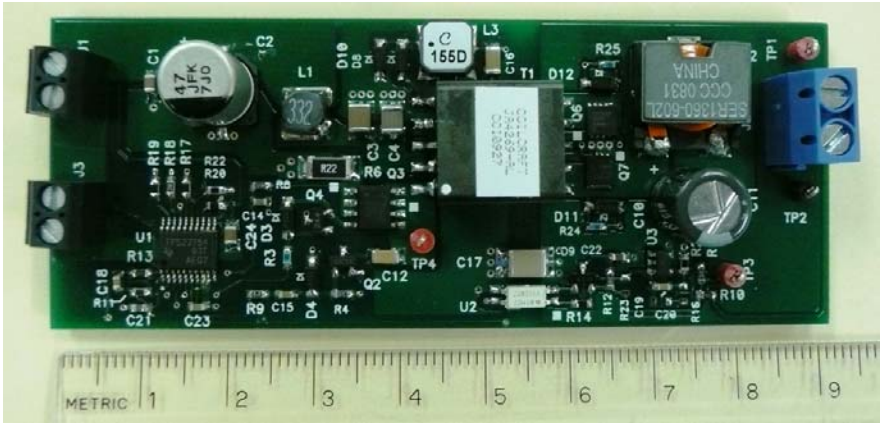
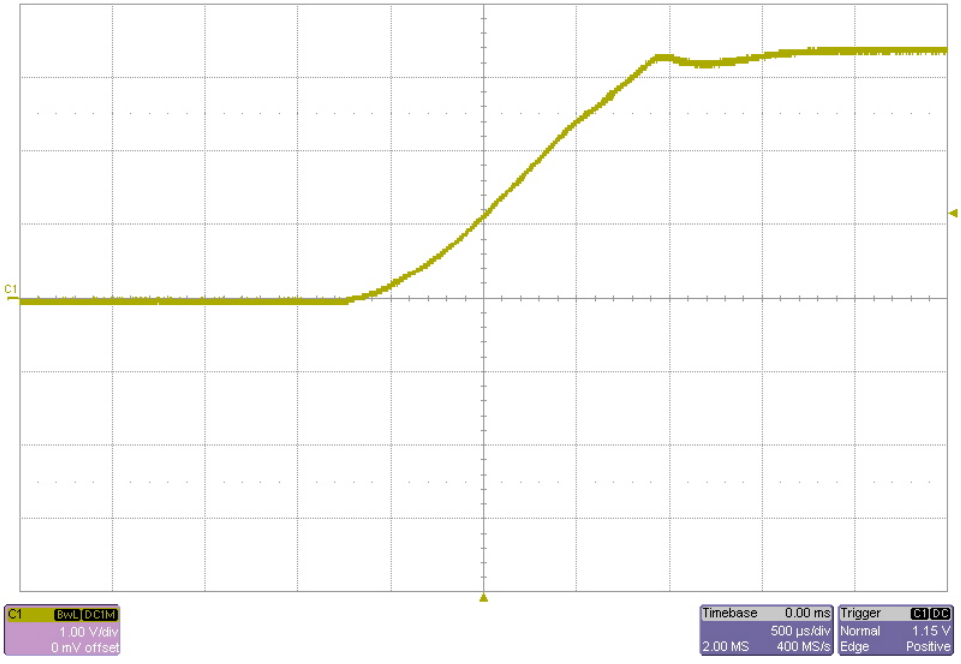
1 Photo

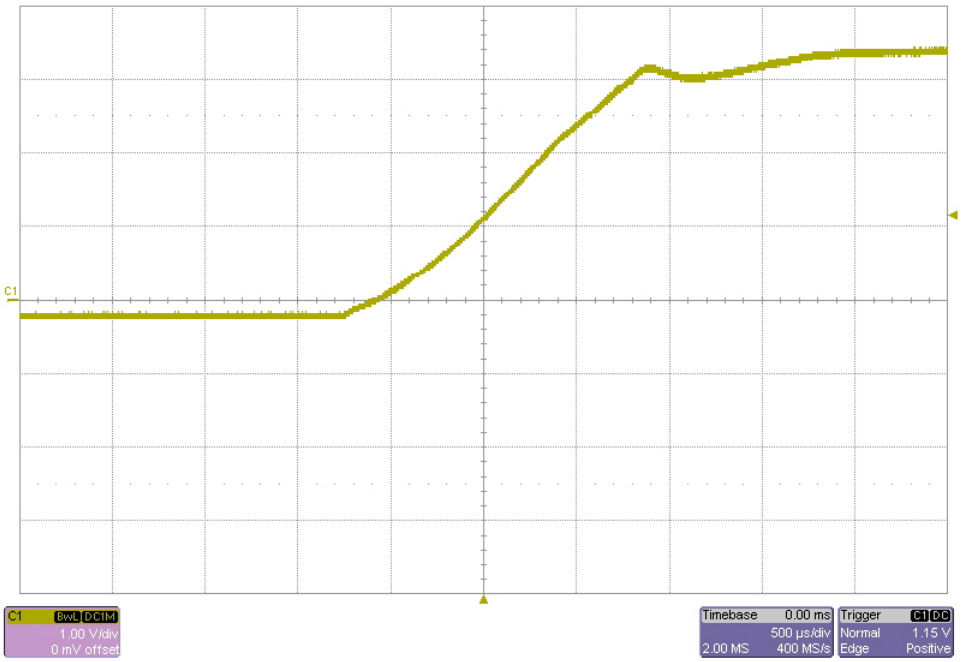
The photograph below shows a top view of the PMP4908 Rev A demo board.



