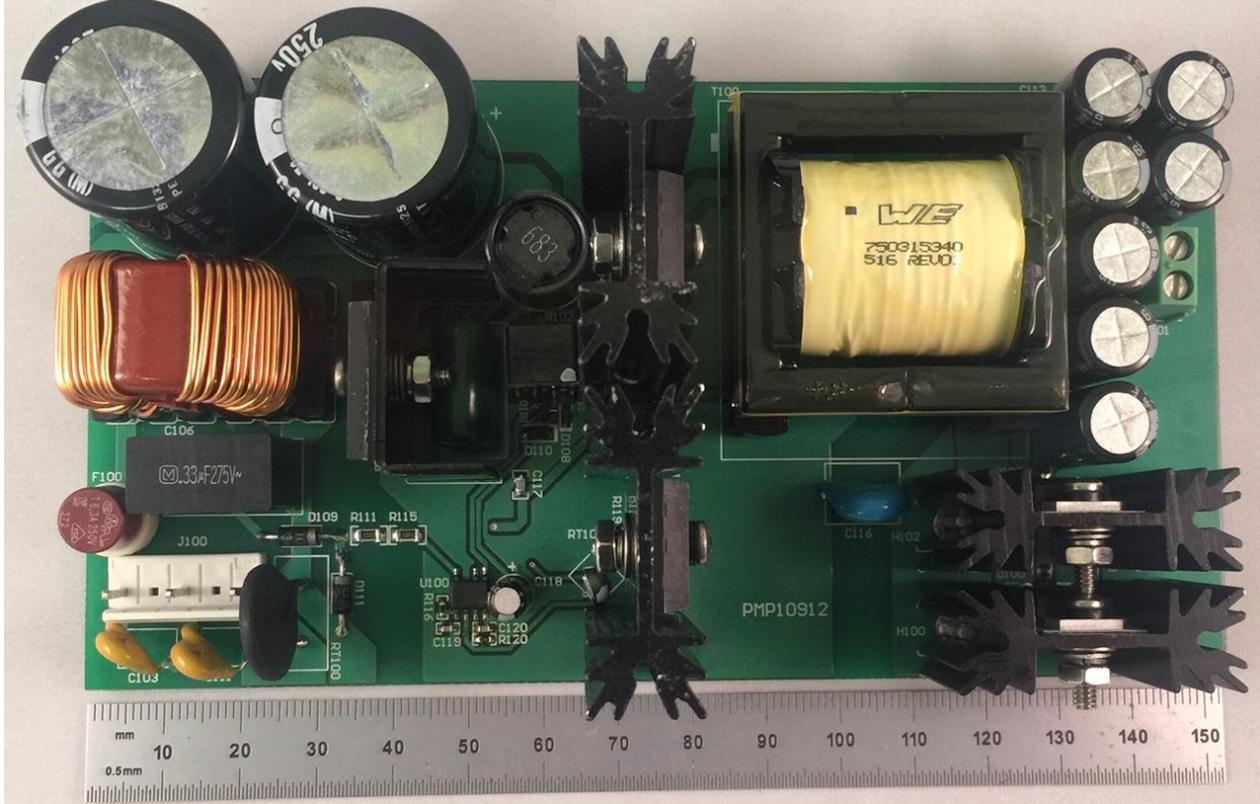


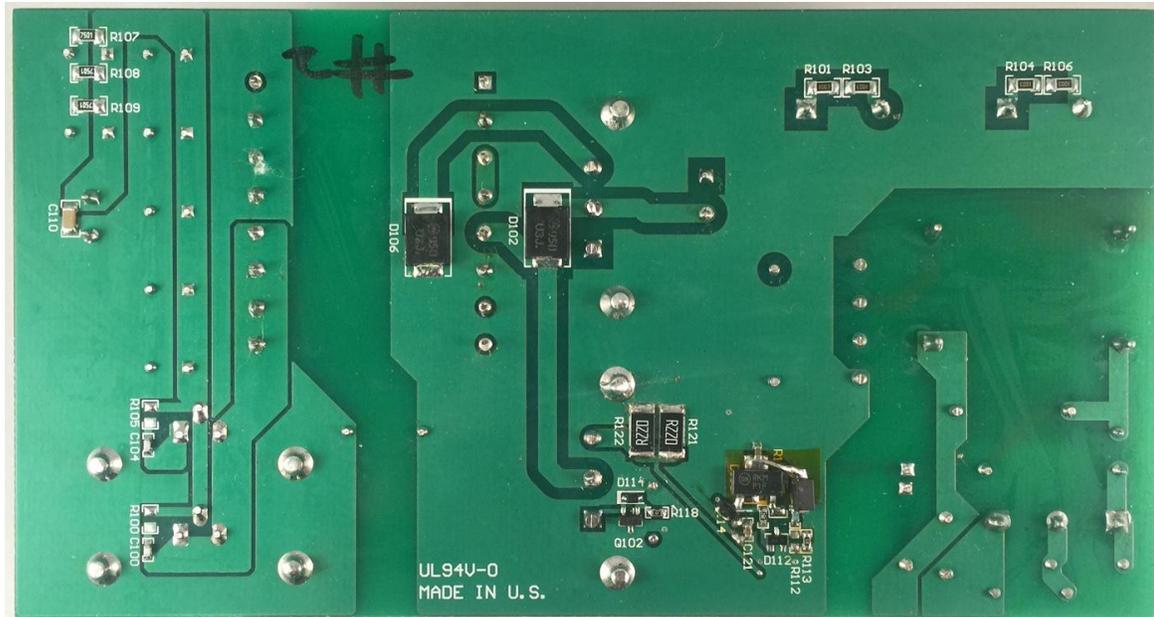
1 Photo

The photographs below show the PMP10912 Rev A assembly. This circuit was built on a PMP10912 Rev A PCB.

