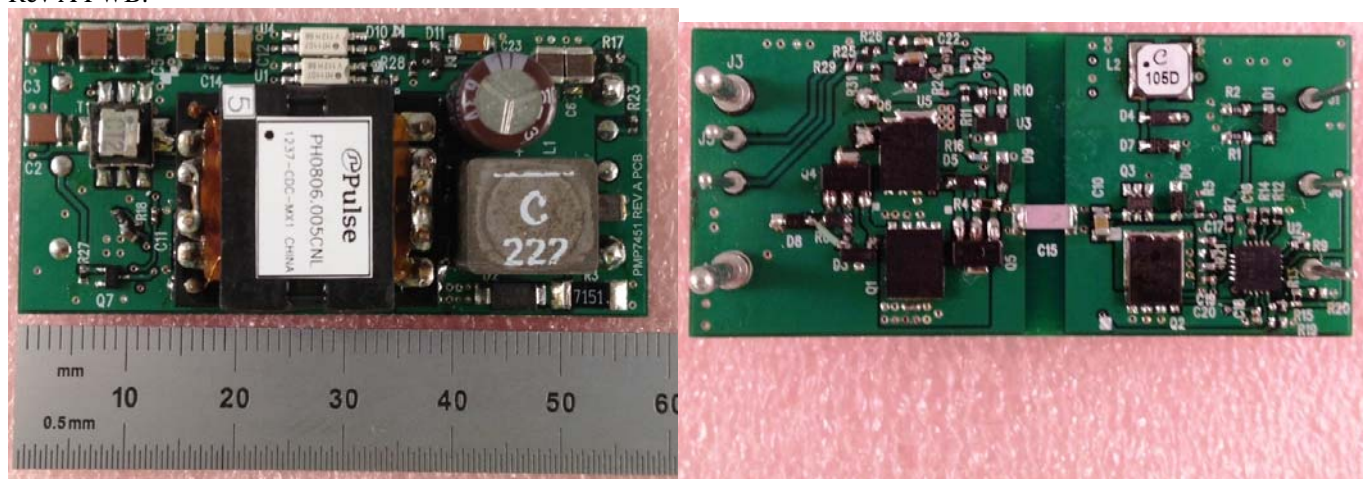
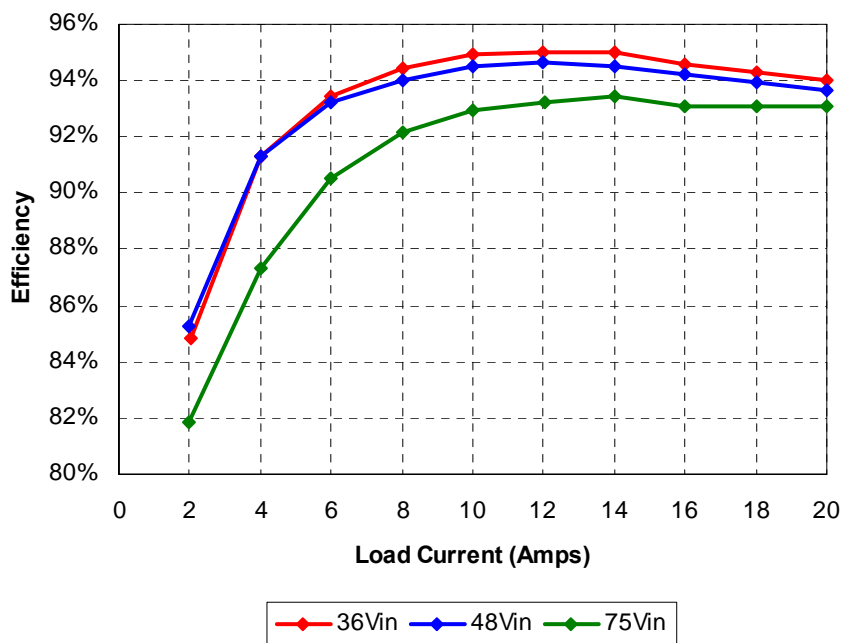


1 Photo

The photographs below show the top and bottom views of the PMP8366 Rev A demo board. The circuit is built on a PMP7451 Rev A PWB.



2 Efficiency



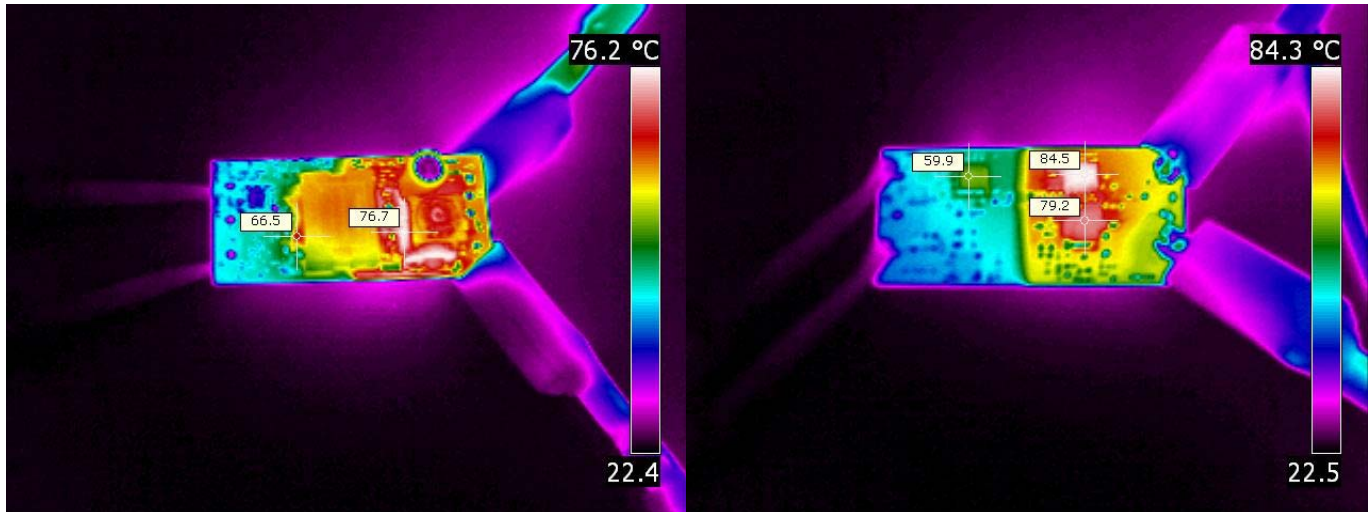
Iout	Vout	Vin	Iin	Pout	Losses	Efficiency
0.000	5.02	36.0	0.061	0.00	2.196	0.0%
2.020	5.02	36.0	0.332	10.14	1.812	84.8%
4.000	5.02	36.0	0.611	20.08	1.916	91.3%
6.004	5.02	36.0	0.896	30.14	2.116	93.4%
8.00	5.02	36.0	1.181	40.16	2.356	94.5%
10.00	5.02	36.0	1.469	50.20	2.684	94.9%
11.99	5.02	36.0	1.760	60.19	3.170	95.0%
14.02	5.02	36.0	2.058	70.38	3.708	95.0%
16.01	5.01	36.0	2.356	80.21	4.606	94.6%
18.00	5.01	36.0	2.657	90.18	5.472	94.3%
20.0	5.01	36.0	2.960	100.20	6.360	94.0%

