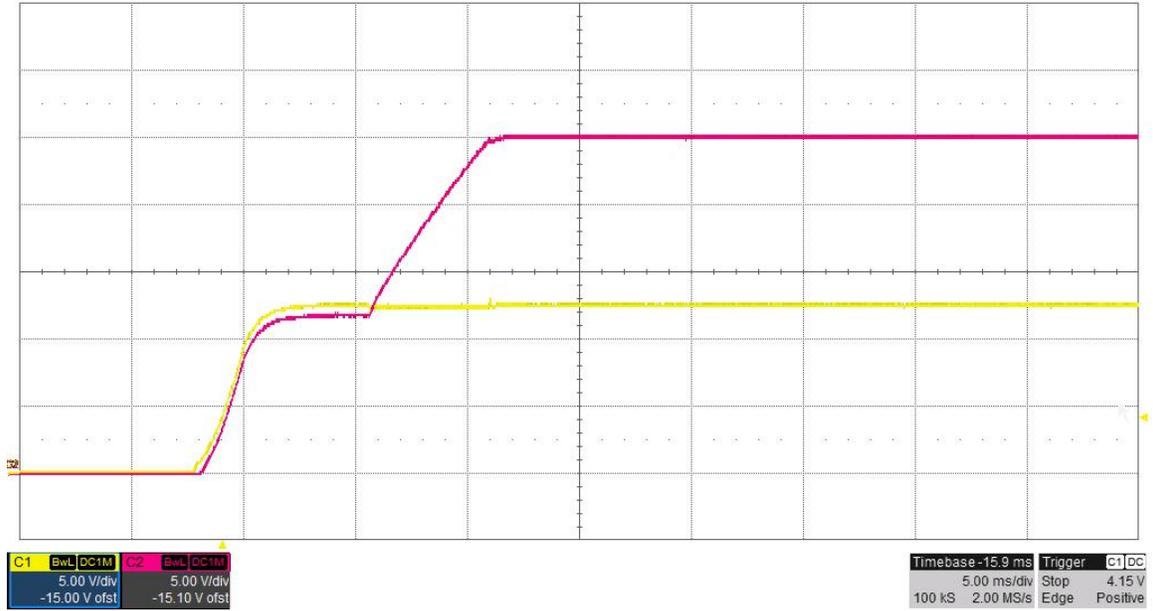
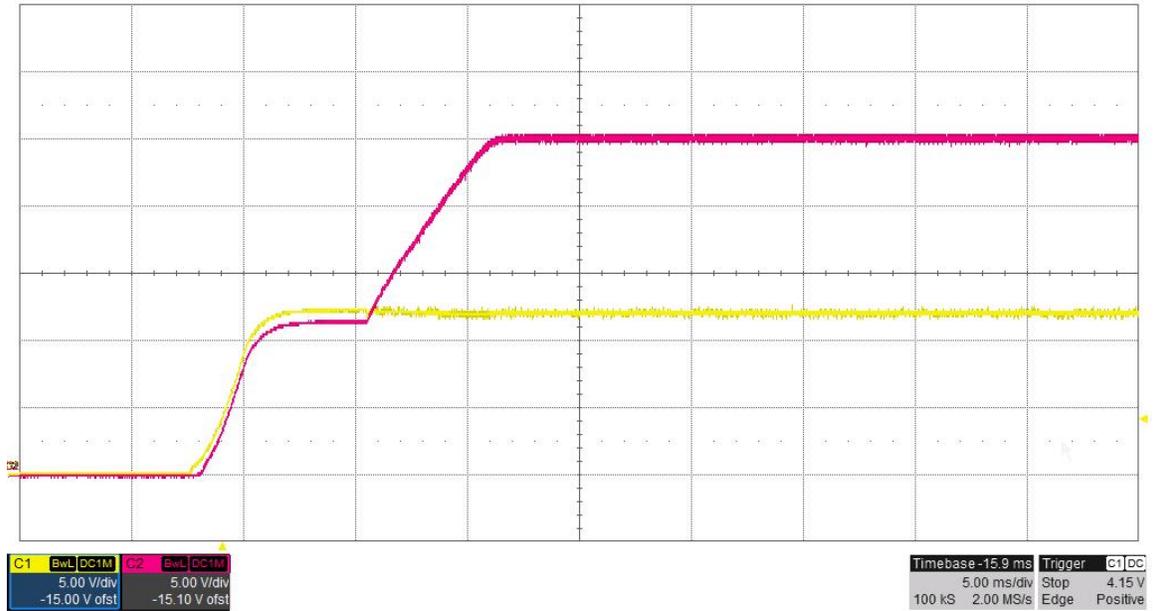


## 1 Startup

The photo below shows the output voltage startup waveform after the application of 12V in. The 25V output was loaded to 0A. (5V/DIV, 5mS/DIV)

