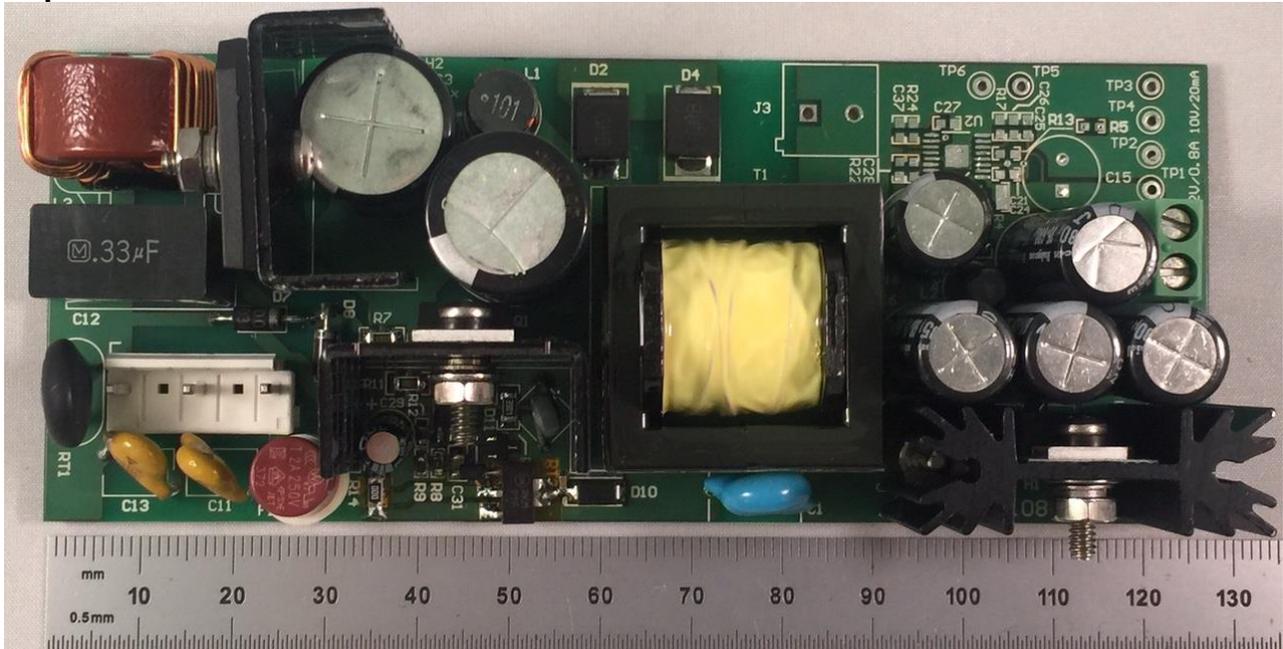


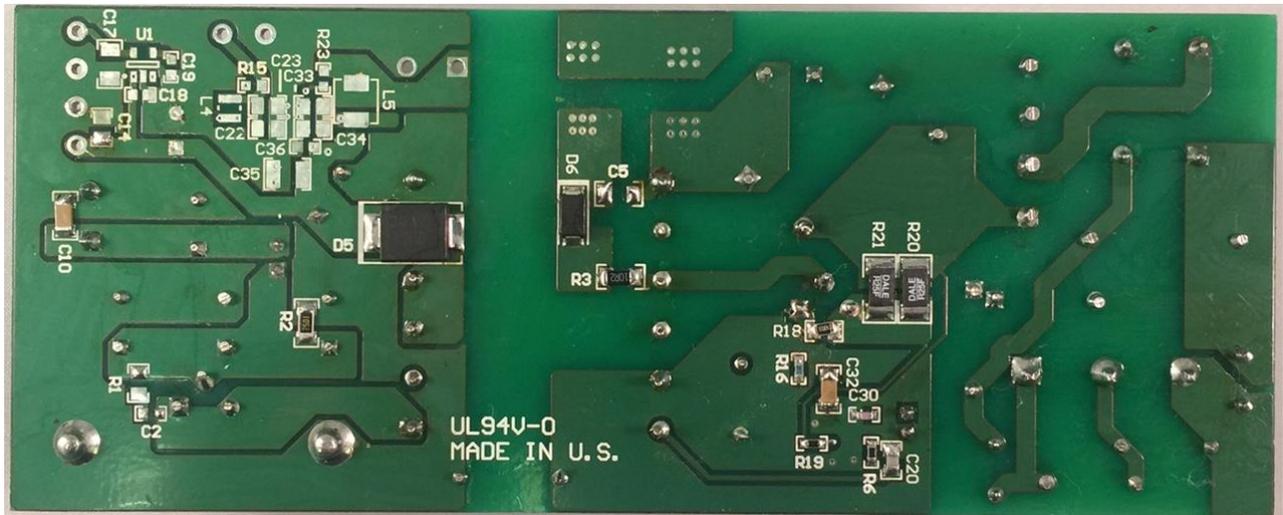
1 Photo

The photographs below show the PMP10804 Rev A assembly. This circuit was built on a PMP10804 Rev A PCB.

