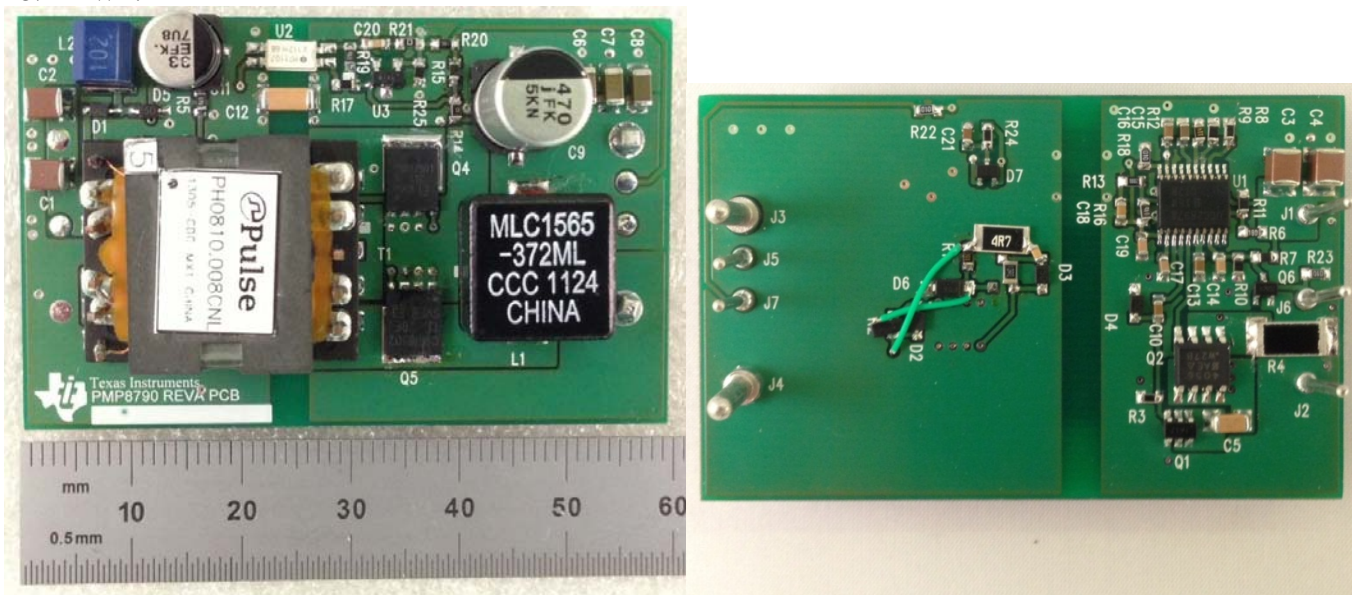
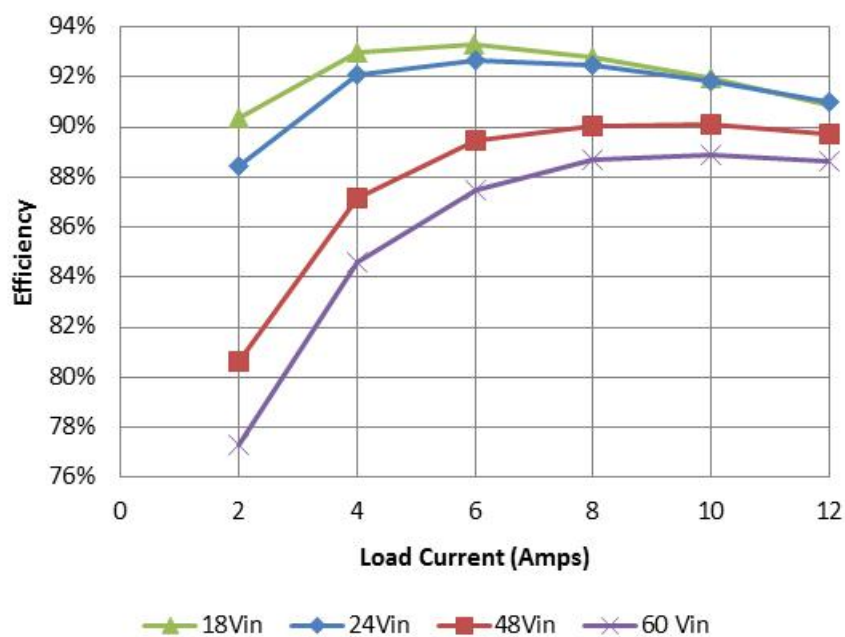


1 Photo

The photographs below show the top and bottom views of the PMP8790 Rev B demo board. The circuit is built on a PMP8790 Rev A PWB.



2 Efficiency



Iout	Vout	Vin	Iin	Pout	Losses	Efficiency
0.000	3.316	18.0	0.033	0.00	0.594	0.0%
2.001	3.315	18.0	0.408	6.63	0.711	90.3%
4.000	3.314	18.0	0.792	13.26	1.000	93.0%
5.996	3.313	18.0	1.183	19.86	1.429	93.3%
8.00	3.312	18.0	1.587	26.50	2.070	92.8%
10.00	3.311	18.0	2.001	33.11	2.908	91.9%
12.01	3.310	18.0	2.430	39.75	3.987	90.9%

Iout	Vout	Vin	Iin	Pout	Losses	Efficiency
0.000	3.315	24.0	0.029	0.00	0.696	0.0%
2.004	3.314	24.0	0.313	6.64	0.871	88.4%
4.007	3.314	24.0	0.601	13.28	1.145	92.1%
6.000	3.313	24.0	0.894	19.88	1.578	92.6%
8.00	3.312	24.0	1.194	26.50	2.160	92.5%
10.00	3.311	24.0	1.502	33.11	2.938	91.8%
12.00	3.310	24.0	1.819	39.72	3.936	91.0%

