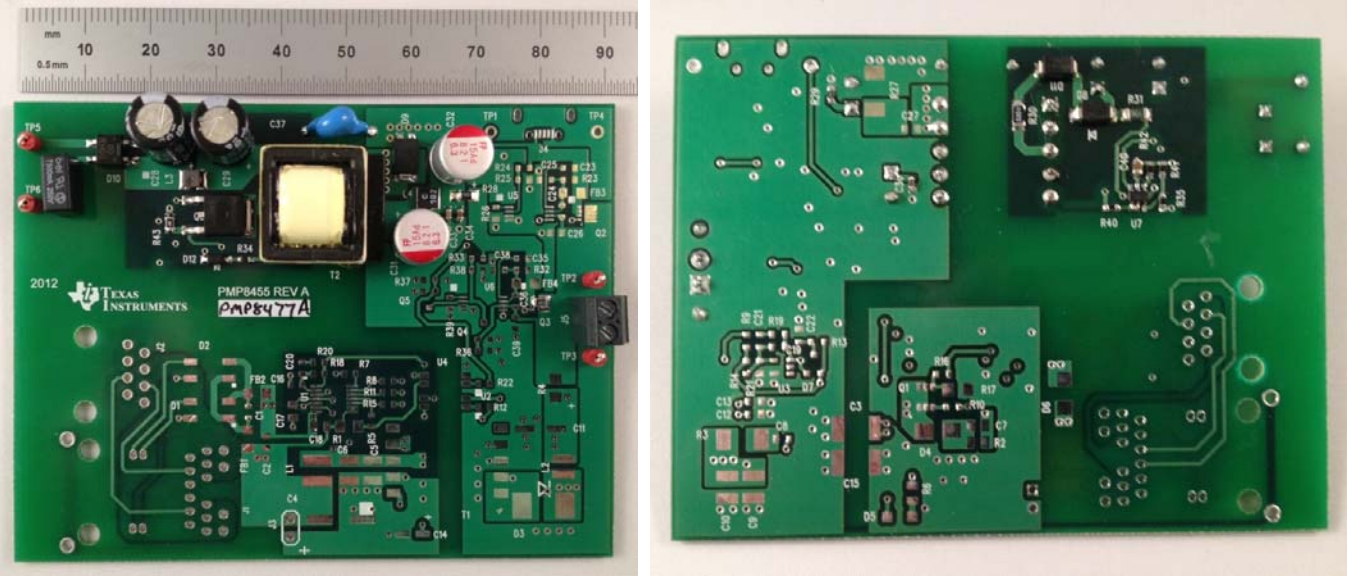
PMP8477 Rev A Test Results

1 Photos

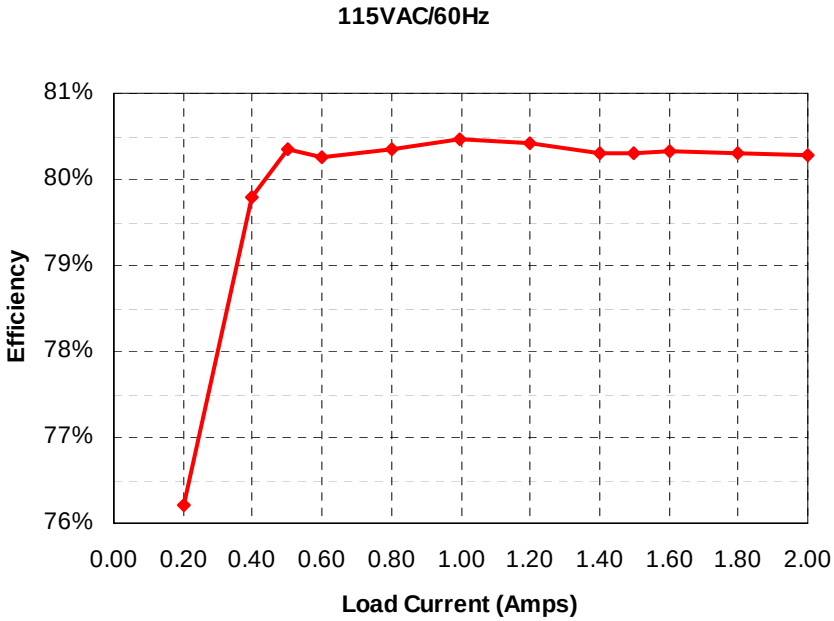
The photographs below show the PMP8477 Rev A prototype assembly. This circuit was built on a PMP8455 Rev A PCB.



