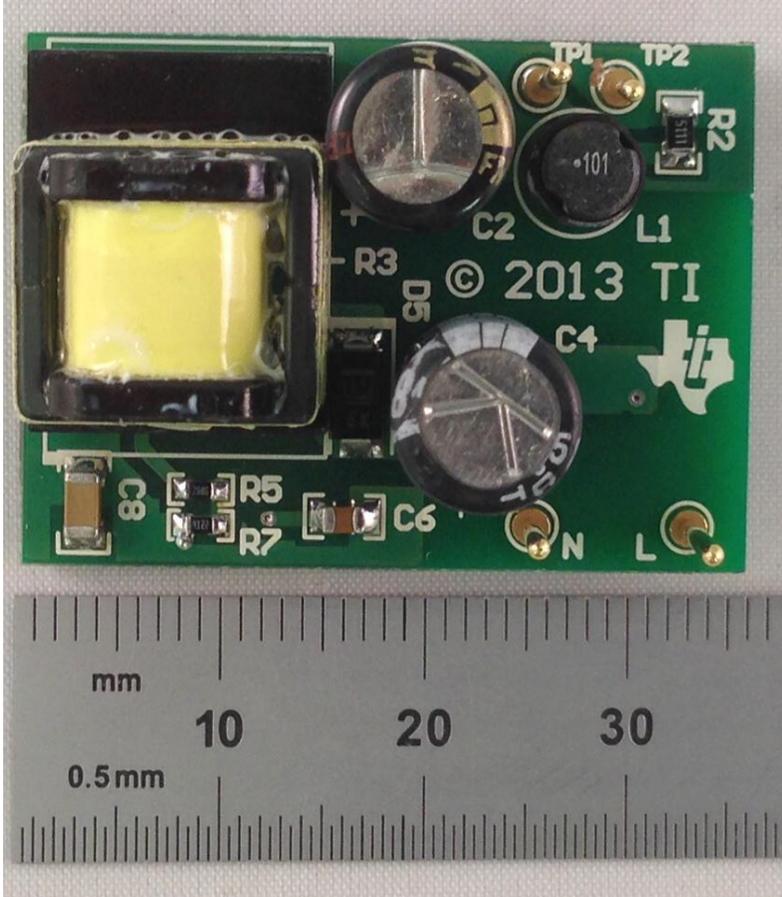


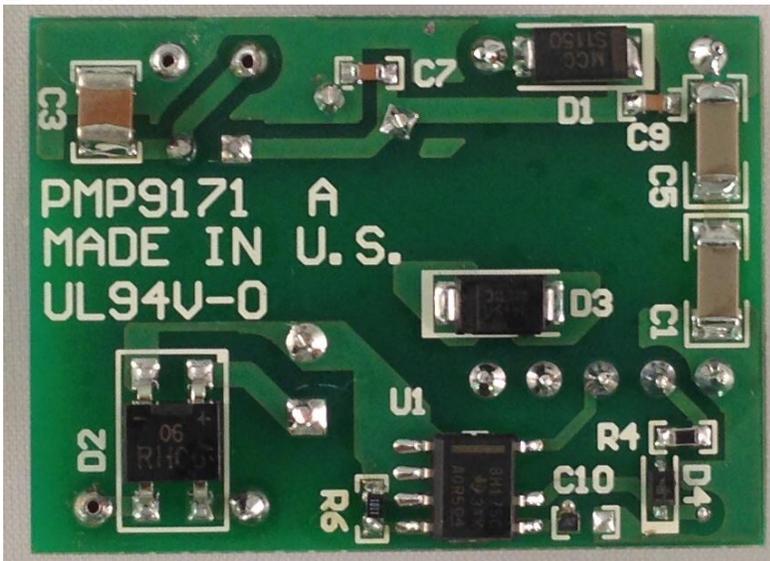
1 Photo

The photographs below show the PMP10385 Rev A assembly. This circuit was built on a PMP9171 Rev A PCB.