Iout	Vout	Vin	Iin	Pout	Losses	Efficiency
0.000	5.02	48.0	0.038	0.00	1.824	0.0%
1.997	5.02	48.0	0.245	10.02	1.735	85.2%
4.000	5.02	48.0	0.458	20.08	1.904	91.3%
6.000	5.02	48.0	0.673	30.12	2.184	93.2%
8.00	5.02	48.0	0.890	40.16	2.560	94.0%
10.00	5.02	48.0	1.107	50.20	2.936	94.5%
12.00	5.02	48.0	1.326	60.24	3.408	94.6%
14.00	5.02	48.0	1.549	70.28	4.072	94.5%
16.00	5.01	48.0	1.772	80.16	4.896	94.2%
18.00	5.01	48.0	2.000	90.18	5.820	93.9%
20.0	5.01	48.0	2.229	100.20	6.792	93.7%

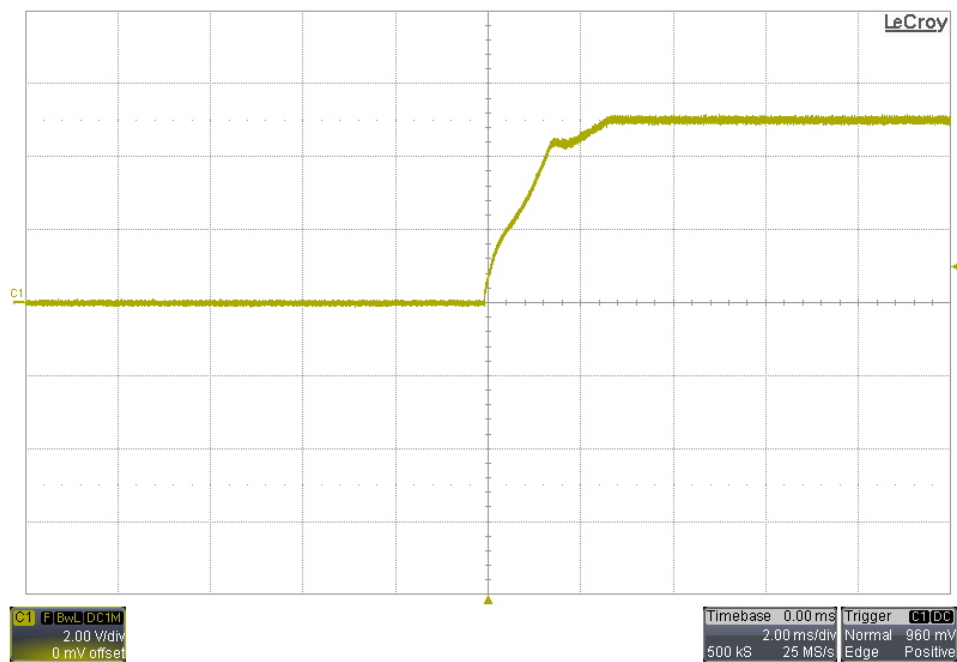
Iout	Vout	Vin	Iin	Pout	Losses	Efficiency
0.000	5.02	75.0	0.028	0.00	2.100	0.0%
1.994	5.02	75.0	0.163	10.01	2.215	81.9%
4.004	5.02	75.0	0.307	20.10	2.925	87.3%
6.003	5.02	75.0	0.444	30.14	3.165	90.5%
8.00	5.02	75.0	0.581	40.16	3.415	92.2%
10.00	5.02	75.0	0.720	50.20	3.800	93.0%
12.01	5.02	75.0	0.862	60.29	4.360	93.3%
14.00	5.02	75.0	1.003	70.28	4.945	93.4%
16.00	5.01	75.0	1.148	80.16	5.940	93.1%
18.00	5.01	75.0	1.292	90.18	6.720	93.1%
20.0	5.01	75.0	1.435	100.20	7.425	93.1%