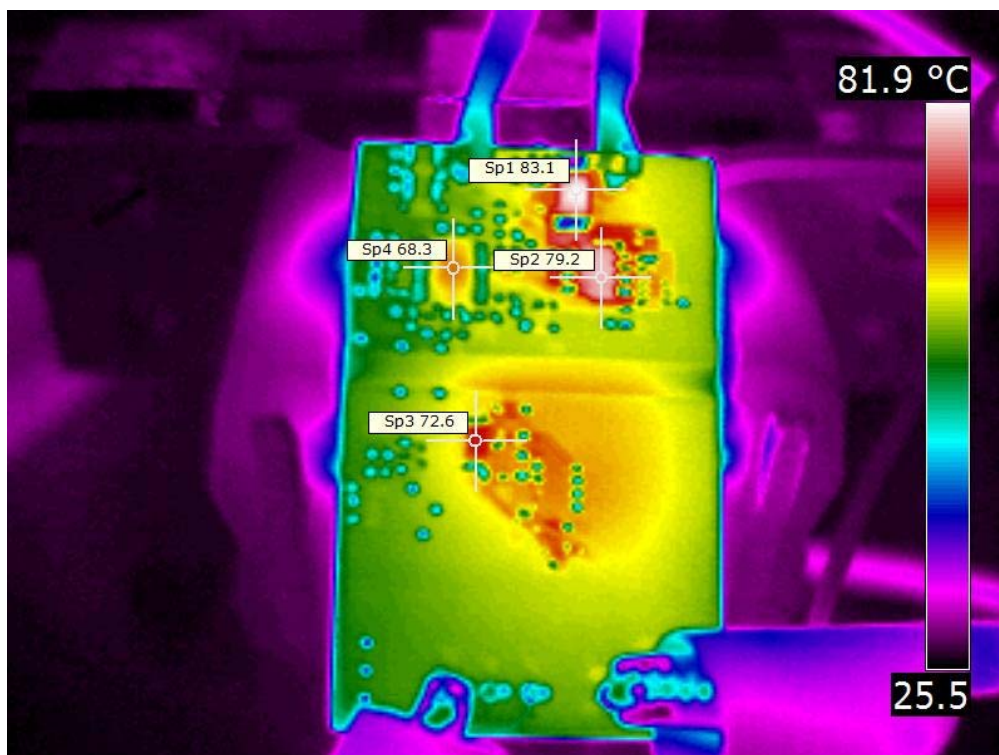
Iout	Vout	Vin	Iin	Pout	Losses	Efficiency
0.000	3.316	48.0	0.024	0.00	1.152	0.0%
1.997	3.315	48.0	0.171	6.62	1.588	80.7%
4.001	3.314	48.0	0.317	13.26	1.957	87.1%
6.002	3.313	48.0	0.463	19.88	2.339	89.5%
8.00	3.312	48.0	0.613	26.50	2.928	90.0%
10.00	3.312	48.0	0.766	33.12	3.648	90.1%
12.00	3.311	48.0	0.923	39.73	4.572	89.7%