Top side

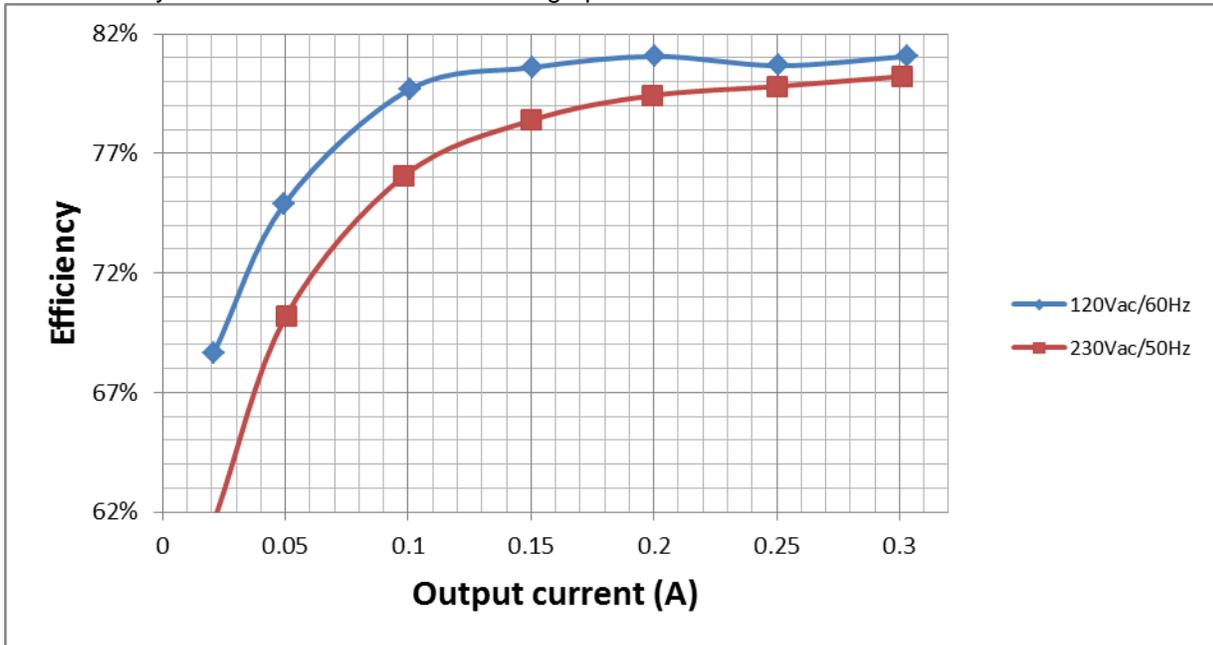


Bottom side



2 Converter Efficiency

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



V_{in}=120V_{AC}/60Hz

V _{in} (V)	I _{in} (mA)	P _{in} (W)	V _{out} (V)	I _{out} (A)	P _{out} (W)	Losses(W)	Efficiency (%)
120.08	78.06	4.628	12.37	0.3033	3.751821	0.876179	81.07%
120.09	67.52	3.844	12.37	0.2507	3.101159	0.742841	80.68%
120.12	56.47	3.062	12.38	0.2005	2.48219	0.57981	81.06%
120.15	45.32	2.315	12.39	0.1506	1.865934	0.449066	80.60%
120.16	33.5	1.567	12.4	0.1007	1.24868	0.31832	79.69%
120.16	19.604	0.8225	12.41	0.04964	0.616032	0.2064676	74.90%
120.17	9.576	0.3776	12.42	0.02087	0.259205	0.1183946	68.65%
120.18	1.517	0.05407	12.52	0	0	0.05407	0.00%

