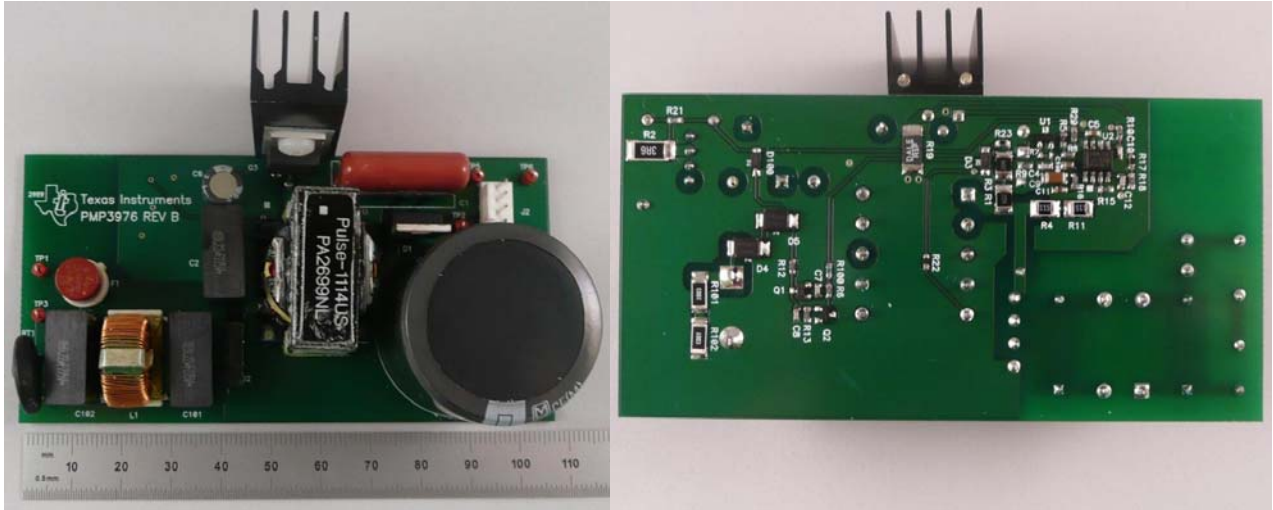


**Note:** All testing was performed using a load comprised of a string of 80 white LEDs (OSRAM part number LUW W5AM).

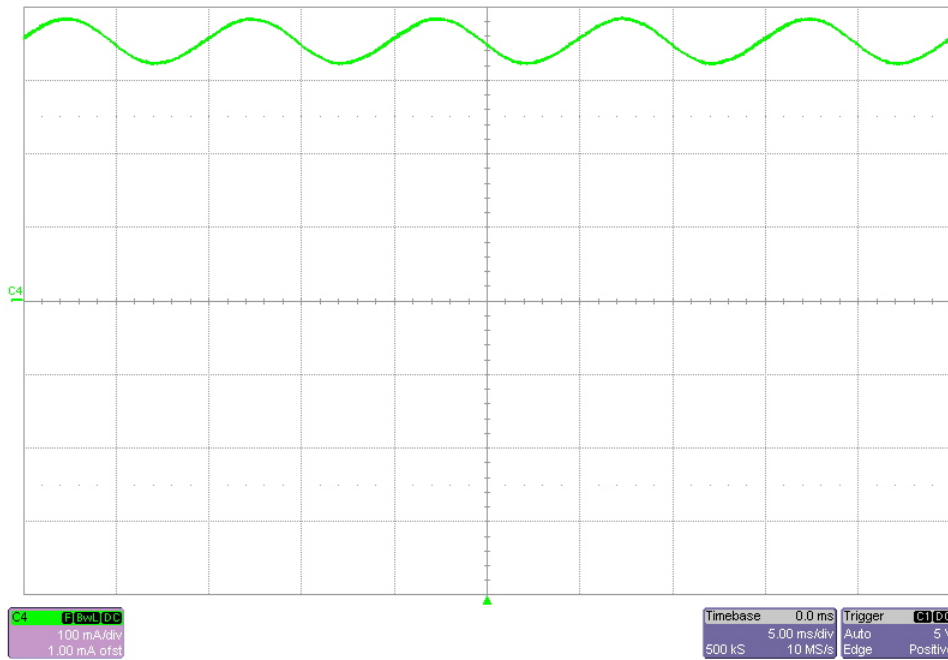
## 1 Photo

The photographs below show the PMP3976 Rev B assembly.