2 Startup

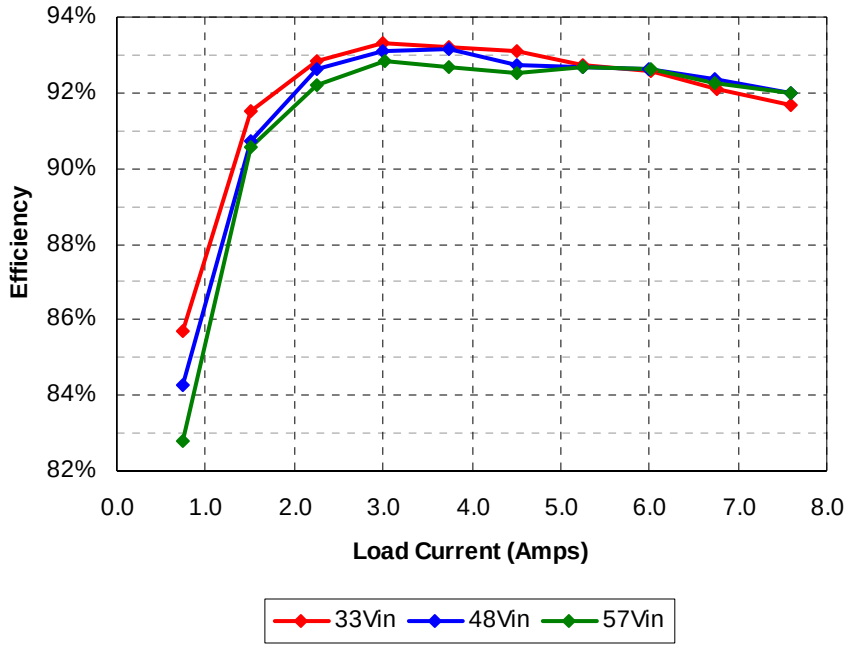
The output voltage at startup is shown in the images below. The input was 48VDC. For the top image the output was unloaded. For the bottom image, the output was loaded with 7.6A.





3 Efficiency

The efficiency data is shown in the tables and graph below.