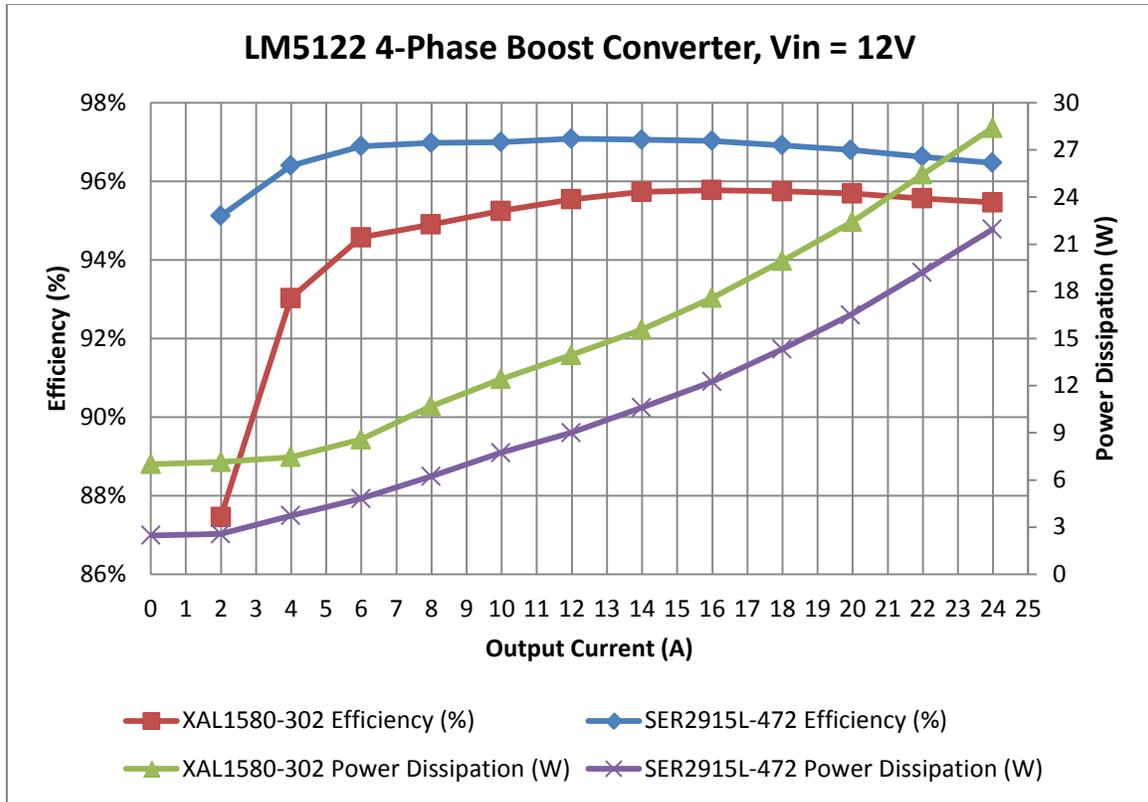


The photo below shows the output voltage startup waveform after the application of 12V in. The 25V output was loaded to 24A. (5V/DIV, 5mS/DIV)



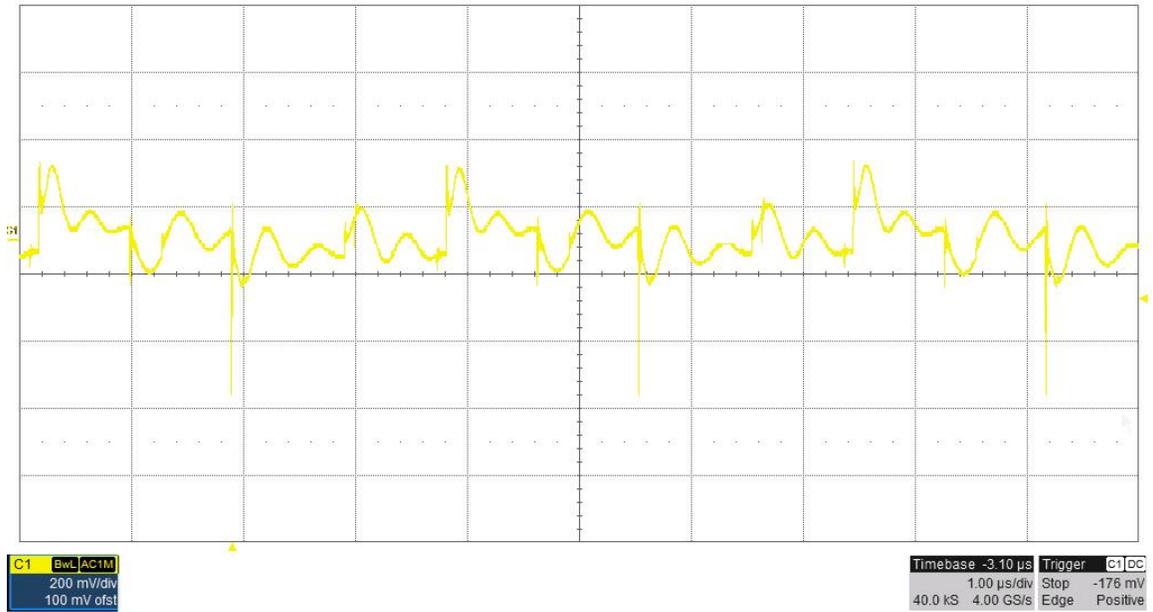
## 2 Efficiency

The converter efficiency and power dissipation is shown below for  $V_{in} = 12V$  and  $V_{out} = 25V$ . Data for Coilcraft XAL1580-302 (3.0uH) and SER2915L-472 (4.7uH) inductors is shown.