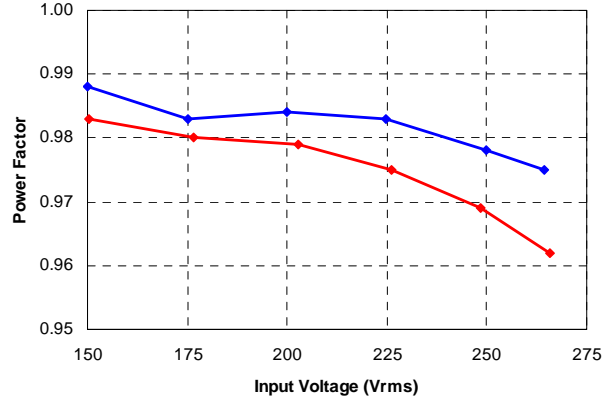
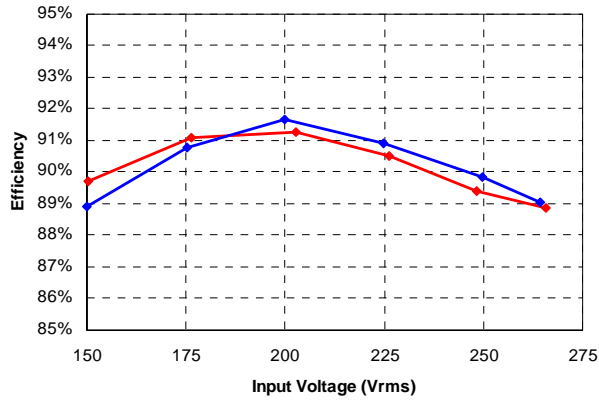
## 2 Load Current

The image below shows the current in the LED string with a 230VAC input.



### 3 Efficiency & Power Factor

The efficiency and power factor across the line range is shown in the tables and graph below. A 170 ohm resistor was added in series with the LED string for testing at 300V output.



—●— 250V Output —●— 300V Output

—●— 250V Output —●— 300V Output

Iout	Vout	Vin	Iin	PF	Pout	Losses	Efficiency
0.349	245.5	150.4	0.646	0.983	85.68	9.827	89.7%
0.349	245.4	176.4	0.544	0.980	85.64	8.398	91.1%
0.349	245.3	202.6	0.473	0.979	85.61	8.208	91.3%
0.350	245.3	226.3	0.430	0.975	85.86	9.021	90.5%
0.350	245.3	248.4	0.399	0.969	85.86	10.184	89.4%
0.350	245.3	265.7	0.378	0.962	85.86	10.763	88.9%

Iout	Vout	Vin	Iin	PF	Pout	Losses	Efficiency
0.348	303.9	149.9	0.803	0.988	105.76	13.168	88.9%
0.349	303.3	175.2	0.677	0.983	105.85	10.742	90.8%
0.349	303.8	199.9	0.588	0.984	106.03	9.634	91.7%
0.349	303.3	224.8	0.527	0.983	105.85	10.604	90.9%
0.349	303.2	249.8	0.482	0.978	105.82	11.938	89.9%
0.349	303.0	264.2	0.461	0.975	105.75	13.004	89.0%

### 4 Harmonic Content

The harmonic content and the EN61000-3-2 Class C (lighting equipments) Limits are shown below; input voltage was set to 230VAC.