3 Thermal Images

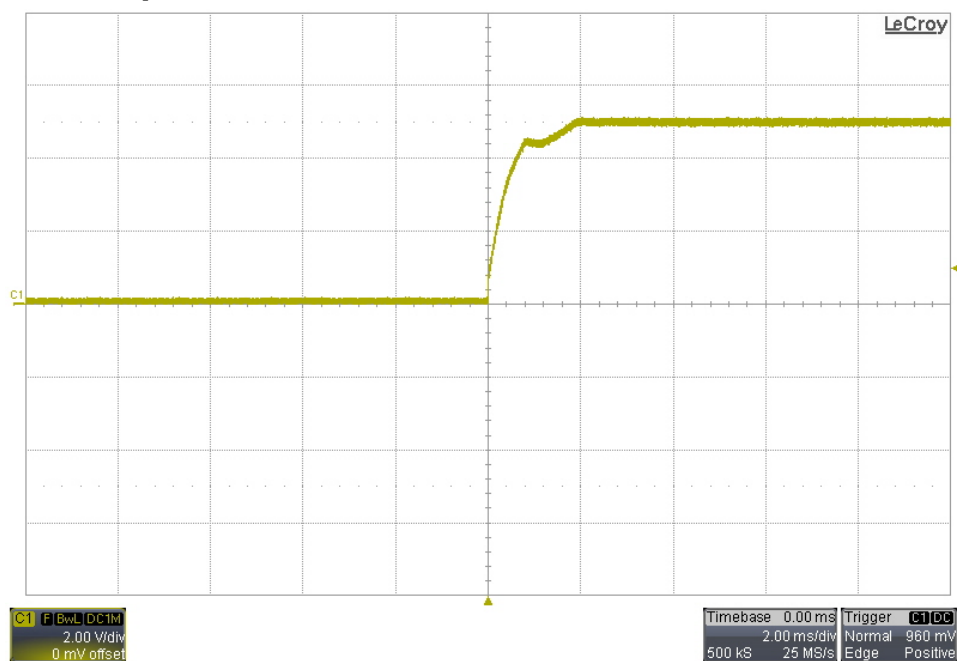
The thermal images below show a top view (left) and bottom view (right) of the board. The ambient temperature was 25C with 150LFM of forced air flow. The input was 48VDC, and the output was loaded with 20A.