Top side

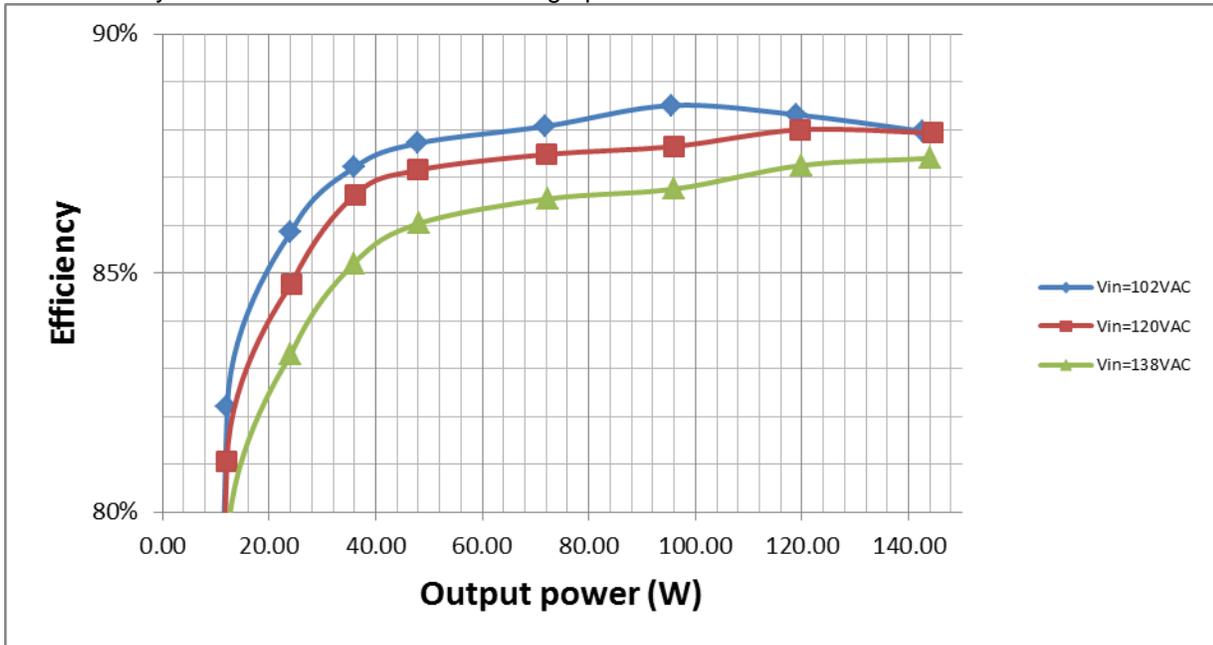


Bottom side



2 Converter Efficiency

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



Vin=102V_{AC}/60Hz

Vin(AC)	Iin(A)	Pin(W)	PF	Vout(V)	Iout(A)	Pout(W)	Eff (%)
101.98	2.27	162.060	0.701	23.72	6.01	142.56	87.97%
101.97	1.92	134.810	0.689	23.81	5.00	119.05	88.31%
101.98	1.57	107.970	0.673	23.89	4.00	95.56	88.51%
101.97	1.22	81.670	0.657	23.92	3.01	71.93	88.07%
102.51	0.85	54.560	0.629	23.94	2.00	47.86	87.71%
102.36	0.66	41.230	0.612	23.97	1.50	35.96	87.21%
102.04	0.47	28.050	0.586	24.01	1.00	24.08	85.85%
102.47	0.27	14.757	0.541	24.02	0.51	12.13	82.20%
102.07	0.02	0.494	N/A	24.17	0.00	0.00	0.00%

Vin=120V_{AC}/60Hz

Vin(AC)	Iin(A)	Pin(W)	PF	Vout(V)	Iout(A)	Pout(W)	Eff (%)
120.04	2.01	164.300	0.683	23.88	6.05	144.47	87.93%
120.00	1.69	135.970	0.669	23.93	5.00	119.65	88.00%
120.05	1.39	109.440	0.655	23.98	4.00	95.92	87.65%
119.97	1.08	82.440	0.637	24.00	3.01	72.12	87.48%
120.02	0.75	54.980	0.61	23.97	2.00	47.92	87.15%
120.03	0.59	41.700	0.593	23.99	1.51	36.13	86.64%
120.23	0.42	28.520	0.57	24.01	1.01	24.18	84.78%
119.97	0.24	14.870	0.525	24.06	0.50	12.05	81.06%
120.49	0.02	0.585	N/A	24.13	0.00	0.00	0.00%

