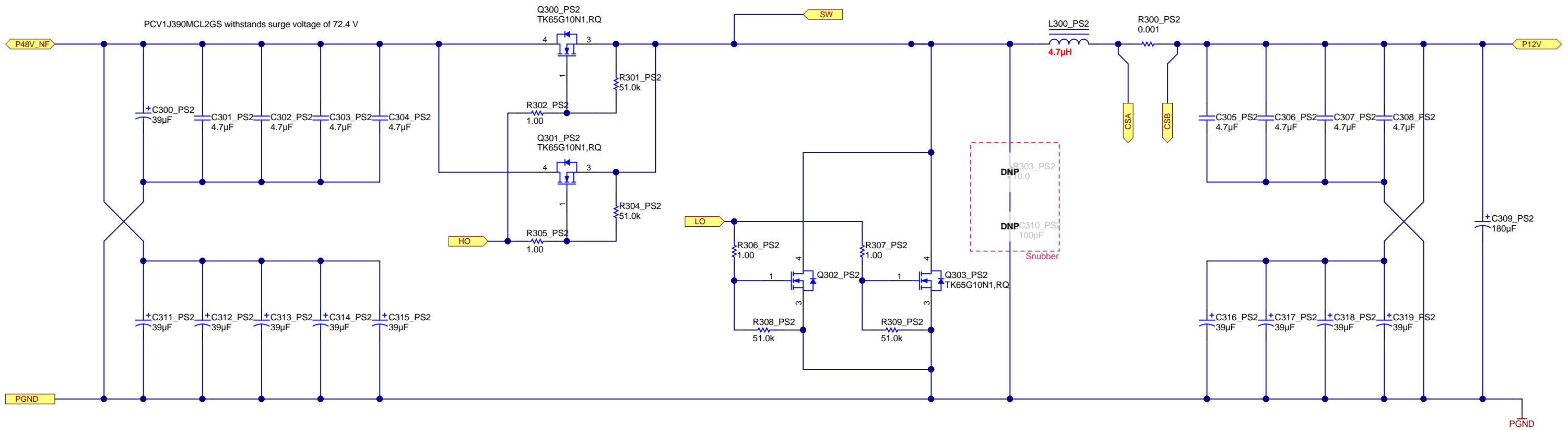




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Orderable: N/A	Designed for: Public Release	Mod. Date: 26-Jan-17
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: Power Stage
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 4 of 11
Drawn By:	File: TIDA-01168_Power_Stage.SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	

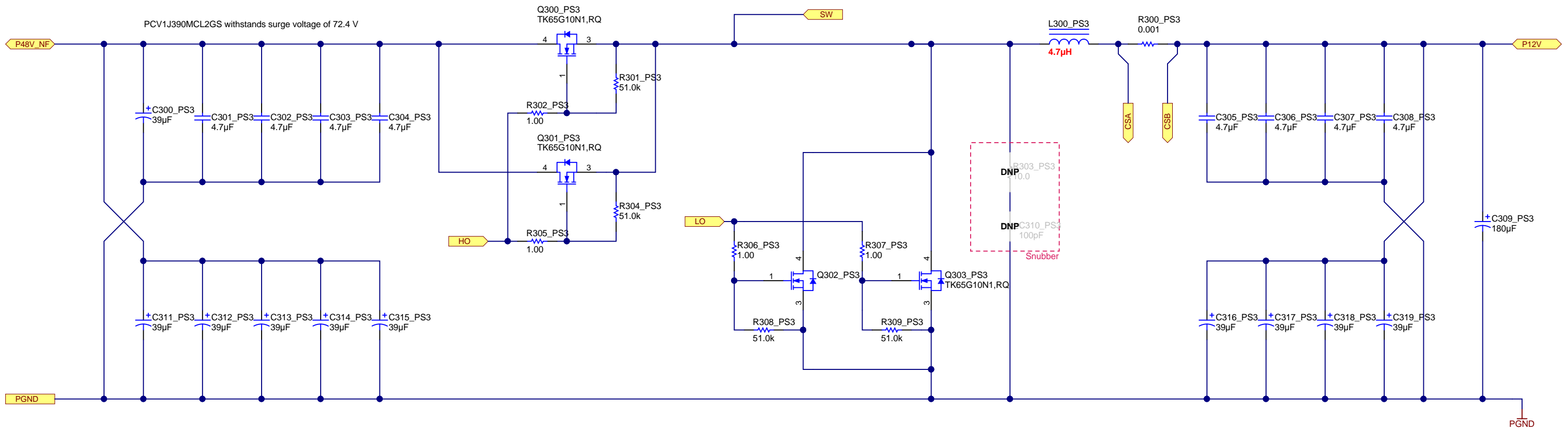




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Orderable: N/A	Designed for: Public Release	Mod. Date: 26-Jan-17
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: Power Stage
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 4 of 11
Drawn By:	File: TIDA-01168_Power_Stage.SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	