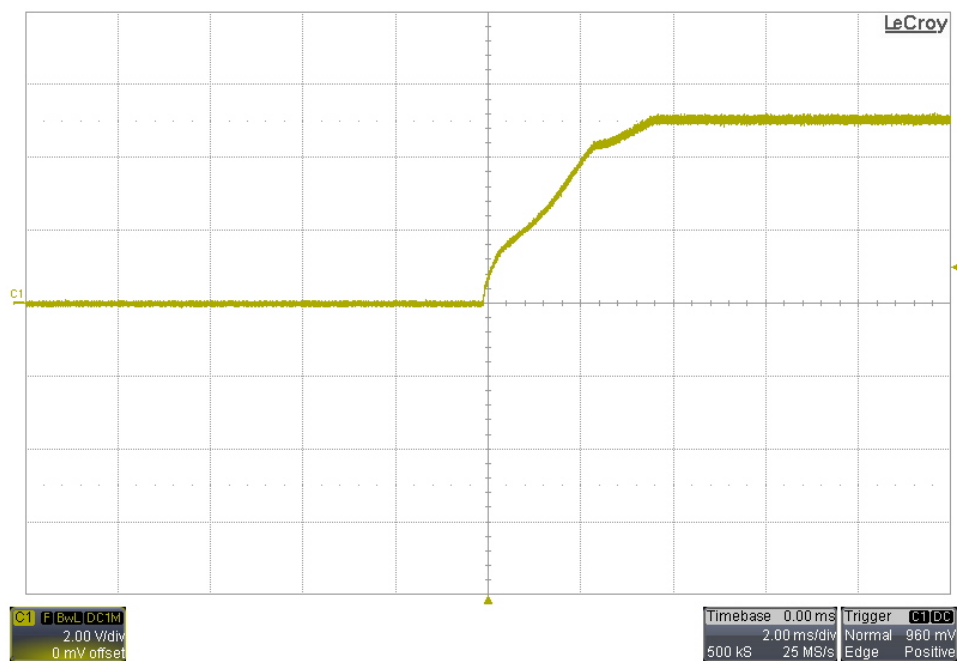
4 Startup – 36V Input, No Load



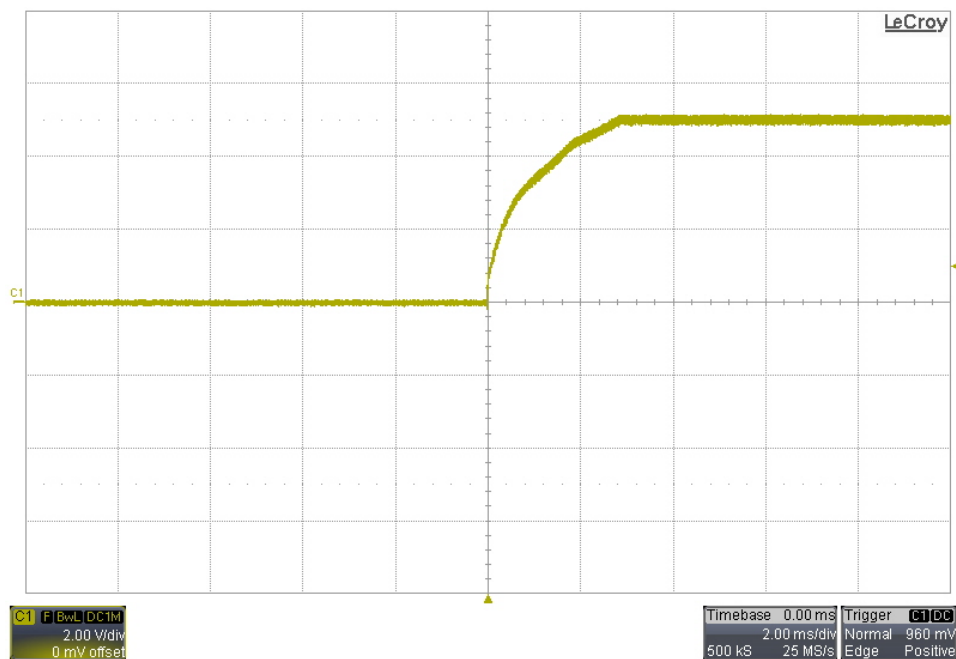
5 Startup – 75V Input, No Load



6 Startup – 36V Input, 0.5Ω Load



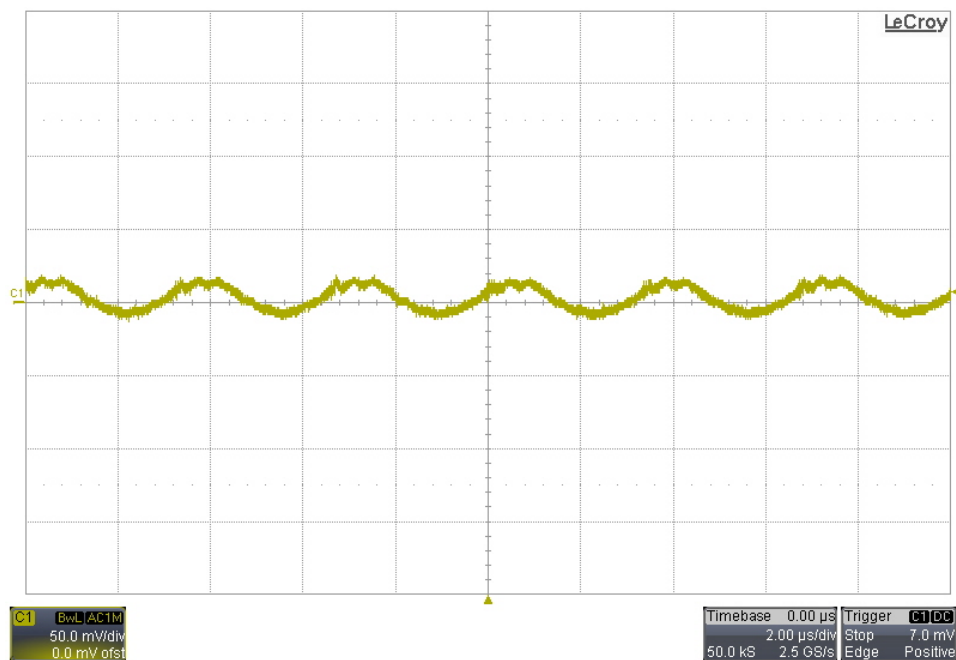
7 Startup – 75V Input, 0.5Ω Load



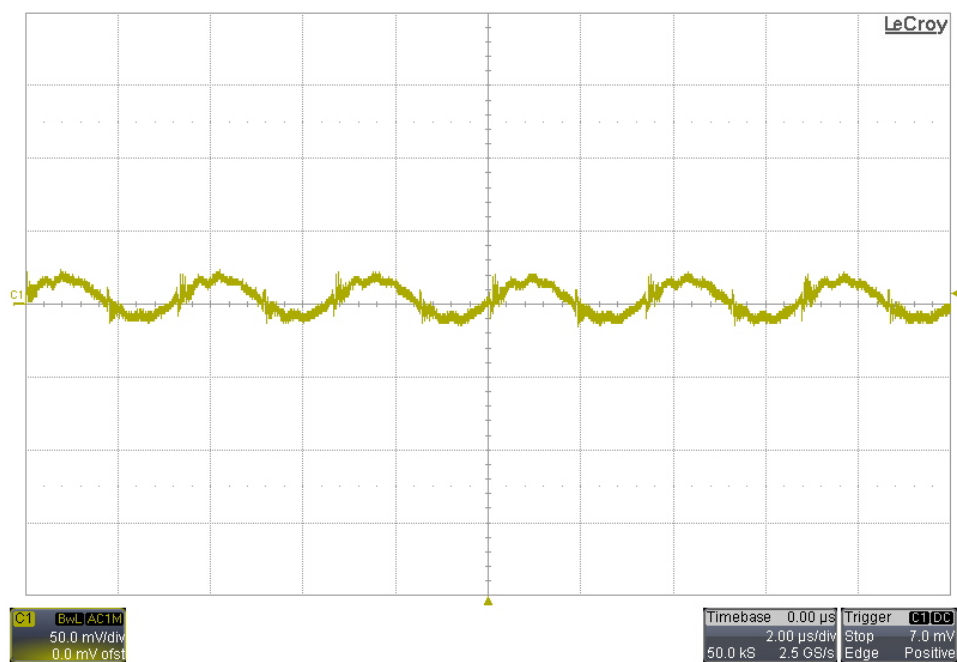
8 Output Ripple Voltage

The output ripple voltage is shown in the plots below. The output was loaded with 20A.