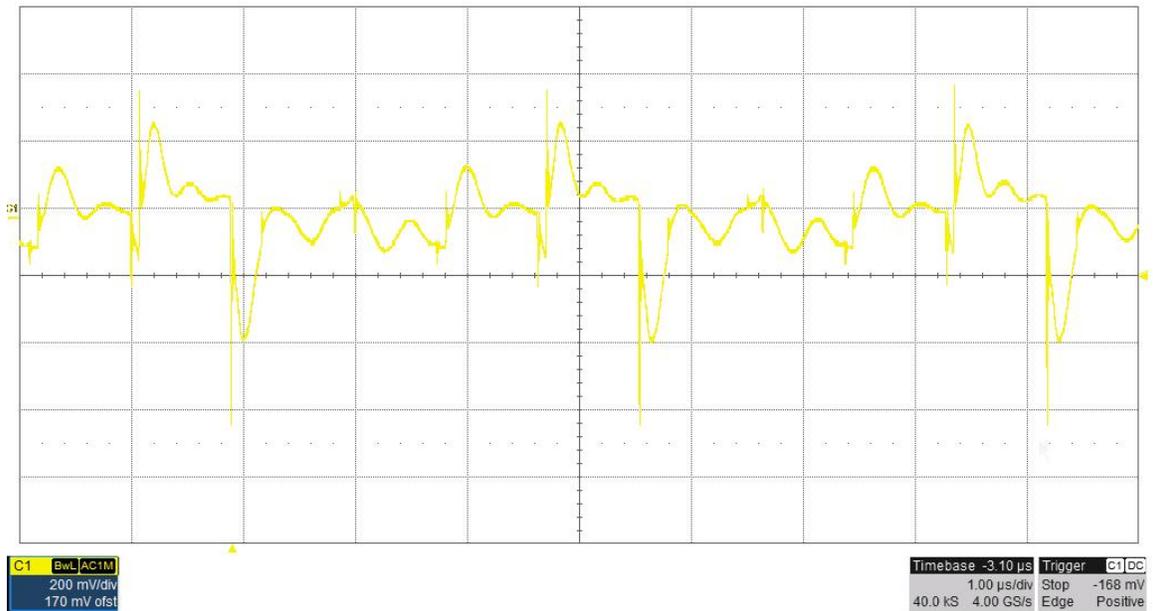


## 3 Output Ripple Voltage

The 25V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 24A. The input voltage is set to 12V. (200mV/DIV, 1uS/DIV)

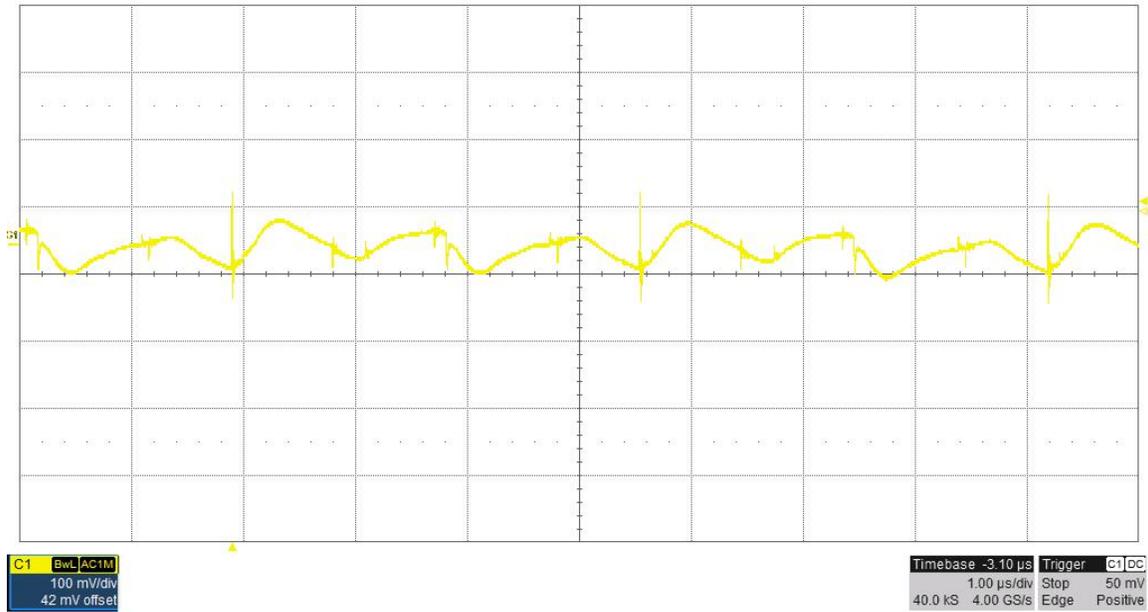


The 25V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 24A. The input voltage is set to 6V. (200mV/DIV, 1uS/DIV)

