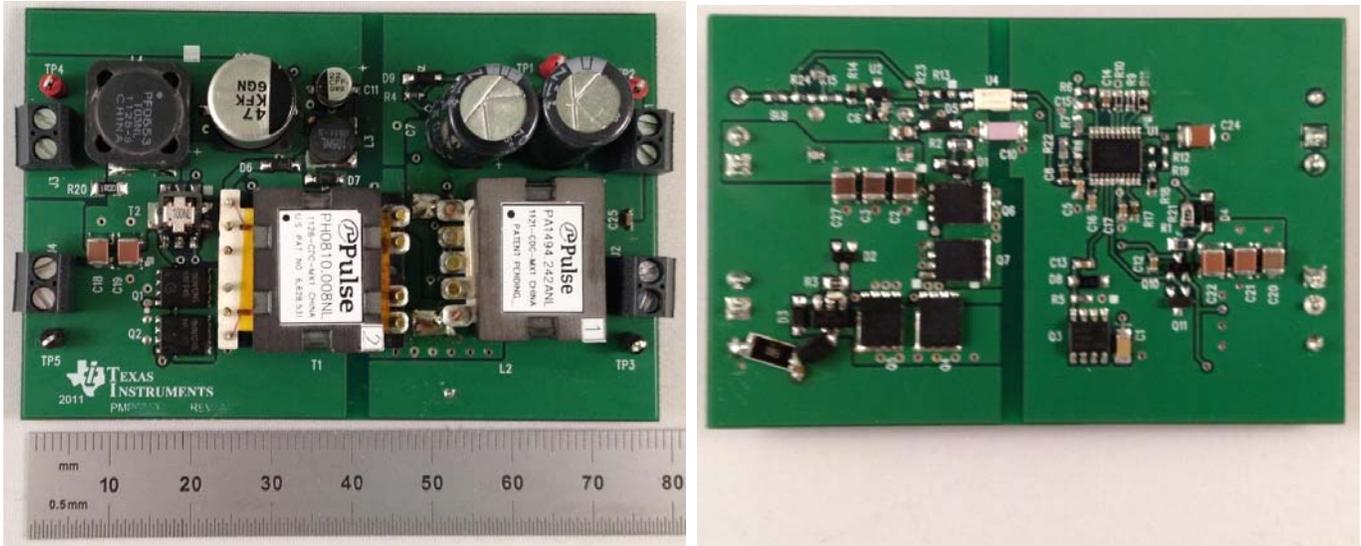


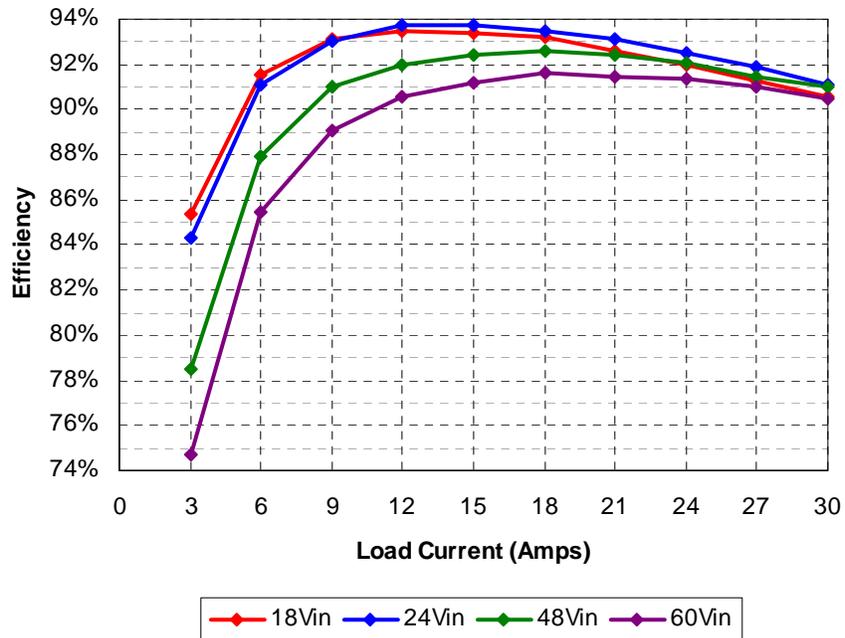
1 Photo

The photos below show the PMP8252 Rev B demo board. This circuit was built on a PMP6753 Rev A PCB.