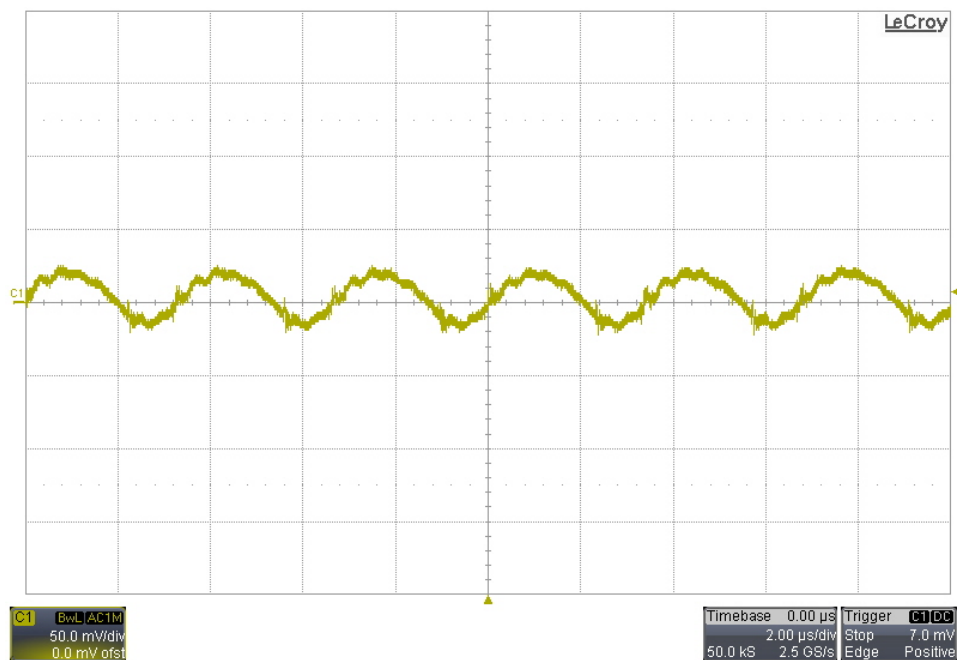
8.1 36V Input



8.2 48V Input



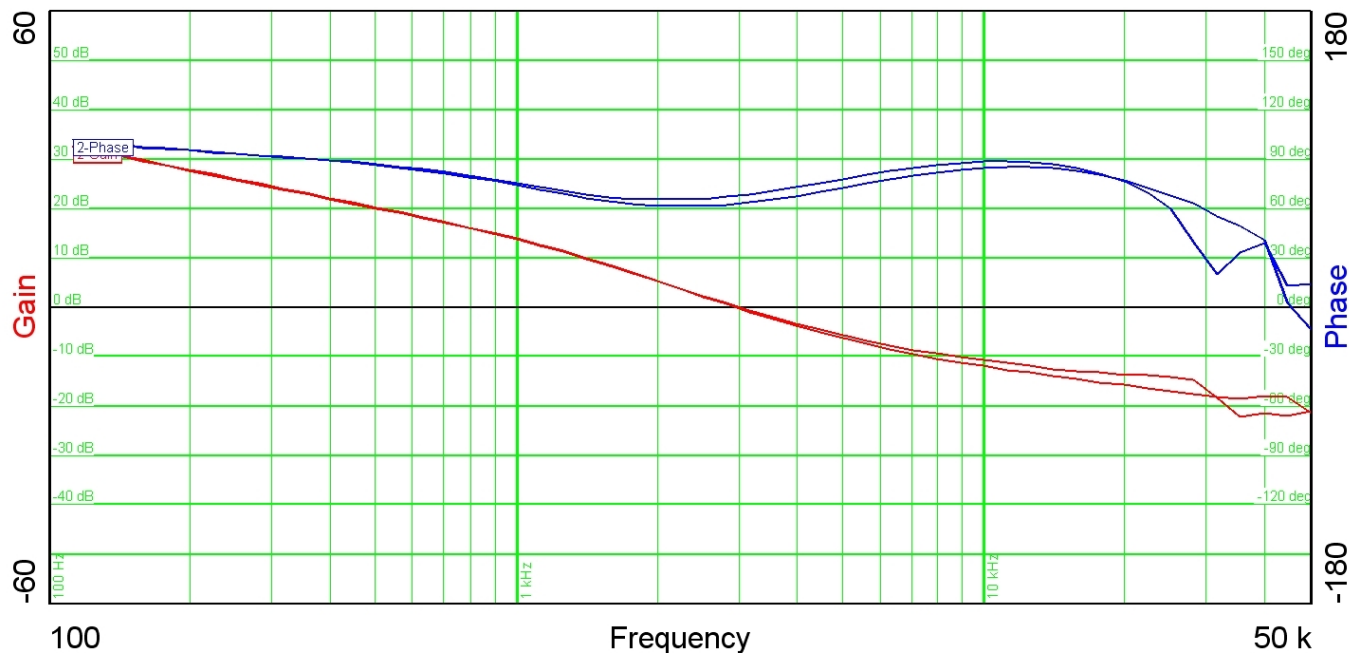
8.3 75V Input



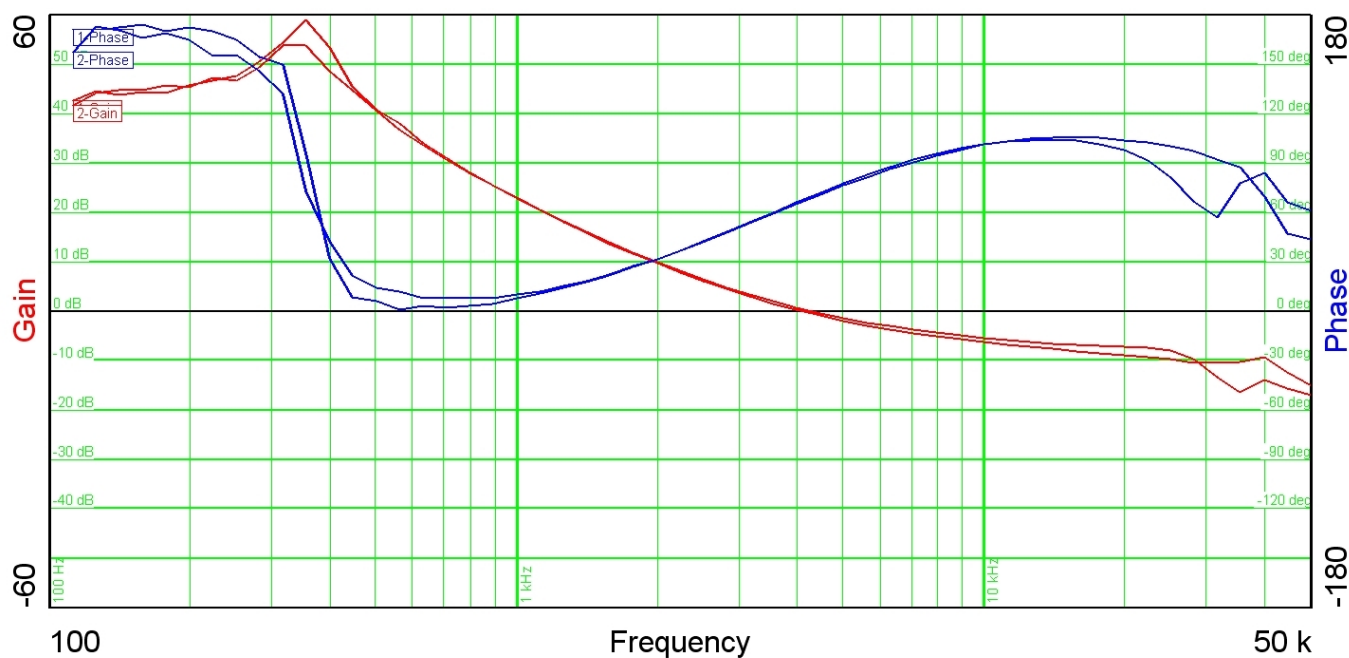
9 Frequency Response

The frequency response of the feedback loop is shown below. For the gain/phase plot #1, the input was set to 36V. For the gain/phase plot #2, the input was set to 75V. The output was loaded with 20A.

9.1 Measured Across R23



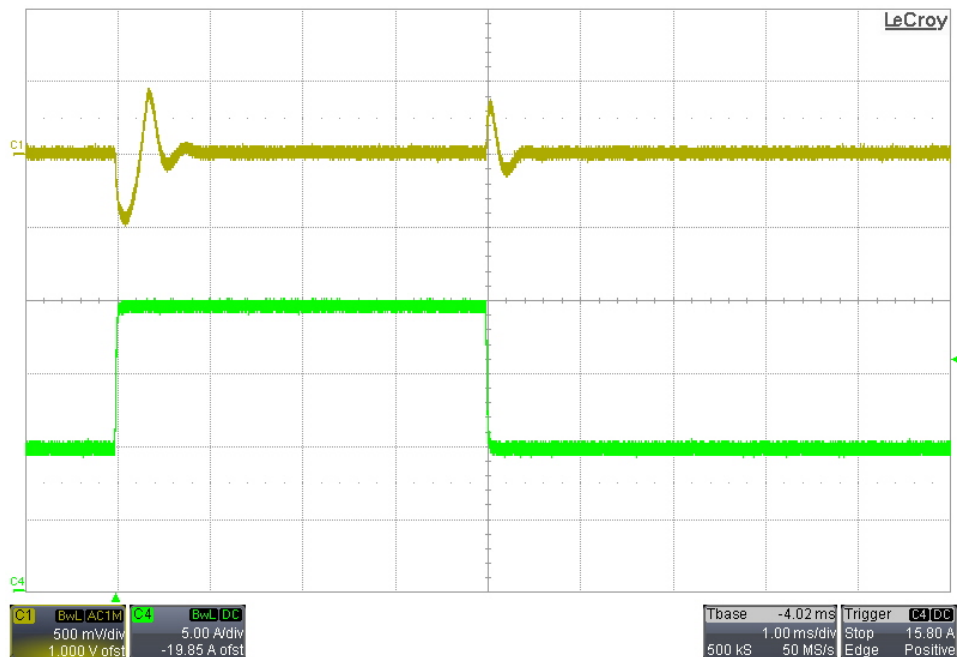
9.2 Measured Across R17



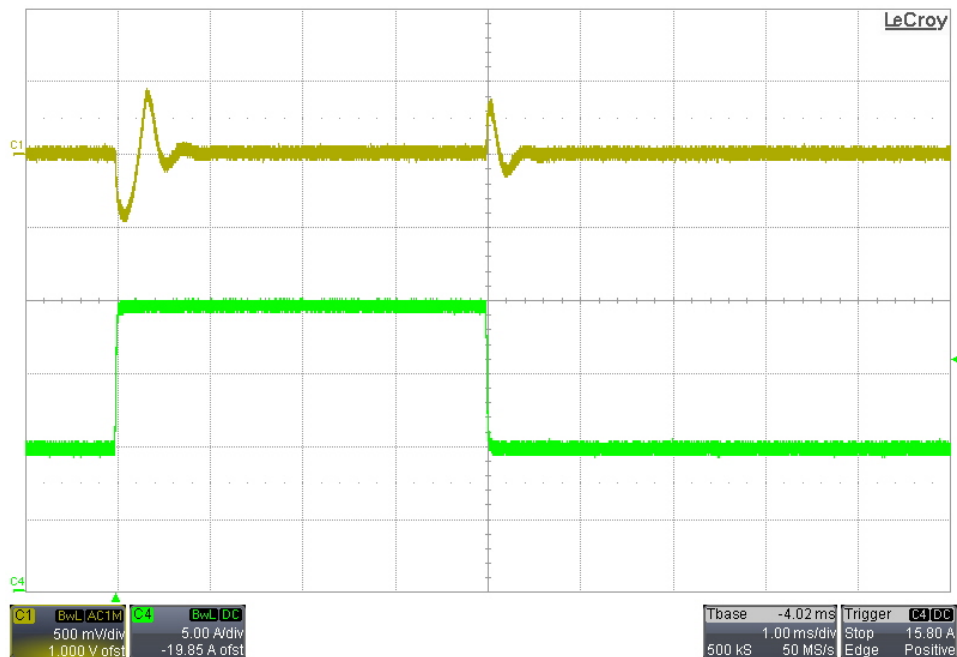
10 Load Transients

The response to a load step from 10A to 20A is shown in the images below. Channel 1: Vout (ac coupled); Channel 4: Iout

