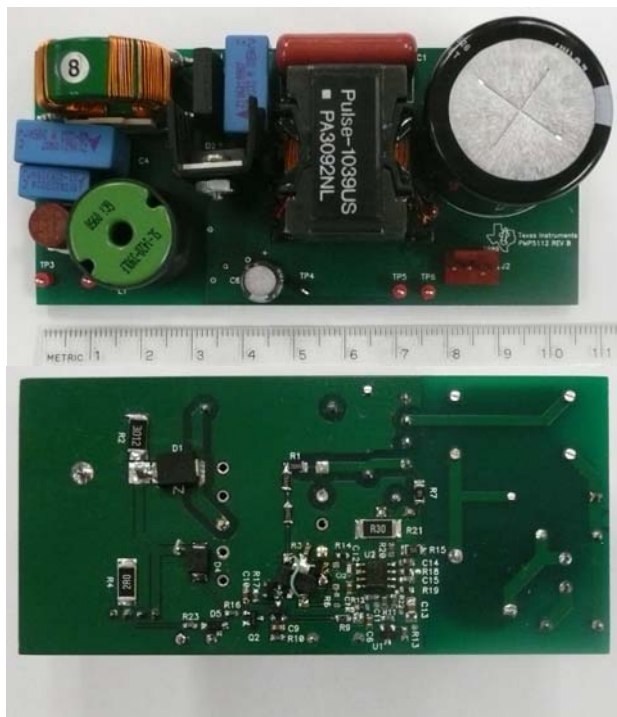


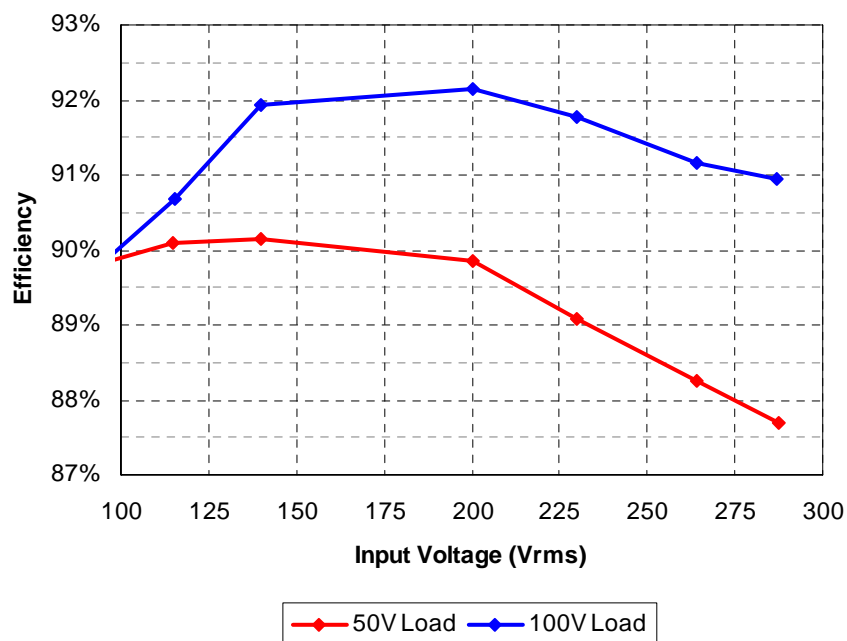
Note: All testing was performed using a load comprised of a string white LEDs (OSRAM part number LUW W5AM).

1 Photo

The photographs below show the top and bottom views of the PMP5112 Rev D demo board. The circuit is built on a PMP5112 Rev B PWB.