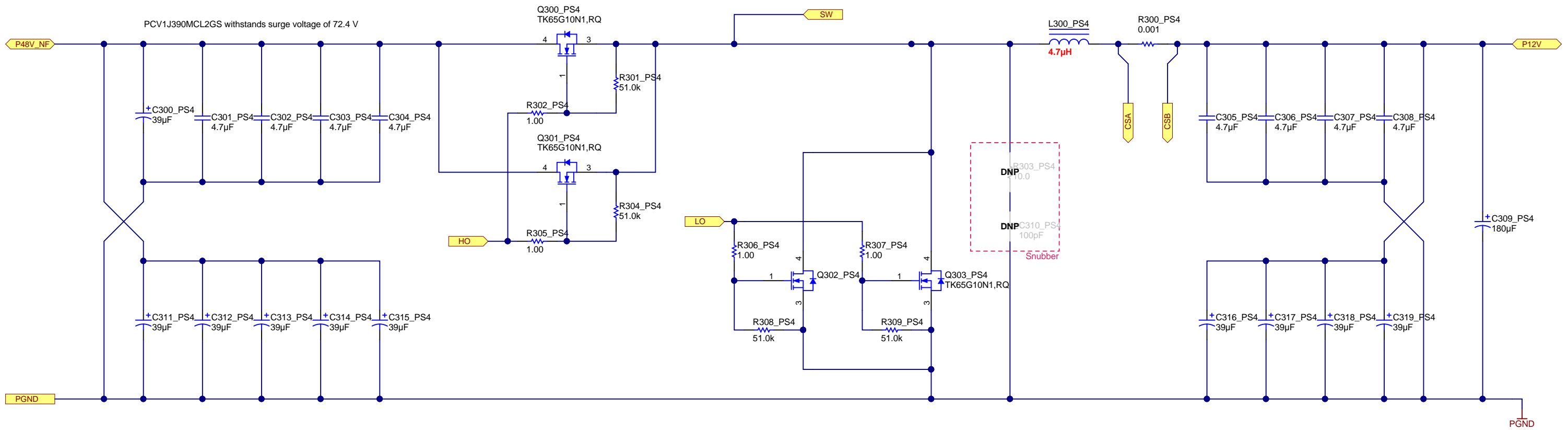




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Orderable: N/A	Designed for: Public Release	Mod. Date: 26-Jan-17
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: Power Stage
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 4 of 11
Drawn By:	File: TIDA-01168_Power_Stage.SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	