Top side

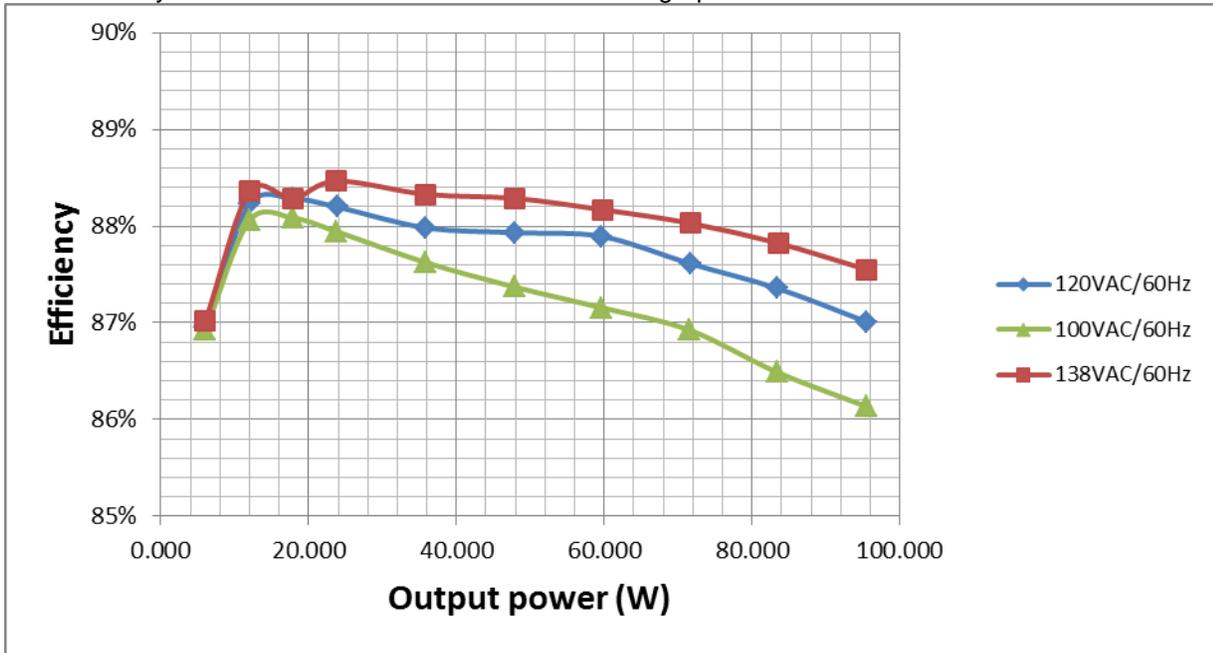


Bottom side



2 Converter Efficiency

The efficiency data of PMP10804Rev A is shown in the graph and table below.



100V/60Hz

Vin(AC)	Iin(A)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Eff. (%)
99.99	1.65800	110.820	23.810	4.01	95.454	86.13%
100.29	1.45400	96.380	23.810	3.50	83.359	86.49%
100.01	1.25900	82.270	23.830	3.00	71.514	86.93%
100.09	1.06200	68.410	23.840	2.50	59.624	87.16%
100.03	0.86600	54.740	23.830	2.01	47.827	87.37%
100.29	0.66380	40.930	23.830	1.51	35.864	87.62%
100.56	0.45460	27.070	23.830	1.00	23.806	87.94%
100.19	0.35170	20.290	23.830	0.75	17.873	88.09%
100.06	0.24860	13.633	24.010	0.50	12.005	88.06%
100.25	0.13684	6.900	23.990	0.25	5.998	86.92%
100.49	0.01156	0.093	24.260	0.00	0.000	0.00%

120V/60Hz

Vin(AC)	Iin(A)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Eff. (%)
120.06	1.41600	109.750	23.820	4.01	95.494	87.01%
120.27	1.24800	95.560	23.830	3.50	83.476	87.36%
120.08	1.08500	81.880	23.840	3.01	71.735	87.61%
120.28	0.91500	67.920	23.850	2.50	59.697	87.89%
119.76	0.74970	54.490	23.850	2.01	47.915	87.93%
120.01	0.57700	40.780	23.840	1.51	35.879	87.98%
120.07	0.39880	27.030	23.840	1.00	23.840	88.20%
120.19	0.30760	20.190	23.830	0.75	17.825	88.29%
120.01	0.21740	13.601	24.000	0.50	12.000	88.23%
120.17	0.12095	6.926	24.090	0.25	6.023	86.95%
120.35	0.01362	0.095	24.380	0.00	0.000	0.00%

