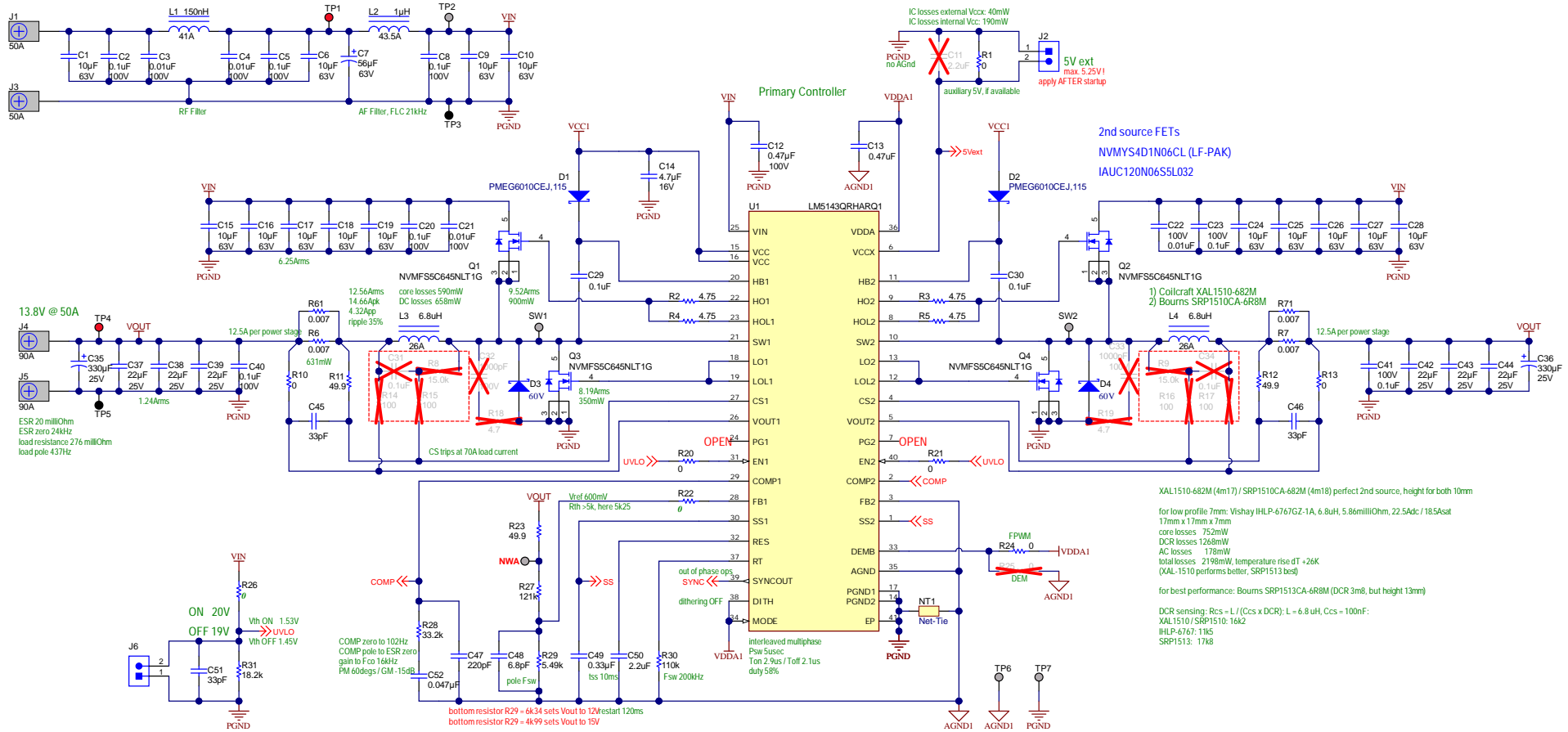


18Vdc to 58Vdc (up to 30A input current)



XAL1510-682M (4m17) / SRP1510CA-682M (4m18) perfect 2nd source, height for both 10mm
 for low profile 7mm: Vishay HILP-6767G2-1A, 6.8uH, 5.86mOhm, 22.5A dc / 18.5A ac
 17mm x 17mm x 7mm
 core losses 752mW
 DCR losses 1268mW
 AC losses 178mW
 total losses 2198mW, temperature rise dT +26K
 (XAL-1510 performs better, SRP1513 best)
 for best performance: Bourns SRP1513CA-6R8M (DCR 3mR, but height 13mm)
 DCR sensing: Rcs = L / (Ccs x DCR); L = 6.8 uH, Ccs = 100nF;
 XAL1510 / SRP1510: 16k2
 HILP-6767: 11k5
 SRP1513: 17k8

NOTES:

- both controller need similar setup regarding 5Vext and FPWM/DEM
- current sense - either use DCR sensing or use shunt sensing
- calculations done for 24Vin and 50Aout
- system efficiency appr. 97%, expect total losses around 20W
- ripple stress on caps is lower due to ripple cancellation by duty close to 25% / 50% and four phase interleaved operation 90degs
- R23 for test purposes only