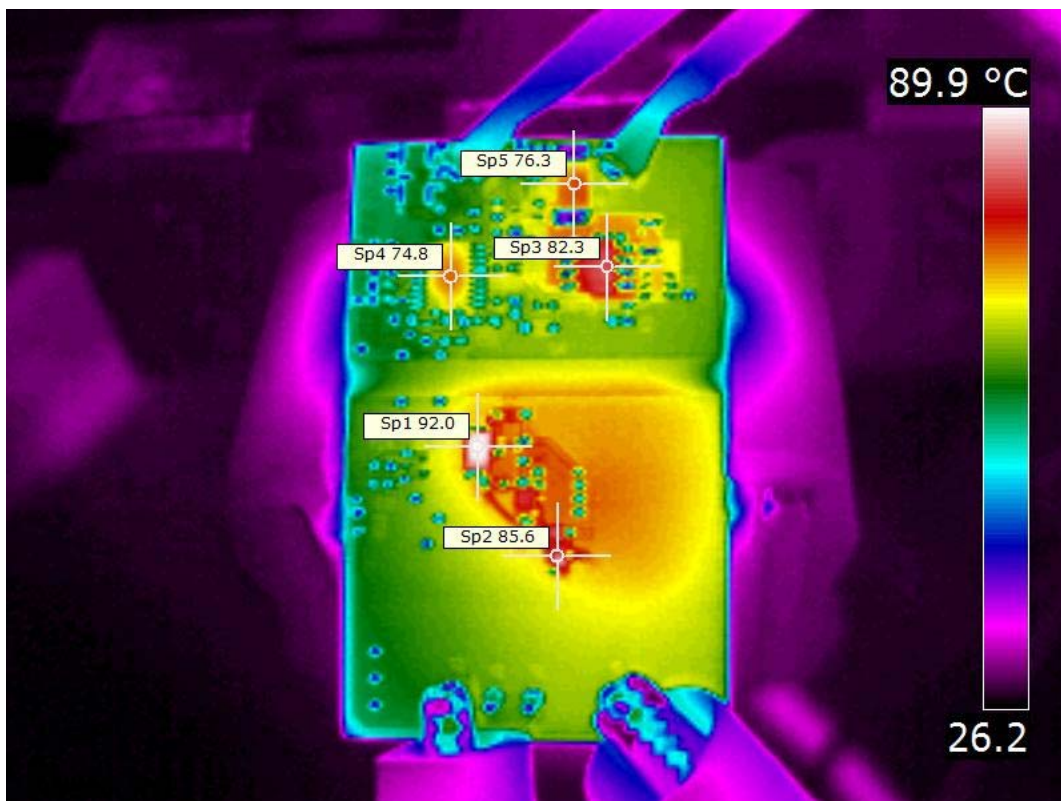
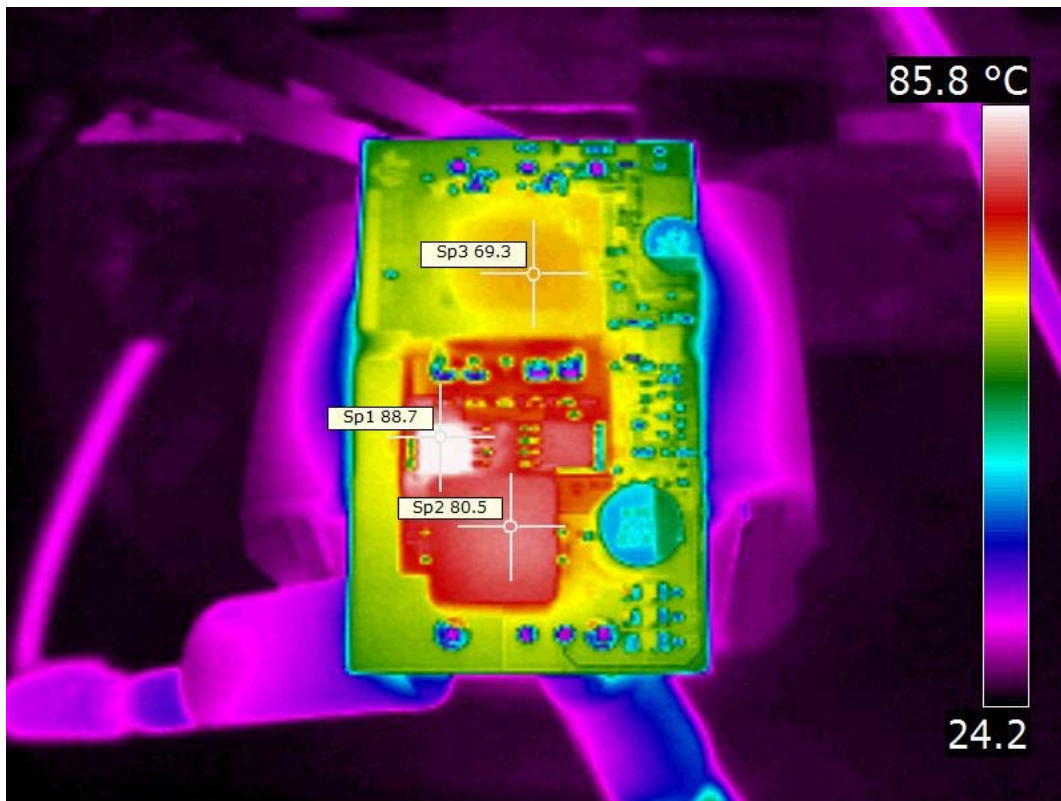
Iout	Vout	Vin	Iin	Pout	Losses	Efficiency
0.000	3.317	60.0	0.023	0.00	1.380	0.0%
2.001	3.315	60.0	0.143	6.63	1.947	77.3%
3.998	3.314	60.0	0.261	13.25	2.411	84.6%
6.002	3.314	60.0	0.379	19.89	2.849	87.5%
8.00	3.313	60.0	0.498	26.50	3.376	88.7%
10.00	3.312	60.0	0.621	33.12	4.140	88.9%
12.00	3.311	60.0	0.747	39.73	5.088	88.6%

3 Thermal Images

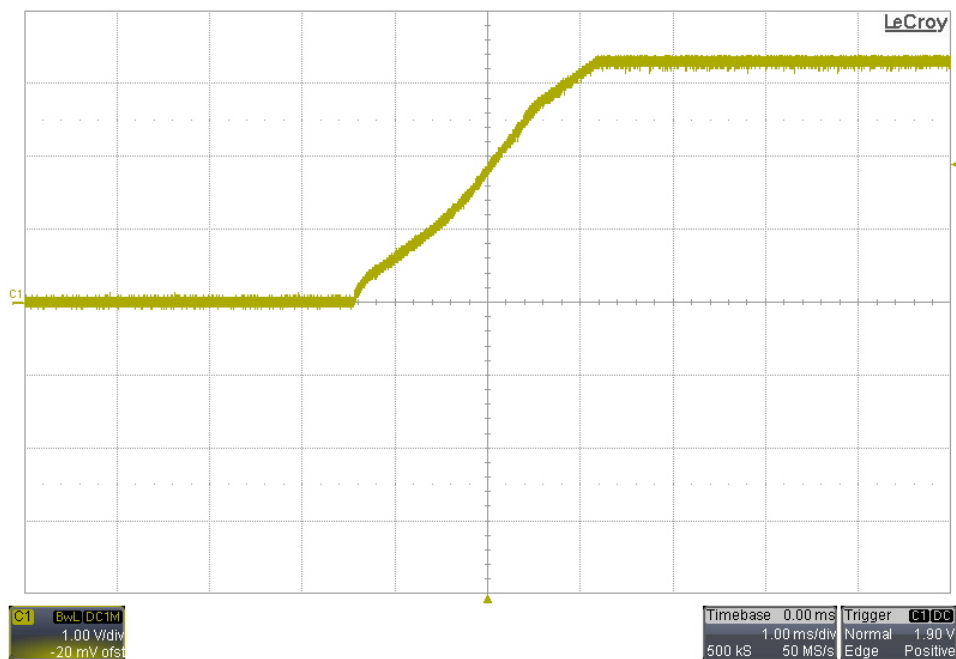
The ambient temperature was 25C with no forced air flow. The output was loaded with 12A.