Vin=138V_{AC}/60Hz

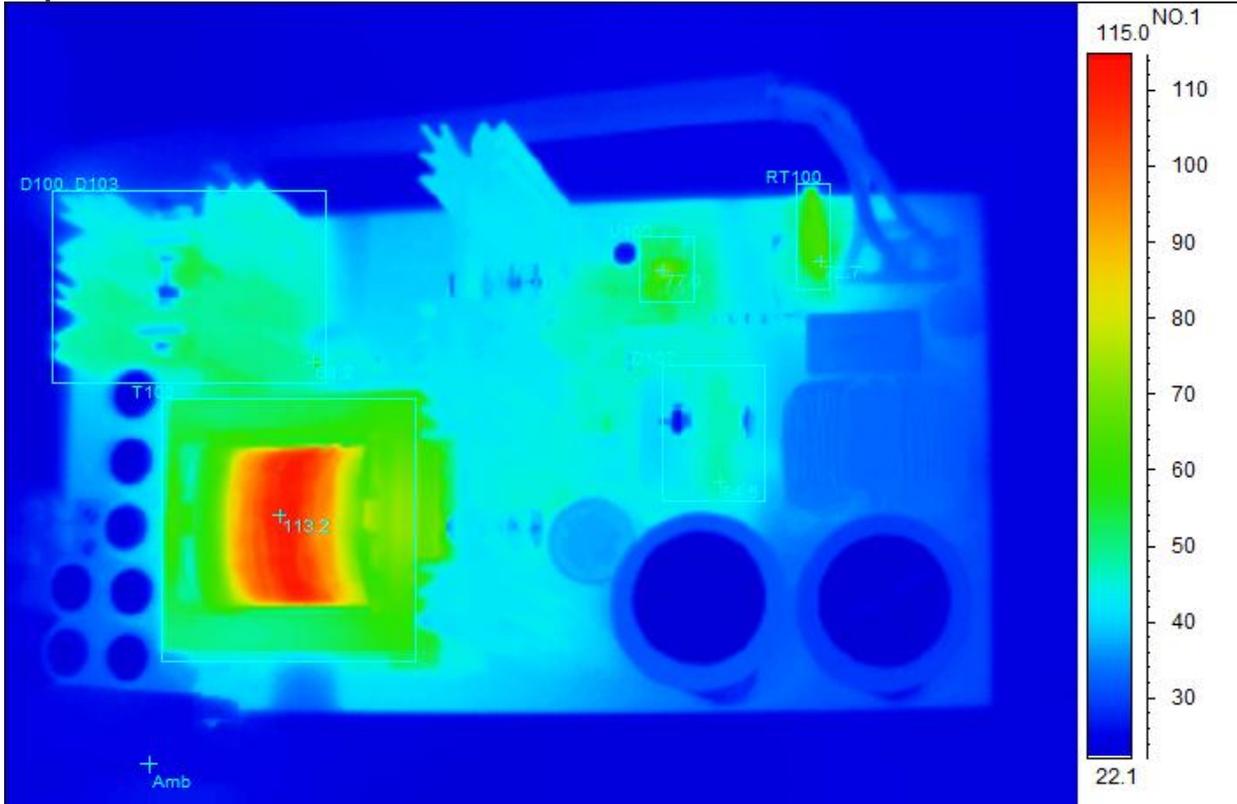
Vin(AC)	Iin(A)	Pin(W)	PF	Vout(V)	Iout(A)	Pout(W)	Eff (%)
138.01	1.80	164.760	0.664	23.96	6.01	144.00	87.40%
138.10	1.53	137.420	0.651	23.98	5.00	119.90	87.25%
138.09	1.26	110.700	0.637	24.01	4.00	96.04	86.76%
138.13	0.98	83.480	0.617	24.02	3.01	72.25	86.55%
138.13	0.68	55.880	0.592	23.99	2.00	48.08	86.03%
138.07	0.53	42.090	0.576	23.97	1.50	35.86	85.20%
138.03	0.38	28.900	0.551	24.00	1.00	24.07	83.29%
138.05	0.22	15.395	0.505	24.06	0.51	12.22	79.39%
137.98	0.02	0.679	N/A	24.16	0.00	0.00	0.00%

3 Thermal Images

The thermal images below show a top view and bottom view of the board. The ambient temperature was 20°C with no forced air flow. The output was at 24V/6A.