V_{in}=230V_{AC}/50Hz

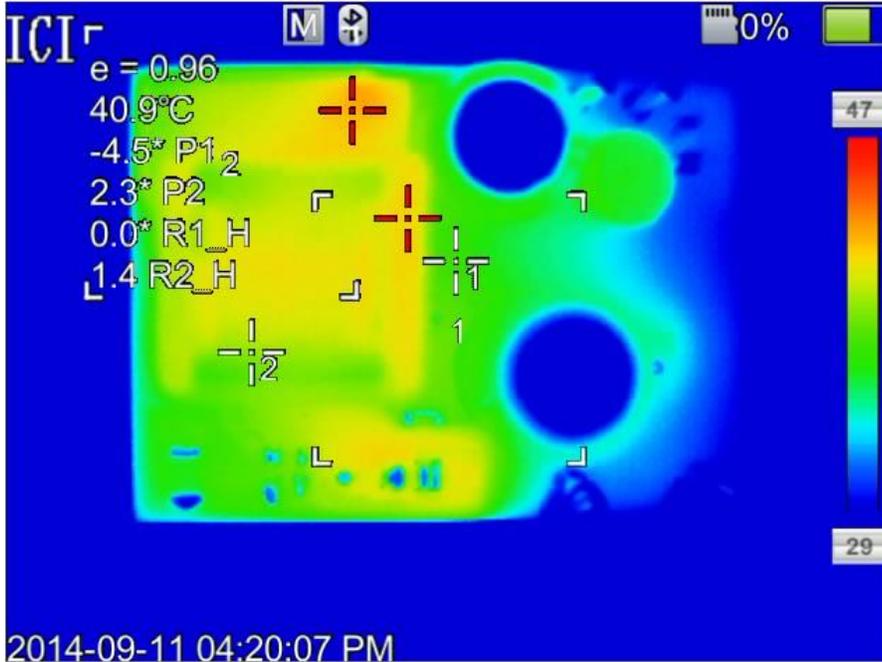
V _{in} (V)	I _{in} (mA)	P _{in} (W)	V _{out} (V)	I _{out} (A)	P _{out} (W)	Losses(W)	Efficiency (%)
230	52.22	4.639	12.36	0.3011	3.721596	0.917404	80.22%
230	45.55	3.878	12.37	0.2502	3.094974	0.783026	79.81%
230	38.55	3.105	12.38	0.1992	2.466096	0.638904	79.42%
230	30.81	2.374	12.39	0.1502	1.860978	0.513022	78.39%
230	21.56	1.604	12.4	0.0984	1.22016	0.38384	76.07%
230	12.403	0.888	12.41	0.05023	0.623354	0.2646457	70.20%
230	6.224	0.4321	12.44	0.02146	0.266962	0.1651376	61.78%
230	1.23	0.09617	12.56	0	0	0.09617	0.00%

3 Thermal Images

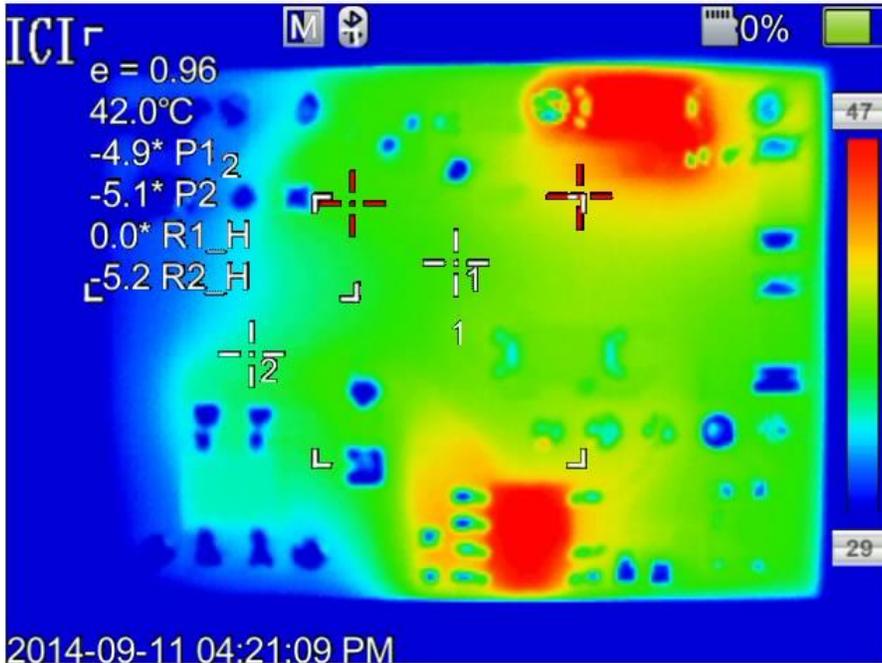
The thermal images below show a top view and bottom view of the board. The ambient temperature was 20°C with no forced air flow. The output was at full load: 12V/0.3A.

