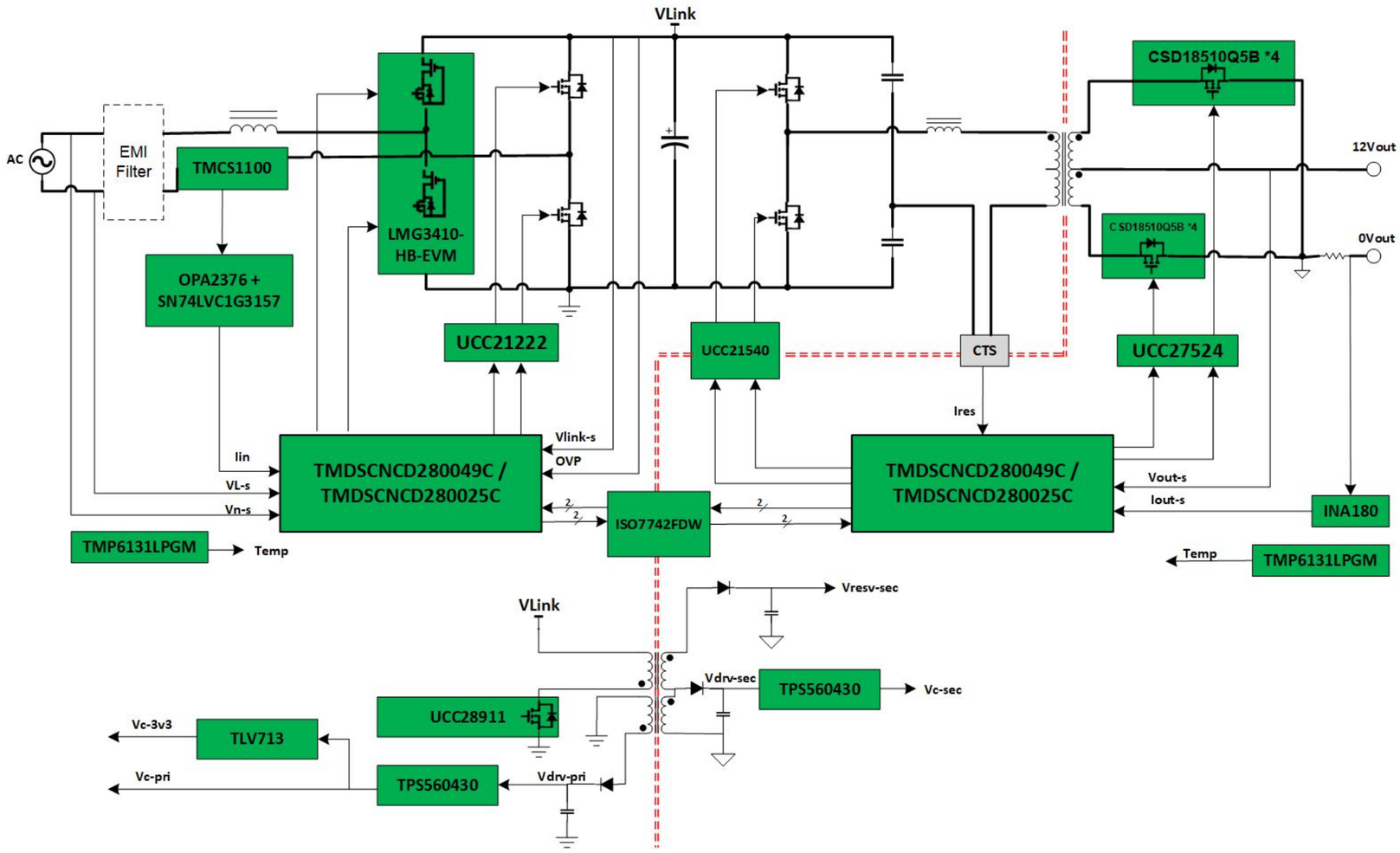
Revision History				
Rev	ECN #	Approved Date	Approved by	Notes
N/A	N/A	N/A	N/A	N/A



Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 11/30/2021
TID #: TIDA-010062	Project Title: 1kW Titanium Server PSU	
Number: PMP-41006 Rev: V4.1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 1 of 8
Drawn By: Desheng Guo	File: PMP41006_CoverSheet.SchDoc	Size: B
Engineer: Desheng Guo	Contact: http://www.ti.com/support	