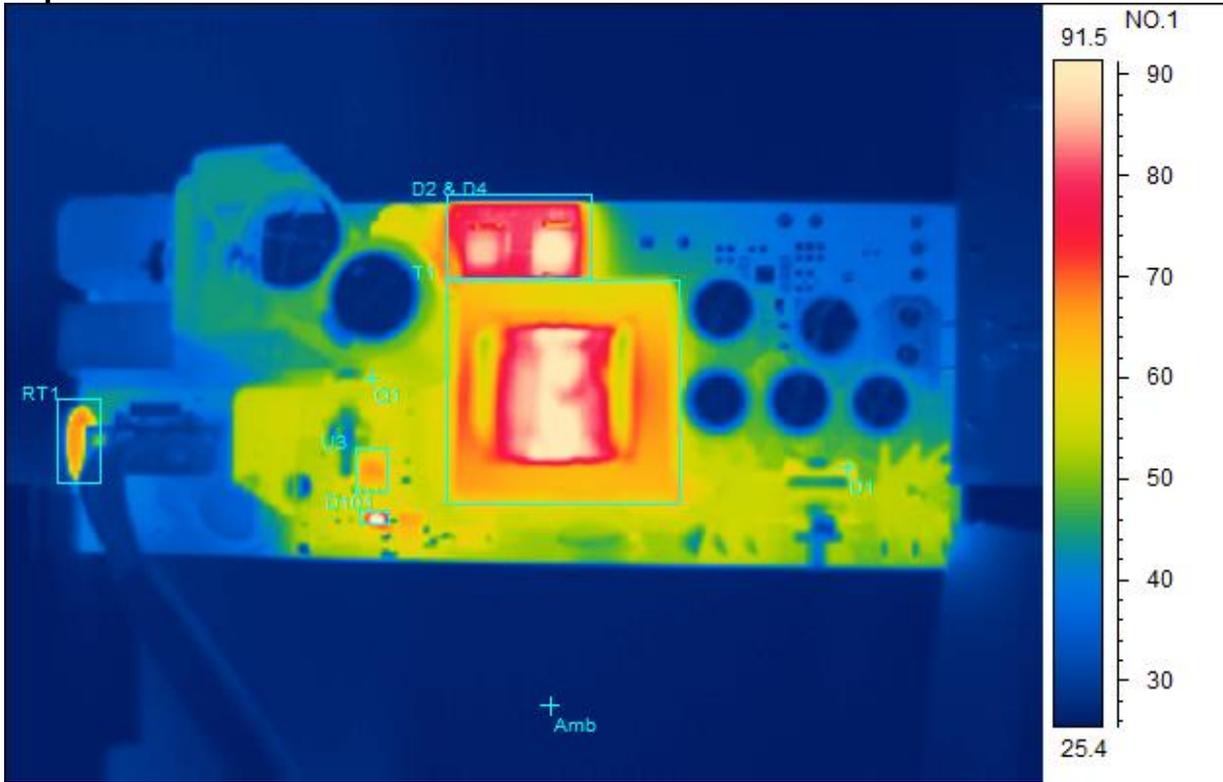
138V/60Hz

Vin(AC)	Iin(A)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Eff. (%)
137.95	1.25700	109.120	23.830	4.01	95.534	87.55%
138.16	1.11000	95.200	23.840	3.51	83.607	87.82%
138.04	0.96400	81.470	23.850	3.01	71.717	88.03%
138.25	0.81600	67.760	23.850	2.51	59.744	88.17%
138.40	0.66470	54.190	23.850	2.01	47.843	88.29%
138.18	0.51270	40.620	23.840	1.51	35.879	88.33%
137.97	0.35340	26.910	23.830	1.00	23.806	88.47%
138.09	0.27390	20.190	23.830	0.75	17.825	88.29%
138.26	0.19451	13.581	24.000	0.50	12.000	88.36%
138.42	0.10877	6.900	23.920	0.25	6.004	87.01%
138.07	0.01550	0.096	24.260	0.00	0.000	0.00%

3 Thermal Images

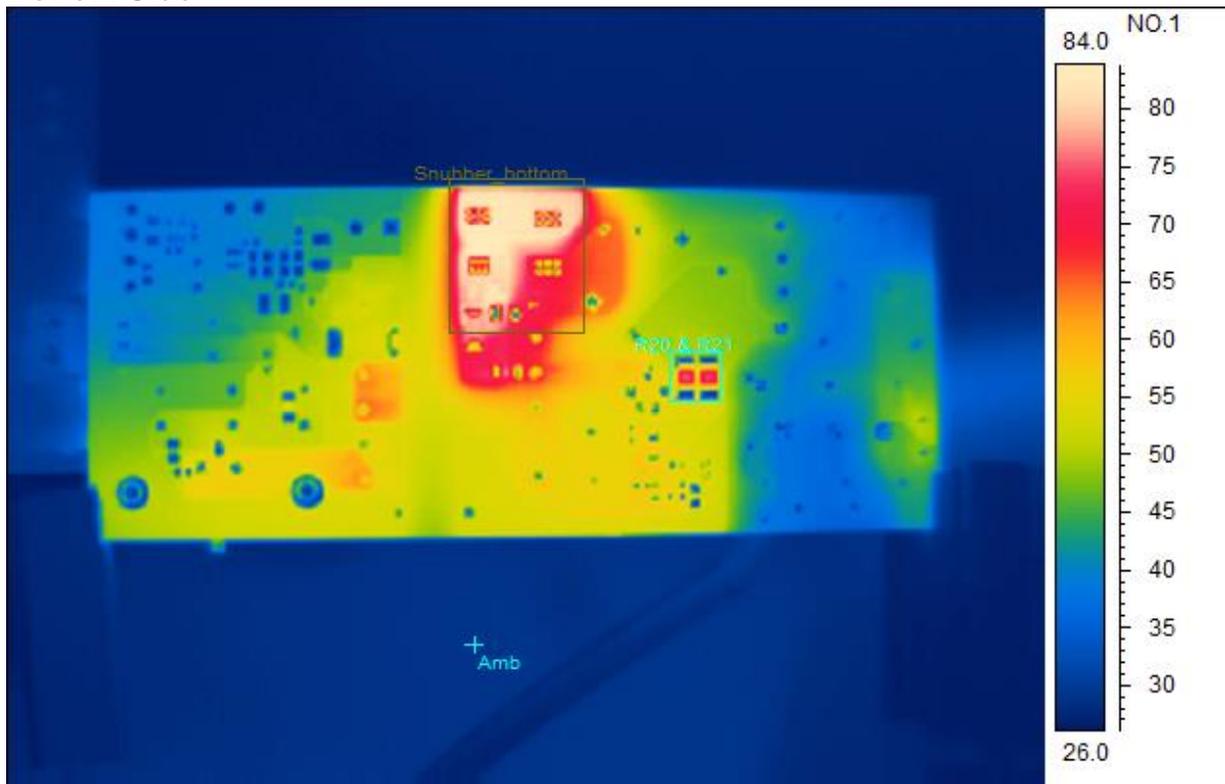
The thermal images below show a top view and bottom view of the board at 120V_{AC}/60Hz input. The ambient temperature was 20°C with no forced air flow. The outputs were loaded with 24V/4A.

Top Side



Spot analysis	Value
D1Temperature	64.2°C
Q1Temperature	61.5°C
Amb Temperature	26.3°C
Area analysis	Value
D2 & D4Max	92.2°C
T1Max	93.8°C
D101Max	98.3°C
U3Max	70.7°C
RT1Max	71.8°C