$V_{in}=120V_{AC}/60Hz$

Top Side

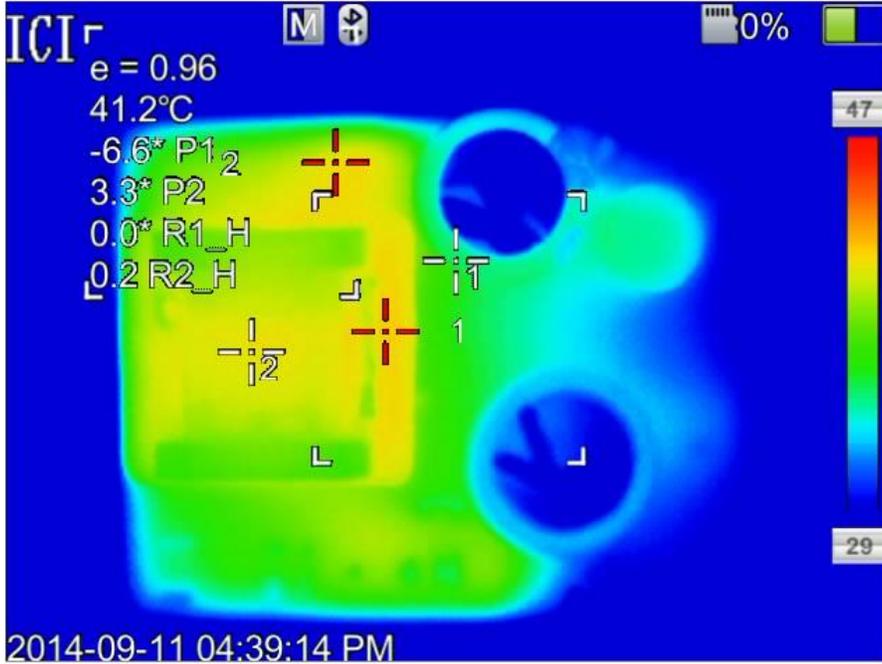


Bottom Side

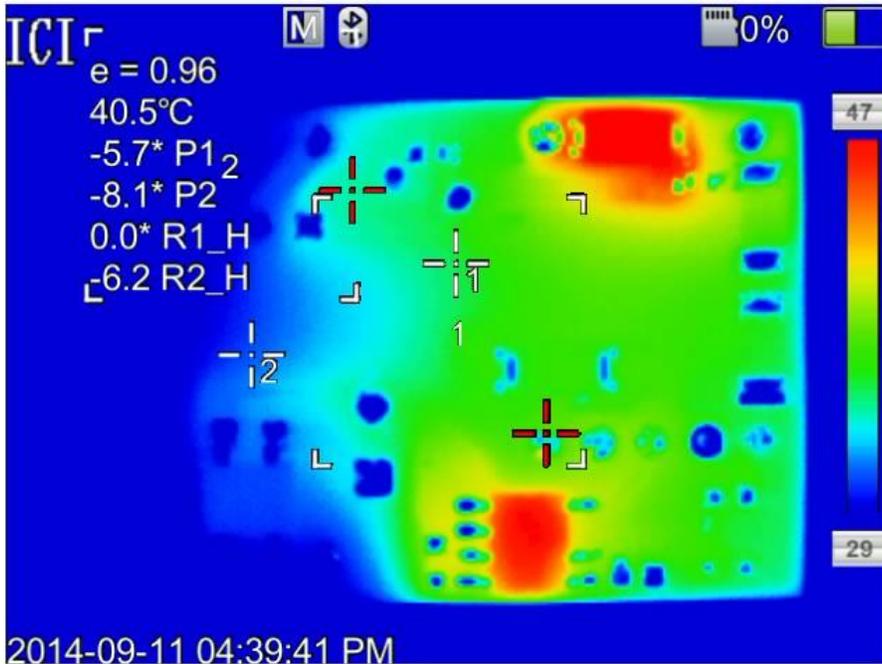


$V_{in}=230V_{AC}/50Hz$

Top Side



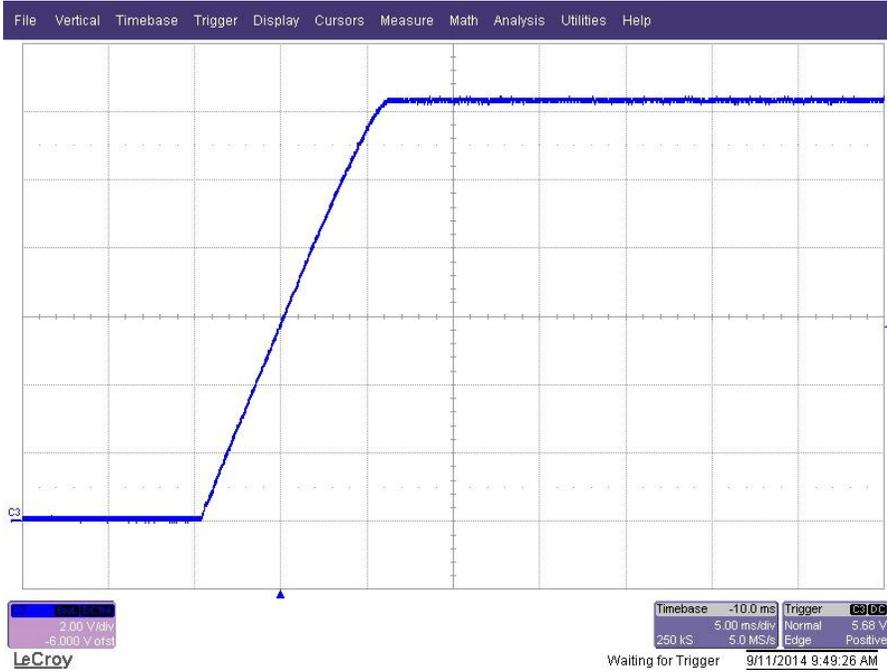