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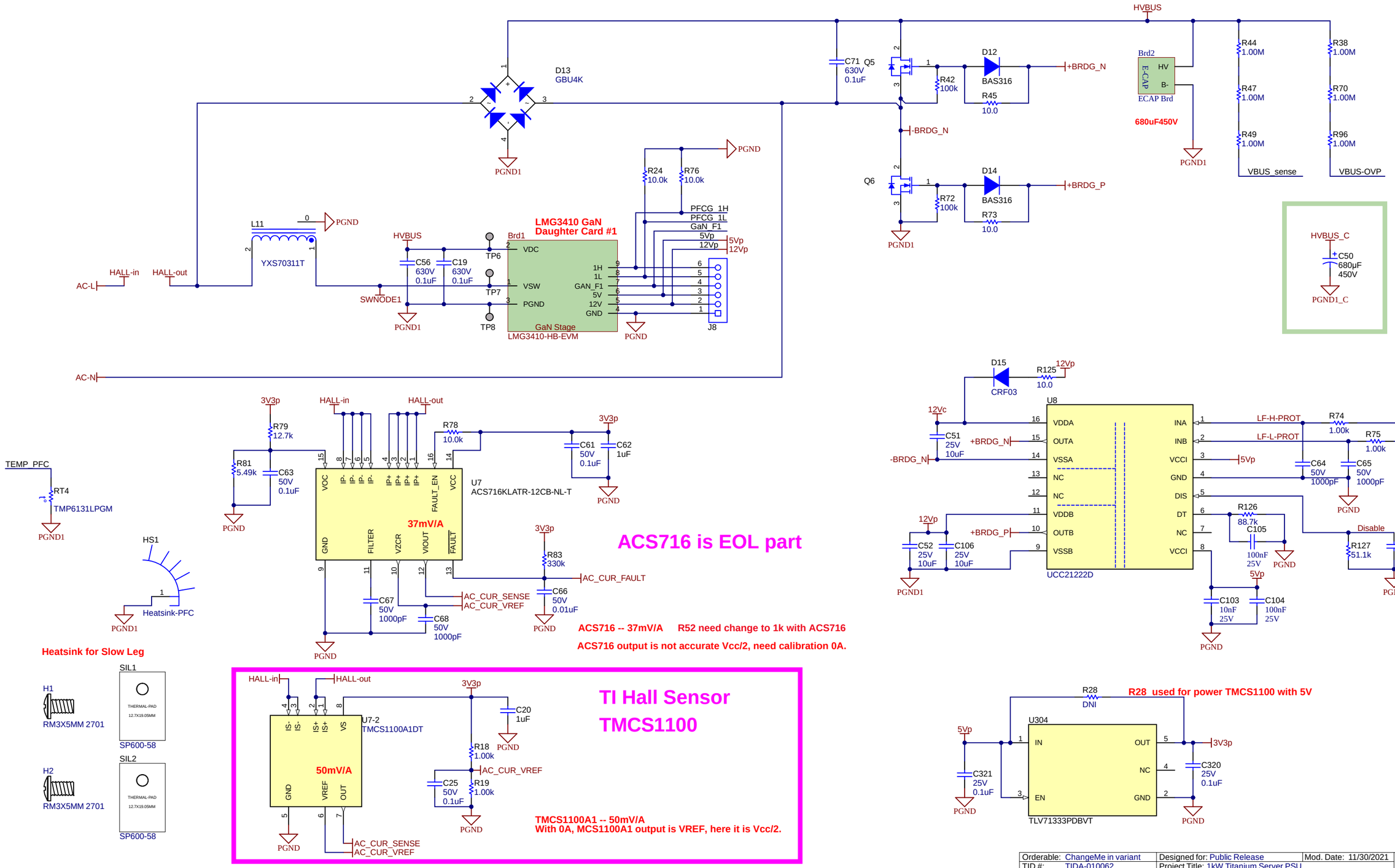
PFC Power Stages