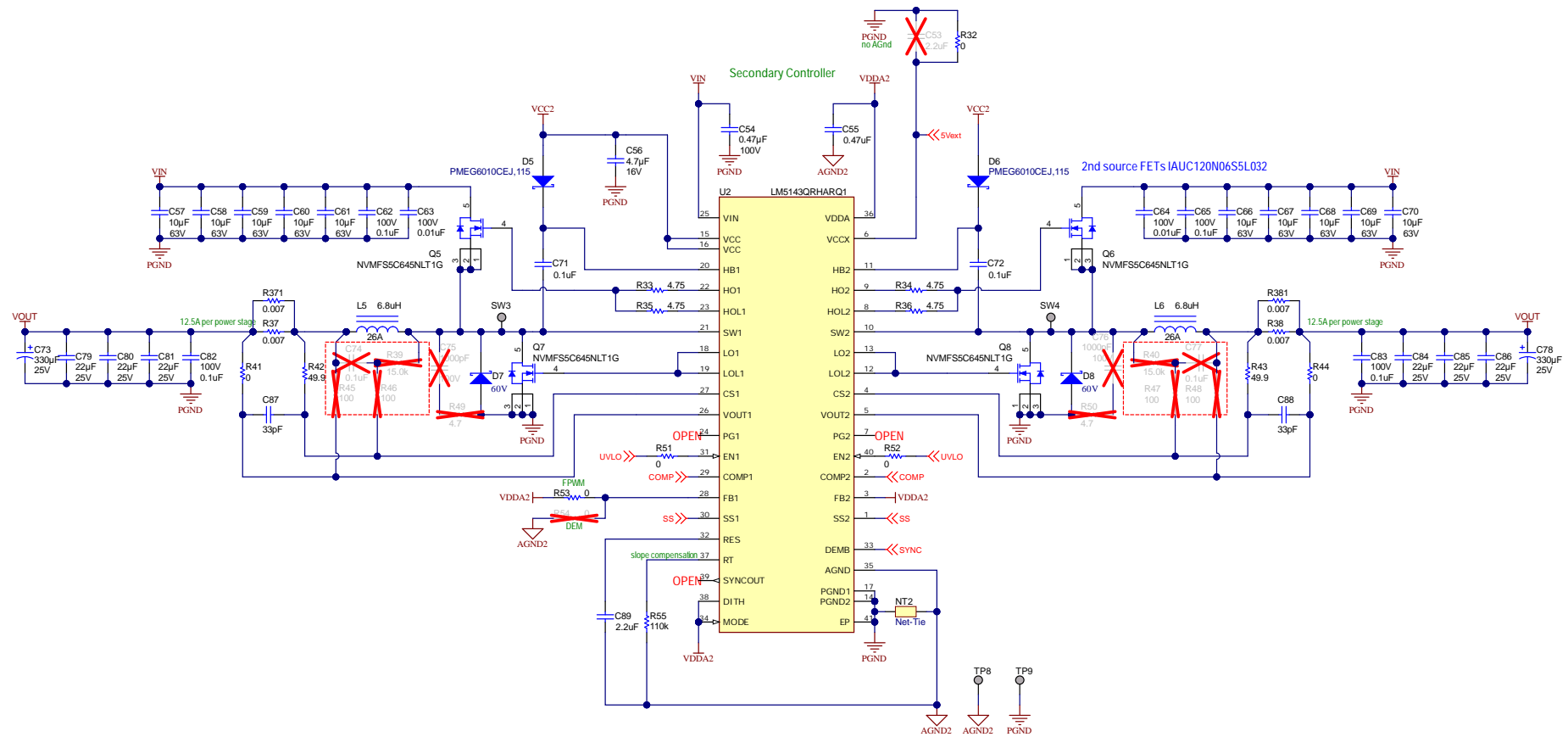
Rev B:

- squeezed loop to best dynamics
- adjusted gate drive to OS/US <5V at Drain

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Orderable: LM5143-Q1-4PHEVM	Designed for: Public Release	Mod. Date: 12/16/2022
TID #: N/A	Project Title: LM5143 4-Phase Buck 690W	
Number: PMP31210 Rev: B	Sheet Title: LM5143 4-Phase Buck 690W	
SVN Rev: Not in version control	Assembly Variant: built	Sheet: 1 of 2
Drawn By: B. Geck	File: PMP31210RevB-SH1_SchDoc	Size: B
Engineer: B. Geck	Contact: http://www.ti.com/support	

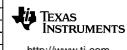




PCB 31202 RevA3, approx. 150mm x 125mm,
 needs heat sink and pad 150mm x 75mm (Pv 14W)
 vier Lagen, einseitig bestueckt, mit Waermeleitfolie auf AluPlatte 5mm
 je nach PCB Grosse 4 . 8 Bohrungen M3 zur Befestigung vorsehen
 Waermeleitfolie elektrisch isolierend, doppelseitig klebend, 0.5mm

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