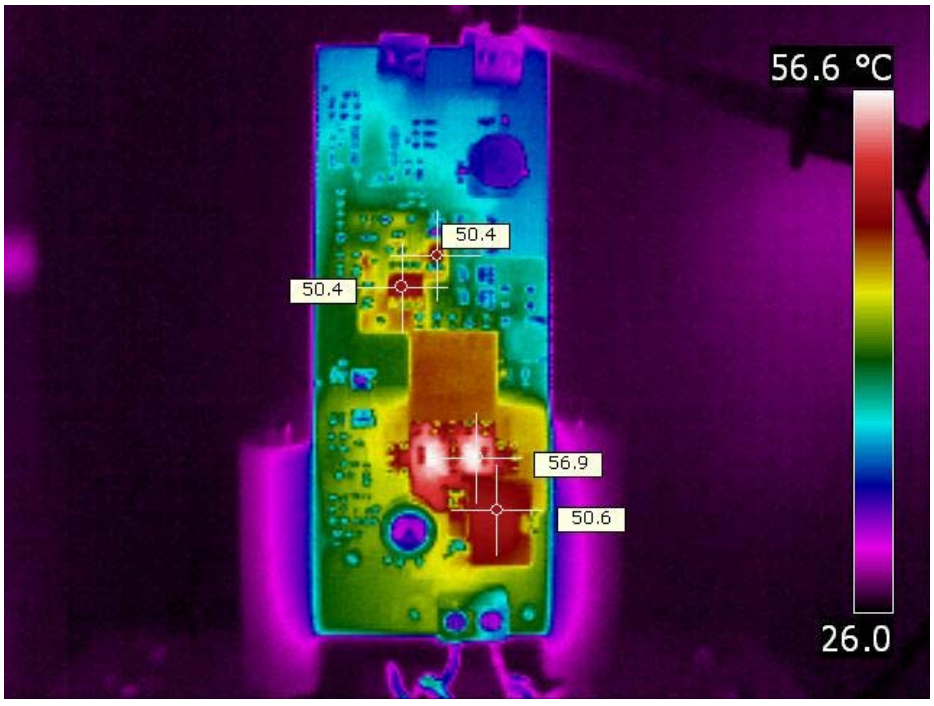
Vin	Iin	Iout	Vout	Pout	Losses	Efficiency
33.0	0.012	0.000	3.34	0.00	0.396	0.0%
33.0	0.088	0.745	3.34	2.49	0.416	85.7%
33.0	0.167	1.510	3.34	5.04	0.468	91.5%
33.0	0.245	2.247	3.34	7.50	0.580	92.8%
33.0	0.326	3.006	3.34	10.04	0.718	93.3%
33.0	0.407	3.749	3.34	12.52	0.909	93.2%
33.0	0.490	4.507	3.34	15.05	1.117	93.1%
33.0	0.573	5.250	3.34	17.54	1.374	92.7%
33.0	0.658	6.018	3.34	20.10	1.614	92.6%
33.0	0.742	6.75	3.34	22.55	1.941	92.1%
33.0	0.839	7.60	3.34	25.38	2.303	91.7%

Vin	Iin	Iout	Vout	Pout	Losses	Efficiency
48.0	0.009	0.000	3.34	0.00	0.432	0.0%
48.0	0.062	0.751	3.34	2.51	0.468	84.3%
48.0	0.115	1.499	3.34	5.01	0.513	90.7%
48.0	0.169	2.250	3.34	7.52	0.597	92.6%
48.0	0.224	2.997	3.34	10.01	0.742	93.1%
48.0	0.280	3.748	3.34	12.52	0.922	93.1%
48.0	0.338	4.504	3.34	15.04	1.181	92.7%
48.0	0.394	5.249	3.34	17.53	1.380	92.7%
48.0	0.451	6.003	3.34	20.05	1.598	92.6%
48.0	0.507	6.73	3.34	22.48	1.858	92.4%
48.0	0.575	7.60	3.34	25.38	2.216	92.0%

Vin	Iin	Iout	Vout	Pout	Losses	Efficiency
57.0	0.008	0.000	3.34	0.00	0.456	0.0%
57.0	0.053	0.749	3.34	2.50	0.519	82.8%
57.0	0.097	1.499	3.34	5.01	0.522	90.6%
57.0	0.143	2.250	3.34	7.52	0.636	92.2%
57.0	0.190	3.010	3.34	10.05	0.777	92.8%
57.0	0.237	3.748	3.34	12.52	0.991	92.7%
57.0	0.285	4.500	3.34	15.03	1.215	92.5%
57.0	0.332	5.250	3.34	17.54	1.389	92.7%
57.0	0.380	6.008	3.34	20.07	1.593	92.6%
57.0	0.428	6.74	3.34	22.51	1.884	92.3%
57.0	0.484	7.60	3.34	25.38	2.204	92.0%