2 Efficiency

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

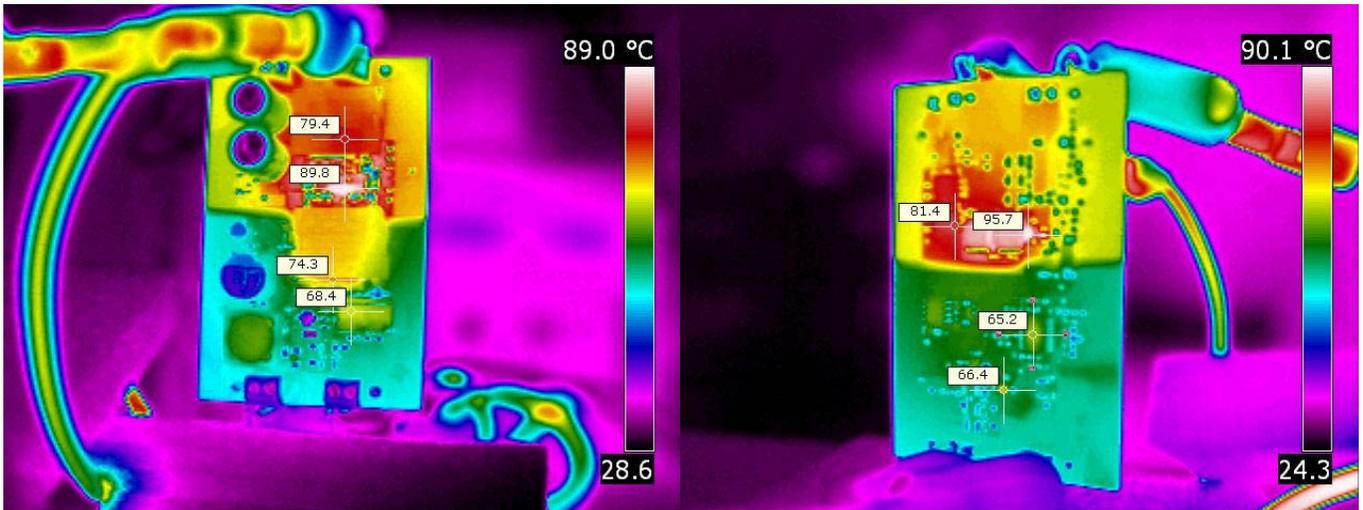


Vin	Iin	Iout	Vout	Pout	Losses	Efficiency	Vin	Iin	Iout	Vout	Pout	Losses	Efficiency
18.02	0.099	0.000	3.299	0.00	1.784	0.0%	24.00	0.082	0.000	3.302	0.00	1.968	0.0%
17.99	0.645	3.003	3.299	9.91	1.697	85.4%	24.04	0.488	2.995	3.301	9.89	1.845	84.3%
18.02	1.200	6.00	3.298	19.78	1.839	91.5%	23.99	0.906	6.00	3.300	19.80	1.935	91.1%
18.02	1.769	9.00	3.298	29.68	2.195	93.1%	24.00	1.330	9.00	3.300	29.70	2.220	93.0%
17.99	2.351	11.99	3.298	39.54	2.751	93.5%	24.00	1.759	11.99	3.299	39.56	2.661	93.7%
17.99	2.943	14.99	3.298	49.44	3.508	93.4%	24.05	2.196	15.00	3.299	49.49	3.329	93.7%
17.99	3.541	18.0	3.298	59.36	4.339	93.2%	24.01	2.645	18.0	3.299	59.38	4.124	93.5%
17.99	4.159	21.0	3.298	69.26	5.562	92.6%	24.01	3.099	21.0	3.299	69.28	5.128	93.1%
17.99	4.783	24.0	3.299	79.18	6.870	92.0%	24.01	3.564	24.0	3.299	79.18	6.396	92.5%
18.00	5.421	27.0	3.299	89.07	8.505	91.3%	24.03	4.033	27.0	3.299	89.07	7.840	91.9%
18.00	6.072	30.0	3.299	98.97	10.326	90.6%	23.98	4.529	30.0	3.299	98.97	9.635	91.1%
Vin	Iin	Iout	Vout	Pout	Losses	Efficiency	Vin	Iin	Iout	Vout	Pout	Losses	Efficiency
48.0	0.062	0.000	3.302	0.00	2.976	0.0%	60.0	0.060	0.000	3.303	0.00	3.600	0.0%
48.0	0.263	3.001	3.302	9.91	2.715	78.5%	60.0	0.221	2.998	3.303	9.90	3.358	74.7%
48.0	0.469	5.99	3.301	19.79	2.726	87.9%	60.0	0.386	6.00	3.302	19.80	3.365	85.5%
48.0	0.680	9.00	3.300	29.70	2.940	91.0%	60.0	0.556	9.00	3.301	29.71	3.651	89.1%
48.0	0.897	12.00	3.300	39.60	3.456	92.0%	60.0	0.729	12.00	3.301	39.61	4.128	90.6%
48.0	1.116	15.00	3.300	49.50	4.068	92.4%	60.0	0.905	15.00	3.300	49.50	4.800	91.2%
48.0	1.337	18.0	3.300	59.40	4.776	92.6%	60.0	1.081	18.0	3.300	59.40	5.460	91.6%
48.0	1.563	21.0	3.300	69.30	5.724	92.4%	60.0	1.263	21.0	3.300	69.30	6.480	91.4%
48.0	1.793	24.0	3.300	79.20	6.864	92.0%	60.0	1.445	24.0	3.300	79.20	7.500	91.3%
48.0	2.029	27.0	3.300	89.10	8.292	91.5%	60.0	1.632	27.0	3.300	89.10	8.820	91.0%
48.0	2.267	30.0	3.300	99.00	9.816	91.0%	60.0	1.824	30.0	3.300	99.00	10.440	90.5%