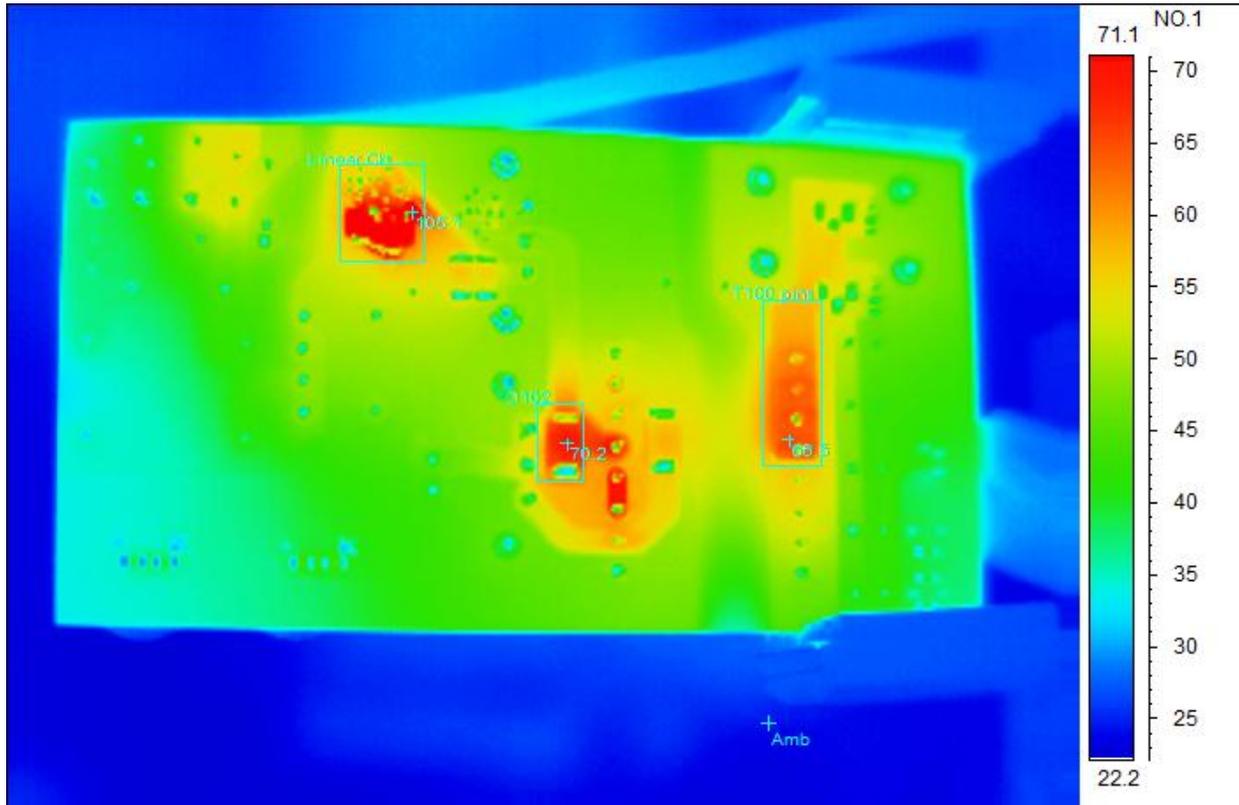
120V_{AC}/60Hz

Top Side



Spot analysis	Value
Amb Temperature	25.5°C
Area analysis	Value
T100Max	113.2°C
RT100Max	72.7°C
U100Max	77.0°C
D100, D103Max	68.2°C
D107Max	54.5°C

**120V_{AC}/60Hz
Bottom Side**

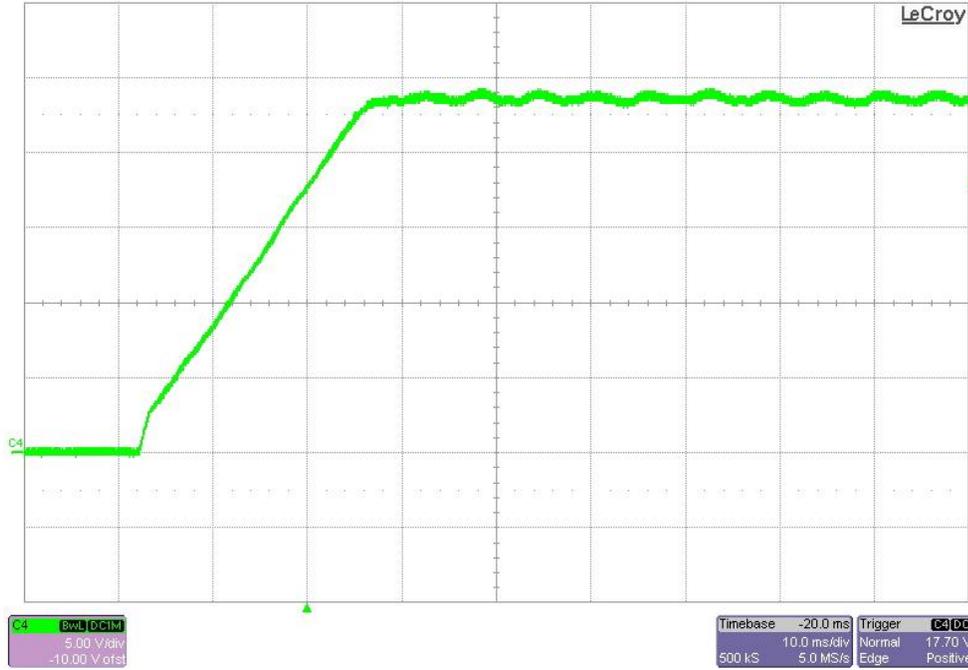


Spot analysis	Value
Amb Temperature	24.7°C
Area analysis	Value
Linear Ckt.Max	105.1°C
D102 Max	70.2°C
T100 pins Max	66.5°C