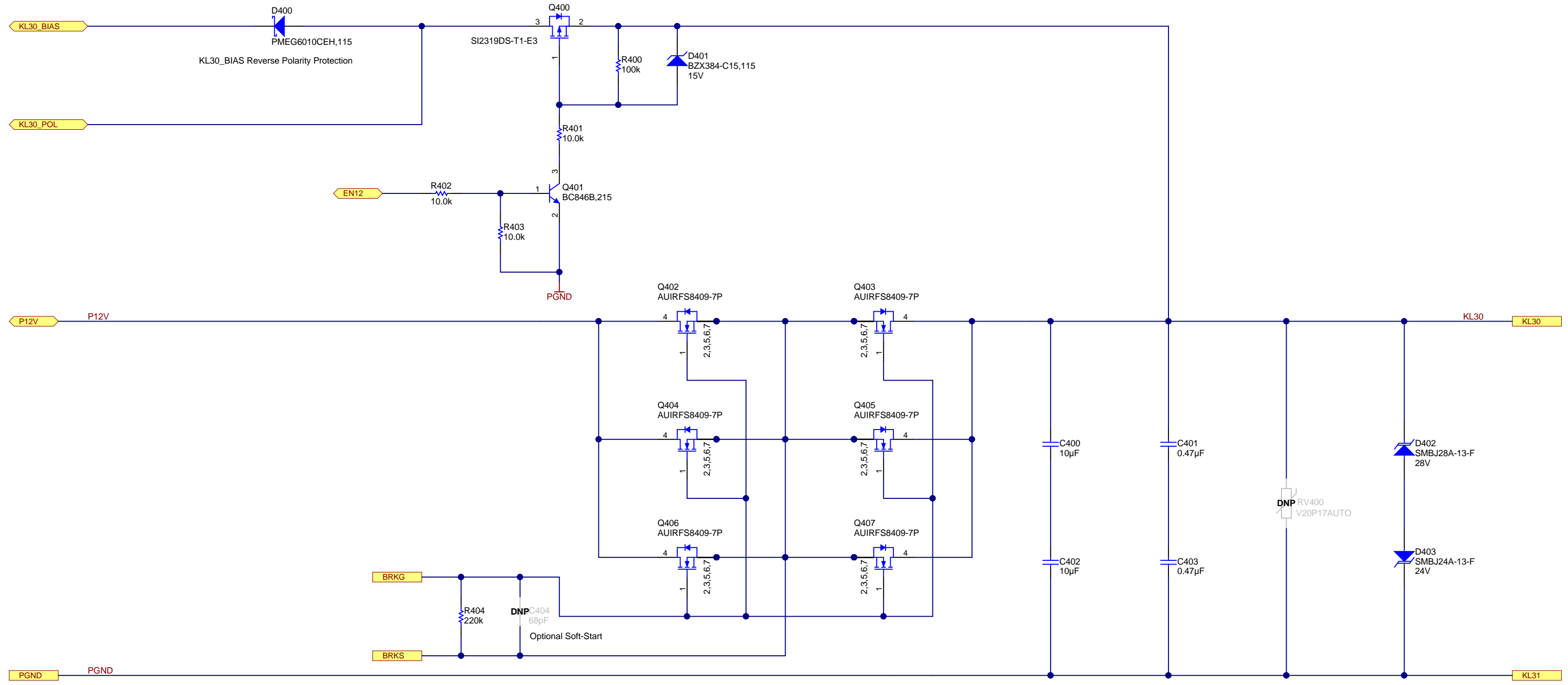




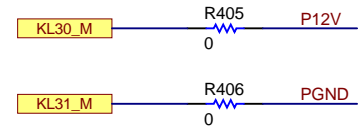
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Orderable: N/A	Designed for: Public Release	Mod. Date: 26-Jan-17
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: Power Stage
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 4 of 11
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Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	





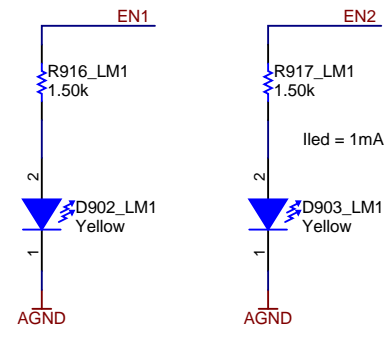
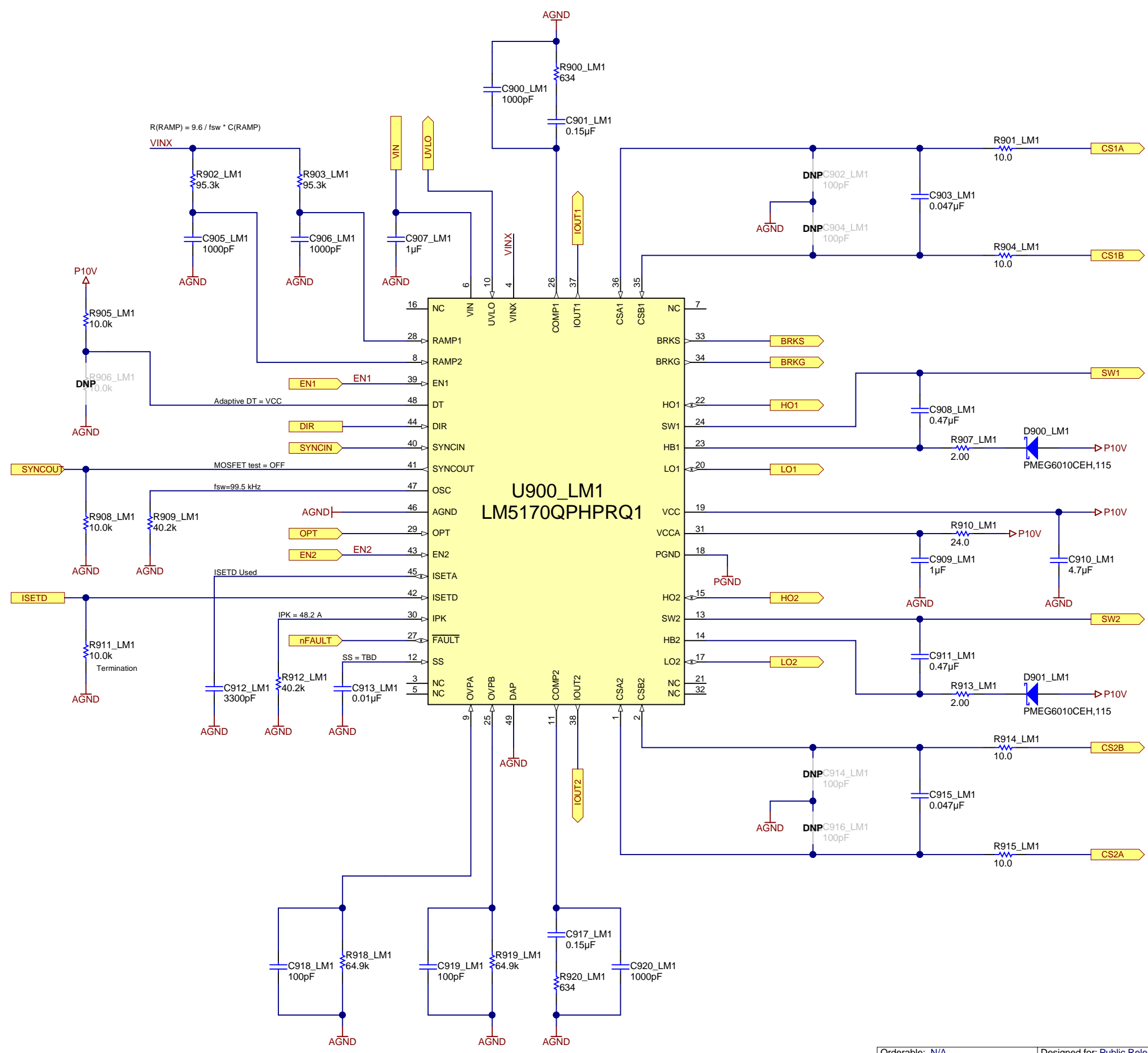
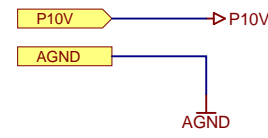
Kelvin connection, check the PCB layout