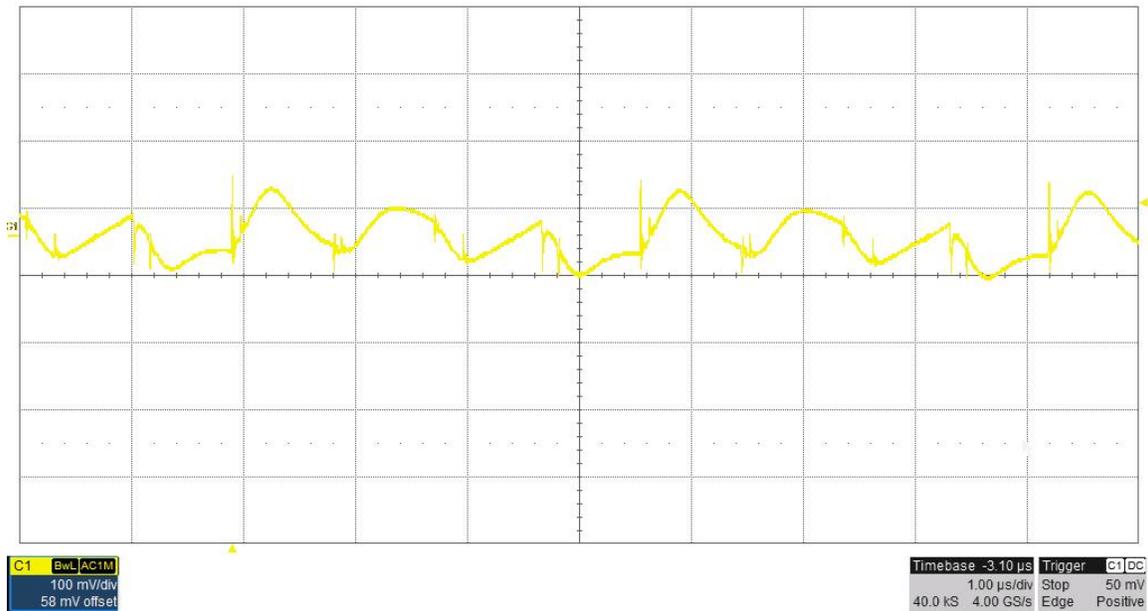


## 4 Input Ripple Voltage

The input ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 24A. The input voltage is set to 12V. (100mV/DIV, 1uS/DIV)

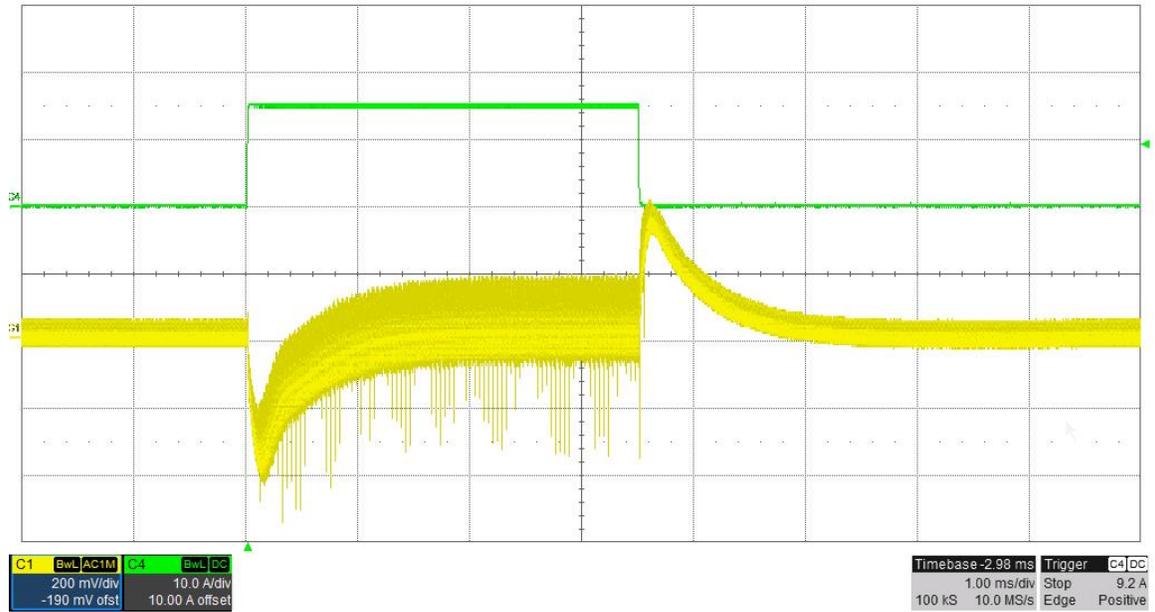


The input ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 24A. The input voltage is set to 6V. (100mV/DIV, 1uS/DIV)



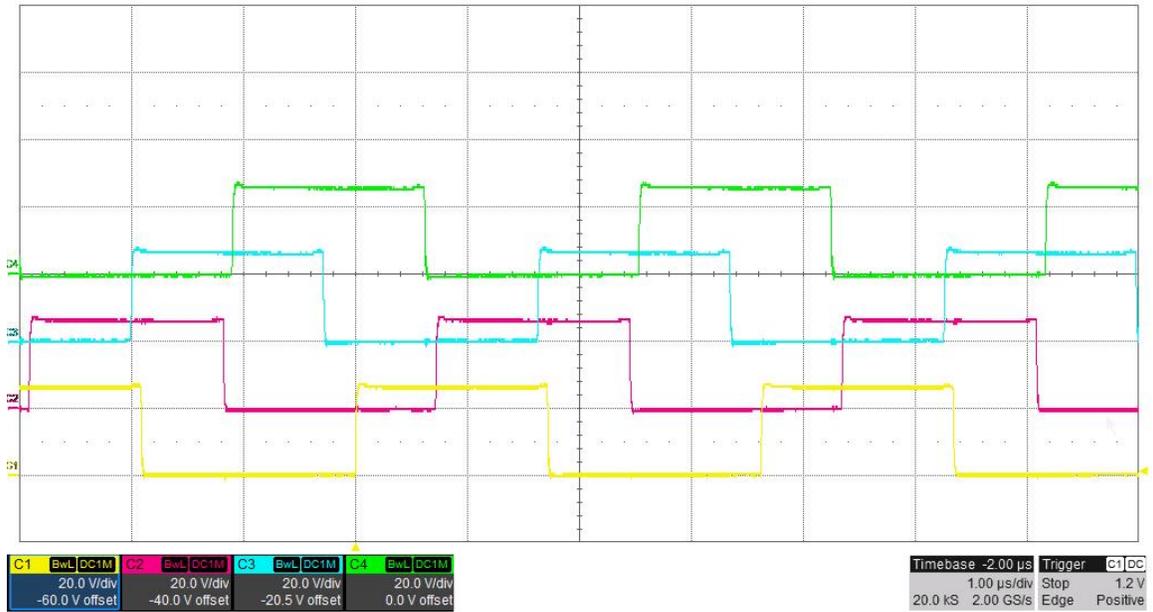
## 5 Load Transients

The photo below shows the 25V output voltage (ac coupled) when the load current is stepped between 0A and 15A.  $V_{in} = 12V$ .  
(200mV/DIV, 10A/DIV, 1mS/DIV)