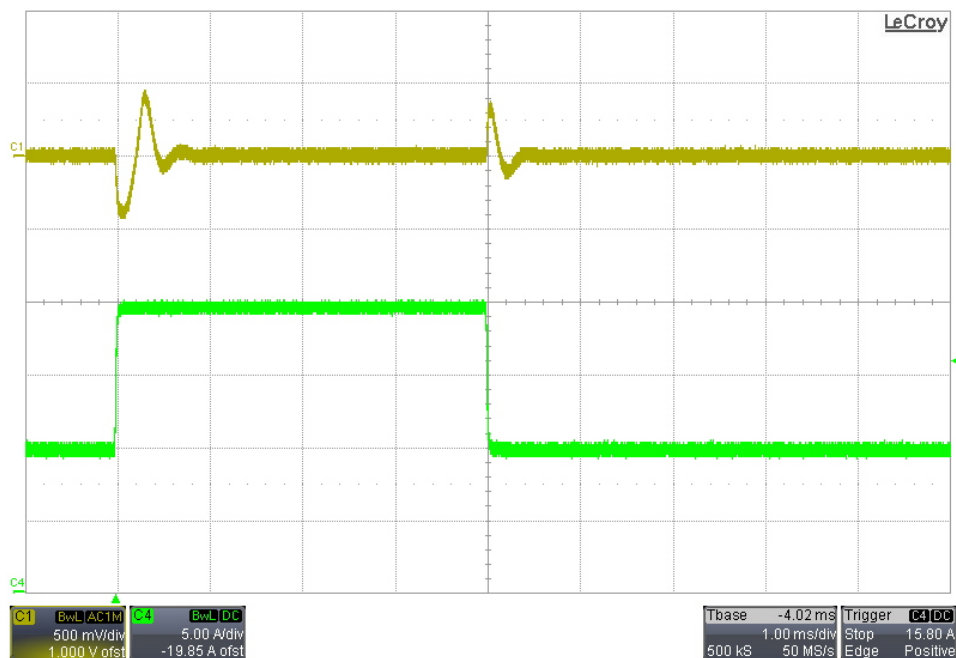
10.1 36V Input



10.2 48V Input



10.3 75V Input



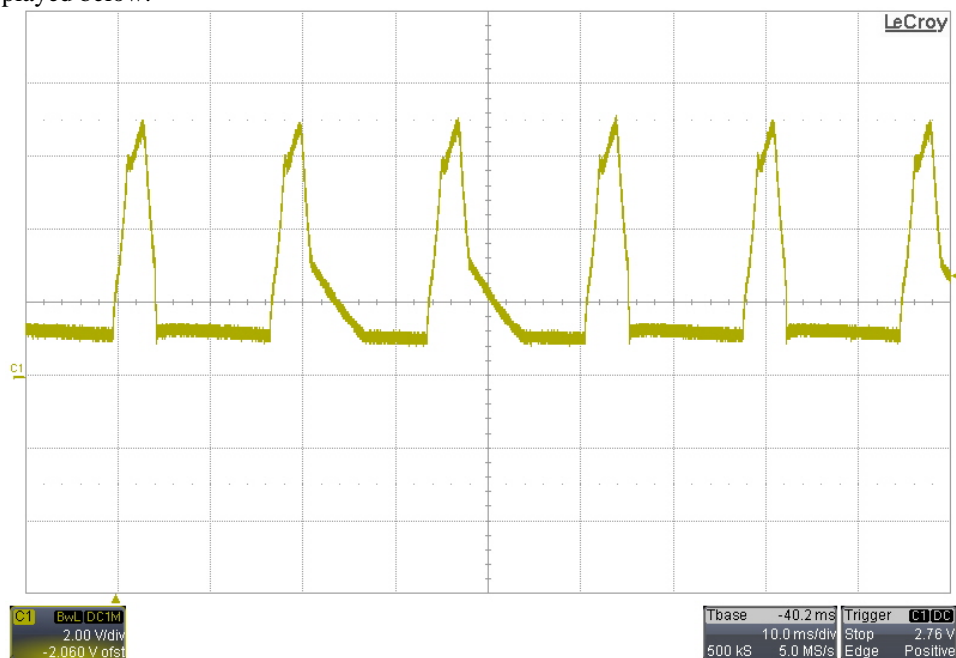
11 Input Under-Voltage Lock-Out

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

Turn-On	35.0 V
Turn-Off	34.4 V

12 Output Over-Voltage

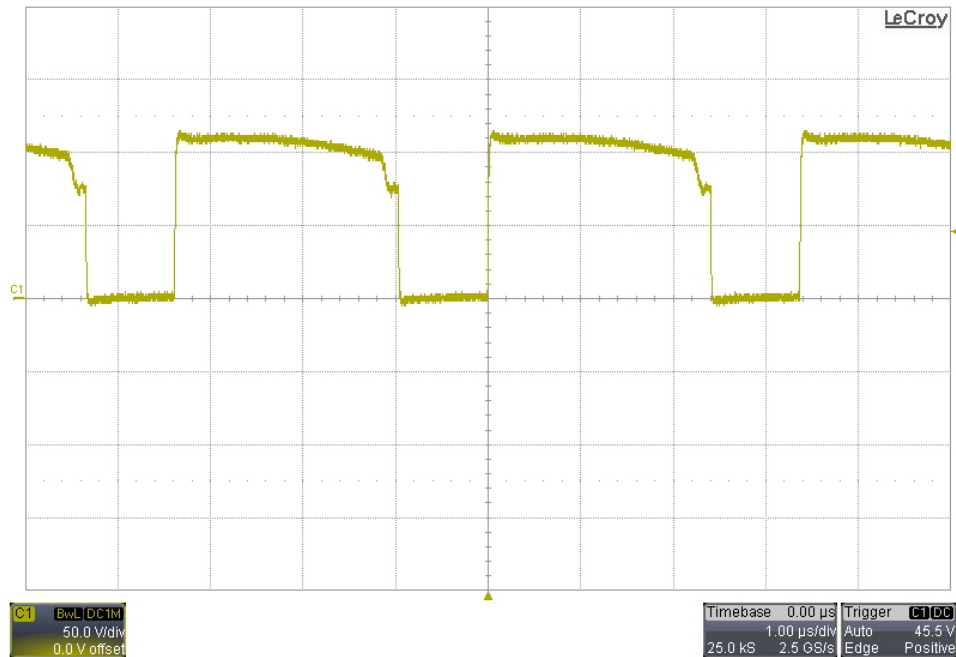
An output over-voltage was induced by shorting the +Remote Sense pin (J5) to ground. The output voltage waveform was captured and is displayed below.