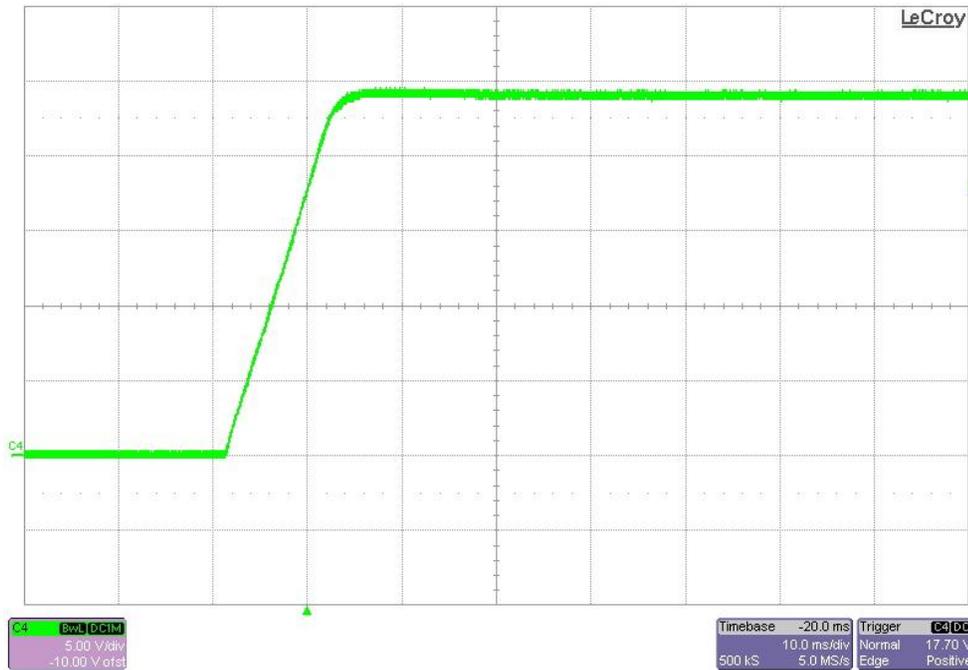
4 Startup

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

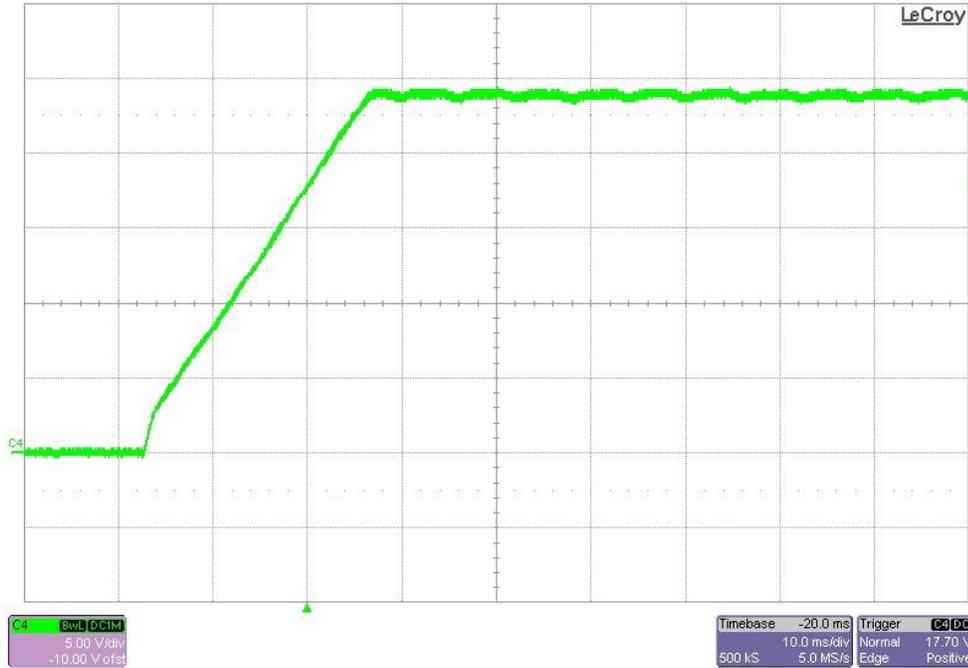
4.1 Start Up @ 102V_{AC}: 24V/6A.



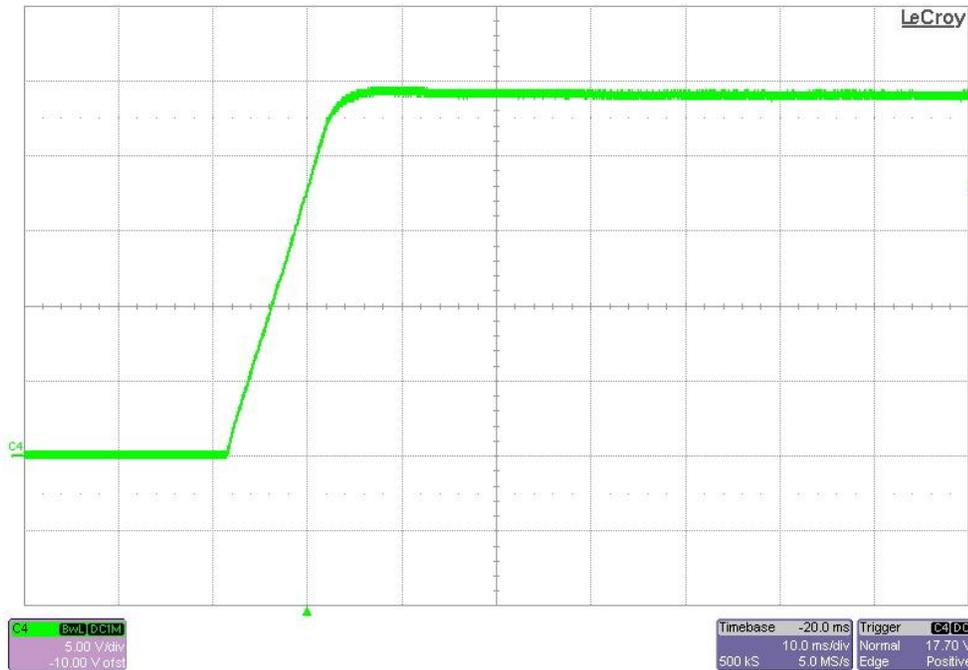
4.2 Start Up @ 102V_{AC}: no load.