Bottom Side

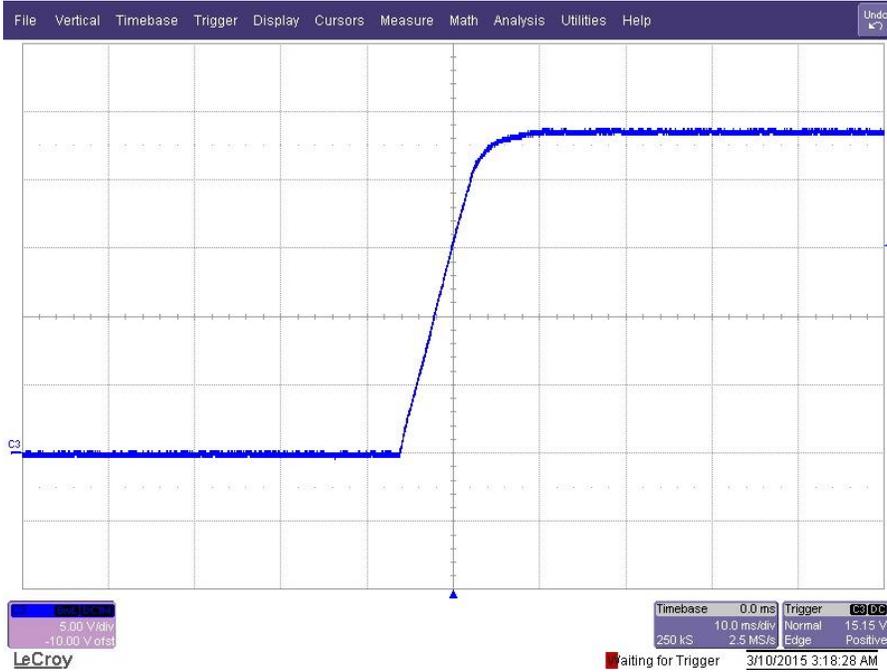


Spot analysis	Value
AmbTemperature	29.8°C
Area analysis	Value
Snubber_bottomMax	85.2°C
R20 & R21 Max	76.2°C

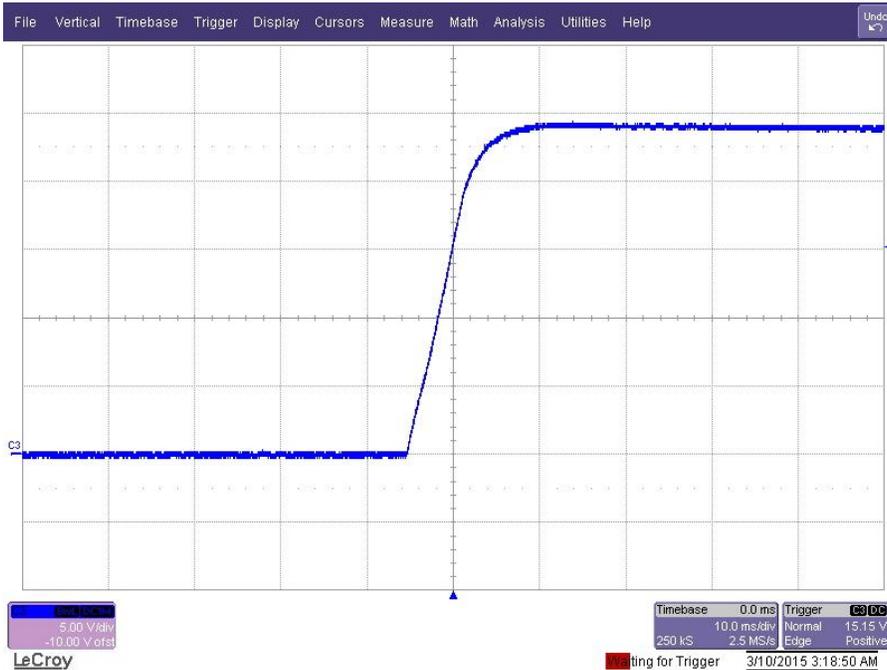
4 Startup

The output voltages at startup are shown in the images below.

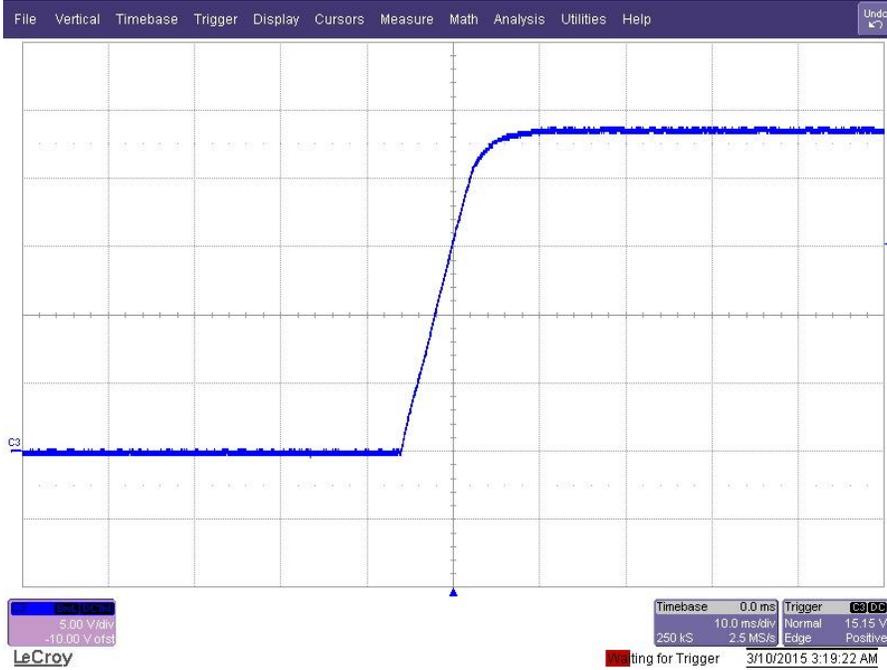
4.1 24V/4A startup @ 100V_{AC}/60Hz.