Orderable: N/A	Designed for: Public Release	Mod. Date: 09-Sep-16
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: 12-V Circuit Breaker
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 5 of 11
Drawn By:	File: TIDA-01168_12V_Brk.SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	http://www.ti.com

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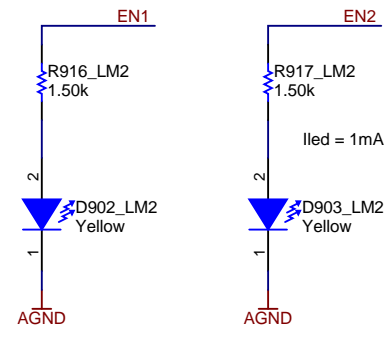
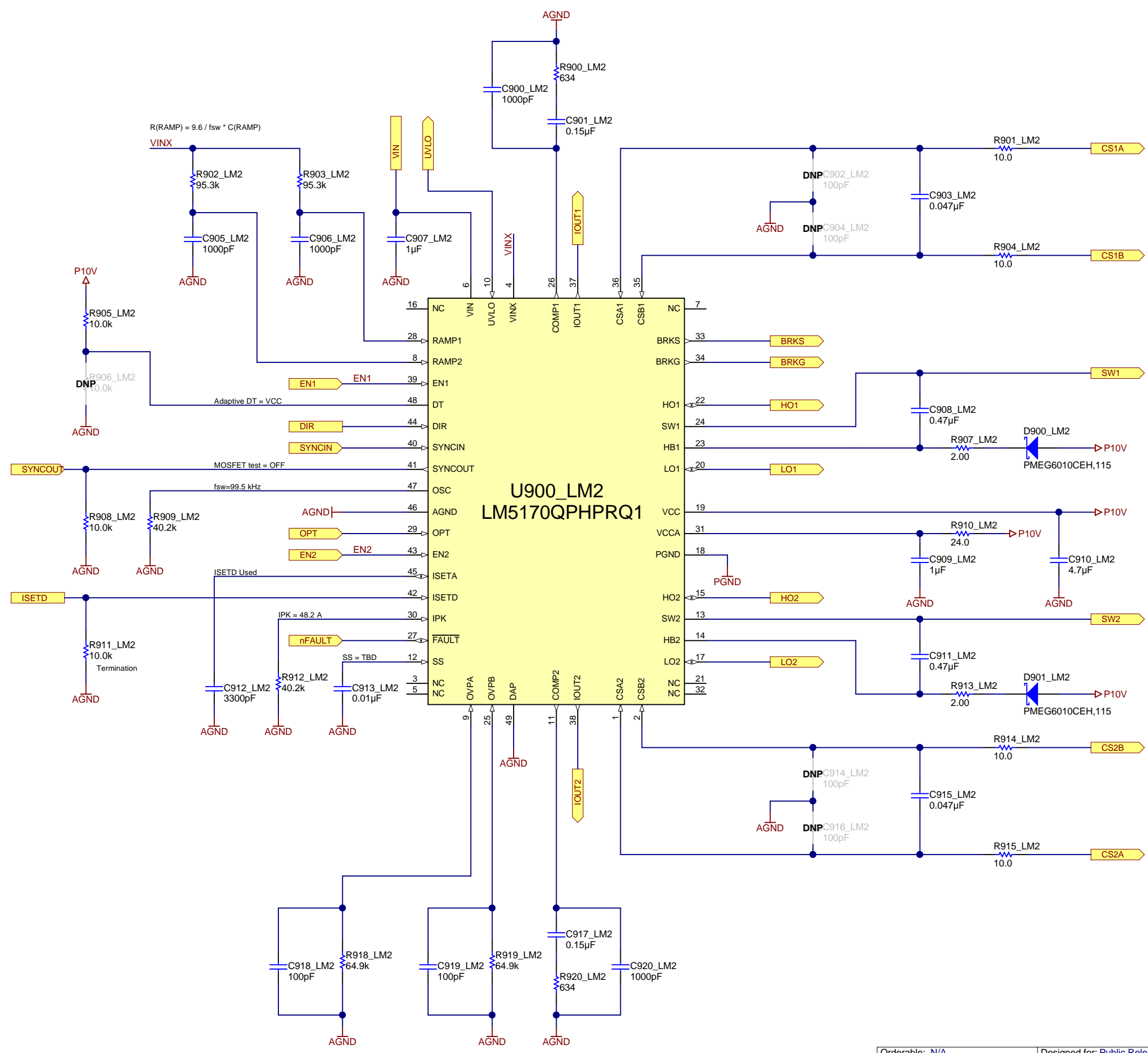
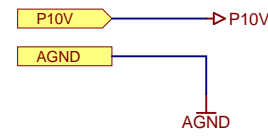