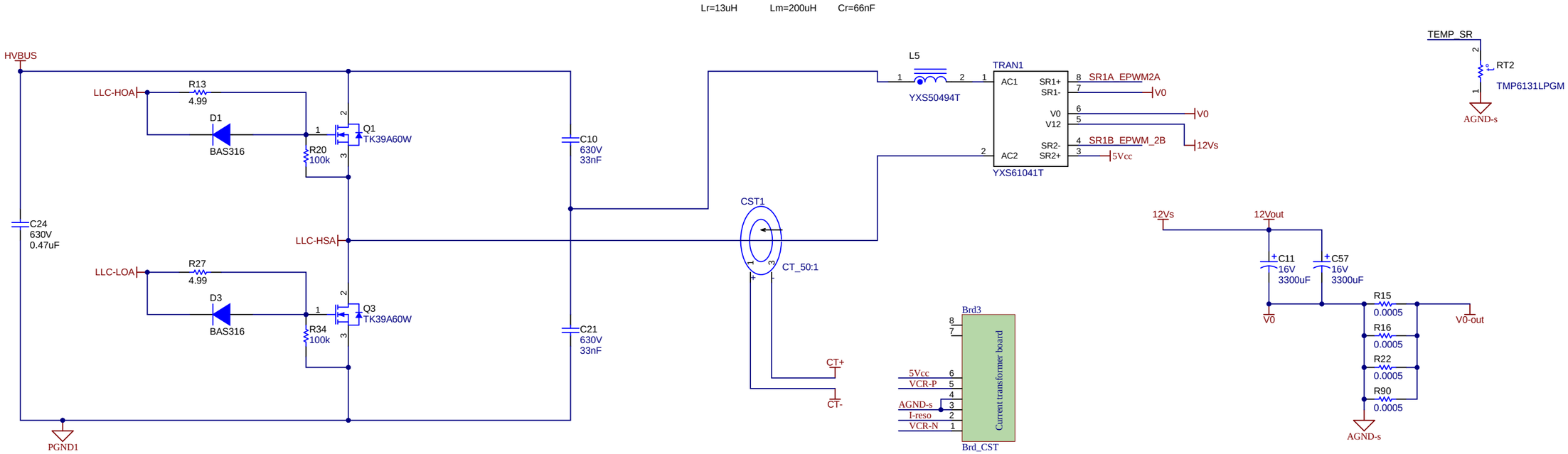


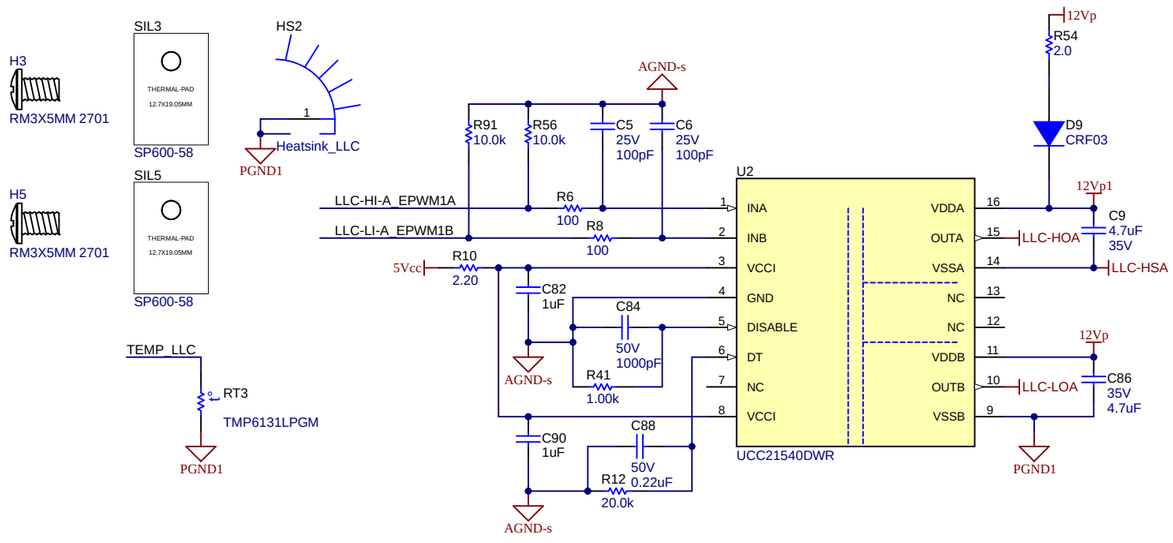
PCB Number: PMP-41006
PCB Rev: V4.1

Orderable: ChangeMe in variant		Designed for: Public Release	Mod. Date: 11/30/2021
TID #: TIDA-010062		Project Title: 1kW Titanium Server PSU	
Number: PMP-41006	Rev: V4.1	Sheet Title: PFC Power Stage	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 2 of 10
Drawn By: Desheng Guo		File: PMP41006_Power-PFC.SchDoc	Size: B
Engineer: Desheng Guo		Contact: http://www.ti.com/support	

LLC Power Stages

Lr=13uH Lm=200uH Cr=66nF



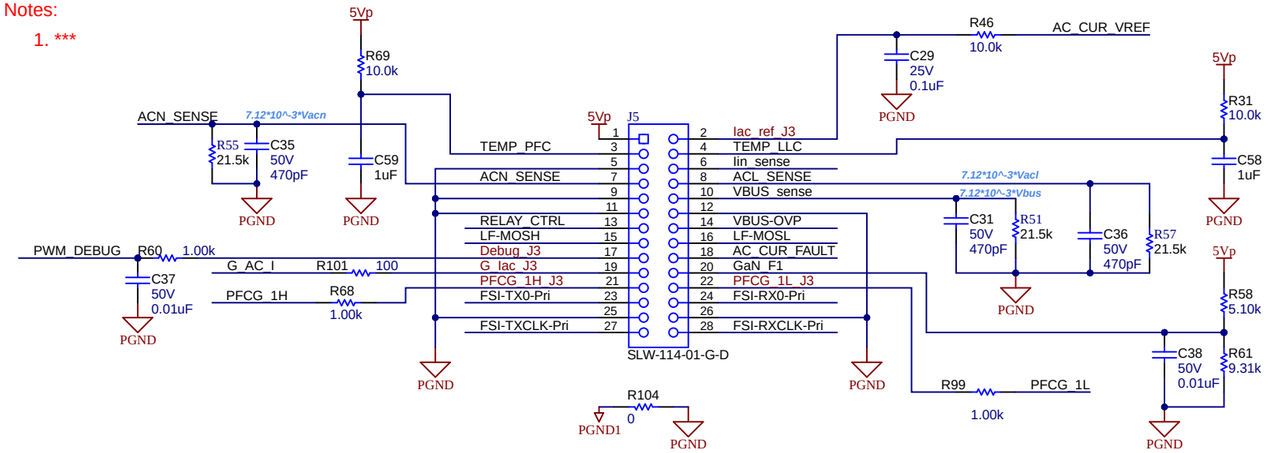


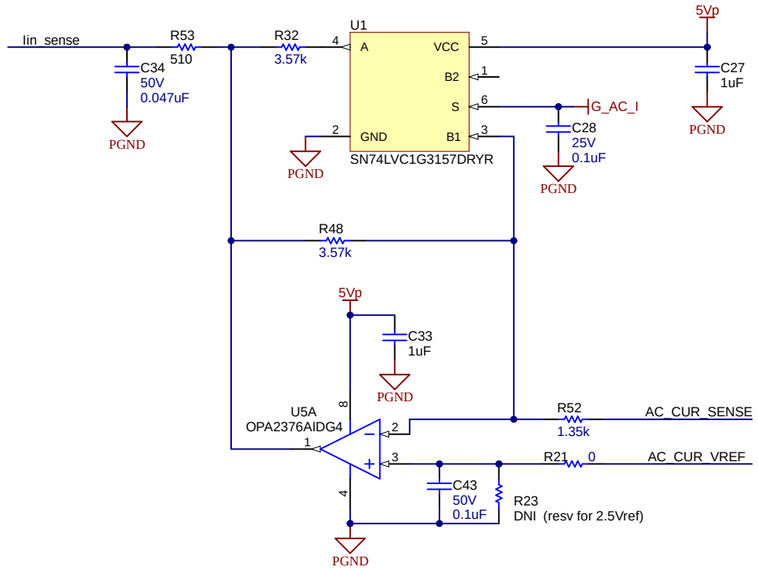
Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 11/30/2021
TID #: TIDA-010062	Project Title: 1kW Titanium Server PSU	
Number: PMP-41006 Rev: V4.1	Sheet Title: LLC Power Stage	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 3 of 10
Drawn By: Desheng Guo	File: PMP41006_Power-LLC.SchDoc	Size: B
Engineer: Desheng Guo	Contact: http://www.ti.com/support	

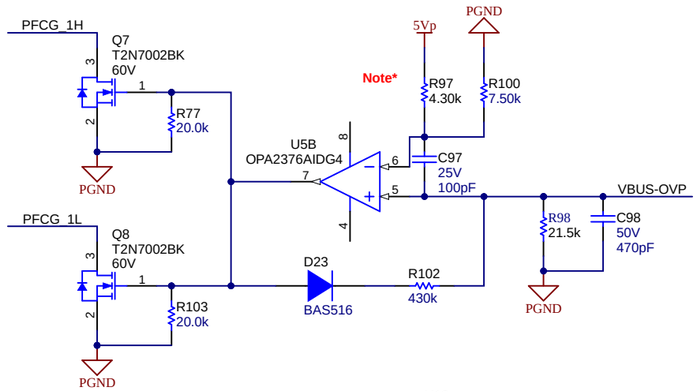
Control for PFC

Notes:

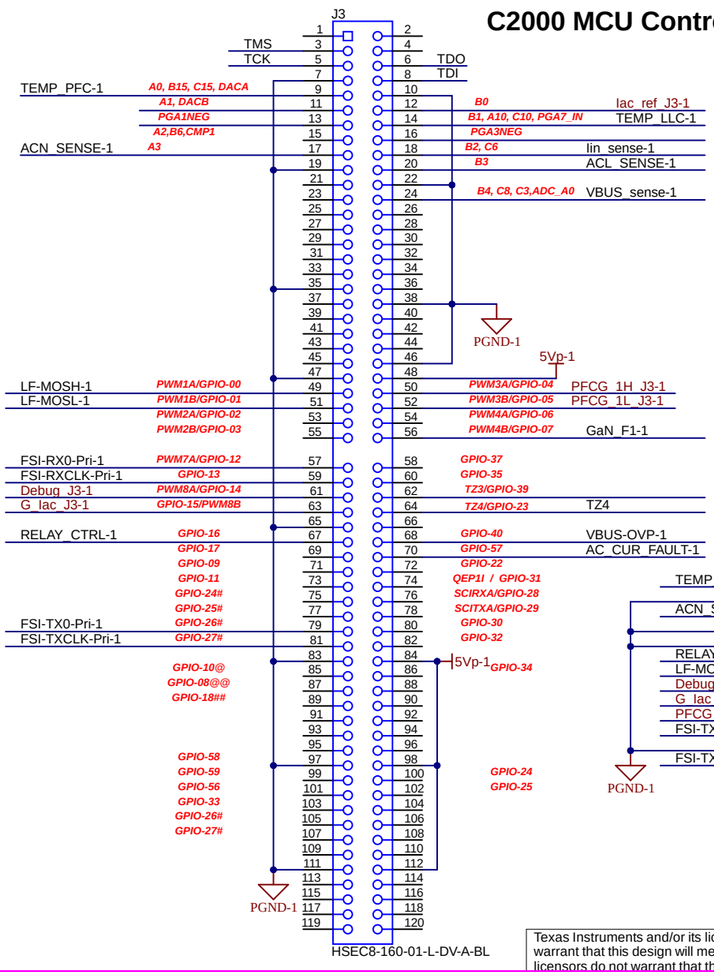
1. ***



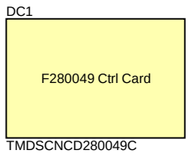


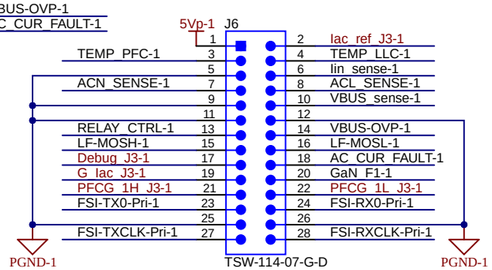


C2000 MCU Control Card 120 pin HSEC

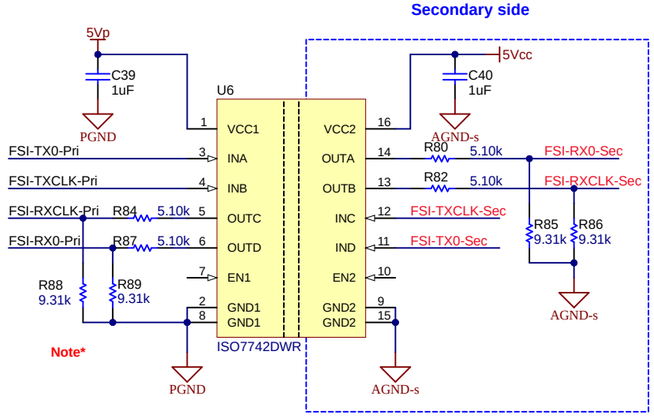


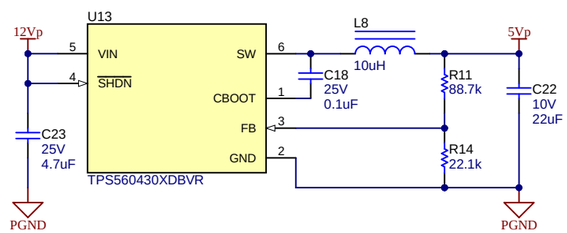
Connector board





Secondary side





Orderable: ChangeMe in variant		Designed for: Public Release	Mod. Date: 11/30/2021
TID #: TIDA-010062		Project Title: 1kW Titanium Server PSU	
Number: PMP41006	Rev: V4.1	Sheet Title: PFC Control Stage	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 4 of 10
Drawn By: Desheng Guo		File: PMP41006_Control-PFC.SchDoc	Size: B
Engineer: Desheng Guo		Contact: http://www.ti.com/support	