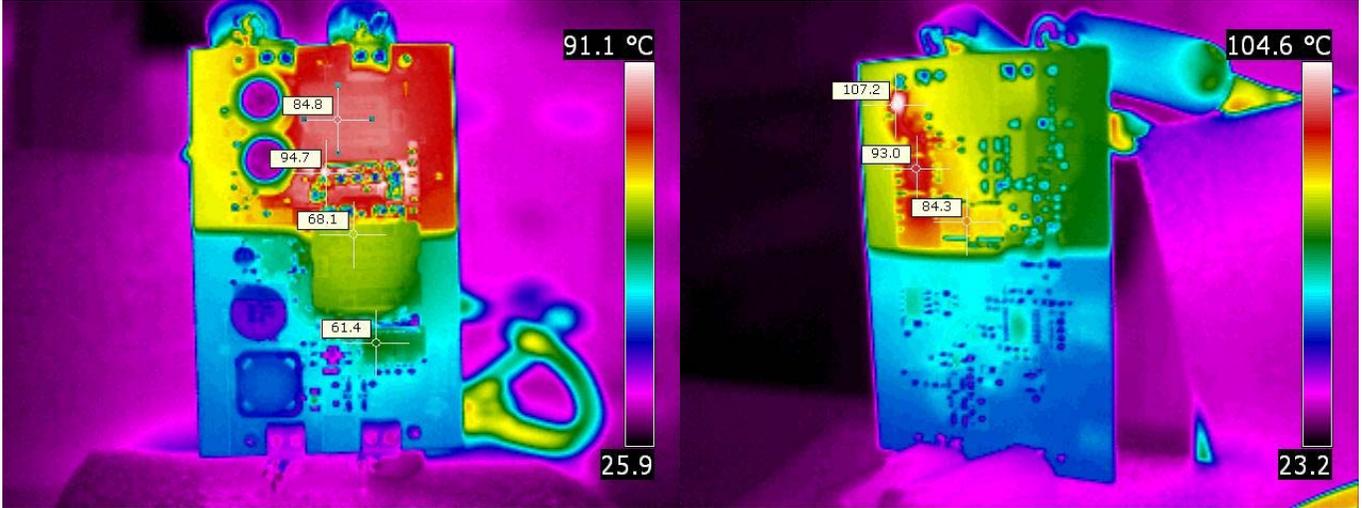
3 Thermal Images

The thermal images below show the top and bottom of the board with a 30A load and 150lfm of air flow. The ambient temperature was 25°C.