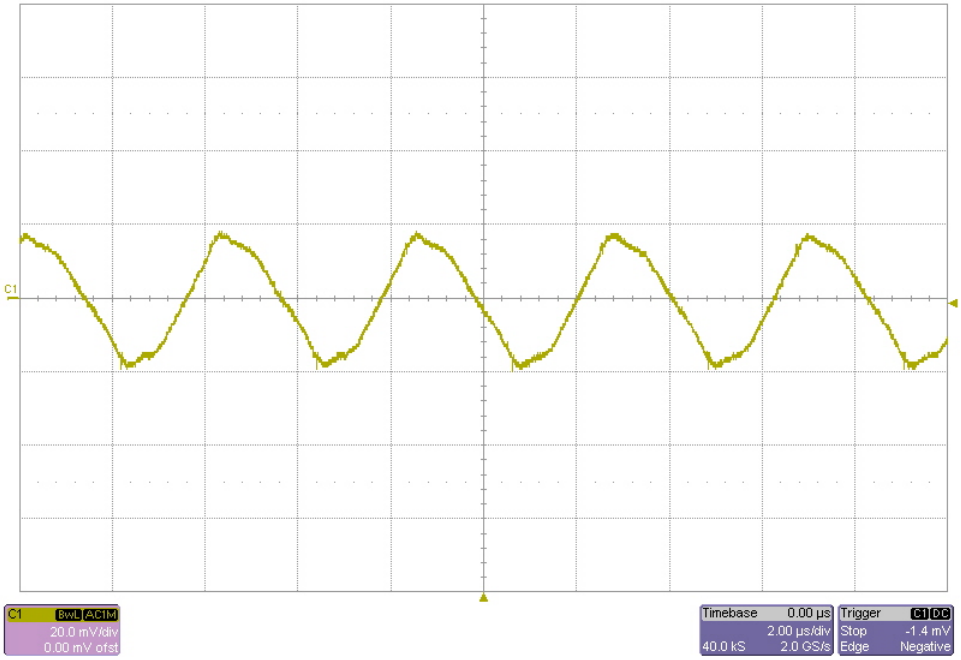
4 Thermal Image

A thermal image of the top side of the board is shown with a 7.6A load. The ambient temperature was 26ºC.



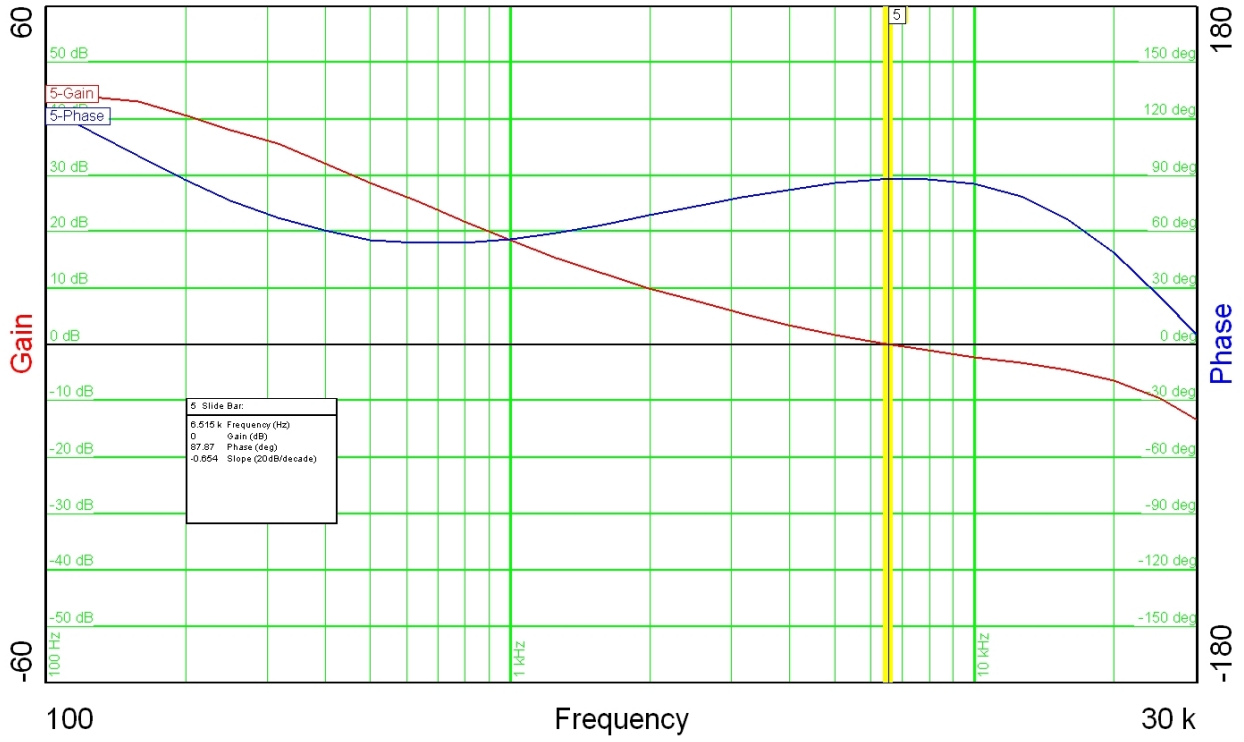
5 Output Ripple Voltage

The output ripple voltage is shown in the plot below. The input was set to 48VDC and the output was loaded with 7.6A.