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LLC Control Stage

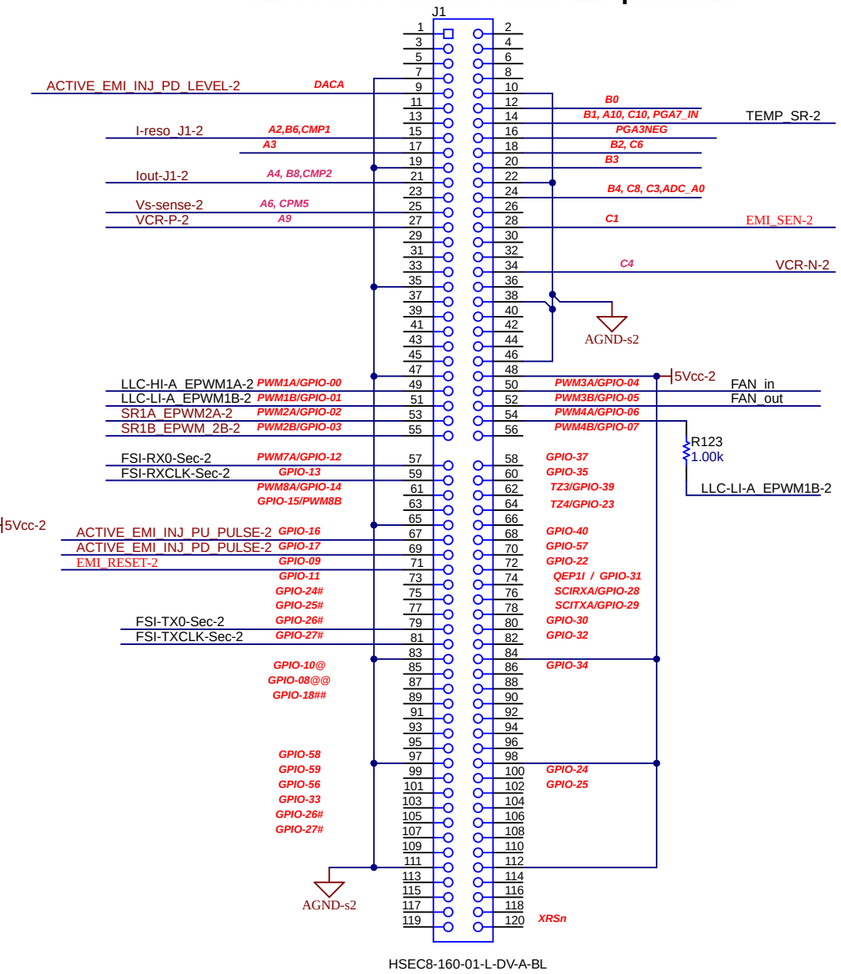
Notes:

1. ***

Text

Connector board

C2000 MCU Control Card 120 pin HSEC



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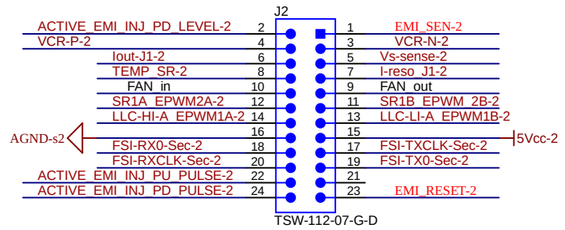
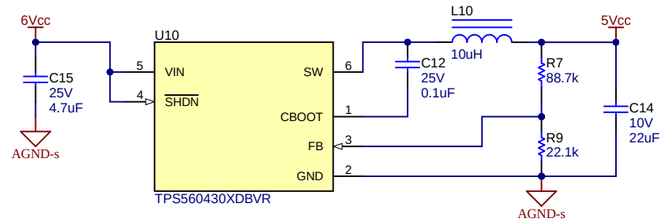


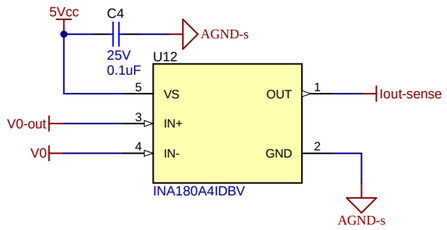
TSW-112-07-G-D

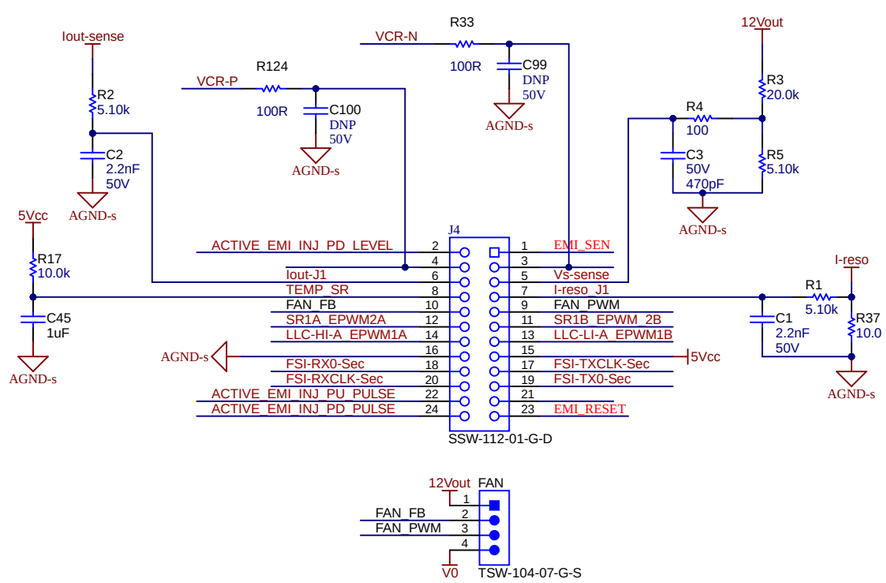
DC2

F280049 Ctrl Card

TMDSCNCD280049C







Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 11/30/2021
TID #: TIDA-010062	Project Title: 1kW Titanium Server PSU	
Number: PMP-41006 Rev: V4.1	Sheet Title: LLC Control Stage	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 5 of 10
Drawn By: Desheng Guo	File: PMP41006_Control-LLC.SchDoc	Size: B
Engineer: Desheng Guo	Contact: http://www.ti.com/support	