3.1 24V Input

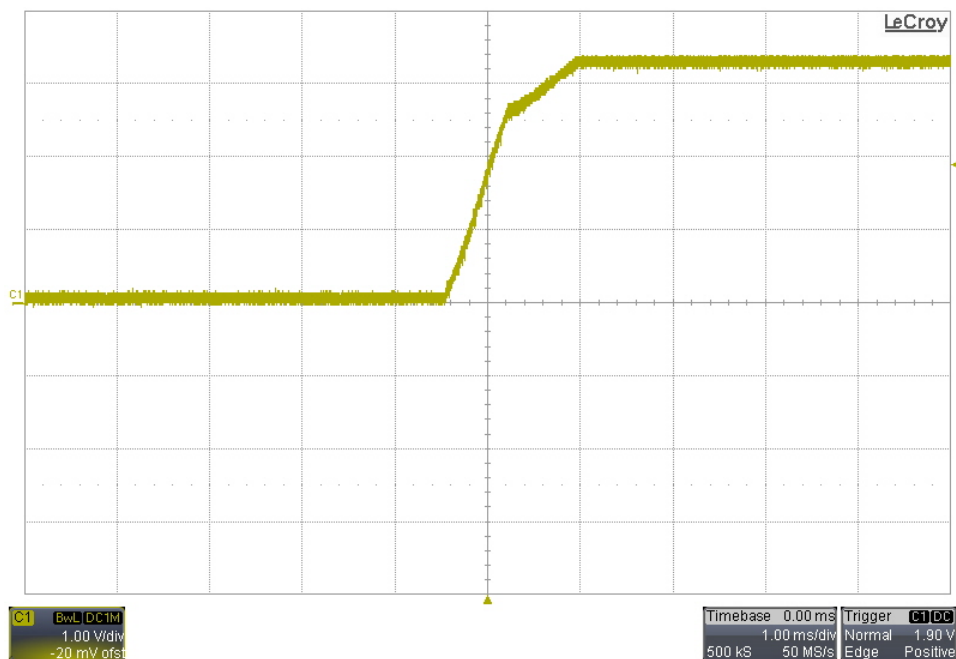


3.2 48V Input

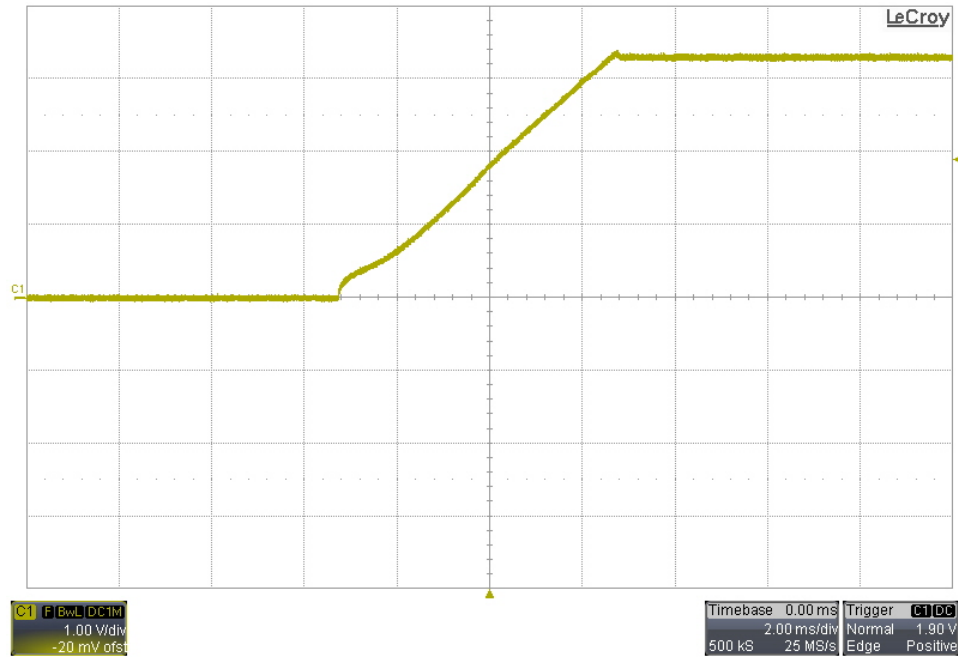
4 Startup – 18V Input, No Load



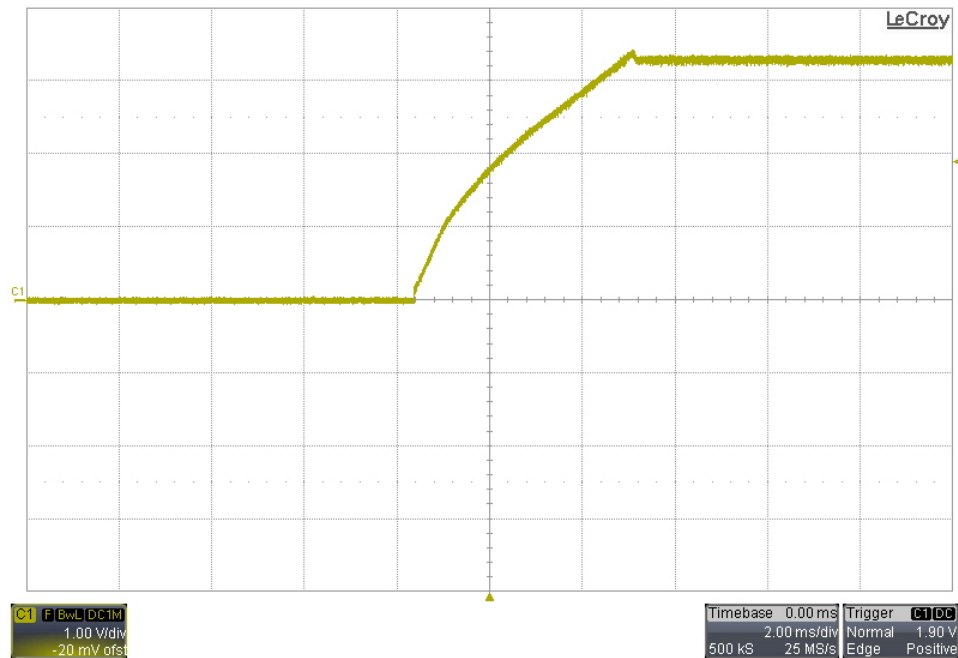
5 Startup – 60V Input, No Load



6 Startup – 18V Input, 0.3Ω Load