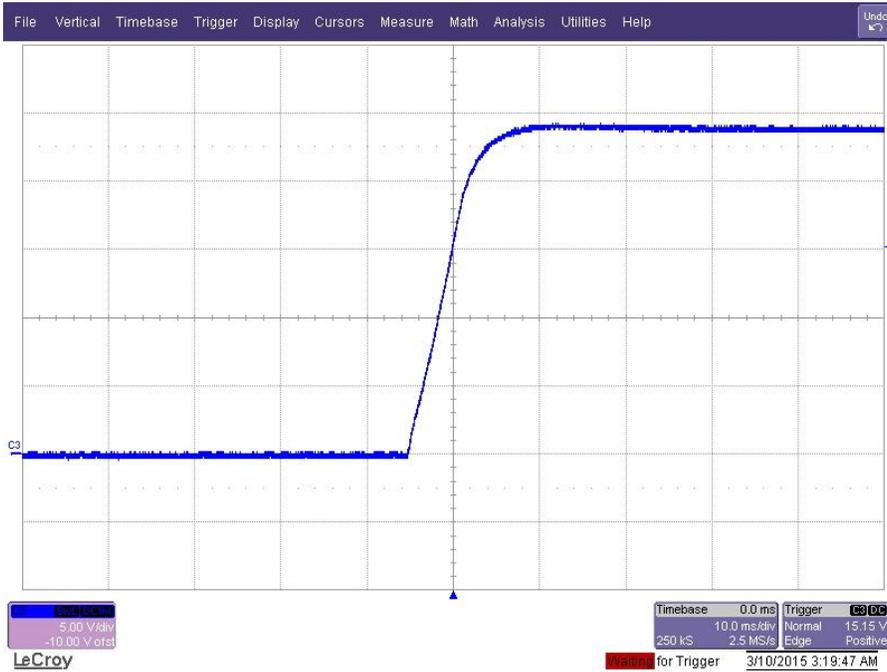
4.2 No load startup @ 100V_{AC}/60Hz.



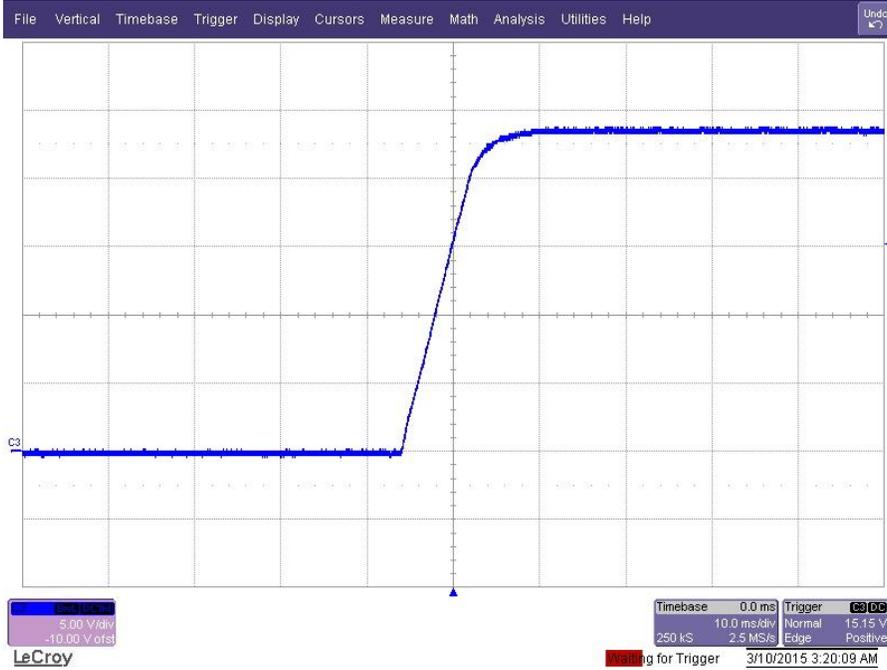
4.3 24V/4A startup @ 120V_{AC}/60Hz.



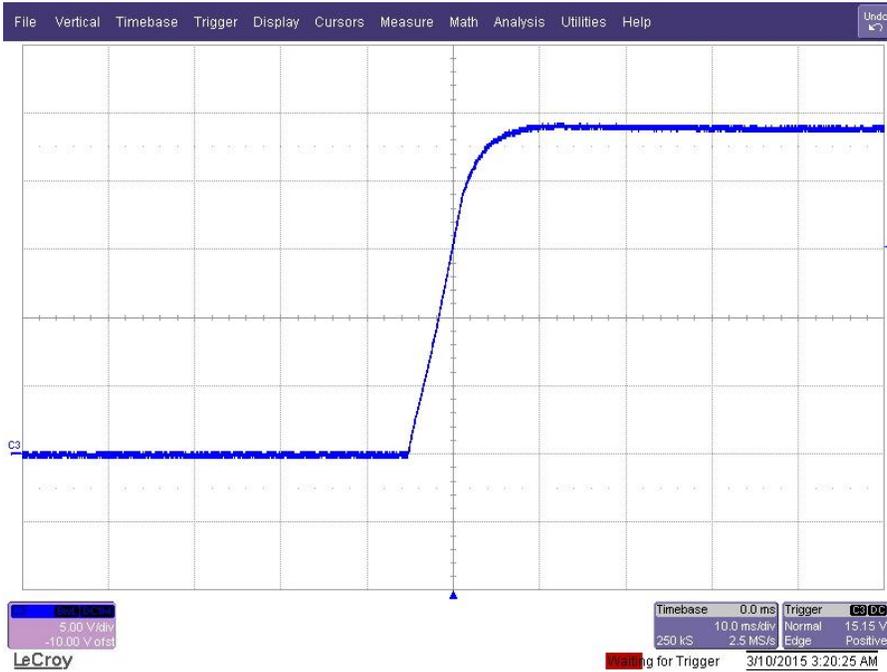
4.4 No load startup @ 120V_{AC}/60Hz.



4.5 24V/4A startup @ 138V_{AC}/60Hz.