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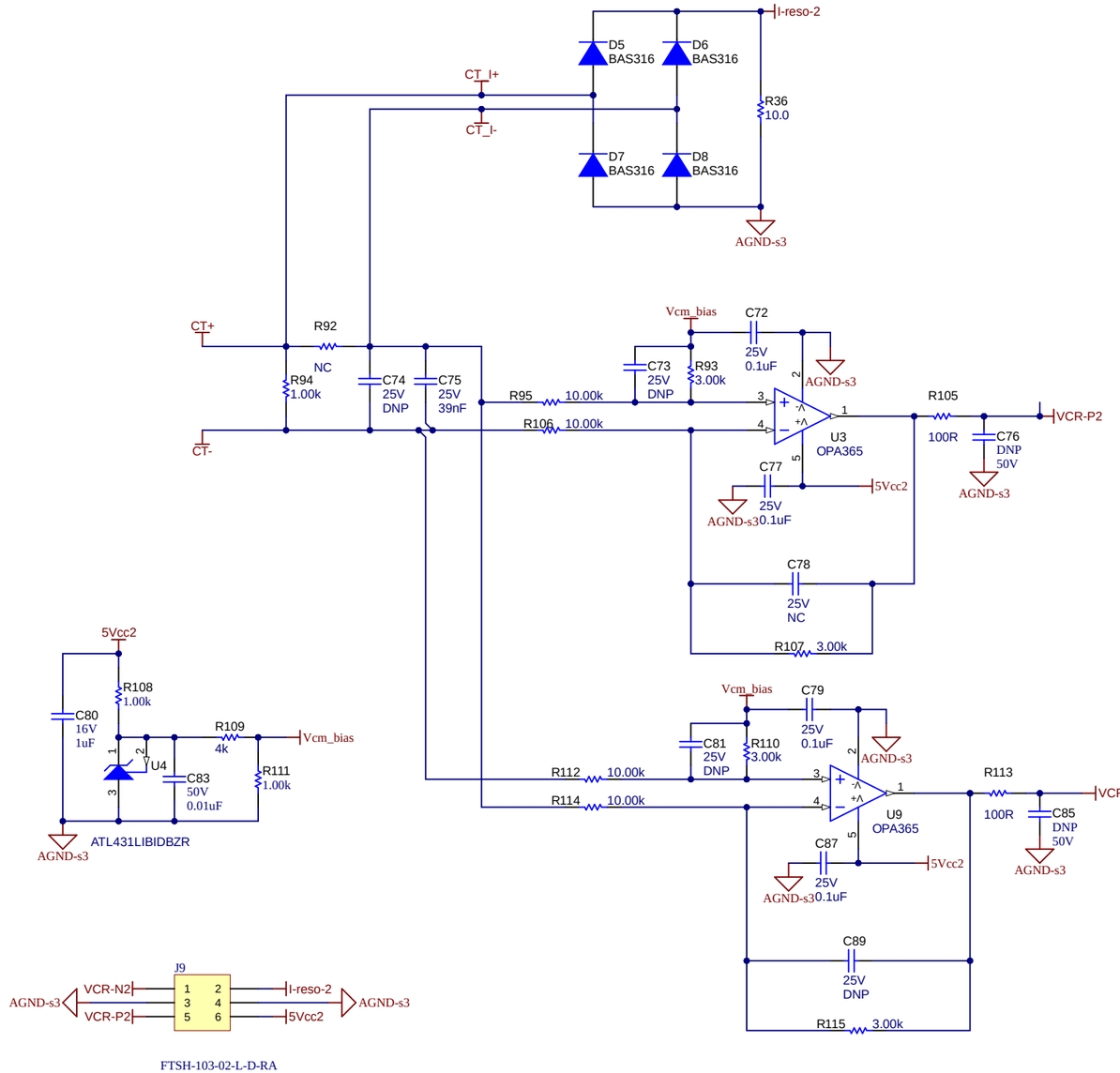

VCR sensing design process:

1, get the peak-peak voltage of the Cr (resonant CAP) @ min Vin and full load;

2, select the CT and its turn ratio N:1;

3, select Cs (sensing CAP) by keeping the CT within its volt-sec;

$$Vs\_pp = Vcr\_pp * Cr / (N*Cs)$$

4, select Ks (ratio of OPA circuits) to adjust the sensing volt to 2.0V max;

$$VCR\_sense\_p = Vcm + 0.5*Vcr\_pp * Cr / (N*Cs) *Ks$$

Min volt is clamped by Vcm, and Vcm is set at 0.5V by default.

Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 11/30/2021
TID #: TIDA-010062	Project Title: 1kW Titanium Server PSU	
Number: PMP-41006 Rev: V4.1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 6 of 10
Drawn By:	File: PMP41006_CTS-VCR.SchDoc	Size: B
Engineer: Desheng Guo	Contact: http://www.ti.com/support	