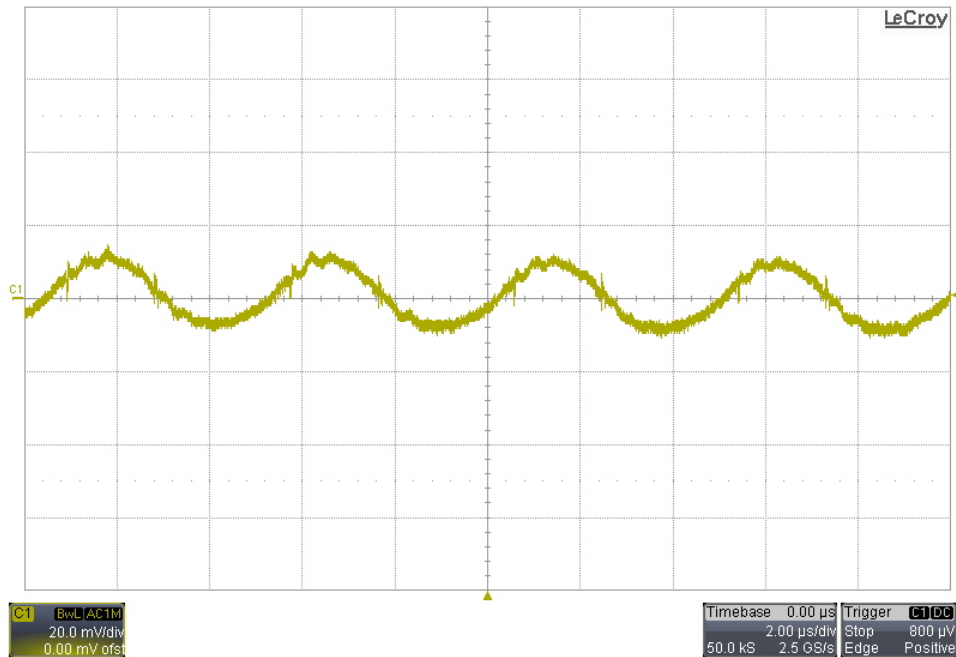
7 Startup – 60V Input, 0.3Ω Load



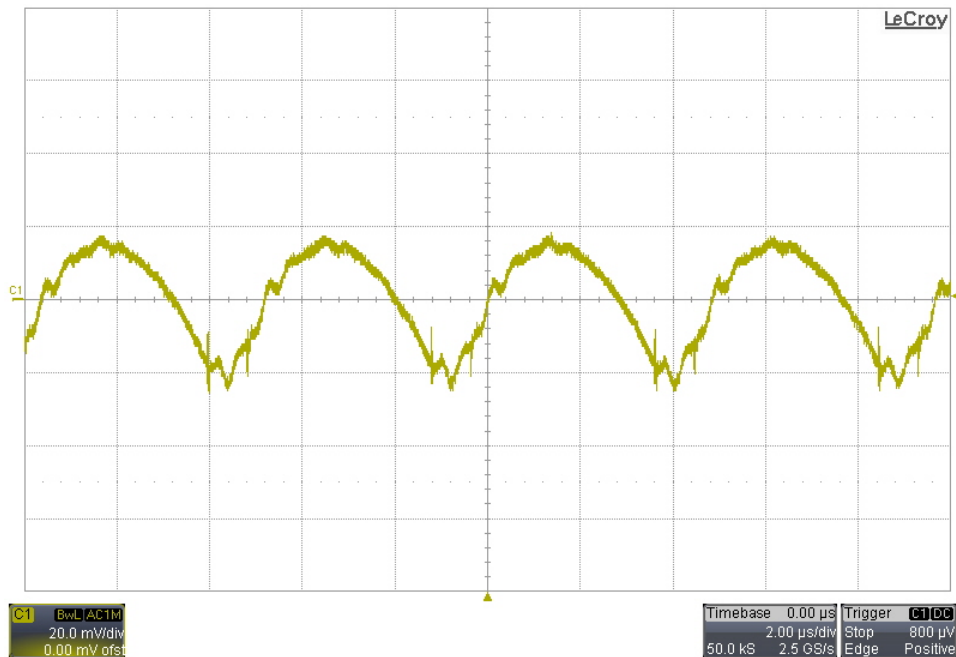
8 Output Ripple Voltage

The output ripple voltage is shown in the plots below. The output was loaded with 12A.