13-Nov-08  
12:49:58

Harmonic	Frequency[Hz]	Measurement[mA]	Limit[mA]
2	100.00	1.51	8.40
3	150.00	41.39	122.71
5	250.00	10.40	42.00
7	350.00	3.76	29.40
9	450.00	2.81	21.00
11	550.00	2.53	12.60
13	650.00	2.43	12.60
15	750.00	2.18	12.60
17	850.00	2.24	12.60
19	950.00	2.28	12.60
21	1050.00	2.21	12.60
23	1150.00	2.12	12.60
25	1250.00	2.11	12.60
27	1350.00	1.95	12.60
29	1450.00	1.85	12.60
31	1550.00	1.95	12.60
33	1650.00	1.81	12.60
35	1750.00	1.76	12.60
37	1850.00	1.55	12.60
39	1950.00	1.57	12.60

LINE POWER

Class C  
Frequency  
50.01Hz

Show Graph

Units  
dBuA

Scroll

100 kS/s

AUTO

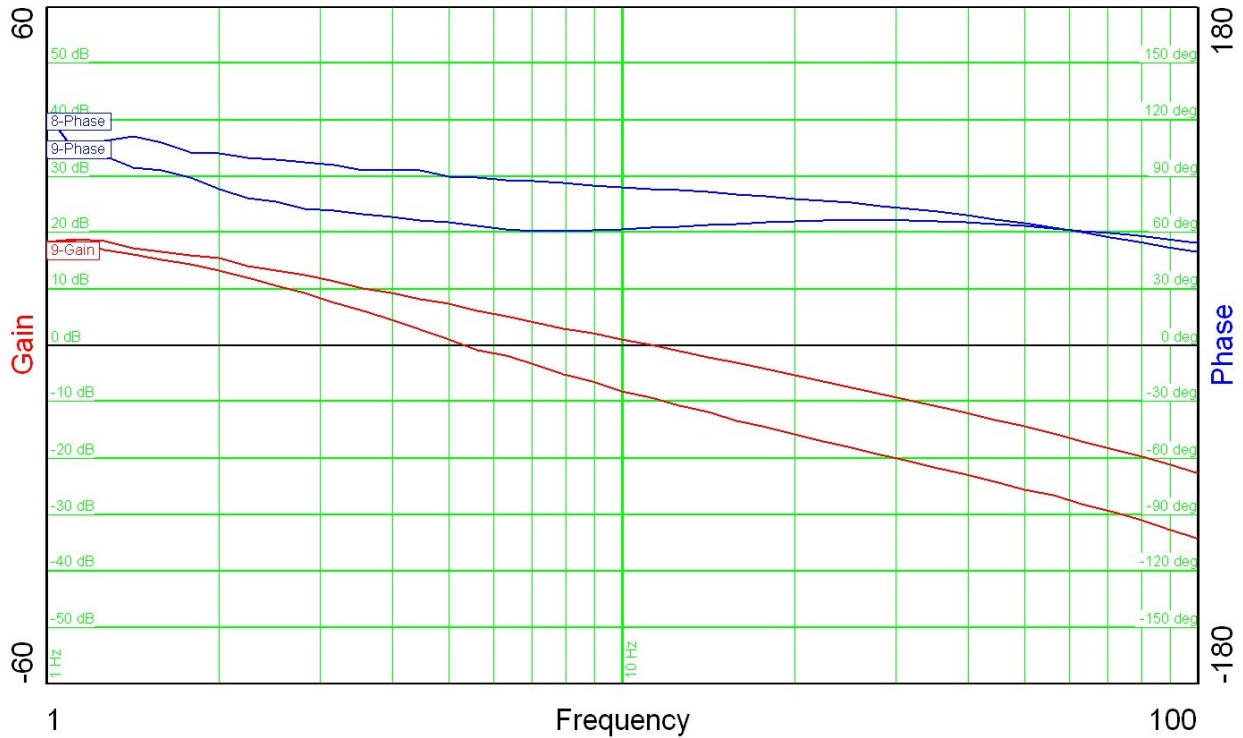
### 5 Thermal Image

The image below shows a thermal image of the board. The ambient temperature was 26°C with no forced air flow. The input was 230VAC.