3.1 18V Input

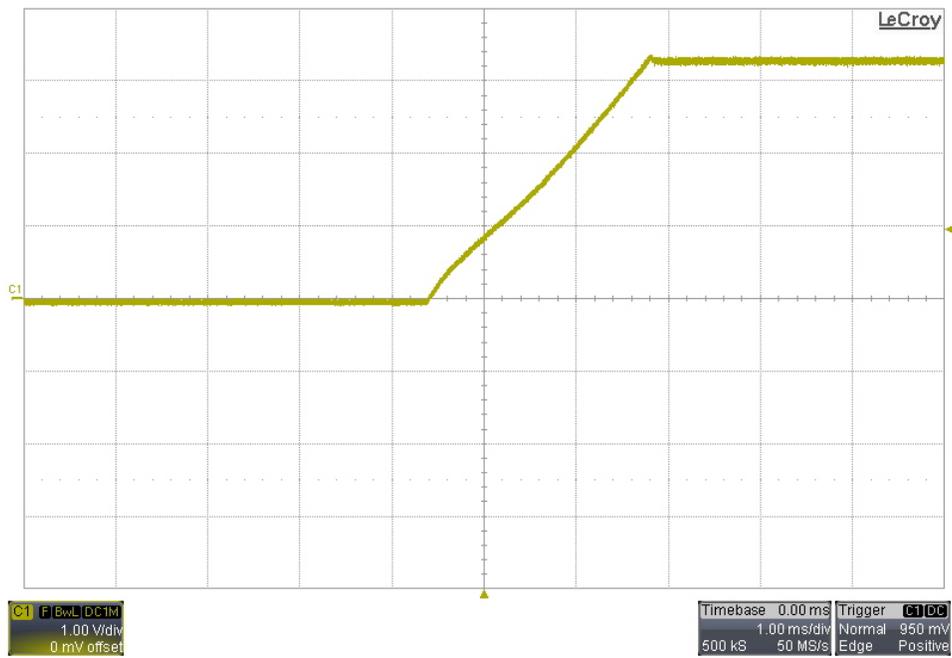


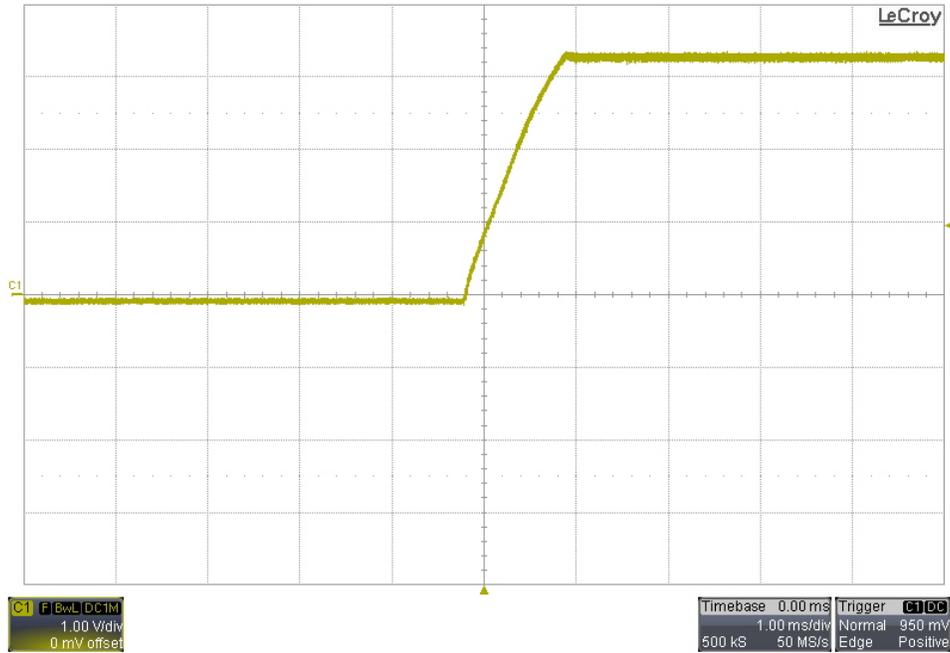
3.2 60Vin



4 Startup

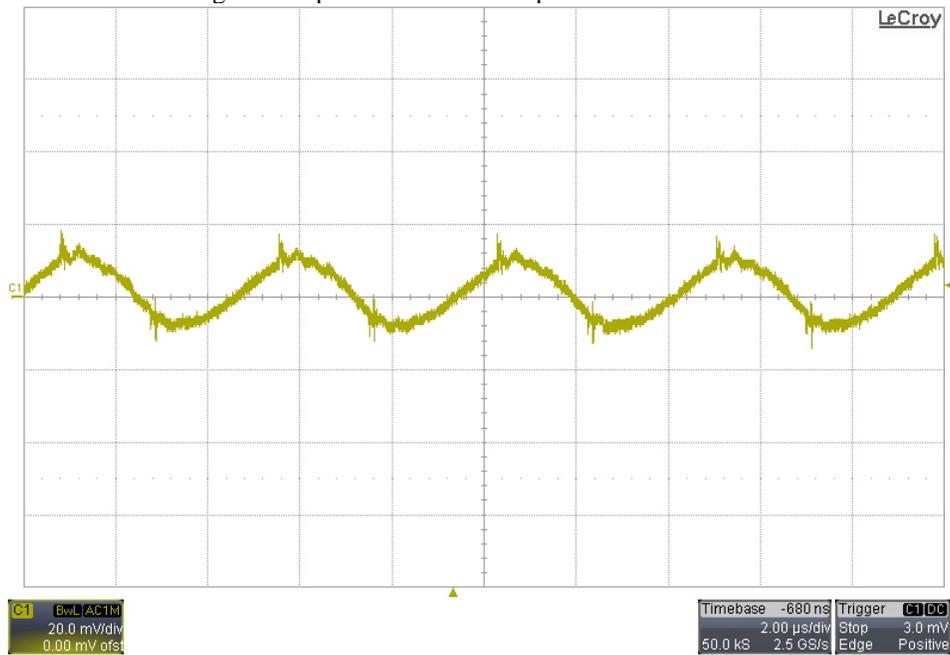
The output voltage at startup is shown in the images below. The top image was captured with an 18V input, and the bottom image was captured with a 60V input. The output was unloaded for both images.