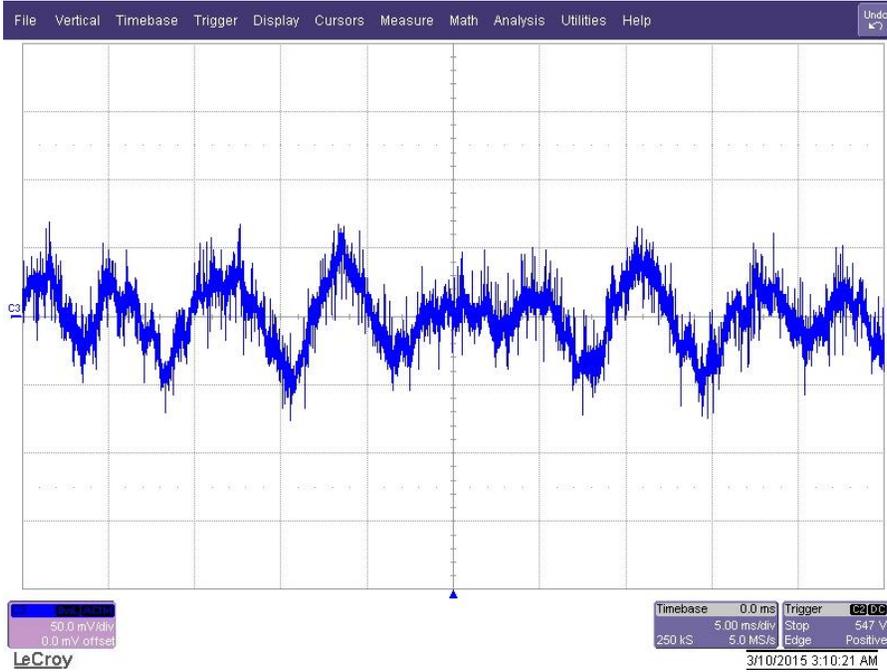
4.6 No load startup @ 138V_{AC}/60Hz.



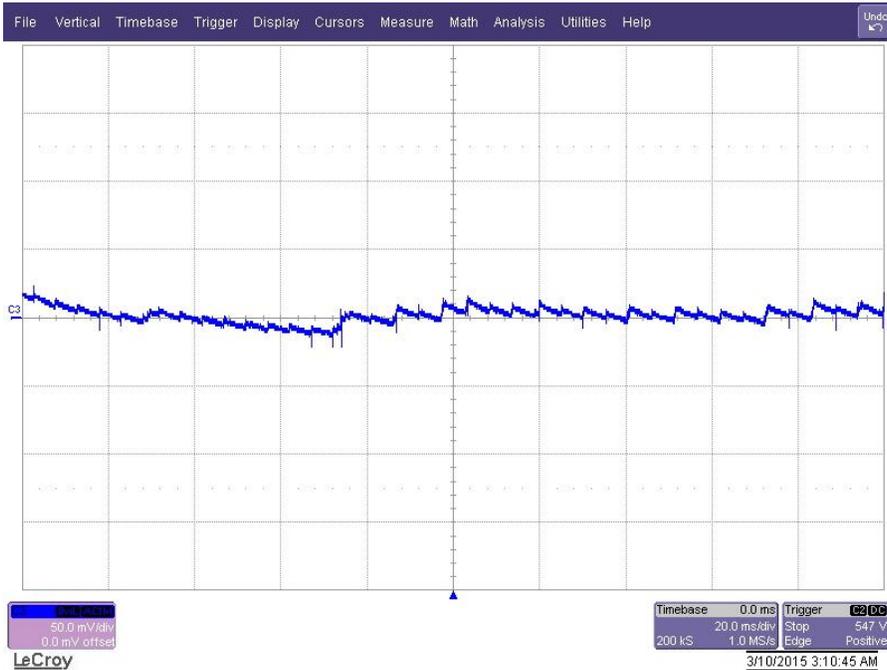
5 Output Ripple Voltages

The output ripple voltages are shown in the plots below.

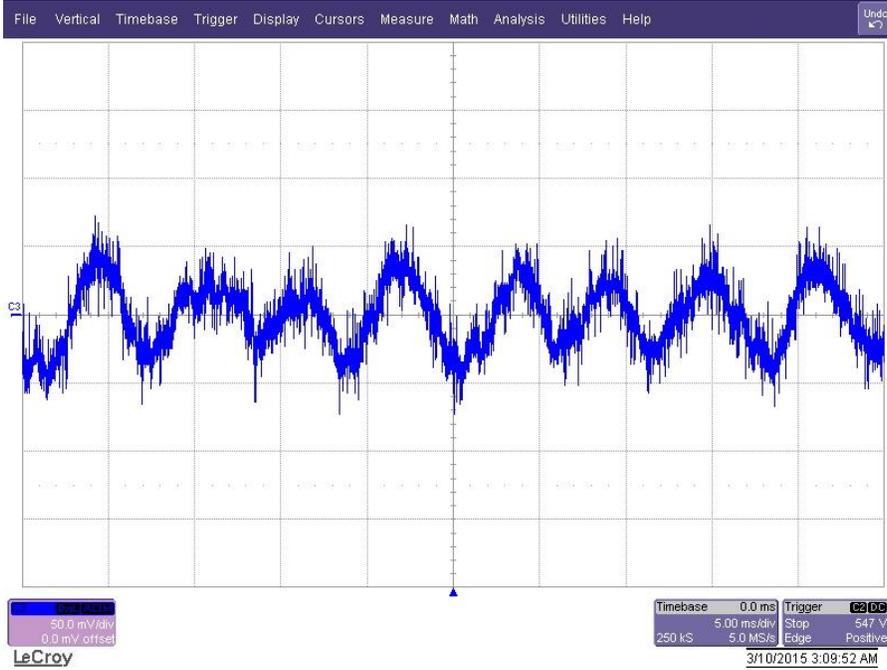
5.1 24V/4A @ 100V_{AC}/60Hz.