48-V OVP Limit = 56.0 V 12-V OVP Limit = 19.4 V

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Orderable: N/A	Designed for: Public Release	Mod. Date: 26-Jan-17
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: LM5170 Subsystem
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 6 of 11
Drawn By:	File: TIDA-01168_LM5170_Subsystem.SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	



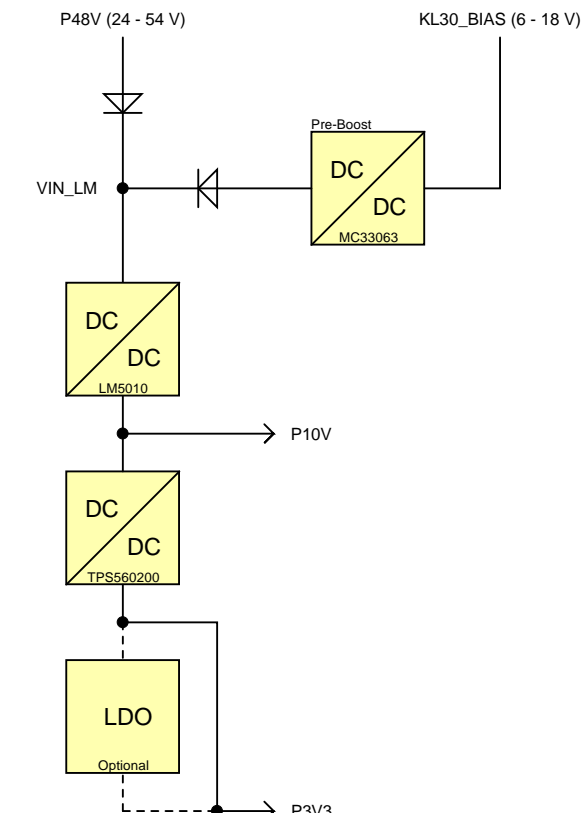
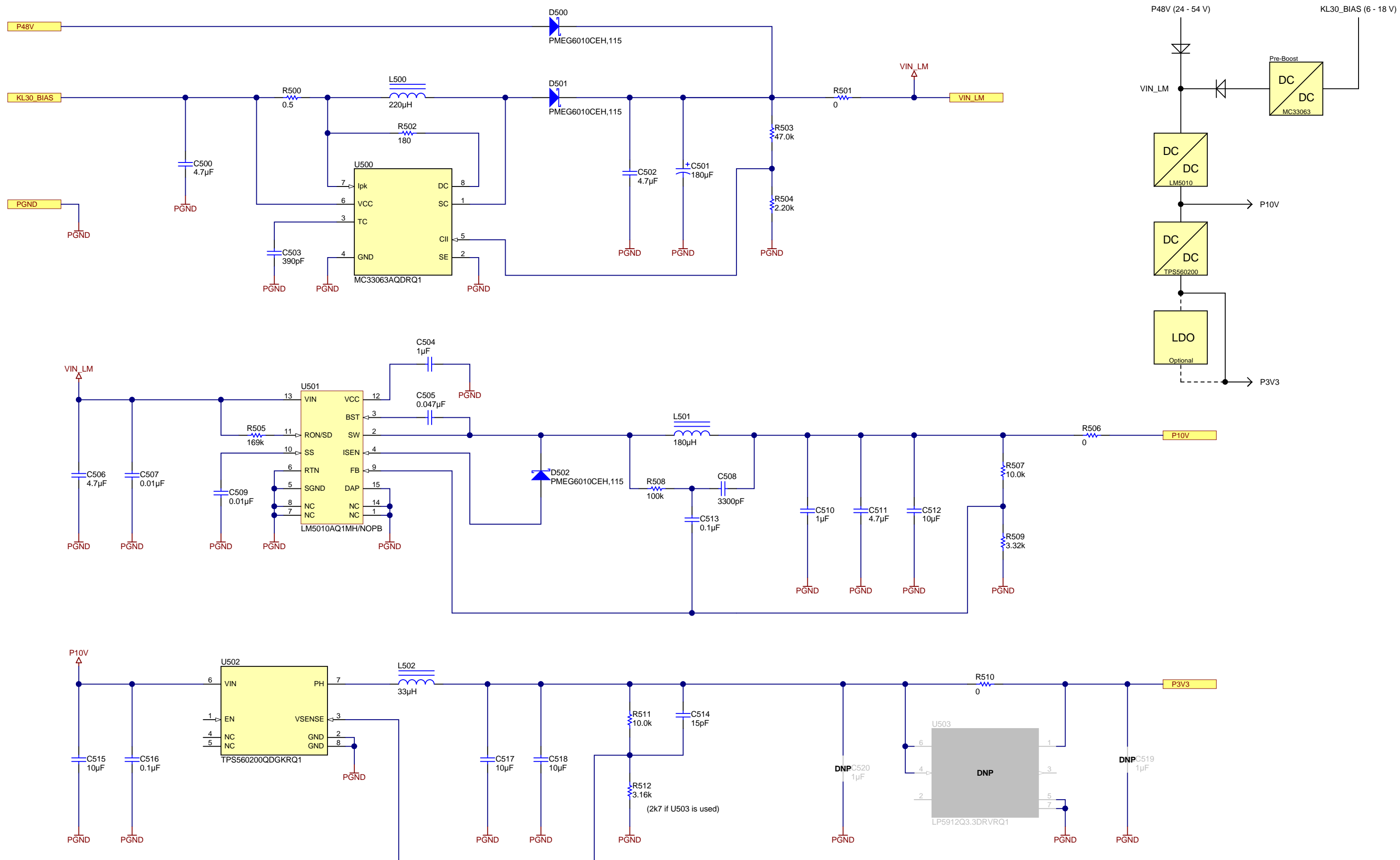