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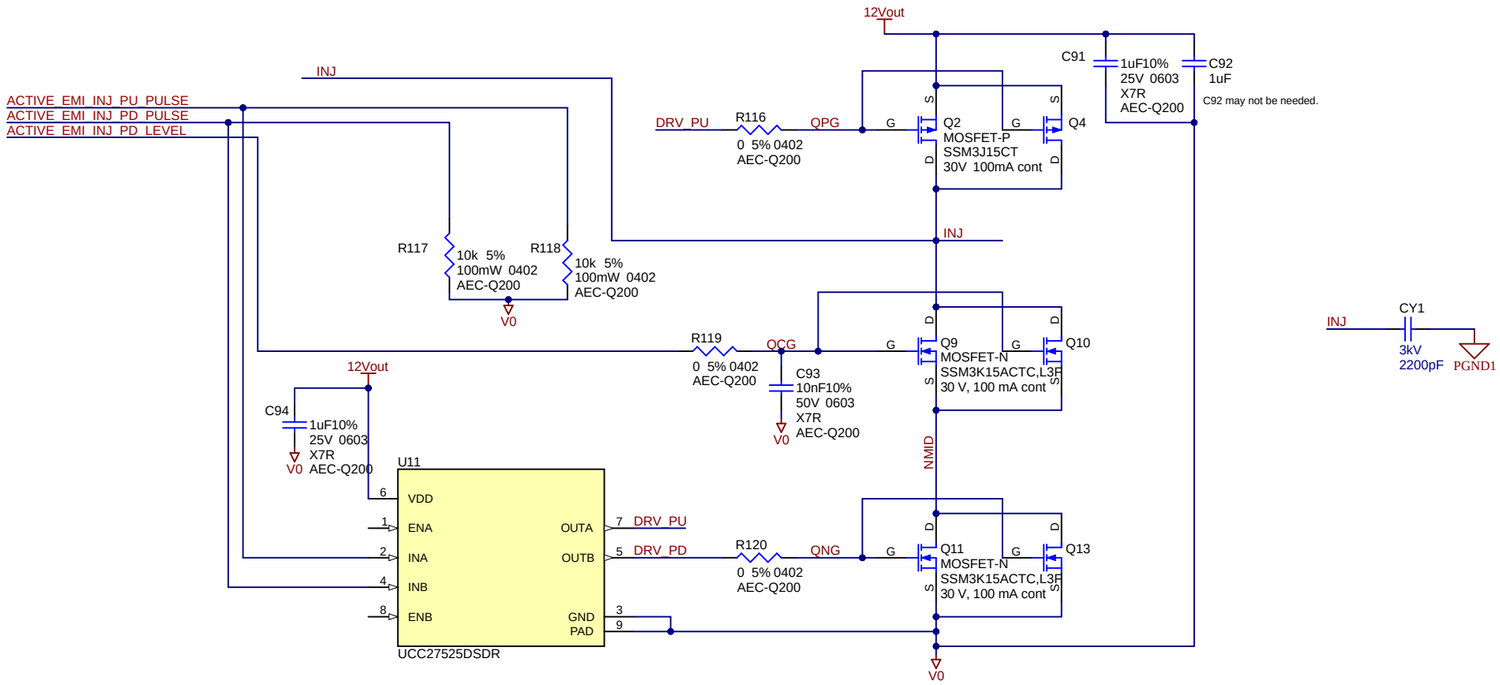
Discrete Canceller Inject Daughter Card with Non-Automotive Devices

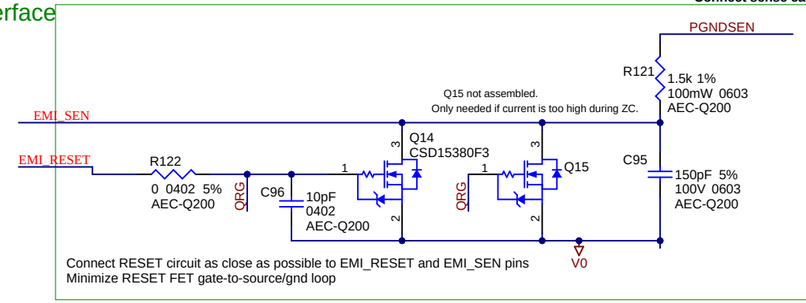
Connect inject card close to high-frequency switching bridge

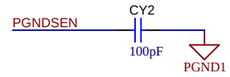


C2000 Sense Interface

Sense Card

Connect sense card close to C2000 control card





Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 11/30/2021
TID #: TIDA-010062	Project Title: 1kW Titanium Server PSU	
Number: PMP-41006 Rev: V4.1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 7 of 10
Drawn By:	File: PMP41006-DCAEF.SchDoc	Size: A3
Engineer: Desheng Guo	Contact: http://www.ti.com/support	

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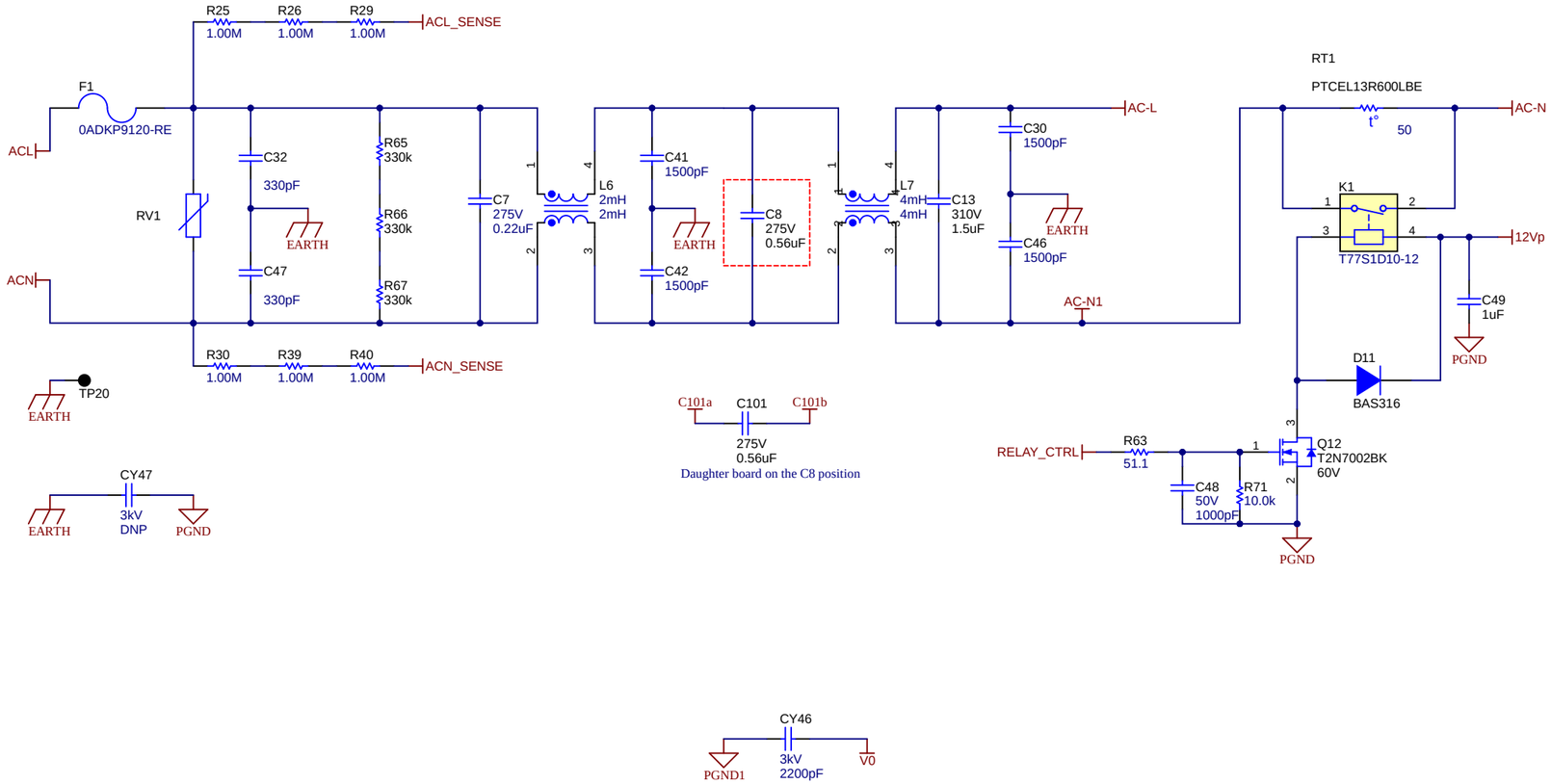
EMI Part



Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 11/30/2021
TID #: TIDA-010062	Project Title: 1kW Titanium Server PSU	
Number: PMP-41006 Rev: V4.1	Sheet Title: EMI Stage	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 8 of 10
Drawn By: Desheng Guo	File: PMP41006_EMI.SchDoc	Size: B
Engineer: Desheng Guo	Contact: http://www.ti.com/support	

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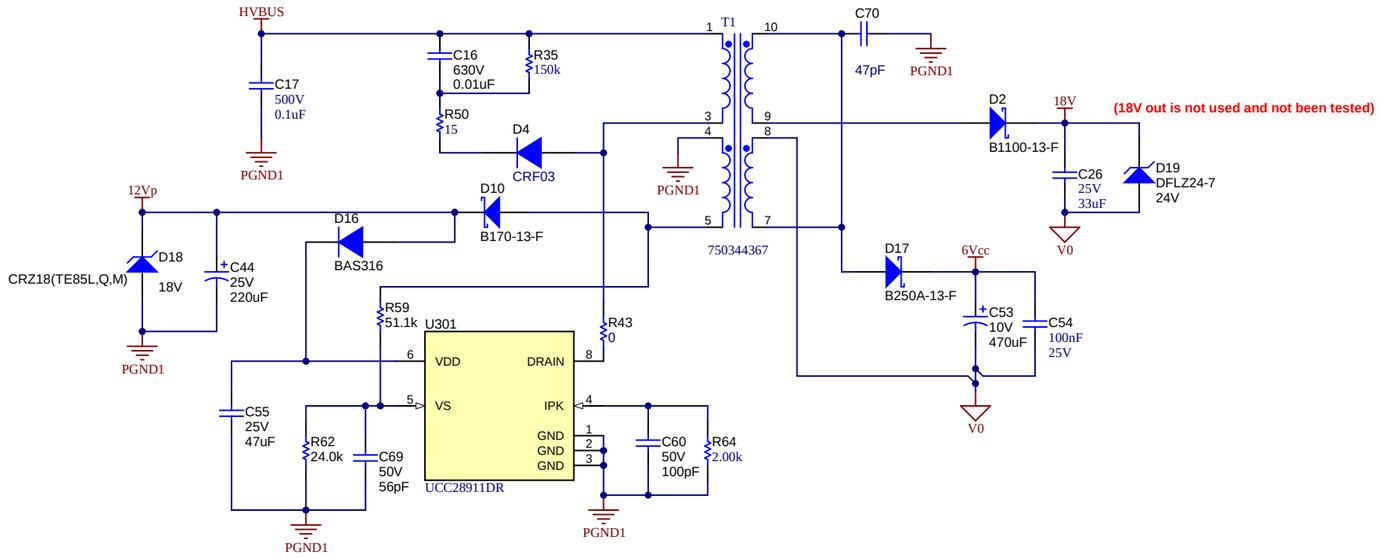
Aux Power Stage



LOGO301

DANGER HIGH VOLTAGE

LOGO302

CAUTION HOT SURFACE

Designed for: Public Release		Mod. Date: 11/30/2021	
Project Title: 1kW Titanium Server PSU			
Number: PMP-41006	Rev: V4.1	Sheet Title: Bias Power Stage	
SVN Rev: Not in version control		Assembly Variant: 001	Sheet: 9 of 10
Drawn By: Desheng Guo		File: PMP41006_Bias.SchDoc	Size: B
Engineer: Desheng Guo		Contact: http://www.ti.com/support	http://www.ti.com

PCB Number: PMP-41006
PCB Rev: V4.1

LBL1

PCB Label

THT-14-423-10
Size: 0.65" x 0.20 "

Variant/Label Table	
Variant	Label Text
001	TIDA-010062
002	PMP41006

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.

Orderable: ChangeMe in variant	Designed for: Public Release	Mod. Date: 11/30/2021
TID #: TIDA-010062	Project Title: 1kW Titanium Server PSU	
Number: PMP-41006 Rev: V4.1	Sheet Title:	
SVN Rev: Not in version control	Assembly Variant: 001	Sheet: 10 of 10
Drawn By:	File: PMP41006_Hardware.SchDoc	Size: B
Engineer: Desheng Guo	Contact: http://www.ti.com/support	

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