2 Standby Power

With no load attached to the output of the supply, the unit draws 51mW of input power with a 115VAC/60Hz input.

3 Efficiency



115VAC/60Hz

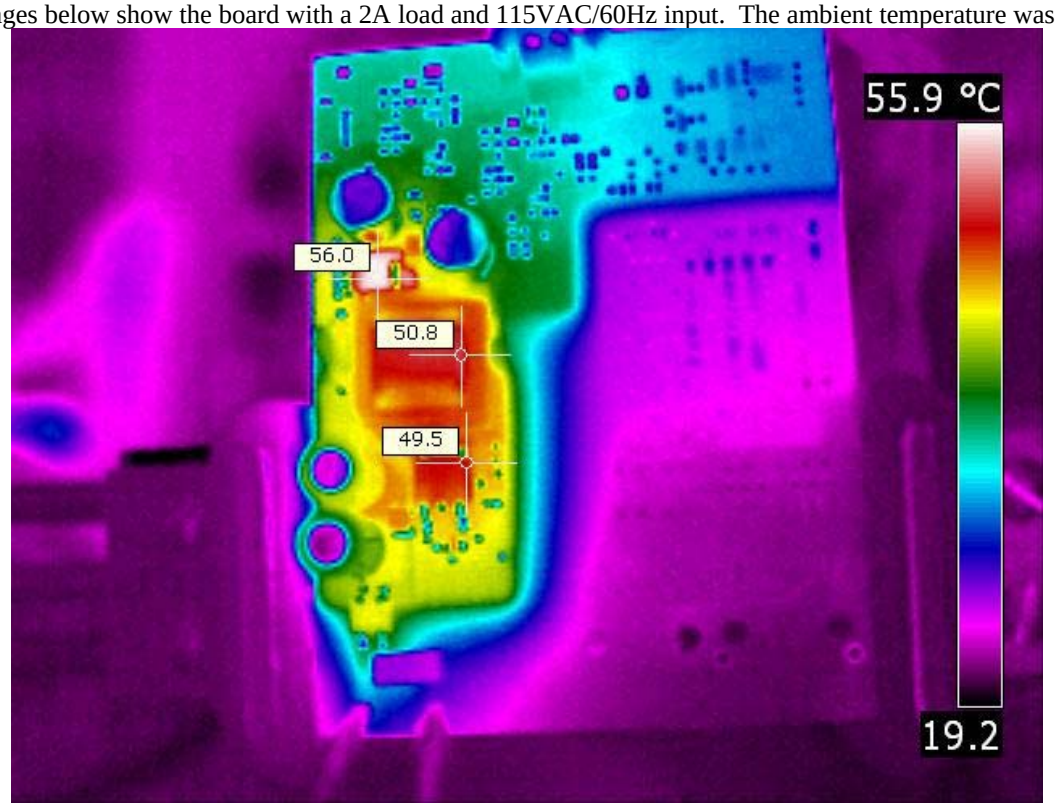
Iout	Vout	Vin	Iin	Pin	PF	Pout	Losses	Efficiency
0.000	5.05	115.0	0.0019	0.051	0.20	0.00	0.05	0.0%
0.200	5.03	115.0	0.031	1.32	0.37	1.01	0.31	76.2%
0.399	5.02	115.0	0.054	2.51	0.41	2.00	0.51	79.8%
0.500	5.03	115.0	0.065	3.13	0.42	2.52	0.62	80.4%
0.600	5.03	115.0	0.075	3.76	0.44	3.02	0.74	80.3%
0.802	5.03	115.0	0.095	5.02	0.46	4.03	0.99	80.4%
0.999	5.05	115.0	0.114	6.27	0.48	5.04	1.23	80.5%
1.200	5.06	115.0	0.132	7.55	0.50	6.07	1.48	80.4%
1.400	5.07	115.0	0.151	8.84	0.51	7.10	1.74	80.3%
1.500	5.07	115.0	0.159	9.47	0.52	7.61	1.87	80.3%
1.600	5.08	115.0	0.168	10.12	0.52	8.13	1.99	80.3%
1.800	5.09	115.0	0.186	11.41	0.53	9.16	2.25	80.3%
2.000	5.11	115.0	0.204	12.73	0.54	10.22	2.51	80.3%