48-V OVP Limit = 56.0 V 12-V OVP Limit = 19.4 V

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Orderable: N/A	Designed for: Public Release	Mod. Date: 26-Jan-17
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: LM5170 Subsystem
SVN Rev: Version control disabled	File: TIDA-01168_LM5170_Subsystem.SchDoc	Sheet: 6 of 11
Drawn By:	Engineer: Panacek, Jiri	Size: B
	Contact: http://www.ti.com/support	

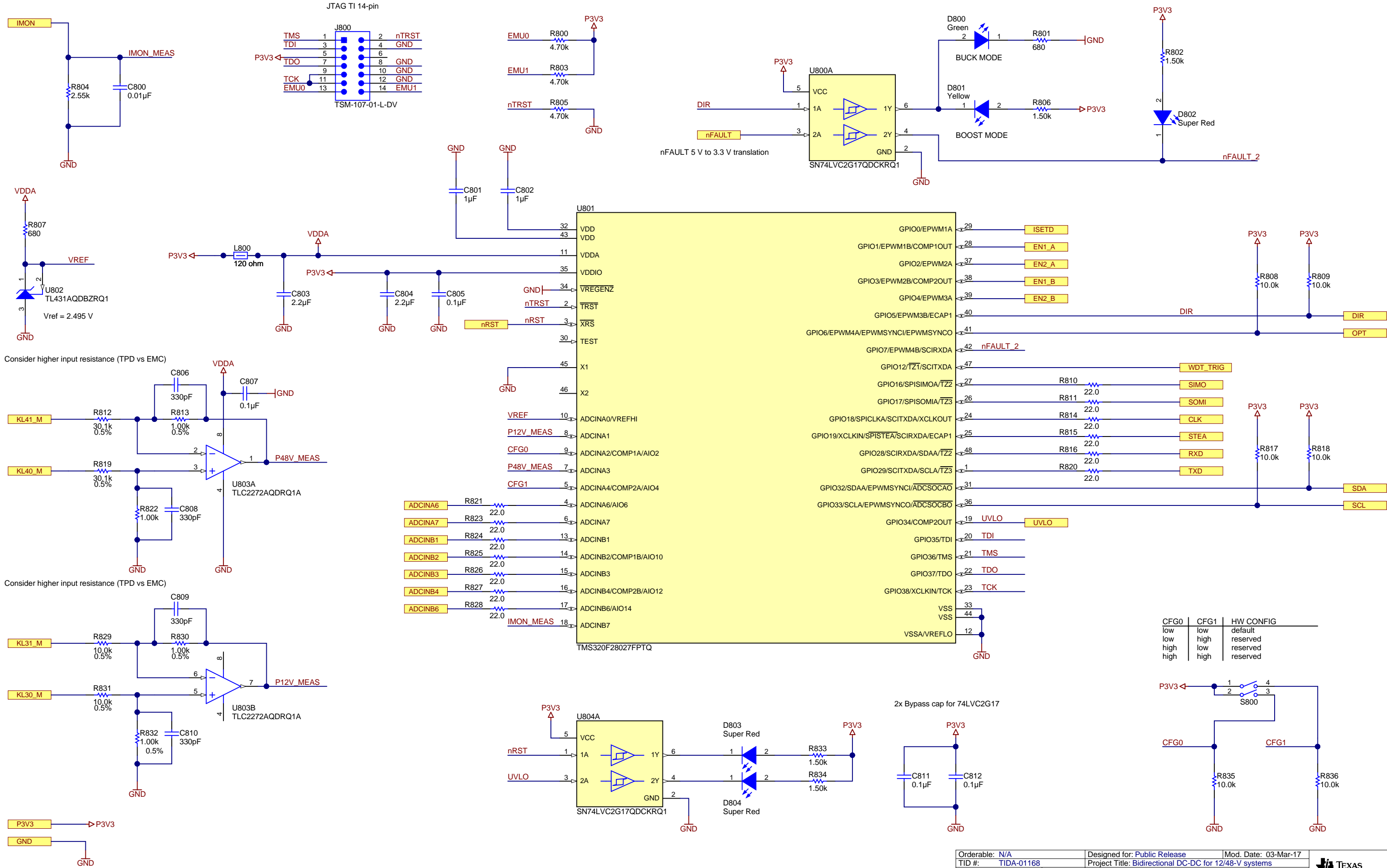