8.1 18V Input



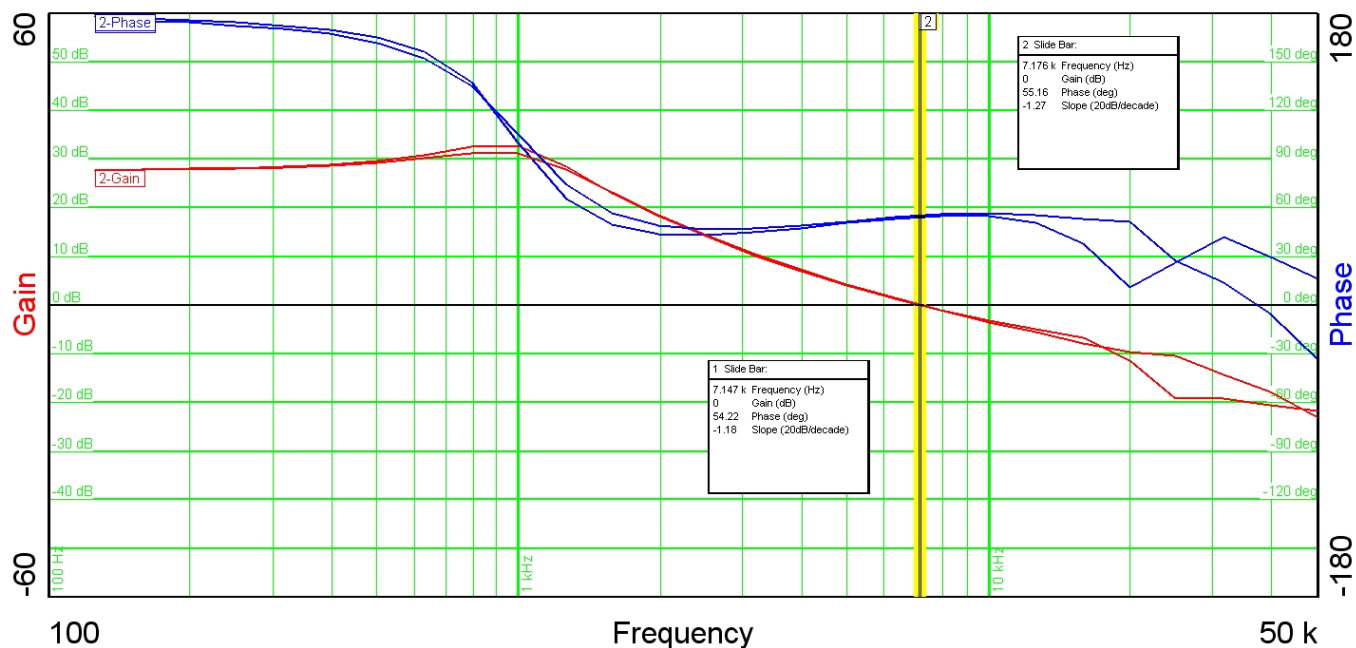
8.2 60V Input



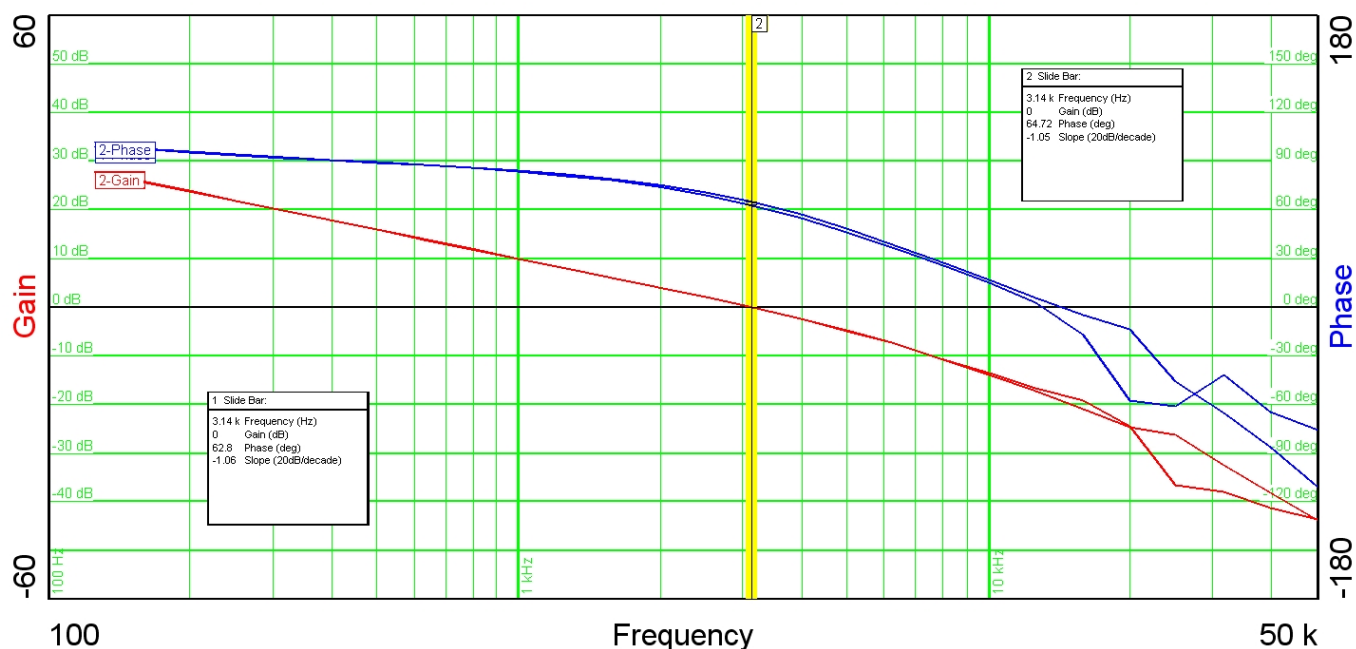
9 Frequency Response

The frequency response of the feedback loop is shown below. For the gain/phase plot #1, the input was set to 18V. For the gain/phase plot #2, the input was set to 60V. The output was loaded with 12A.