6 Frequency Response

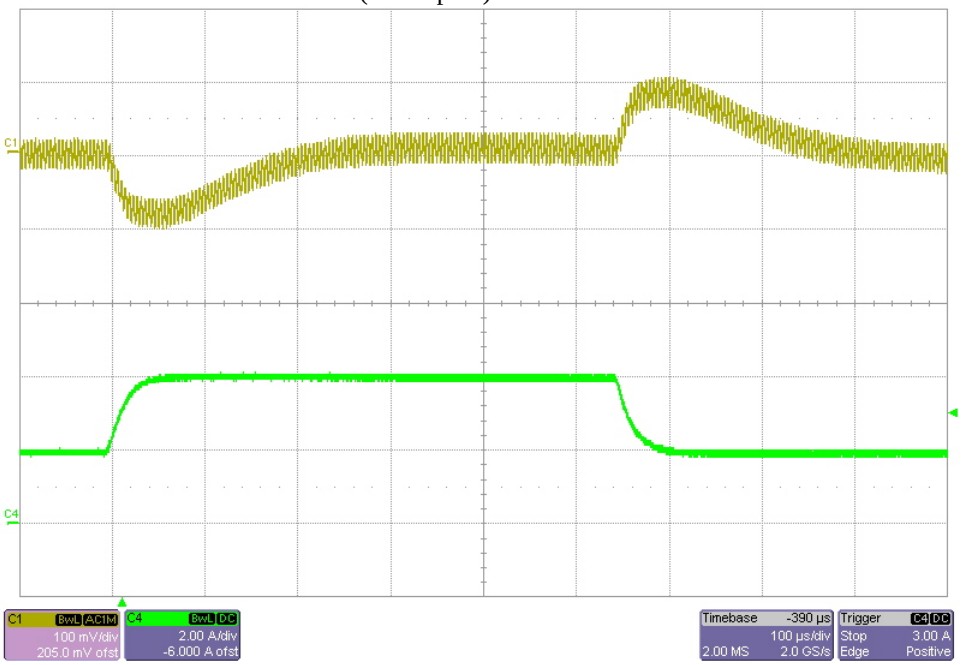
The frequency response of the feedback loop is shown below. The input was set to 48V and the output was loaded with 7.6A.



7 Load Transients

The response to a load step from 2A to 4A is shown in the image below. The input was set to 48V.

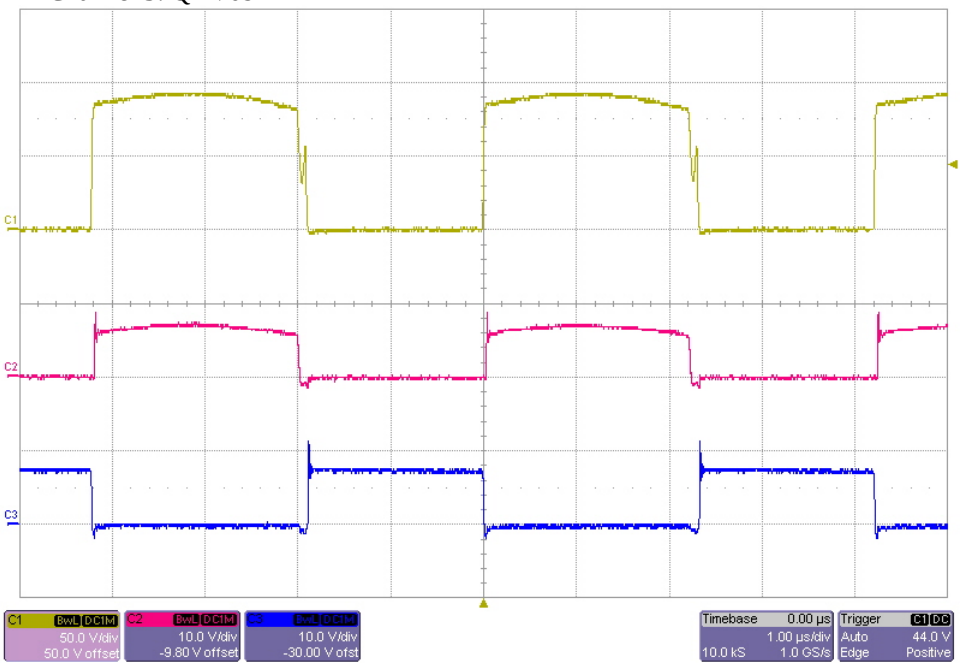
Channel 1: Vout 100mV/div (ac coupled) Channel 4: Iout 2A/div



8 Switching Waveforms

The image below shows the drain-to-source voltage waveforms on the switching MOSFETs. The input was set to 48VDC, and the output was loaded with 7.6A.

Channel 1: Q3 Vds Channel 2: Q6 Vds
Channel 3: Q7 Vds



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