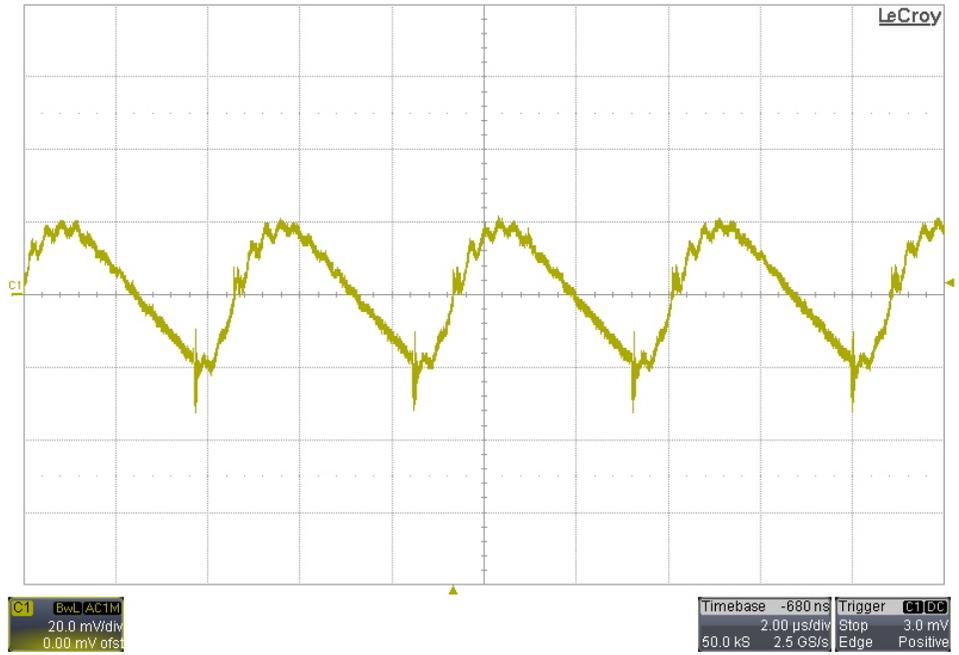




5 Output Ripple Voltage

The output ripple voltage during full load operation (30A load) is shown in the images below. The top image was captured with an 18V input, and the bottom image was captured with a 60V input.