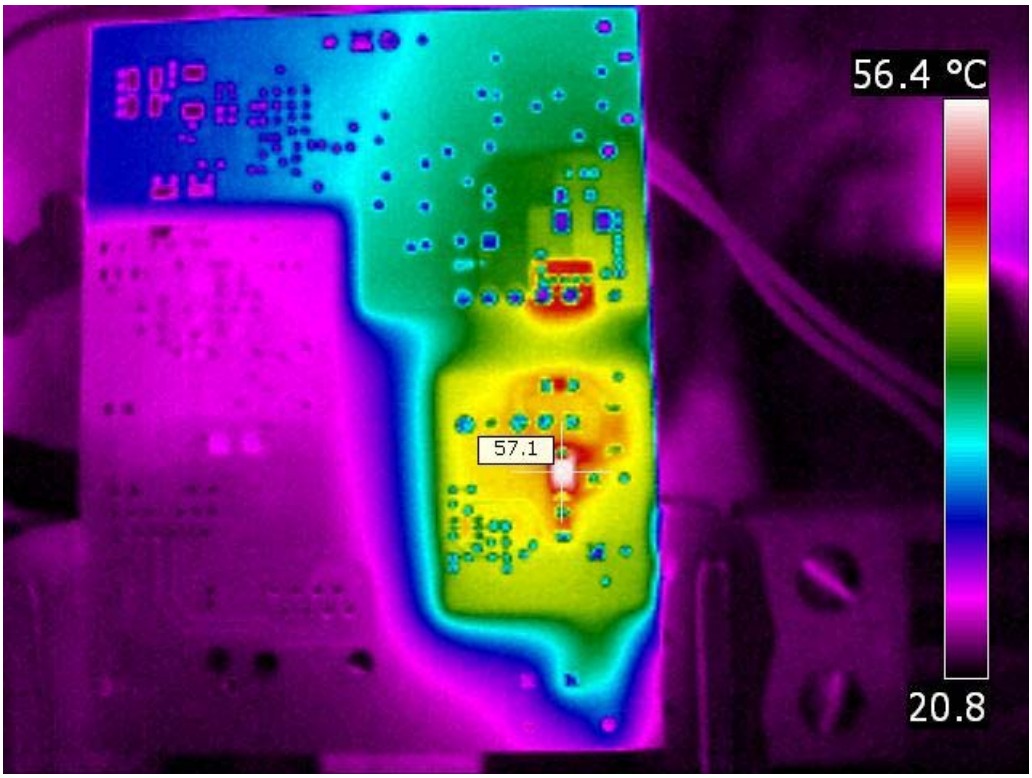
4 Average Efficiency

Vin	Pin	Vout	Iout	Load	Efficiency	Avg. Eff.
115VAC/60Hz	3.13	5.03	0.500	25%	80.35%	**80.35%**
	6.27	5.05	0.999	50%	80.46%	
	9.47	5.07	1.500	75%	80.31%	
	12.73	5.11	2.000	100%	80.28%	