Bottom Side



4 Startup

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

4.1 Start Up @ 120V_{AC}/60Hz: 12V/0.3A.



4.2 Start Up @ 120V_{AC}/60Hz: no load.



4.3 Start Up @ 230V_{AC}/50Hz: 12V/0.3A.



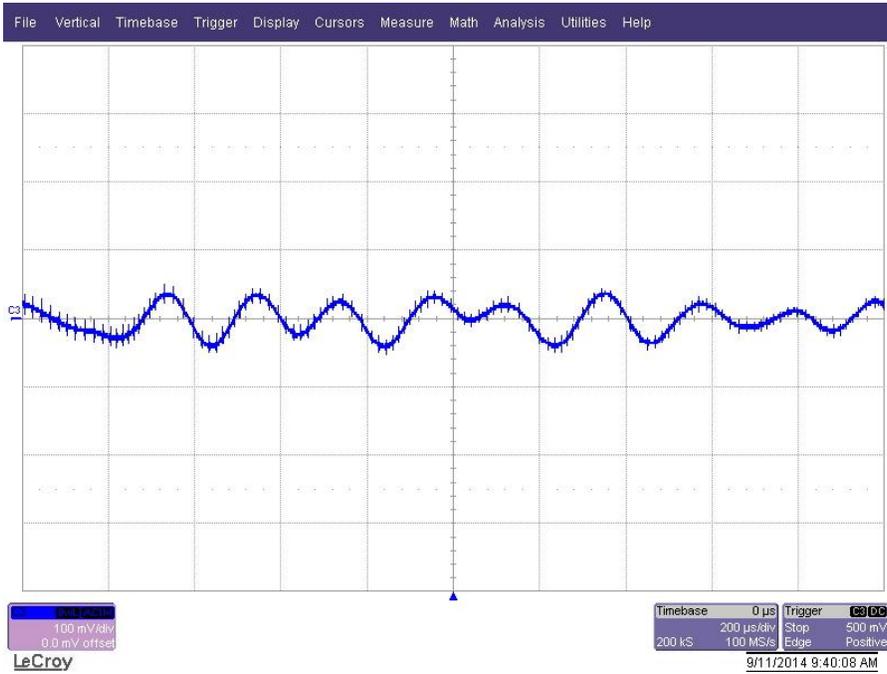
4.4 Start Up @ 230V_{AC}/50Hz: no load.



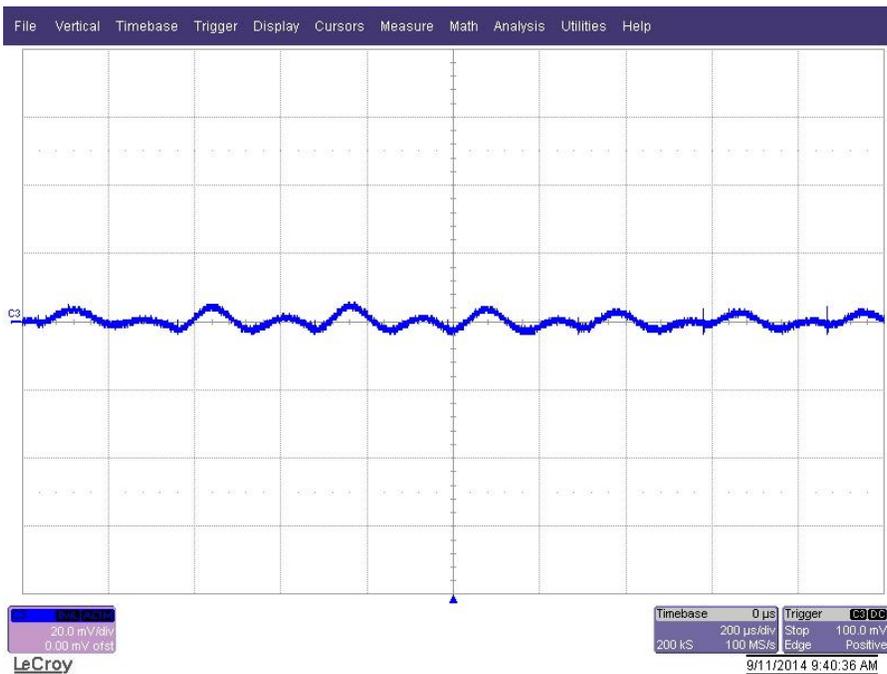
5 Output Ripple Voltages

The output ripple voltages are shown in the plots below.