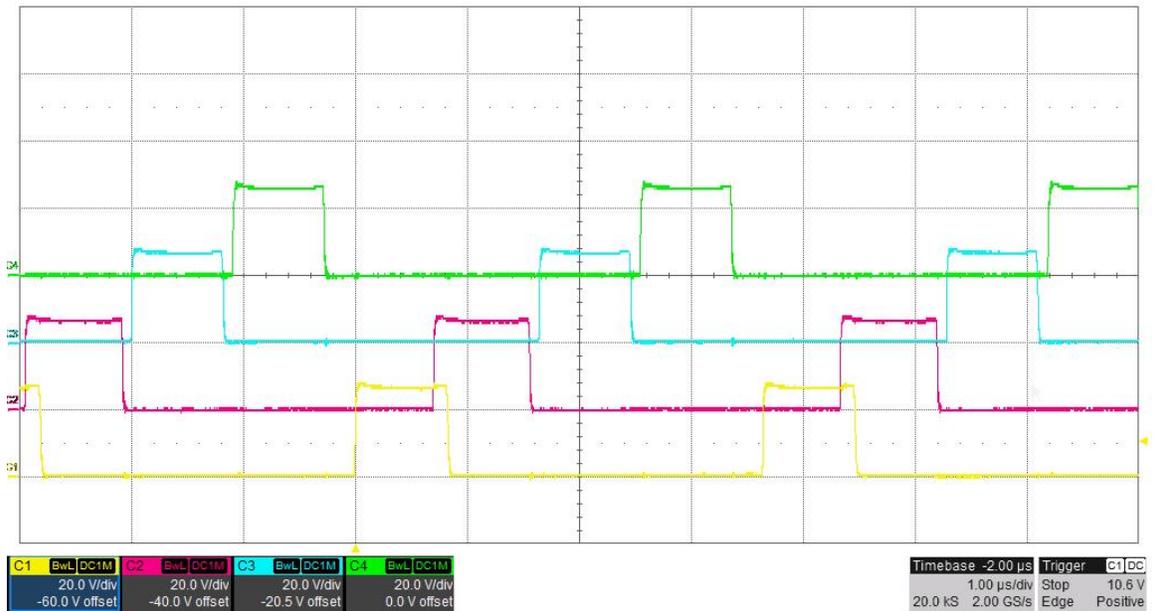


## 6 Switch Node Waveforms

The photo below shows the FET switching voltages for an input voltage of 12V and a 24A load. (20V/DIV, 1uS/DIV)



The photo below shows the FET switching voltages for an input voltage of 6V and a 24A load. (10V/DIV, 1uS/DIV)



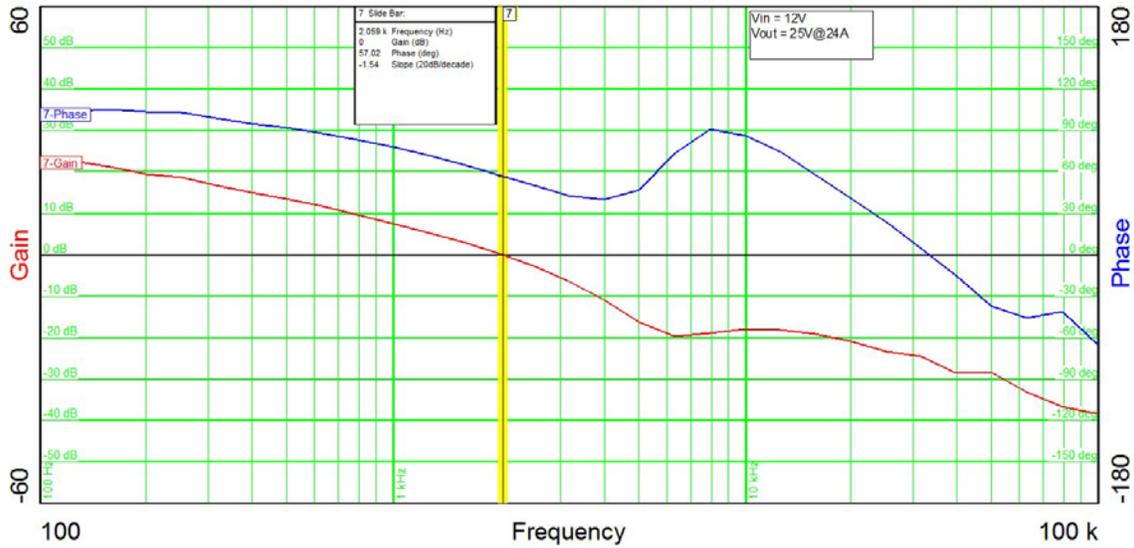
## 7 Loop Gain

The plot below shows the loop gain for an input voltage of 12V and an output of 25V @ 24A.