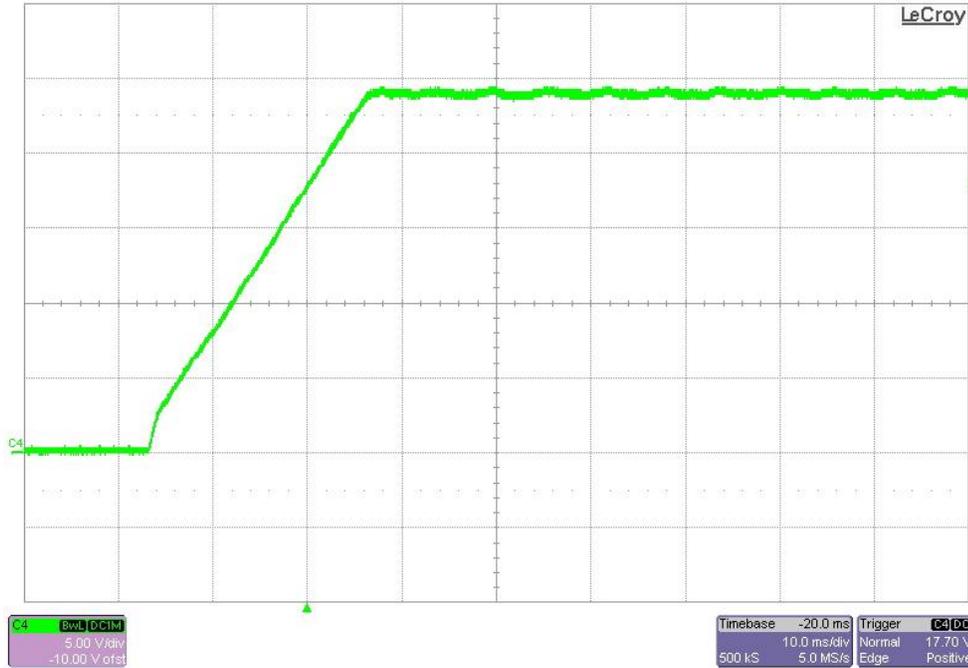
4.3 Start Up @ 120V_{AC}: 24V/6A.



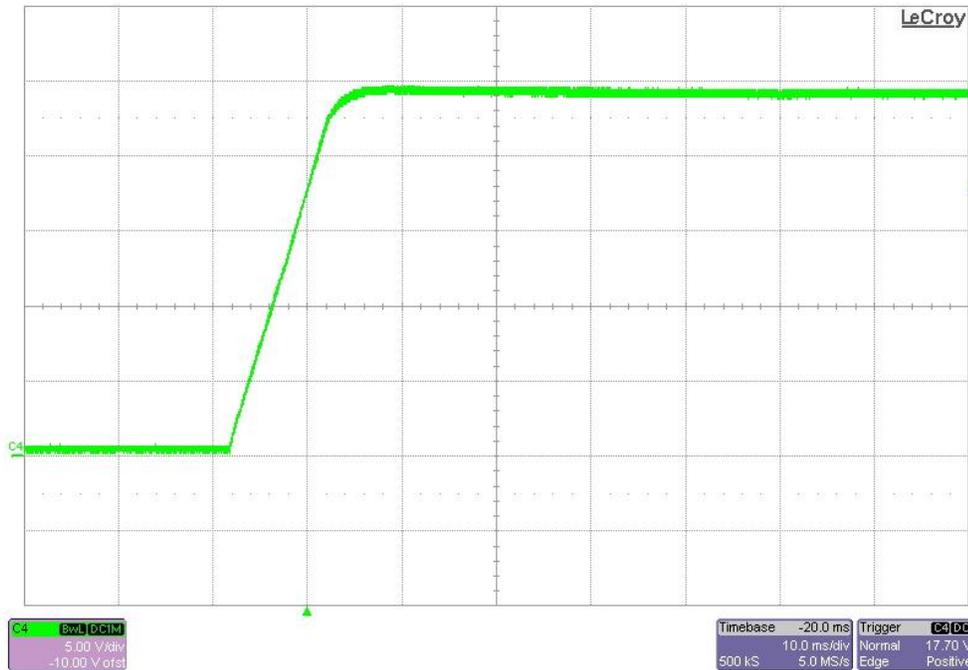
4.4 Start Up @ 120V_{AC}: no load.