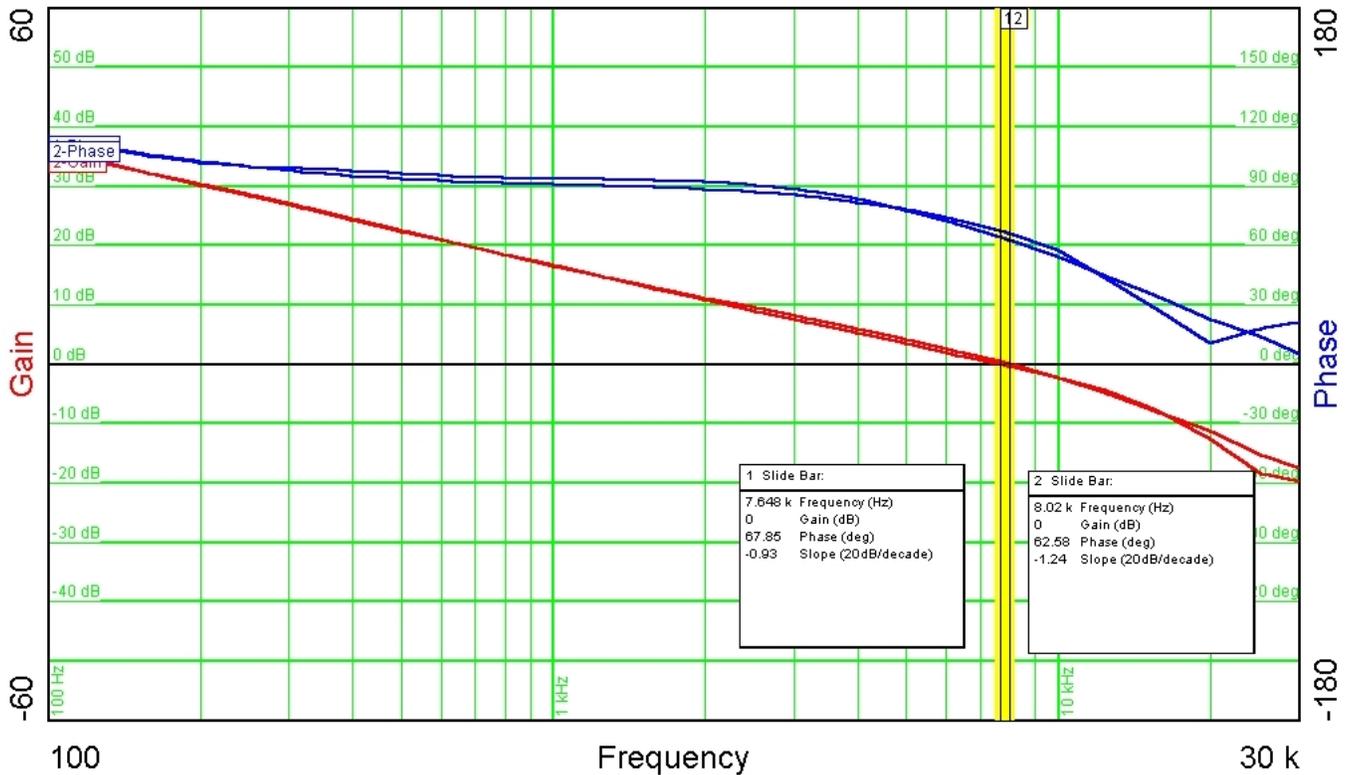




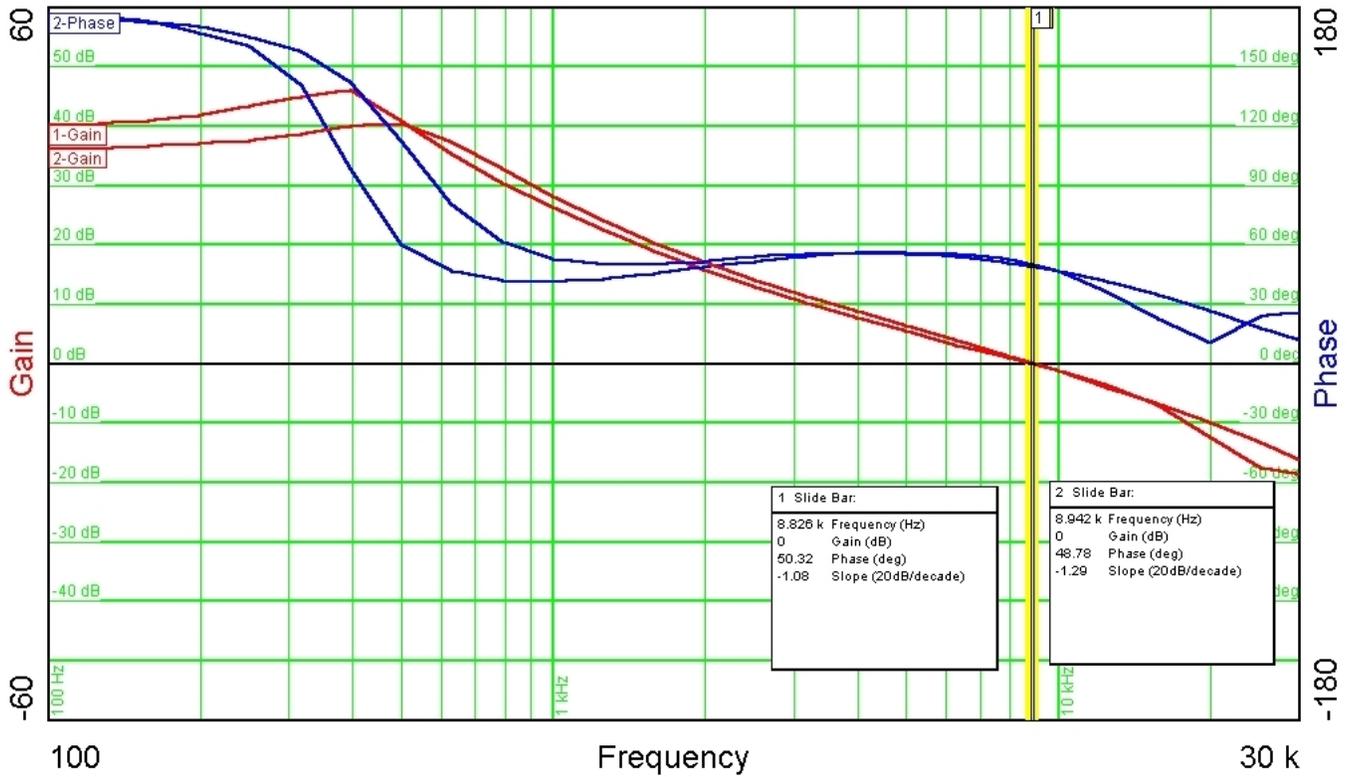
6 Loop Response

The images below show the loop response of the converter. For plot #1, the input was 18Vdc. For plot #2, the input was 60Vdc. The output was loaded with 30A.