Loop Gain

BW: 2.06KHz

PM: 57 degrees

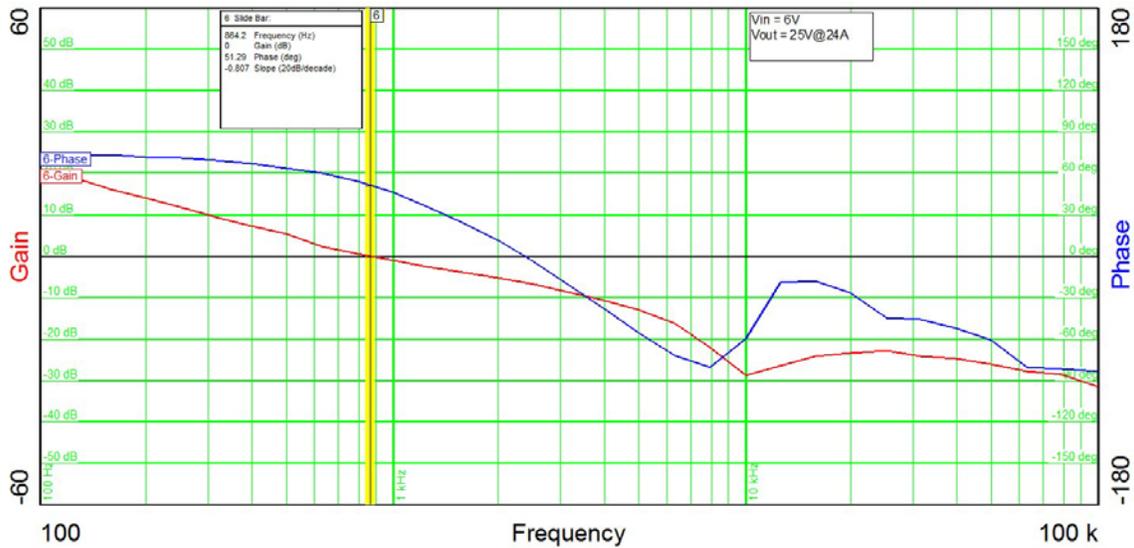


The plot below shows the loop gain for an input voltage of 6V and an output of 25V @ 24A.