9.1 Measured Across R14



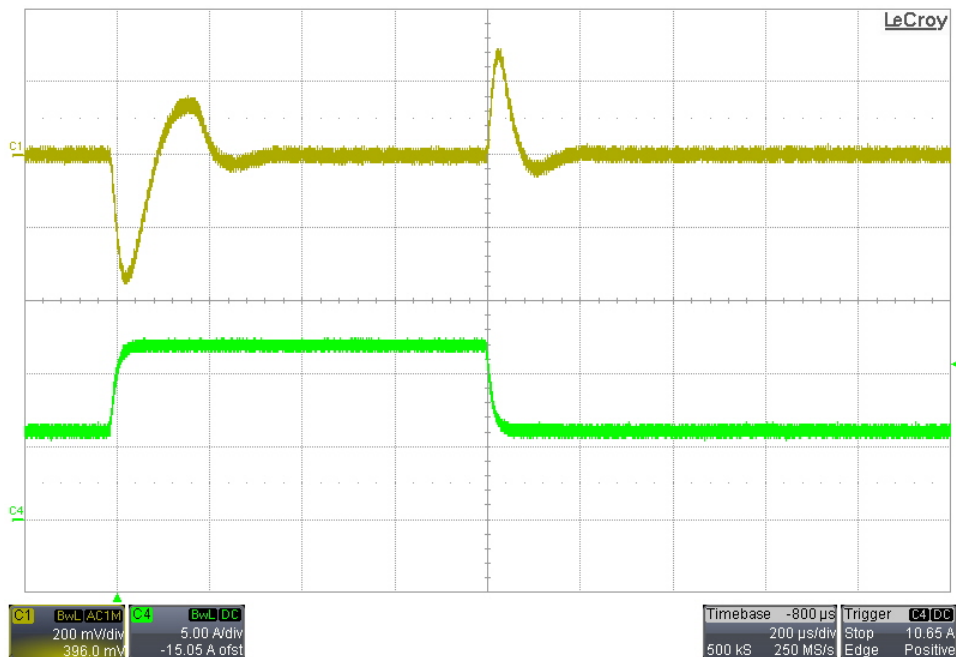
9.2 Measured Across R15



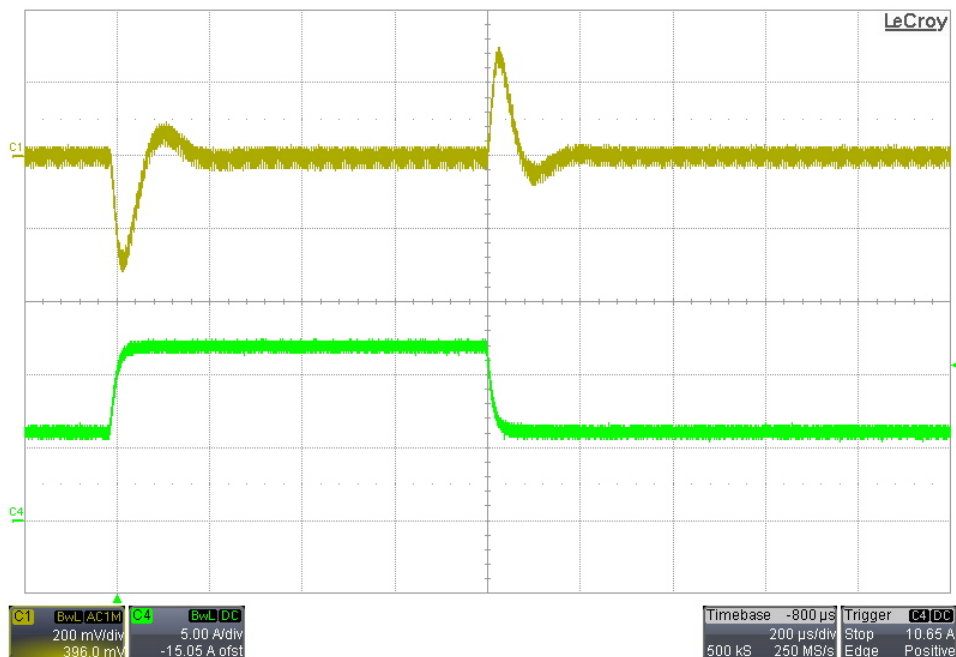
10 Load Transients

The response to a load step from 6A to 12A is shown in the images below. Channel 1: Vout (ac coupled); Channel 4: Iout

10.1 18V Input



10.2 60V Input



11 Input Under-Voltage Lock-Out

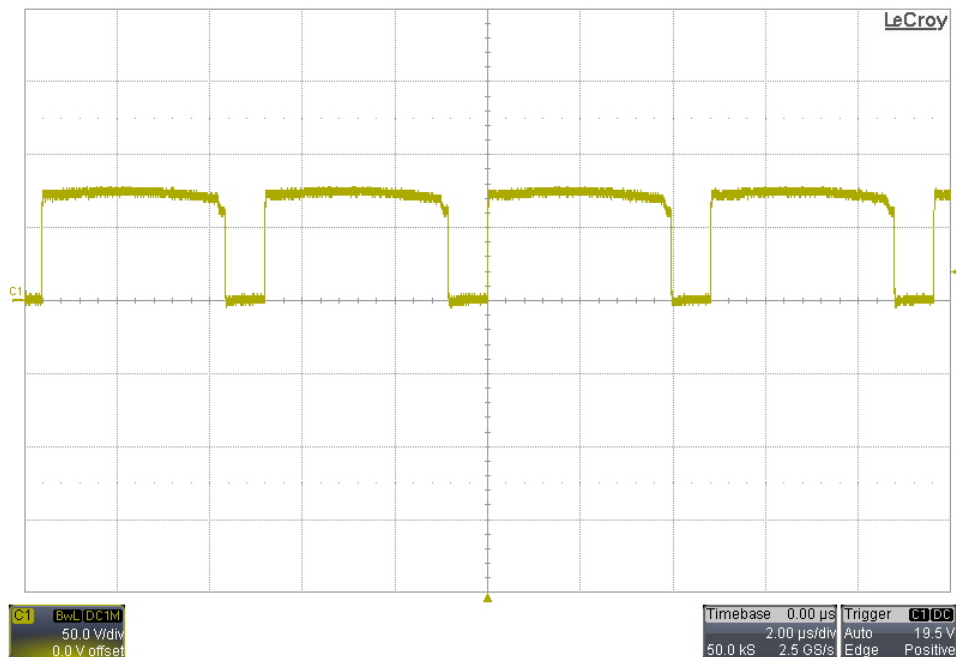
The turn-on and turn-off input voltages were measured and recorded below.