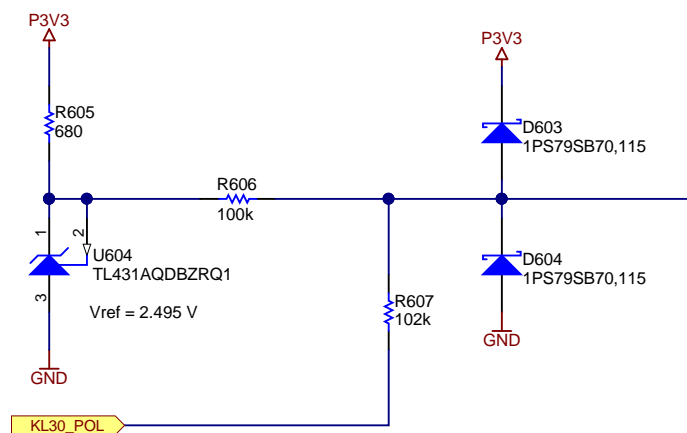
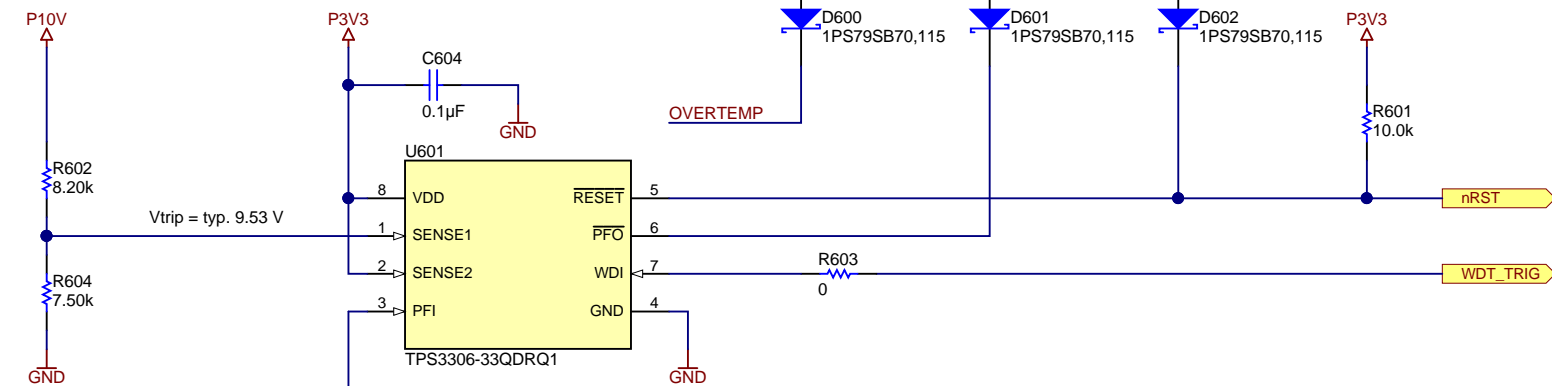
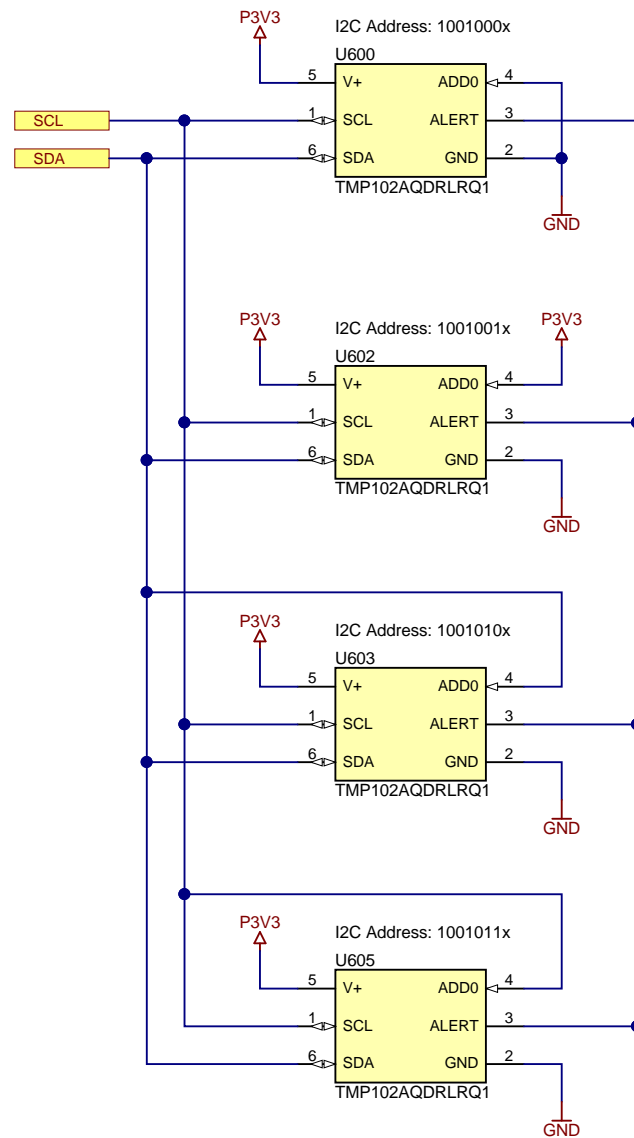
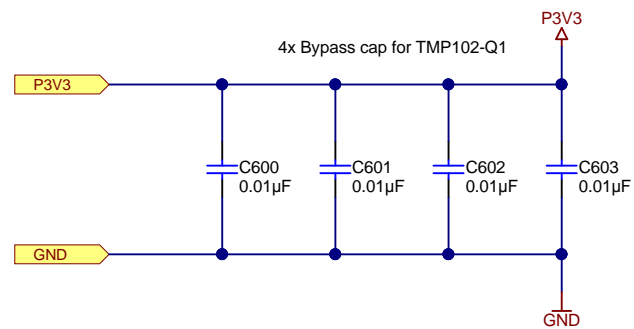
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Number: TIDA-01168	Rev: E2	Sheet Title: Bias Supplies
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 7 of 11
Drawn By:	File: TIDA-01168_BiasSupply_SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	