### 6 Frequency Response

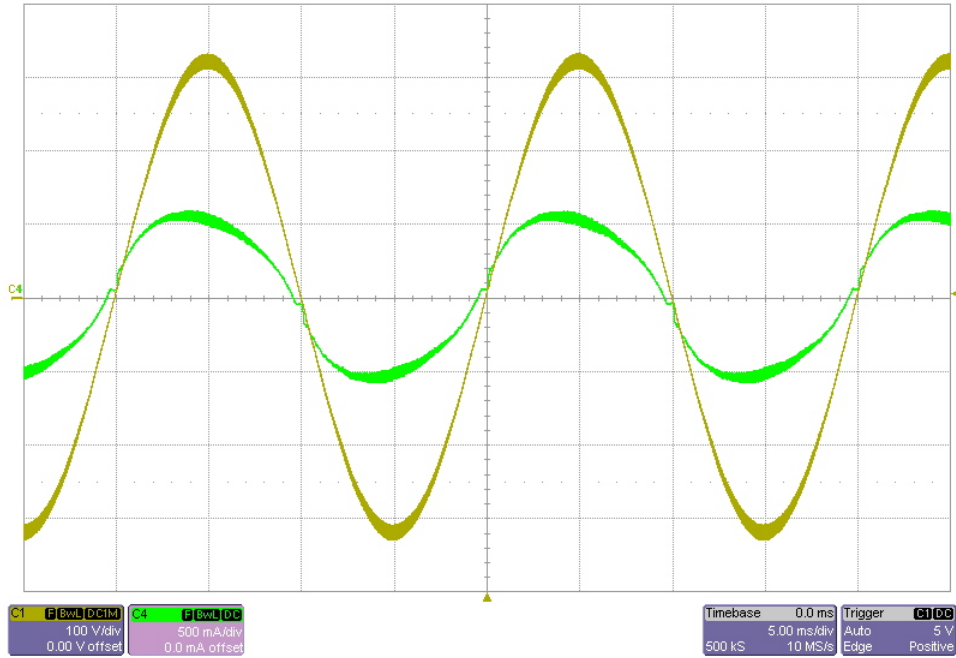
The frequency response of the feedback loop is shown in the plot below. The input was set to 220VAC. The lower gain plot was taken with a 300V output. The upper gain plot was taken with a 250V output.