Turn-On	17.3 V
Turn-Off	17.0 V

12 Switching Waveforms

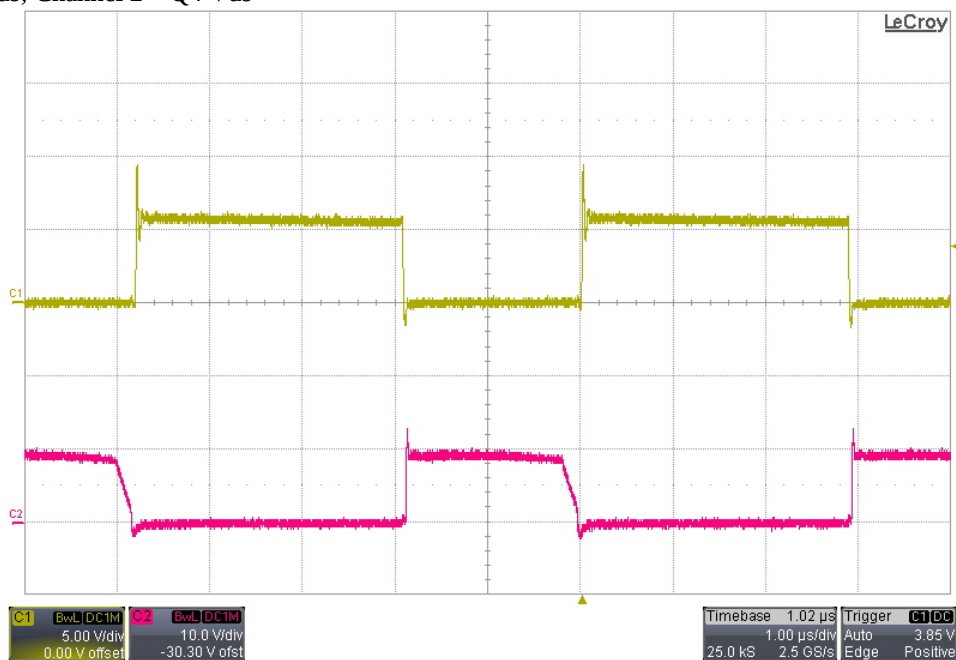
For the images below show the output was loaded with 12A.

12.1 Primary FET (Q2) Vds – 60V Input



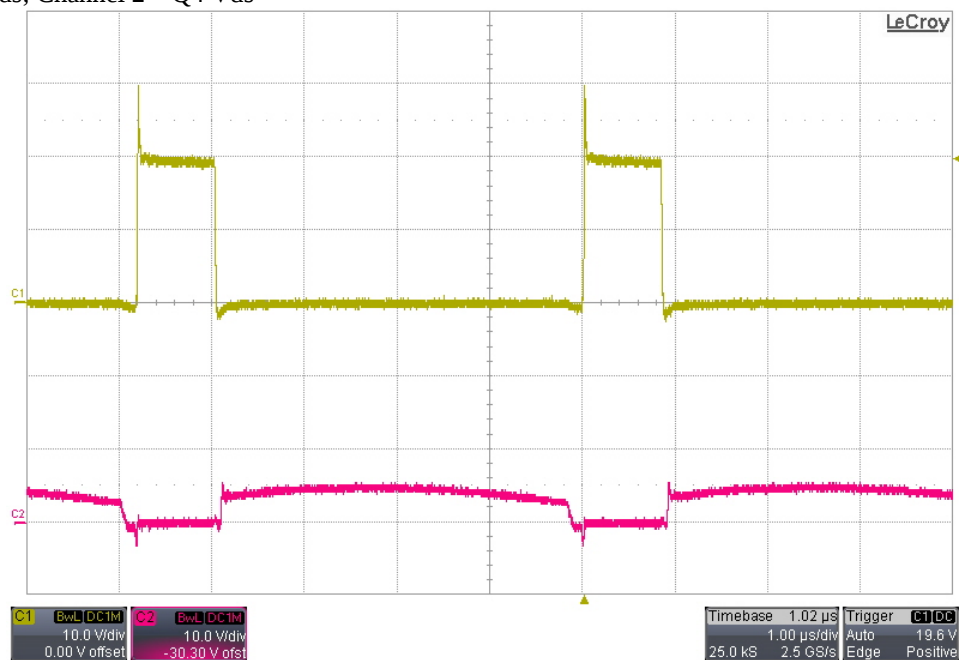
12.2 Q4 & Q5 Synchronous FETs – 18V Input

Channel 1 – Q5 Vds; Channel 2 – Q4 Vds



12.3 Q4 & Q5 Synchronous FETs – 60V Input

Channel 1 – Q5 Vds; Channel 2 – Q4 Vds



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