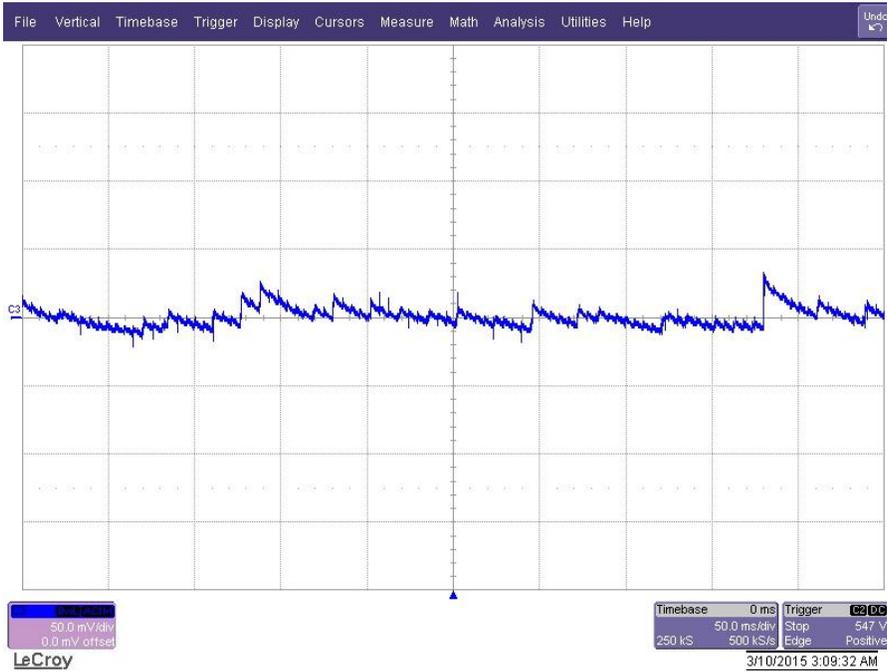
5.2 No load @ 100V_{AC}/60Hz.



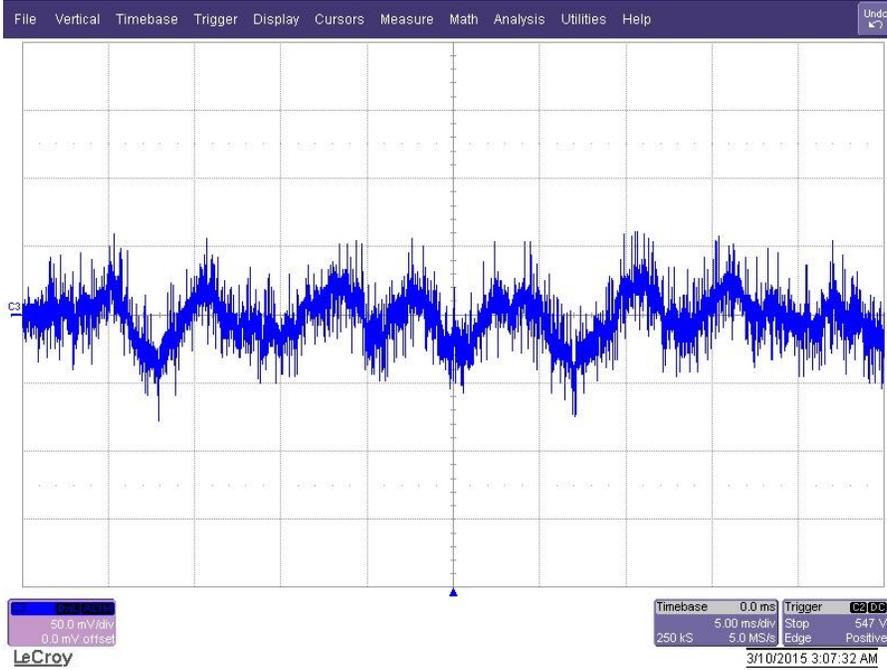
5.3 24V/4A @ 120V_{AC}/60Hz.



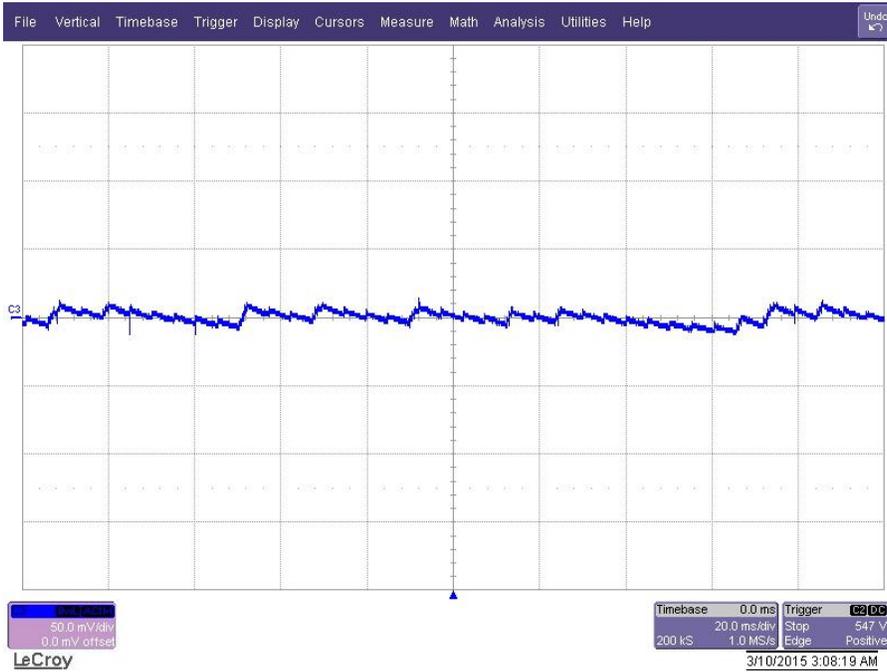
5.4 No load @ 120V_{AC}/60Hz.



5.5 24V/4A @ 138V_{AC}/60Hz.