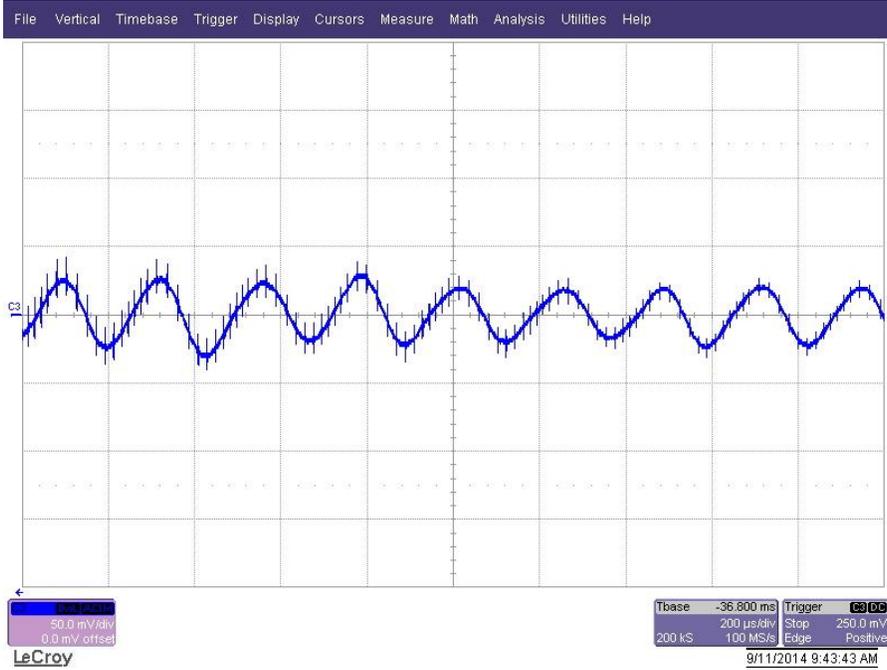
5.1 120V_{AC}/60Hz – 12V/0.3A



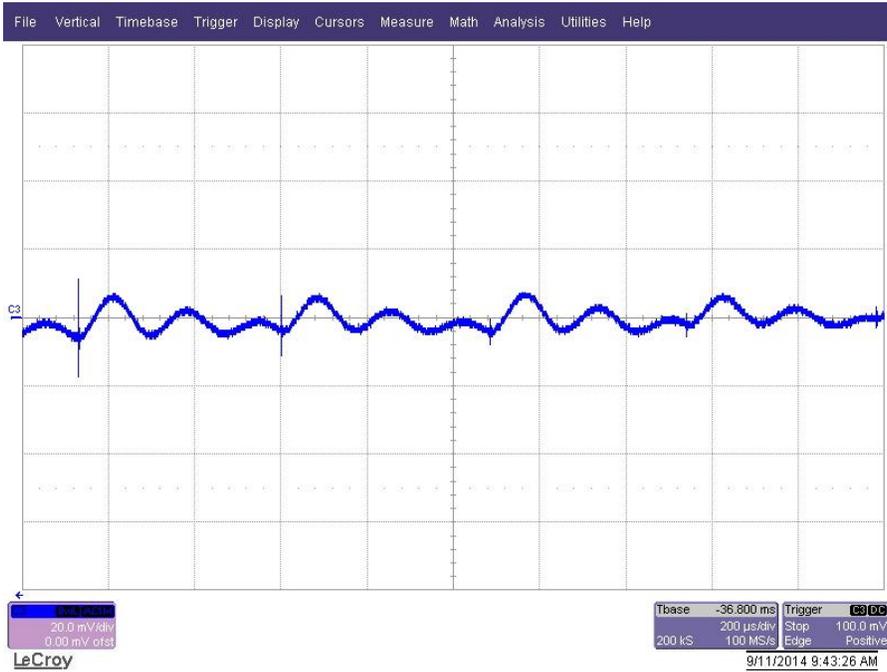
5.2 120V_{AC}/60Hz – 12V/ No load



5.3 230V_{AC}/50Hz – 12V/0.3A



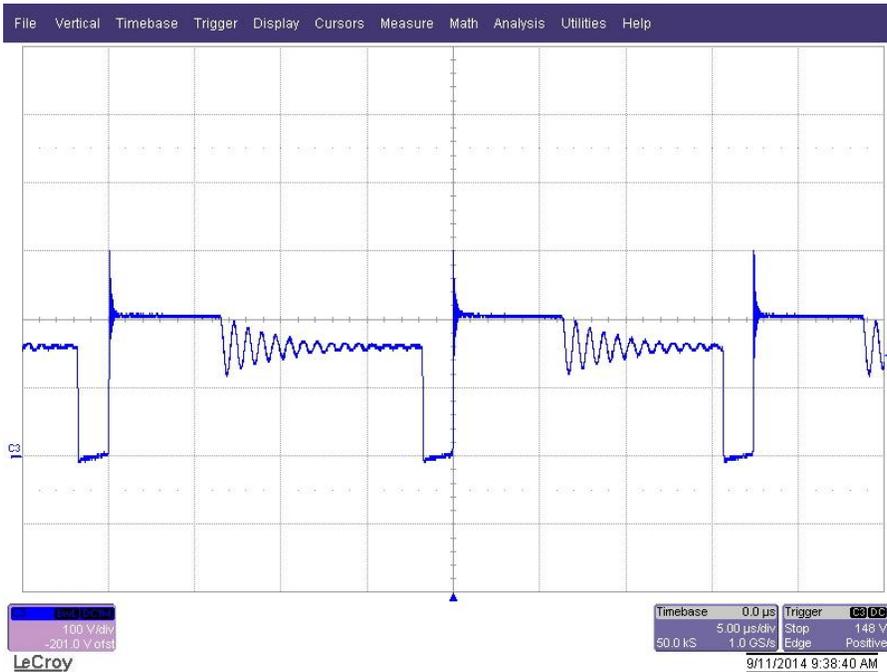
5.4 230V_{AC}/50Hz – 12V/ No load



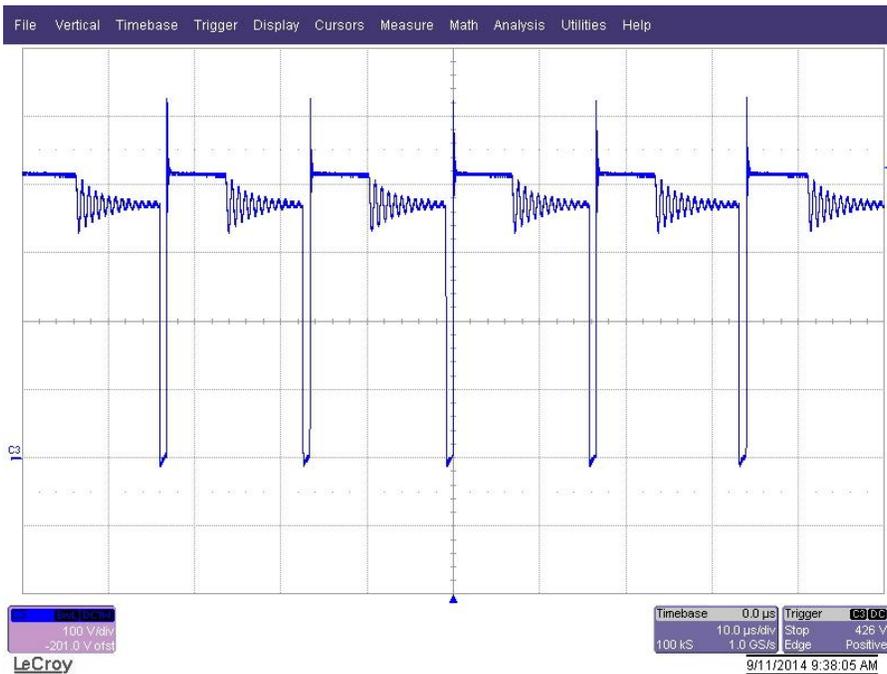
6 Switching Waveforms

The images below show key switching waveforms of PMP10385RevA. The waveforms are measured with 0.3A full load.

6.1 Primary MOSFET U1 pin8 @ 120V_{ac}/60Hz



6.2 Primary MOSFET U1 pin8 @ 265V_{ac}/50Hz



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