4.5 Start Up @ 138V_{AC}: 24V/6A.



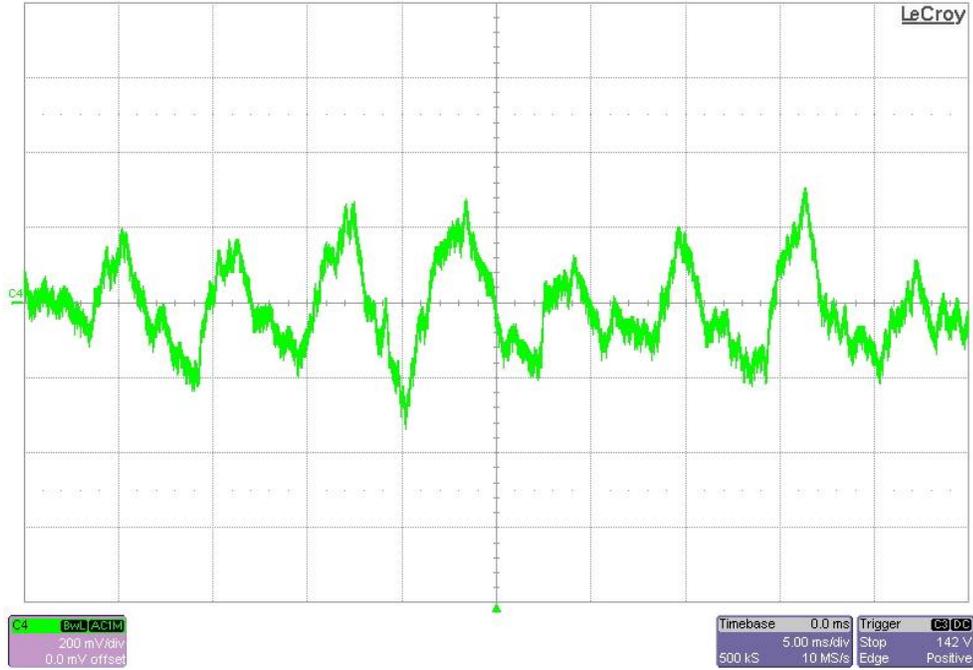
4.6 Start Up @ 138V_{AC}: no load.



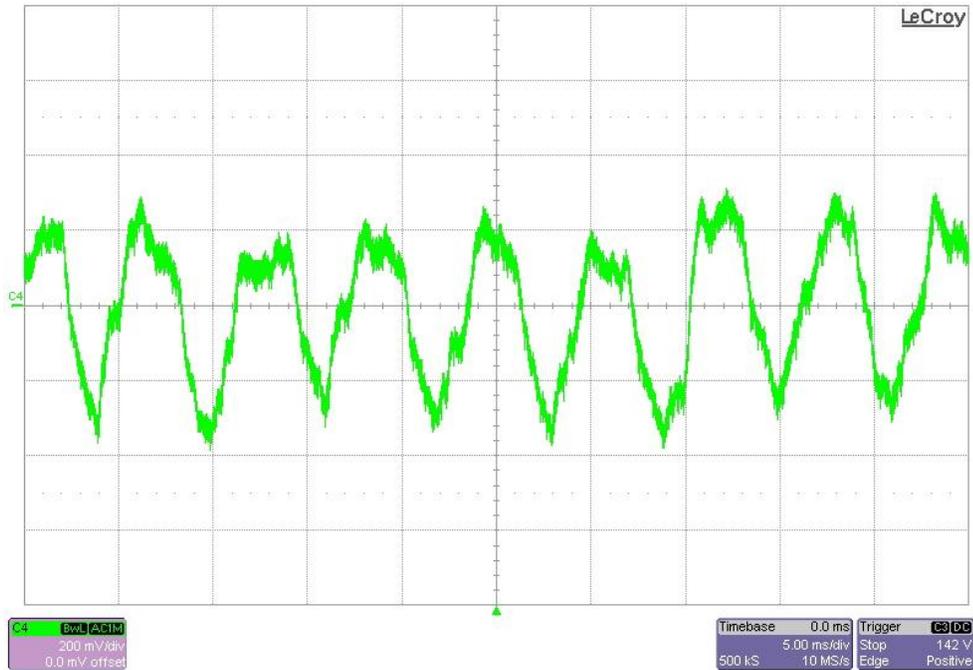
5 Output Ripple Voltages

The output ripple voltage is shown in the plots below at 24V/6A full load.