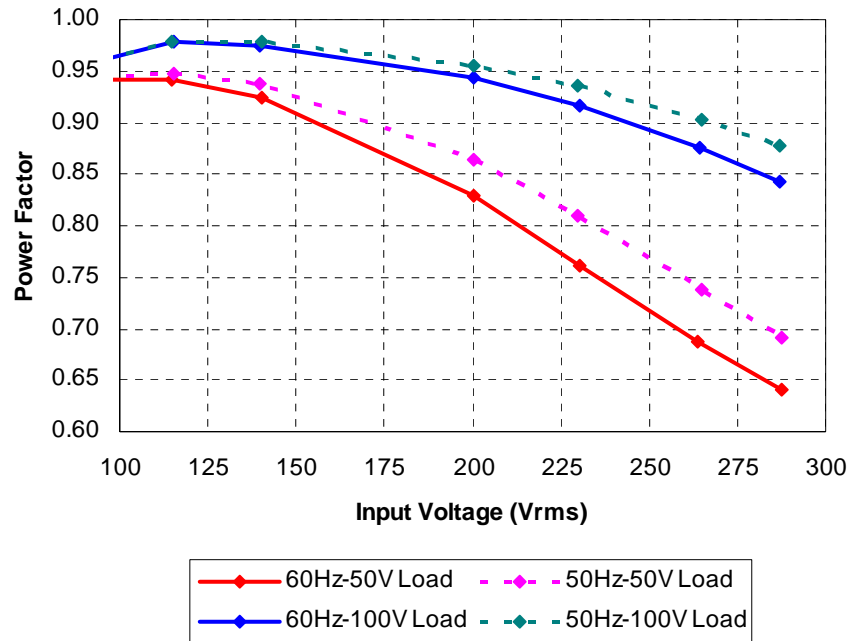


2 Efficiency



3 Power Factor

The power factor is shown in the plots below. Actual data is shown in the tables below.



60Hz							
I _{out}	V _{out}	V _{in}	I _{in}	PF	P _{out}	Losses	Efficiency
0.504	47.1	95.1	0.295	0.942	23.74	2.689	89.8%
0.504	47.0	115.0	0.243	0.941	23.69	2.608	90.1%
0.504	47.0	140.1	0.203	0.924	23.69	2.591	90.1%
0.504	47.0	200.0	0.159	0.829	23.69	2.674	89.9%
0.504	47.1	230.1	0.152	0.762	23.74	2.913	89.1%
0.504	47.0	264.0	0.148	0.687	23.69	3.154	88.2%
0.504	47.1	287.7	0.147	0.640	23.74	3.328	87.7%

50Hz							
I _{out}	V _{out}	V _{in}	I _{in}	PF	P _{out}	Losses	Efficiency
0.504	47.1	95.0	0.294	0.946	23.74	2.683	89.8%
0.504	47.0	115.1	0.242	0.948	23.69	2.718	89.7%
0.504	47.0	139.6	0.201	0.937	23.69	2.604	90.1%
0.504	47.0	200.0	0.153	0.864	23.69	2.750	89.6%
0.504	47.0	229.7	0.143	0.809	23.69	2.885	89.1%
0.504	47.0	264.7	0.138	0.737	23.69	3.234	88.0%
0.504	47.0	287.7	0.136	0.691	23.69	3.349	87.6%