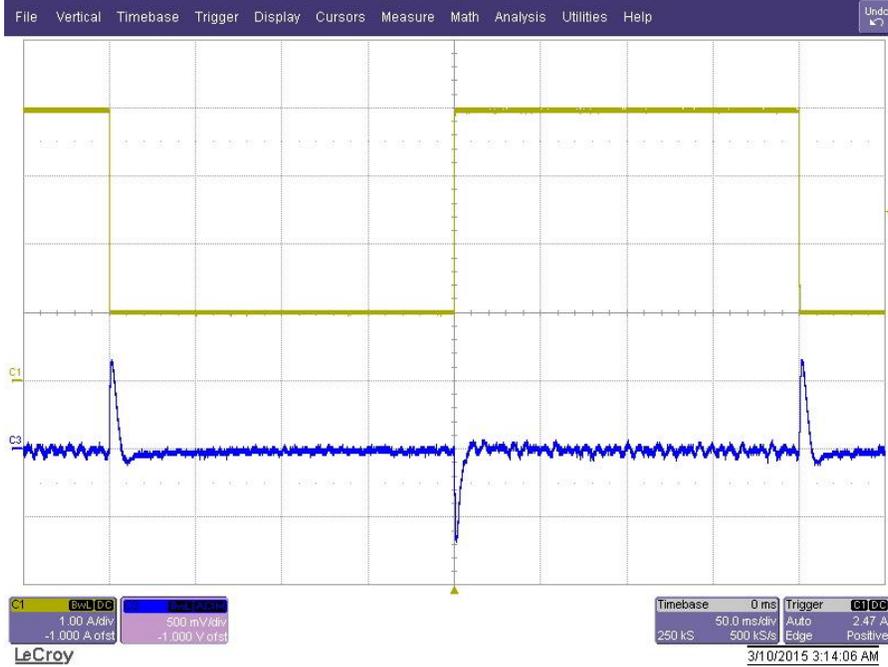


5.6 No load @ 138V_{AC}/60Hz.



6 Dynamic Load Response

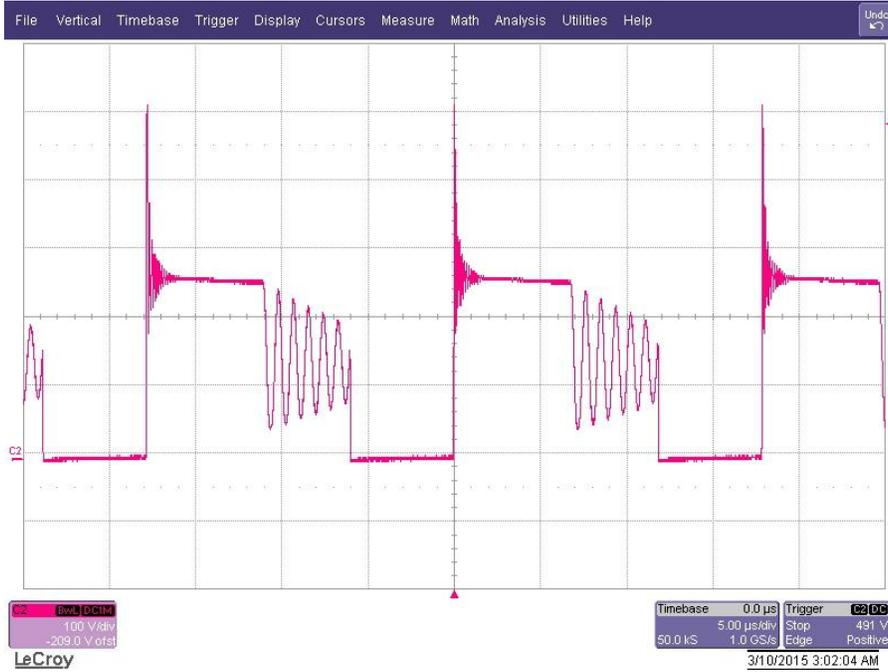
The image below shows the dynamic load response on 24V at 120V_{AC}/60Hz. Load step is from 1A to 4A.



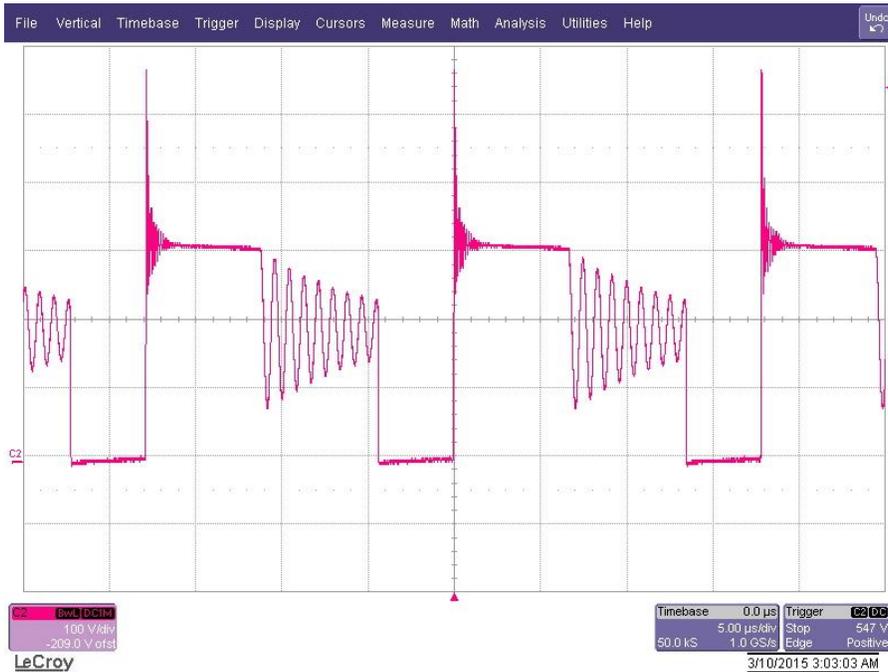
7 Switching Waveforms

The images below show key switching waveforms of PMP10804RevA. The waveforms are measured at full load.

7.1 Voltage at Q1 Drain @ 100V_{AC}/60Hz input and 24V/4A output.



7.2 Voltage at Q1 Drain @ 138V_{AC}/60Hz input and 24V/4A output.



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