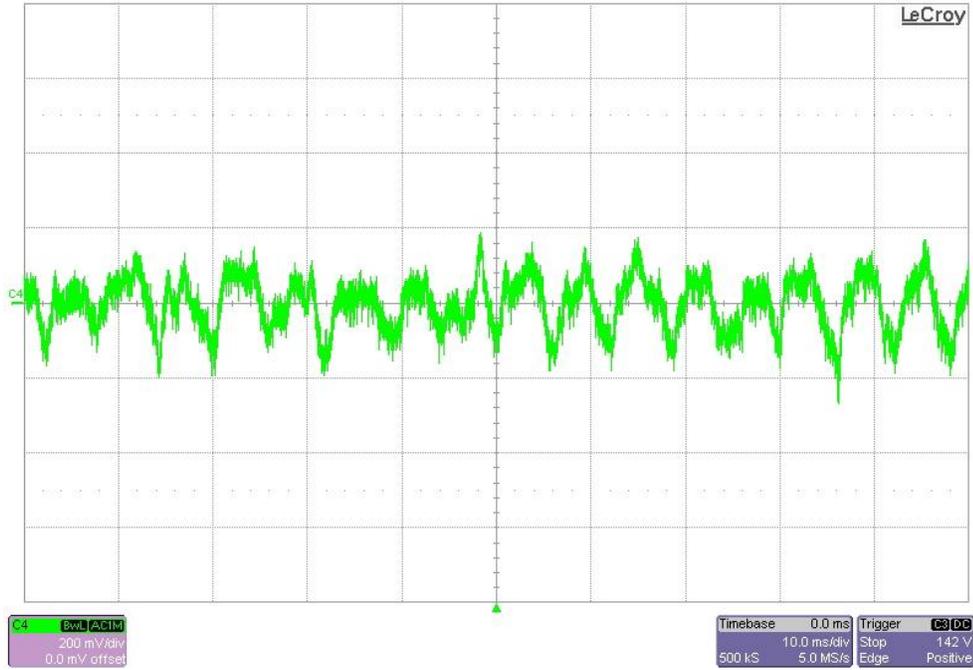
5.1 $24V_{ripple}$ at $102V_{AC}/60Hz$



5.2 $24V_{ripple}$ at $120V_{AC}/60Hz$



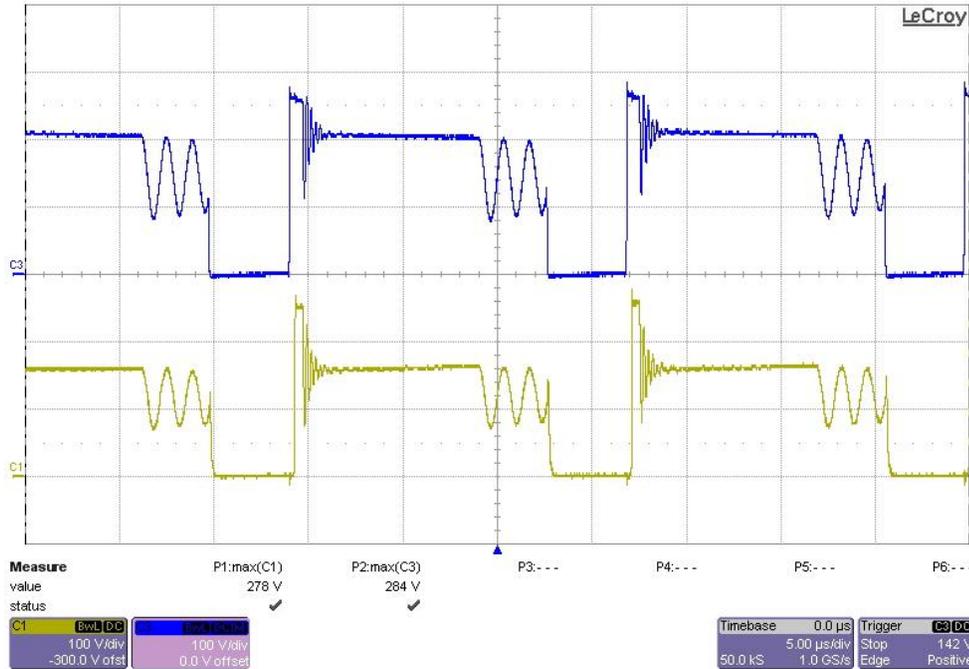
5.3 24V_{ripple} at 138V_{AC}/60Hz



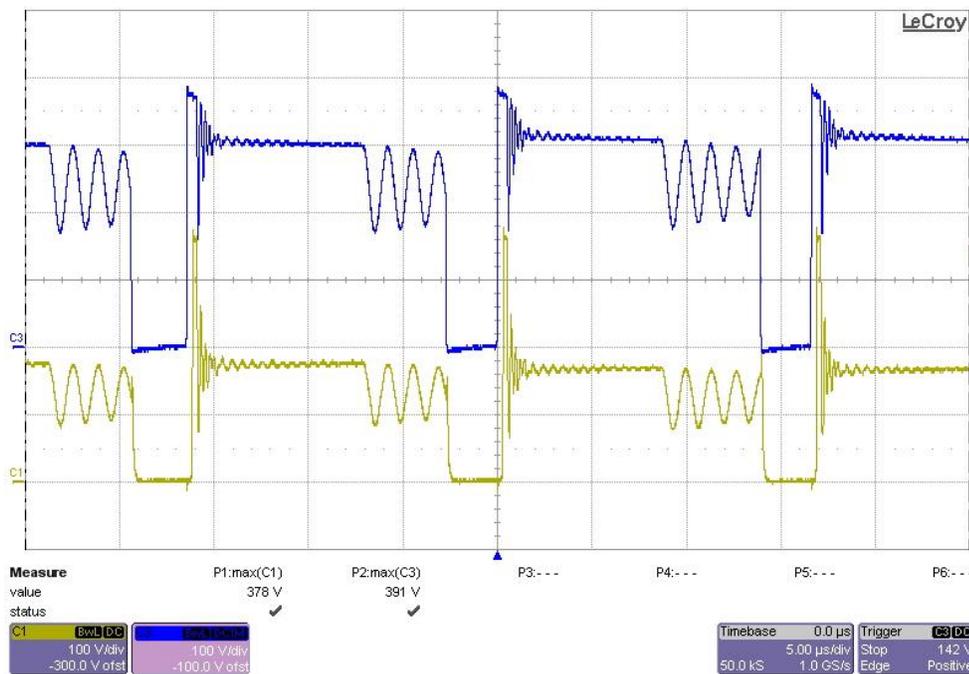
6 Switching Waveforms

The images below show key switching waveforms of PMP10912 RevA. The waveforms are measured with 24V/6A load. CH1: $V_{DS}(Q_{100})$, CH3: $V_{D_GND}(Q_{103})$.

6.1 102V_{AC}/60Hz



6.2 138V_{AC}/50Hz



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