6.1 Loop Broken At R24

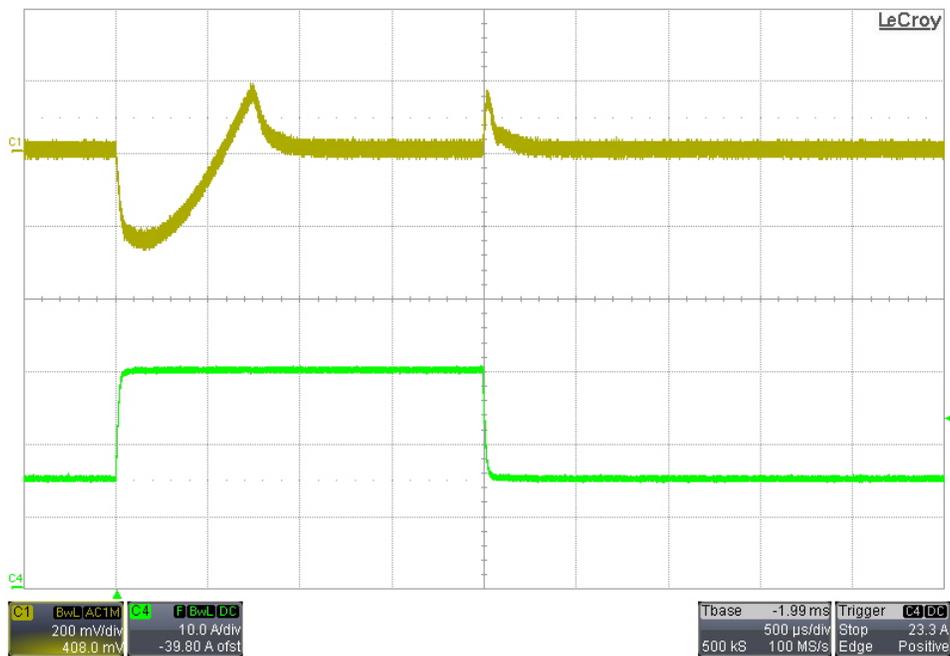


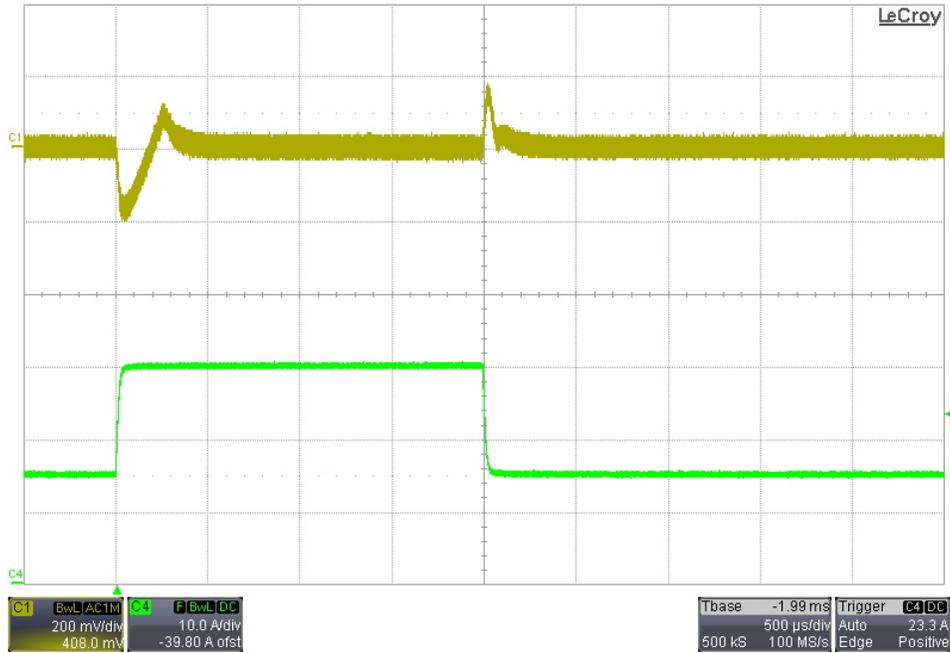
6.2 Loop Broken at R16



7 Load Transients

The images below show the response to a 15A to 30A load transient. For the top image, the input voltage was set to 18VDC. For the bottom image, the input voltage was set to 60VDC. Channel 1 displays the output voltage (ac coupled). Channel 4 displays the load current.