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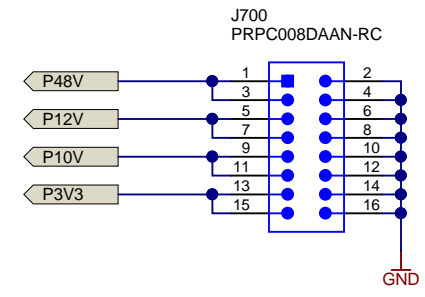
Orderable: N/A	Designed for: Public Release	Mod. Date: 03-Oct-16
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: Diagnostics
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 9 of 11
Drawn By:	File: TIDA-01168_Diag_SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	

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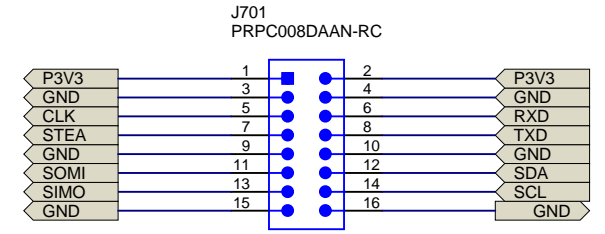
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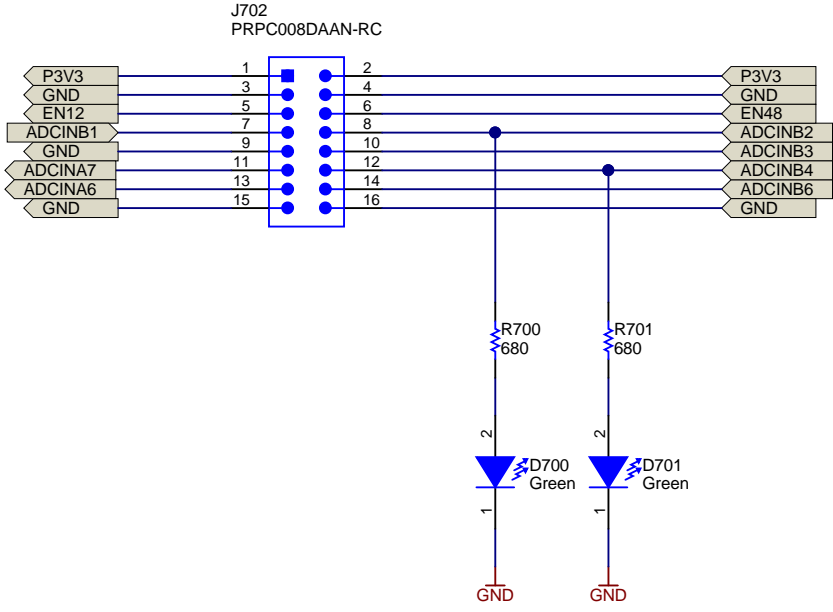
B

B



C

C



D

D

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Orderable: N/A	Designed for: Public Release	Mod. Date: 11-Oct-16
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	
Number: TIDA-01168	Rev: E2	Sheet Title: System Interface
SVN Rev: Version control disabled	Assembly Variant: 001	Sheet: 10 of 11
Drawn By:	File: TIDA-01168_If.SchDoc	Size: B
Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	





PCB Number: TIDA-01168
PCB Rev: E2

PCB
LOGO
Pb-Free Symbol

PCB
LOGO
FCC disclaimer

ZZ1
Label Assembly Note
This Assembly Note is for PCB labels only

ZZ2
Assembly Note
These assemblies are ESD sensitive, ESD precautions shall be observed.

ZZ3
Assembly Note
These assemblies must be clean and free from flux and all contaminants. Use of no clean flux is not acceptable.

ZZ4
Assembly Note
These assemblies must comply with workmanship standards IPC-A-610 Class 2, unless otherwise specified.

Variant/Label Table	
Variant	Label Text
001	Engineering Sample

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Orderable: N/A	Designed for: Public Release	Mod. Date: 17-May-17	
TID #: TIDA-01168	Project Title: Bidirectional DC-DC for 12/48-V systems	Sheet: 11 of 11	
Number: TIDA-01168	Rev: E2	File: TIDA-01168_Hardware.SchDoc	Size: B
SVN Rev: Version control disabled	Engineer: Panacek, Jiri	Contact: http://www.ti.com/support	http://www.ti.com
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