## 7 Waveforms

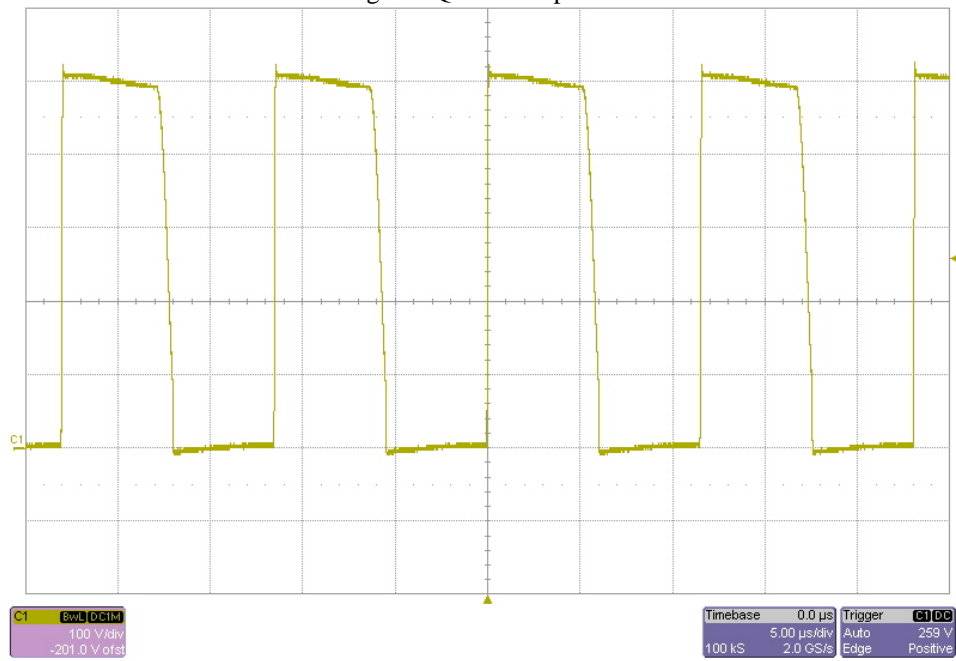
### 7.1 Line Voltage and Current

The image below shows the input voltage and current. The input voltage was 230VAC.



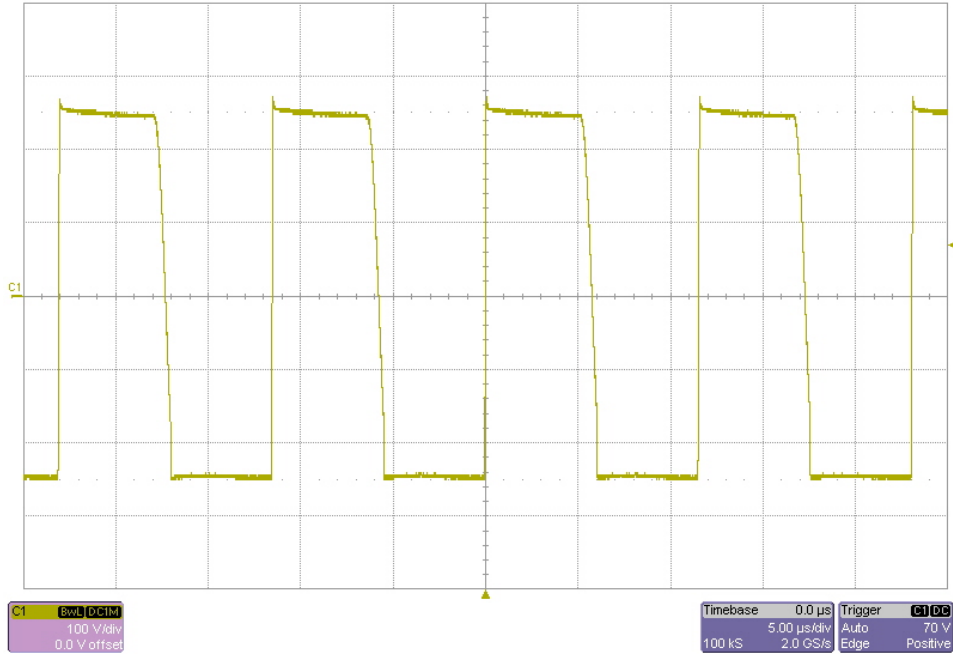
### 7.2 MOSFET Voltage Waveform

The image below shows the drain-to-source voltage on Q3. The input was set to 250VDC.