5 Thermal Images

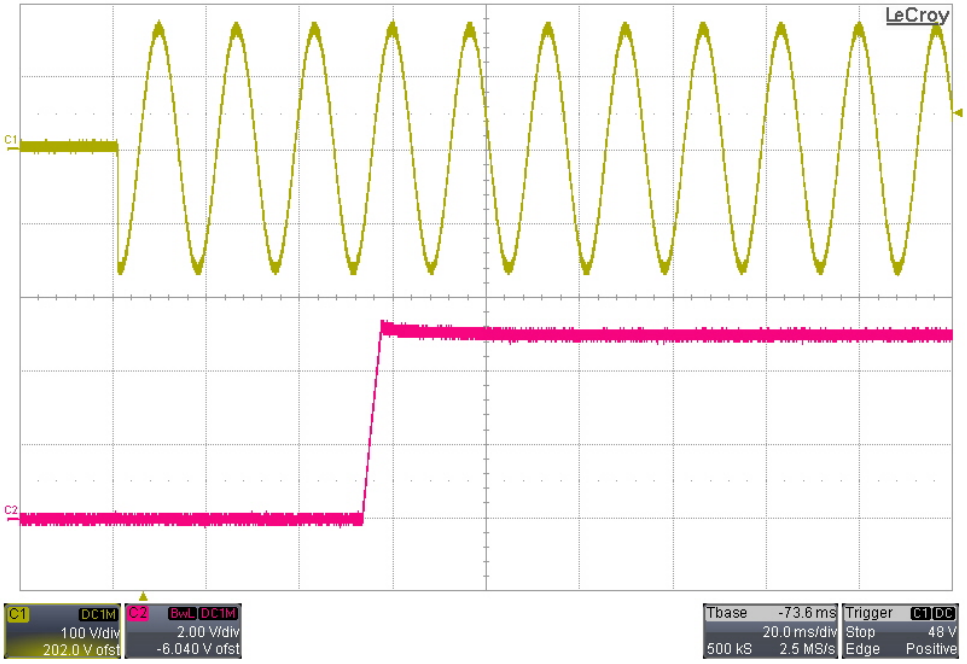
The thermal images below show the board with a 2A load and 115VAC/60Hz input. The ambient temperature was 25ºC.





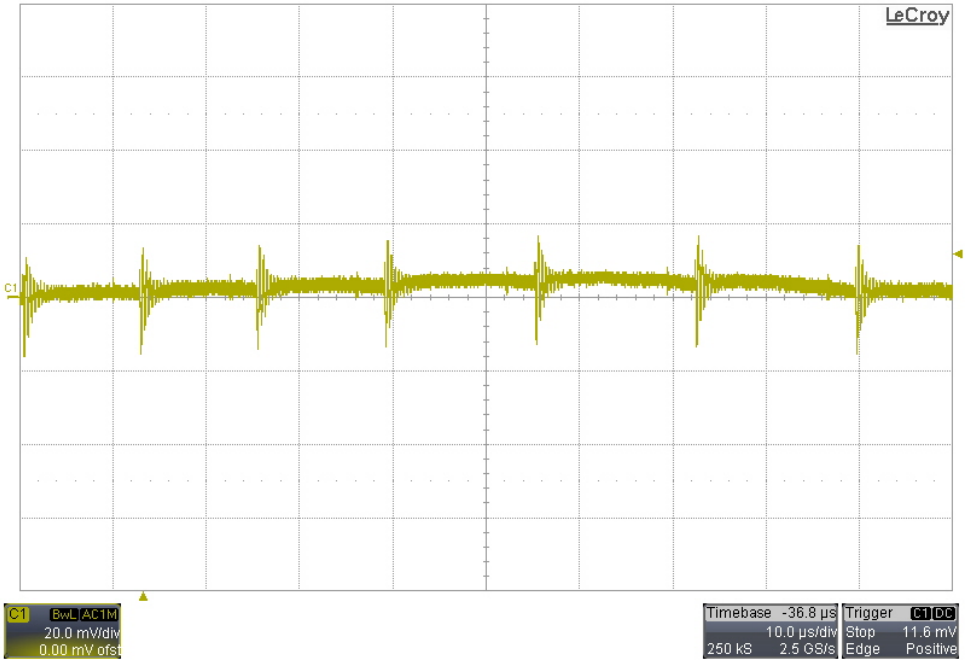
6 Startup

Channel 1 shows the AC input voltage. Channel 2 shows the output voltage. The input was 115VAC/60Hz. The output was unloaded.