13 Switching Waveforms

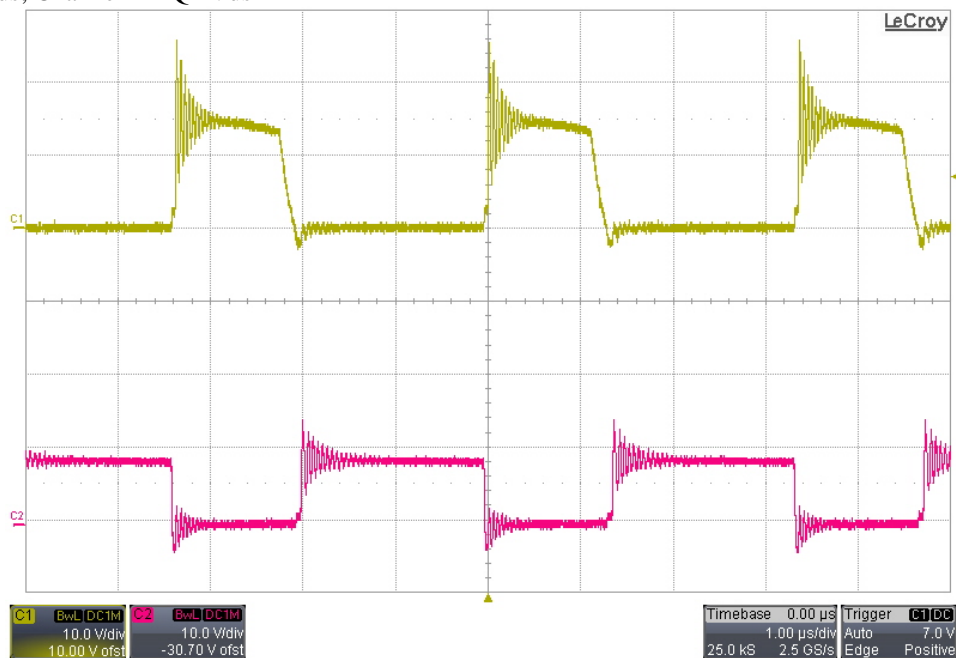
For the images below show the output was loaded with 20A.

13.1 Primary FET (Q2) V_{ds} – 75V Input



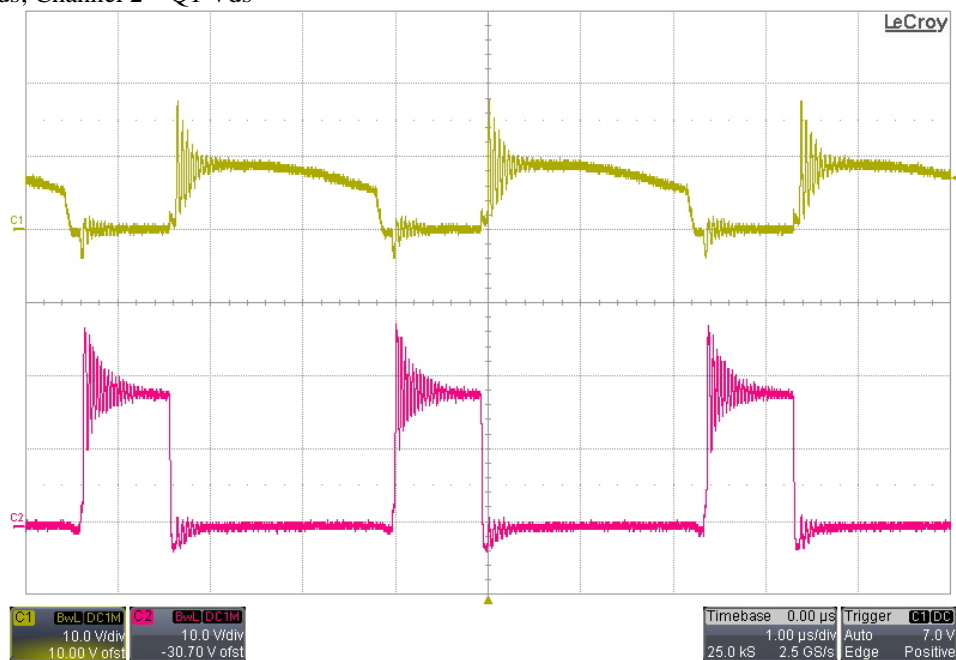
13.2 Q1 & Q6 Synchronous FETs – 36V Input

Channel 1 – Q6 V_{ds} ; Channel 2 – Q1 V_{ds}



13.3 Q1 & Q6 Synchronous FETs – 75V Input

Channel 1 – Q6 Vds; Channel 2 – Q1 Vds



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