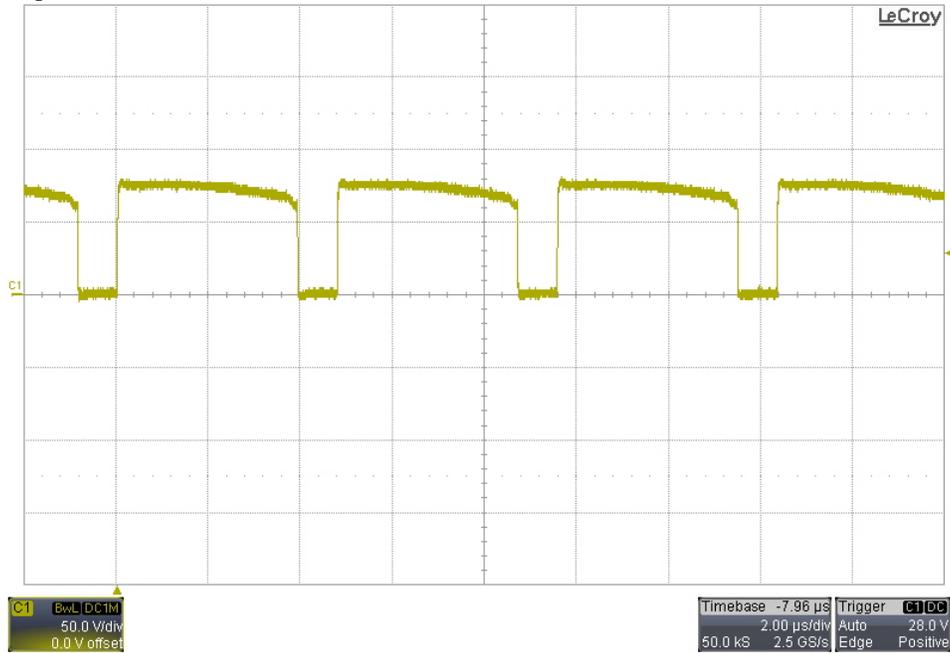




8 Switching Waveforms

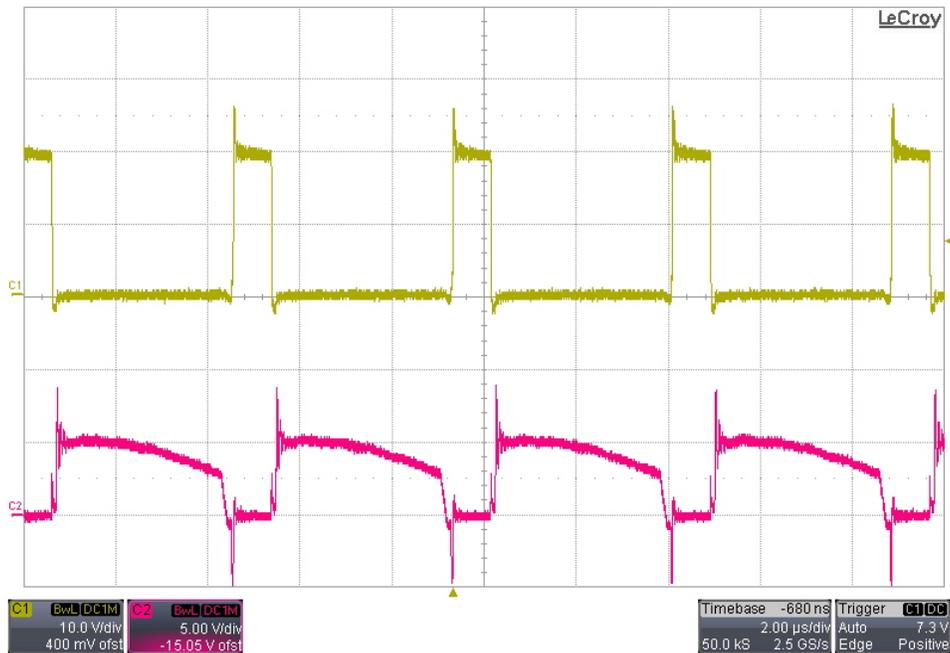
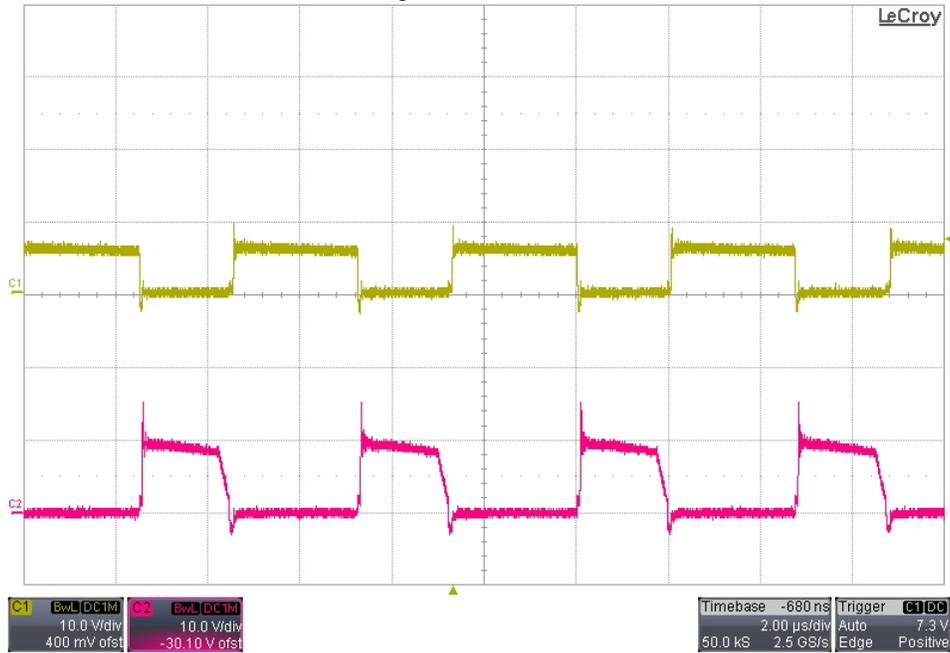
8.1 Primary Waveform

The image below shows the drain-to-source voltage waveform on the primary MOSFETs (Q1 and Q2). The input voltage was set to 60V and the output was loaded with 30A.



8.2 Secondary Waveforms

The images below show the drain-to-source voltage waveforms on the synchronous MOSFETs. The output was loaded with 30A. For the top image, the input was set to 18V. For the bottom image, the input was set to 60V. Channel 1 shows the drain voltage on Q4 and Q5. Channel 2 shows the drain voltage on Q6 and Q7.



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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
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