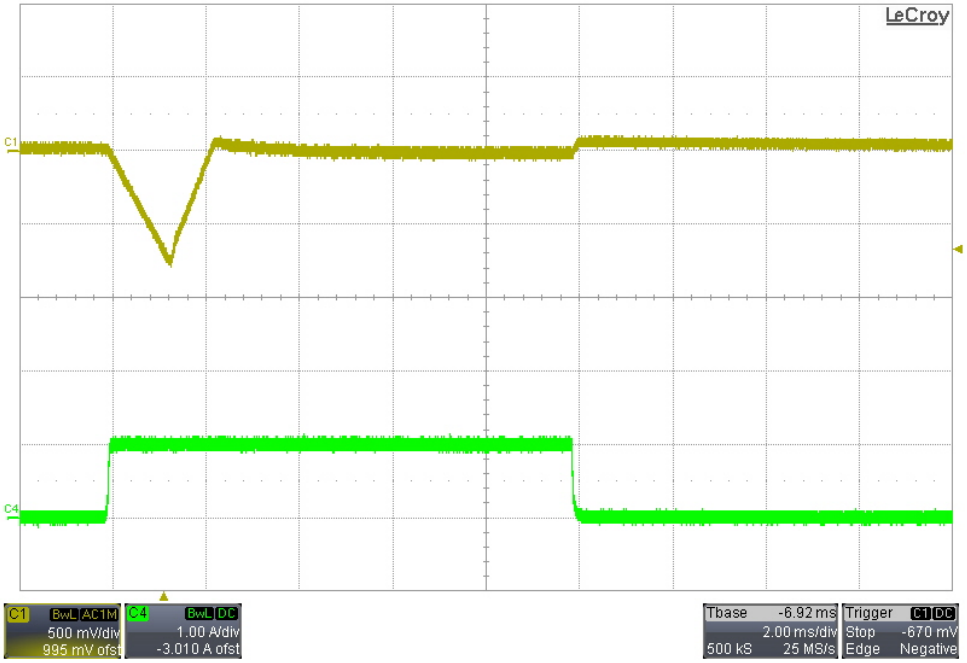
7 Output Ripple Voltage

The input was 115VAC/60Hz. The output was loaded with 2A.