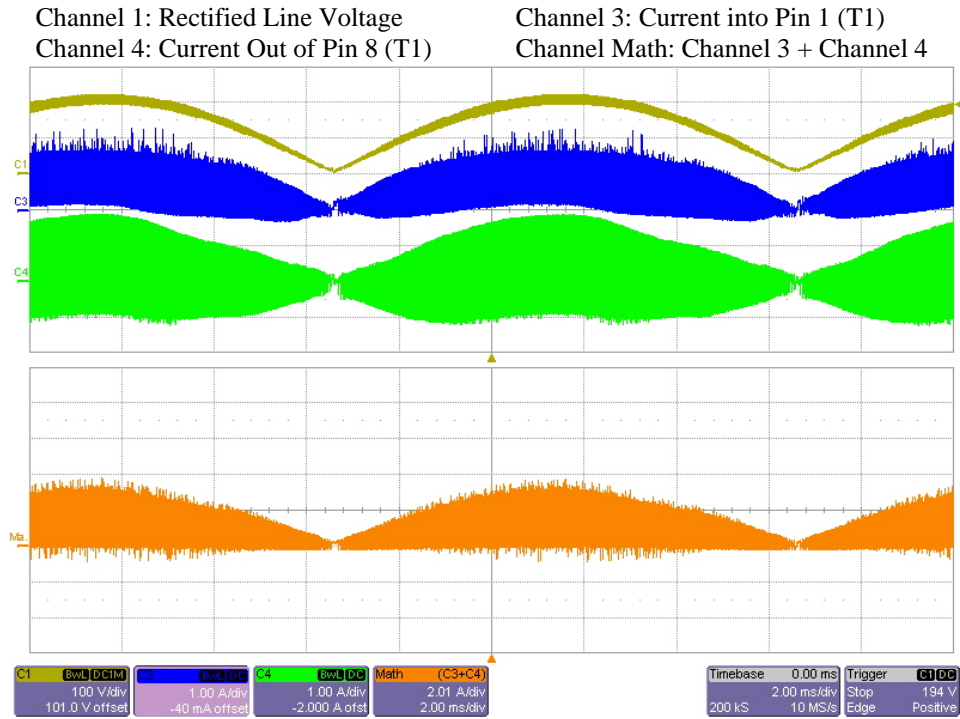
## 7.3 Diode Voltage Waveform

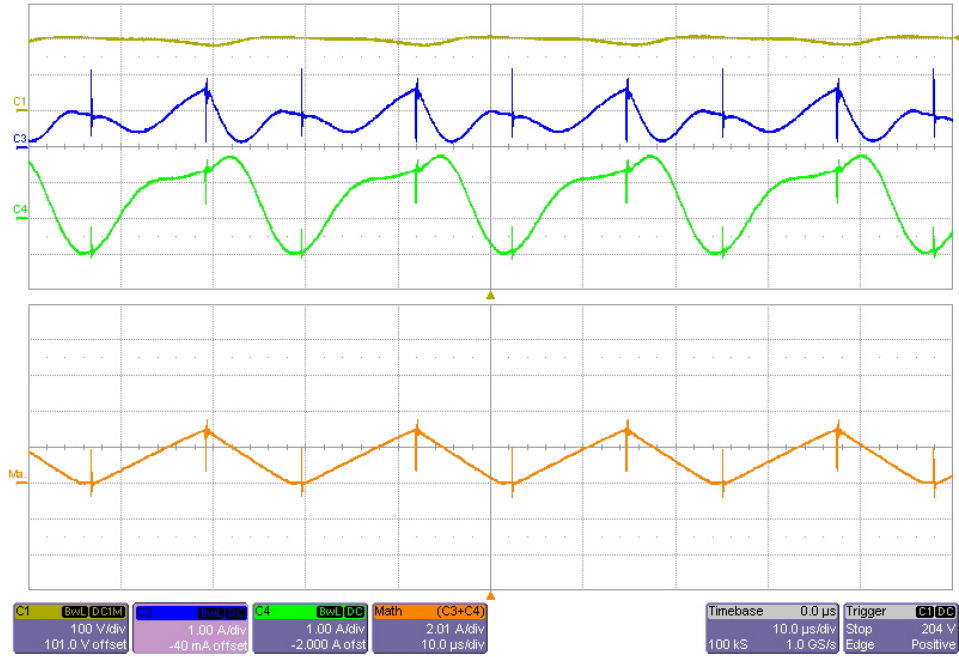
The image below shows the voltage on the anode of D1. The input was set to 250VDC.



## 7.4 Inductor Winding Currents

The two images below show the currents in the individual windings of the inductor.





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