Loop Gain

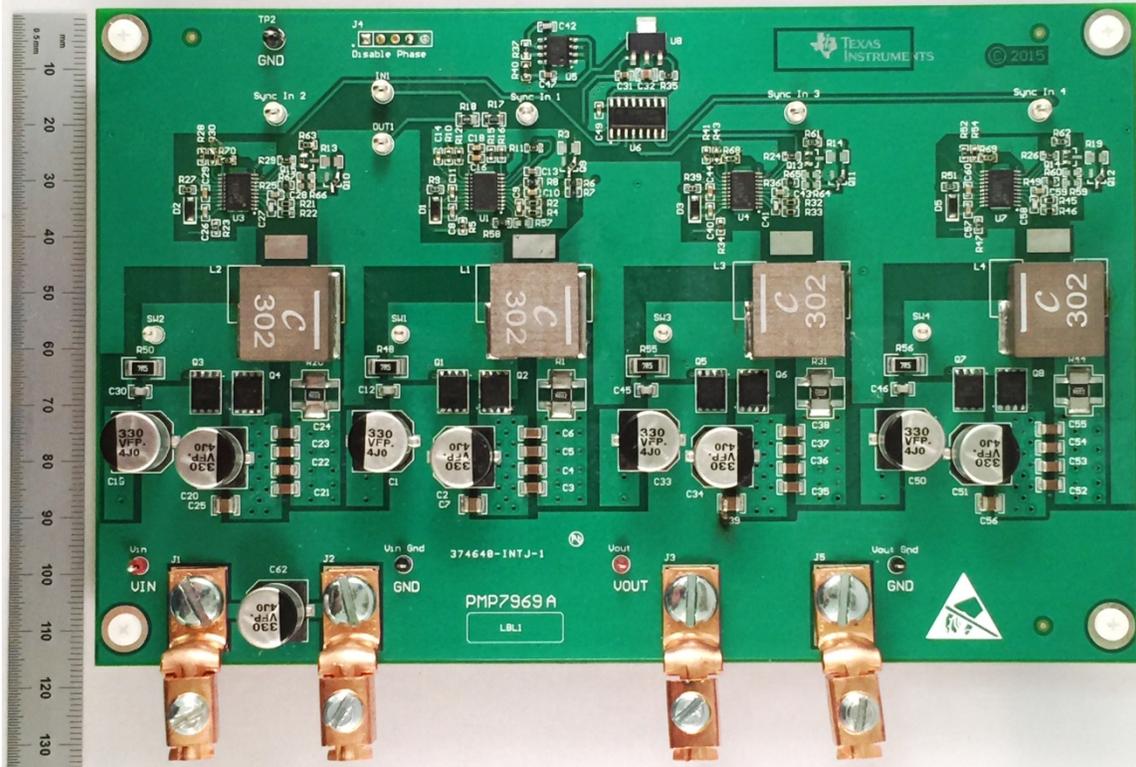
BW: 864Hz

PM: 51 degrees

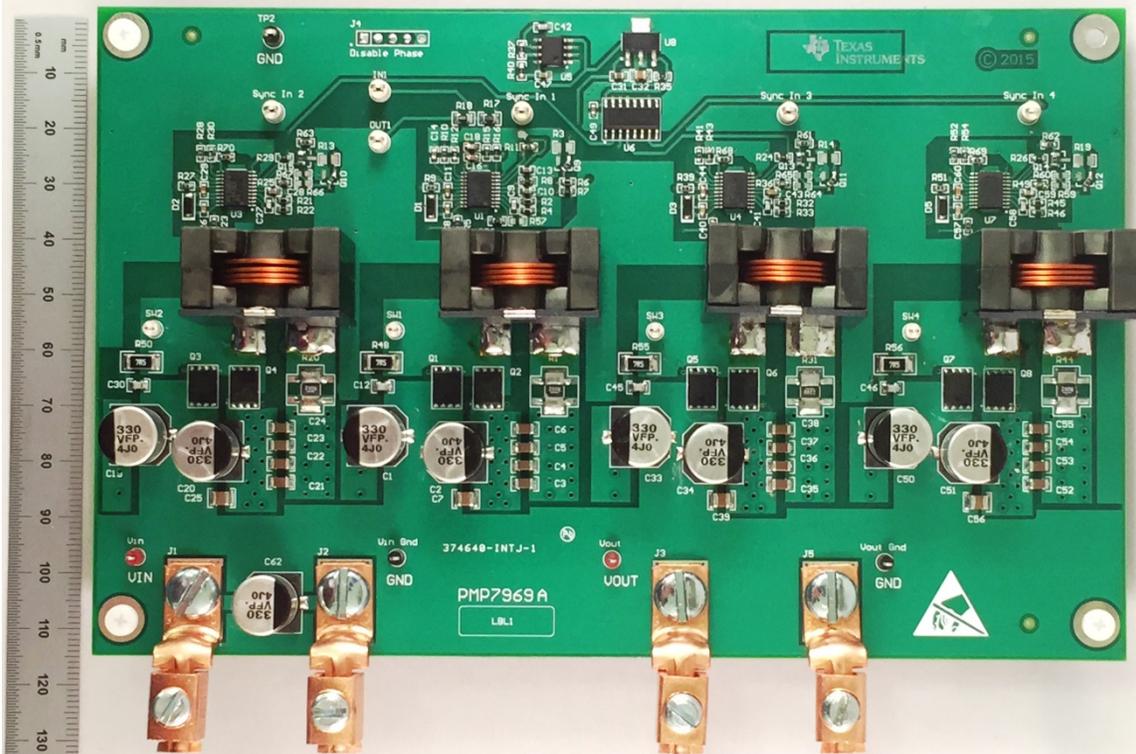


## 8 Photo

The photo below shows the PMP11112 REVB assembly built on the PMP7969 REVA PWB.

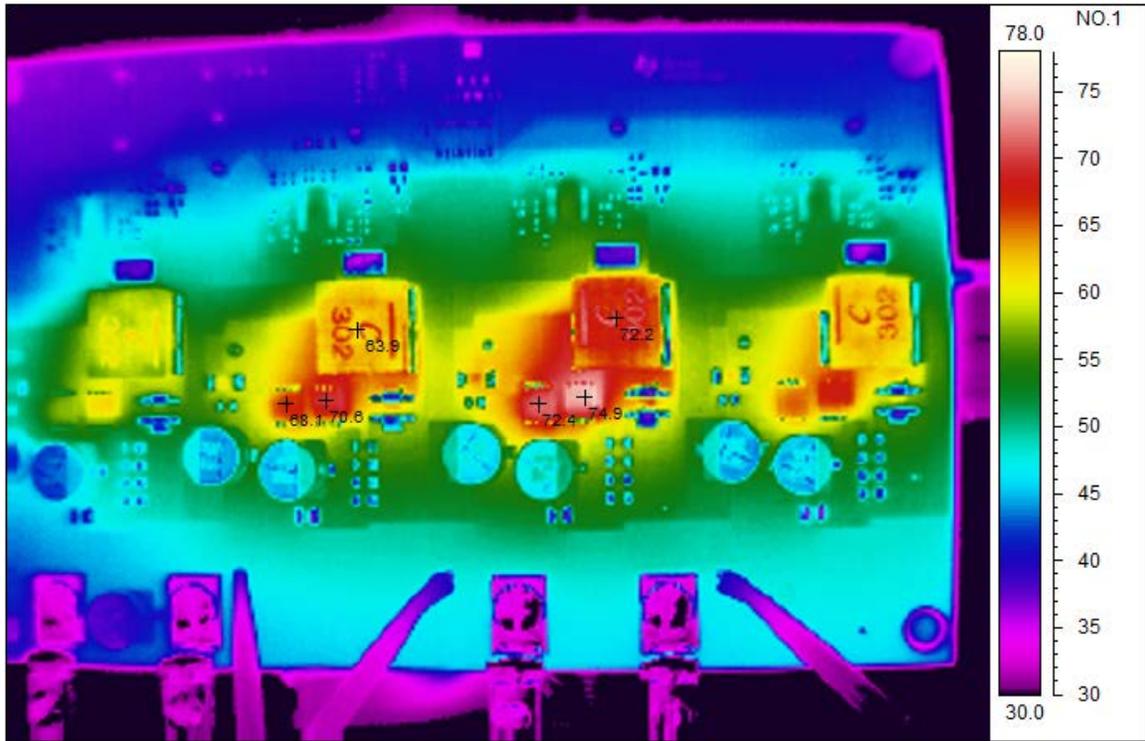


This second image changes L1-L4 to larger SER2915L-472 inductors for reduced losses.