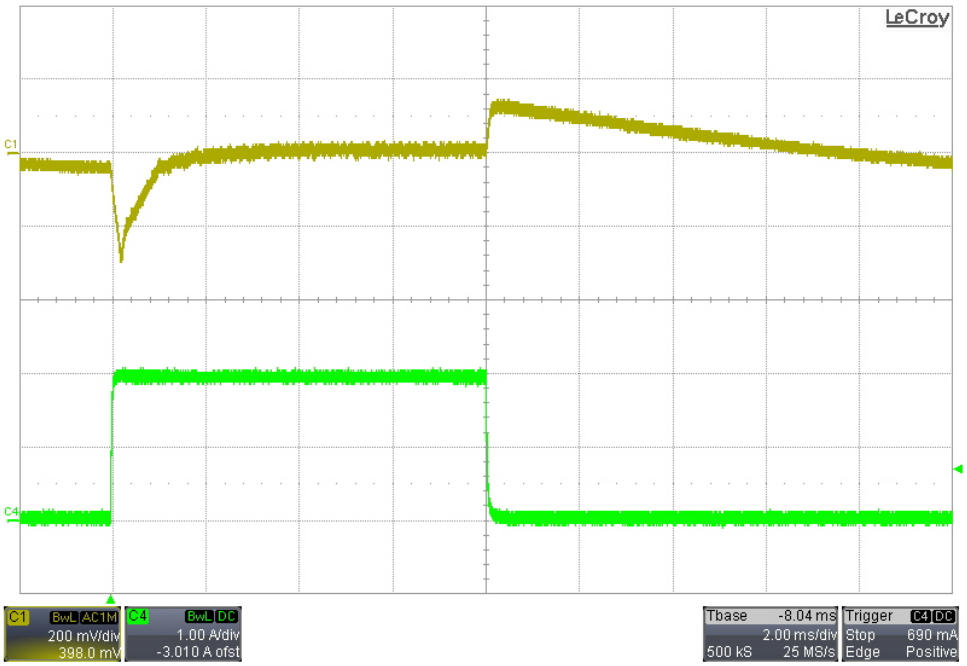


8 Load Transients

8.1 0A to 1A Transient



8.2 30mA to 2A Transient

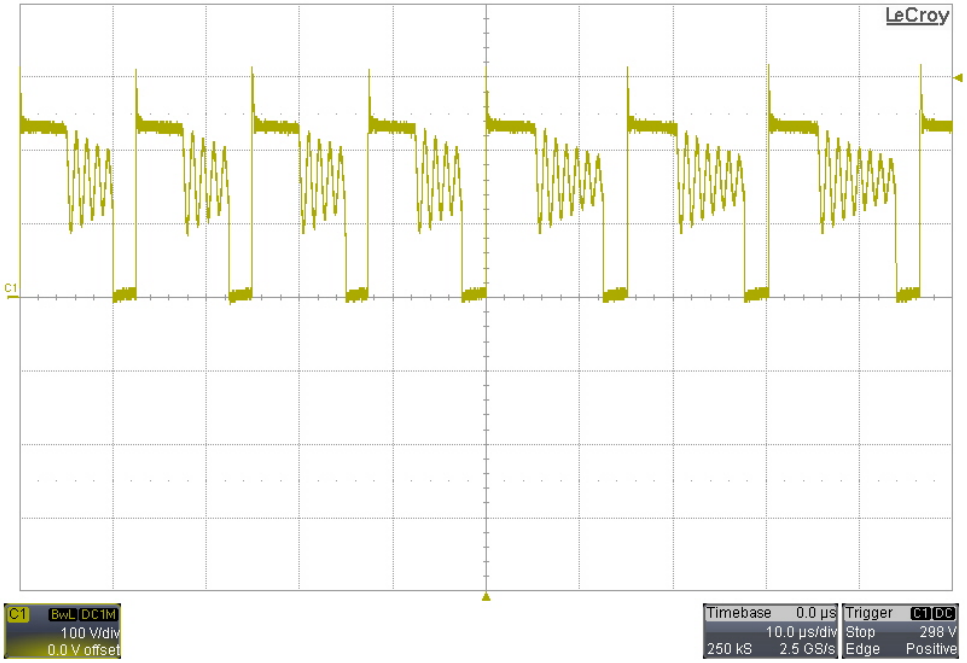


9 Switching Waveforms

The images below show the voltage waveforms on the switching devices within the supply. The input was 115VAC/60Hz. The output was loaded 2A.

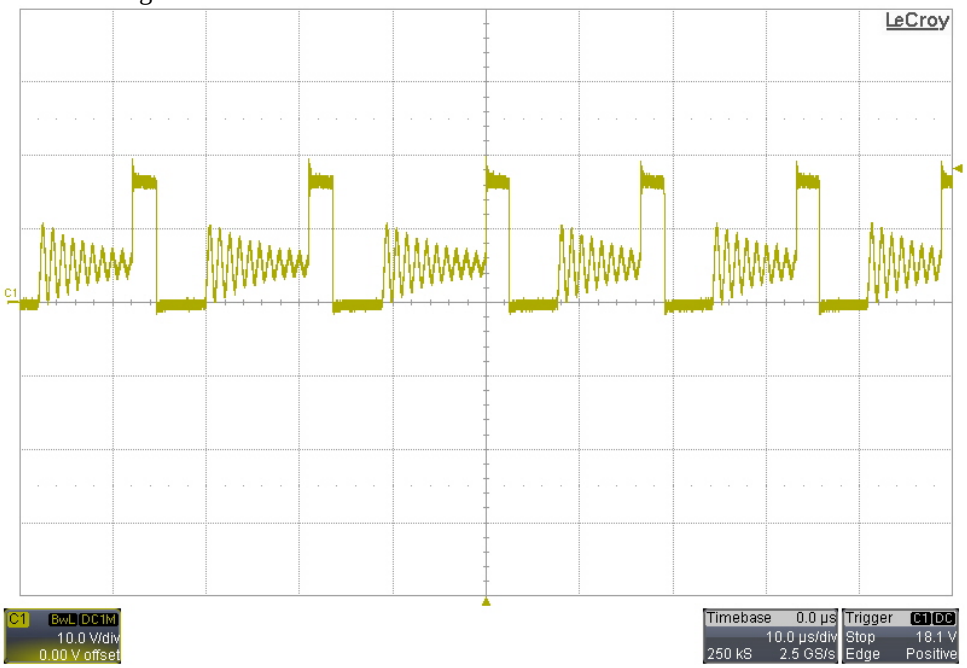
9.1 Primary Waveforms

The image below shows the drain-to-source voltage on Q6.



9.2 Secondary Waveforms

The image below shows the voltage on the anode of D9.



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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265