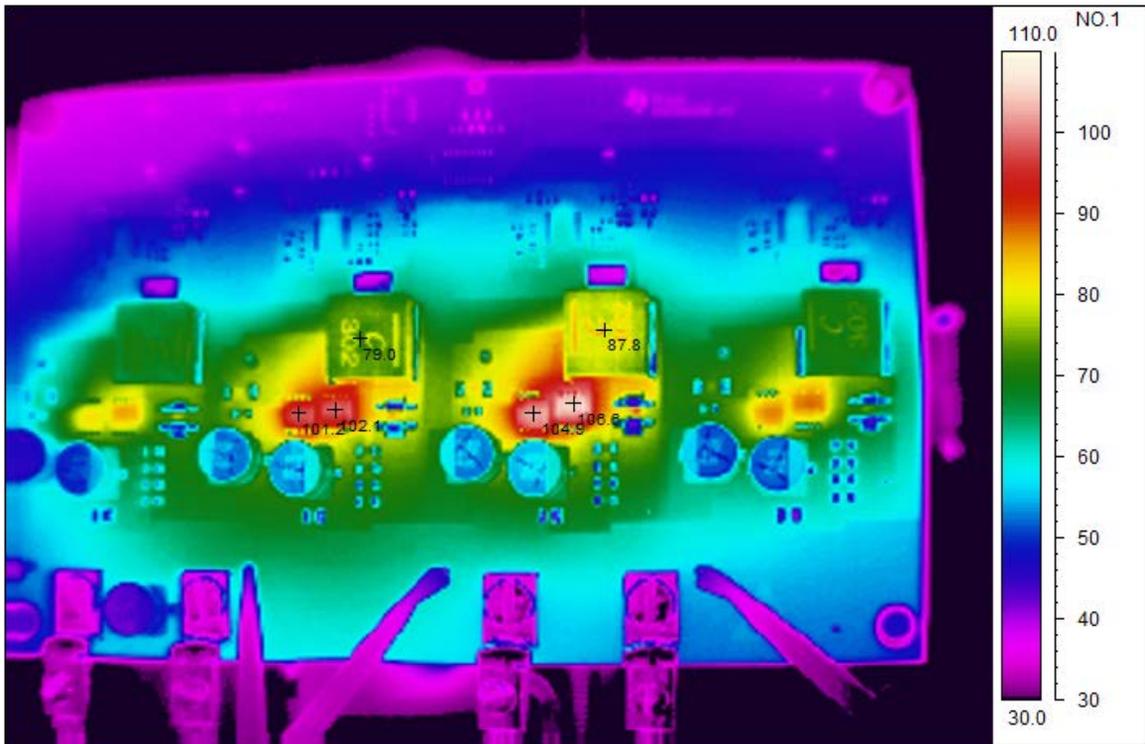


## 9 Thermal Image

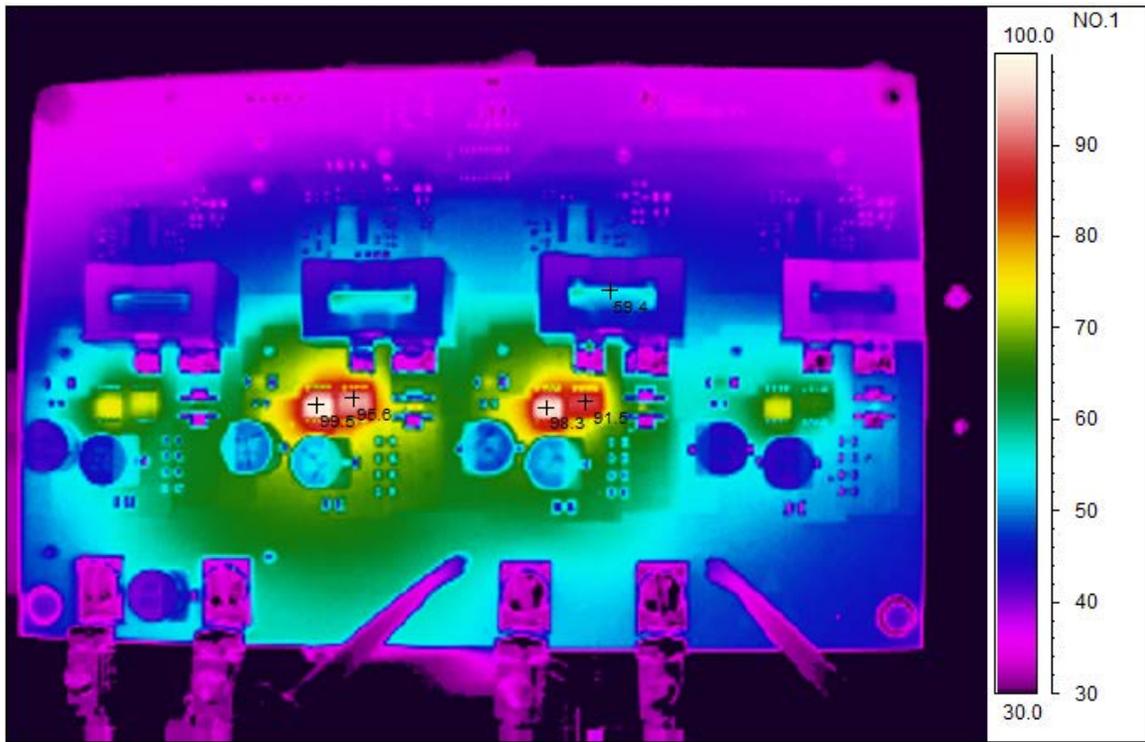
A thermal image is shown below operating at 12V input and 25V@12A output (room temp, no airflow).



A thermal image is shown below operating at 12V input and 25V@24A output (room temp, no airflow).



A thermal image is shown below operating at 12V input and 25V@24A output (room temp, no airflow). This image changes L1-L4 to larger SER2915L-472 inductors, which run cooler.



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