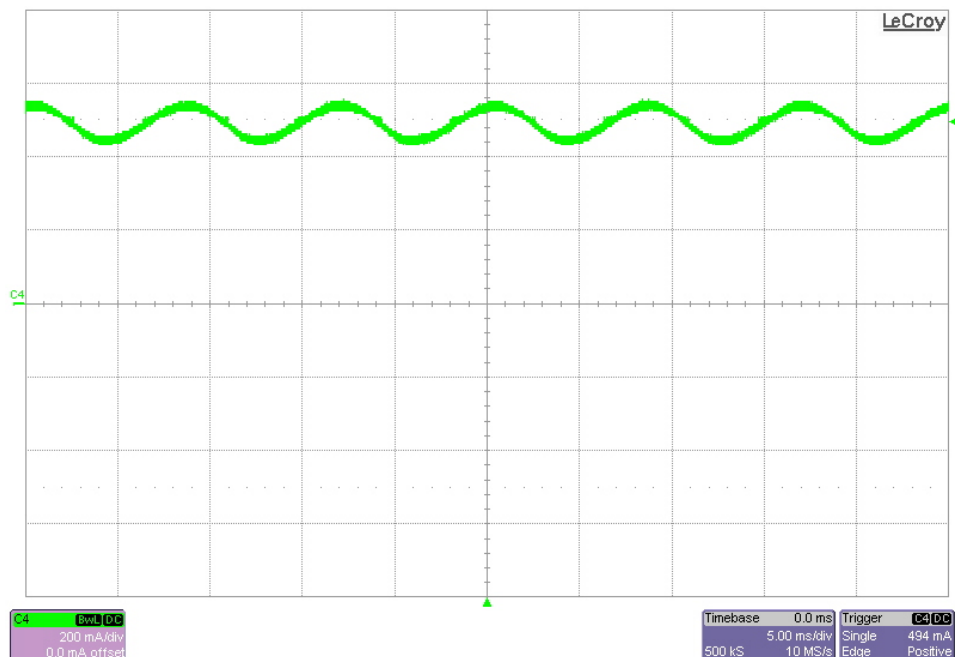
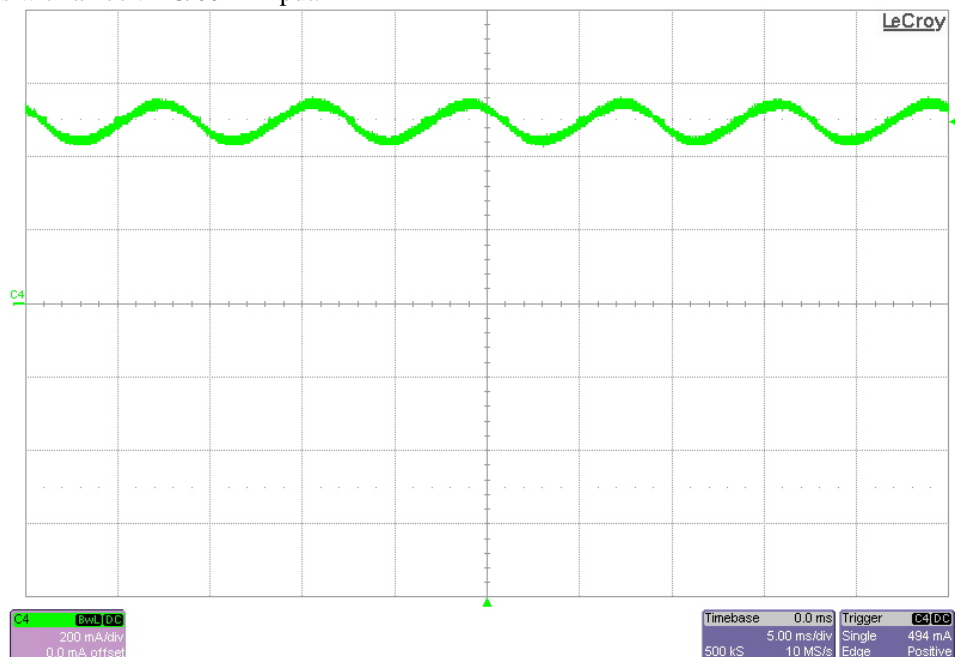
60Hz							
I _{out}	V _{out}	V _{in}	I _{in}	PF	P _{out}	Losses	Efficiency
0.504	98.3	95.3	0.602	0.961	49.54	5.590	89.9%
0.504	97.7	115.2	0.482	0.978	49.24	5.064	90.7%
0.505	97.6	139.9	0.393	0.975	49.29	4.318	91.9%
0.505	97.4	200.0	0.283	0.943	49.19	4.187	92.2%
0.505	97.3	230.1	0.254	0.916	49.14	4.399	91.8%
0.505	97.2	264.1	0.233	0.875	49.09	4.757	91.2%
0.505	97.2	287.1	0.223	0.843	49.09	4.886	90.9%

50Hz							
I _{out}	V _{out}	V _{in}	I _{in}	PF	P _{out}	Losses	Efficiency
0.504	97.0	95.0	0.597	0.962	48.89	5.672	89.6%
0.505	97.1	114.9	0.478	0.979	49.04	4.733	91.2%
0.505	97.1	140.0	0.389	0.978	49.04	4.226	92.1%
0.505	97.1	200.2	0.278	0.955	49.04	4.116	92.3%
0.505	97.1	229.5	0.249	0.935	49.04	4.396	91.8%
0.505	97.1	265.1	0.225	0.902	49.04	4.767	91.1%
0.505	97.1	287.0	0.215	0.877	49.04	5.080	90.6%

4 Load Current

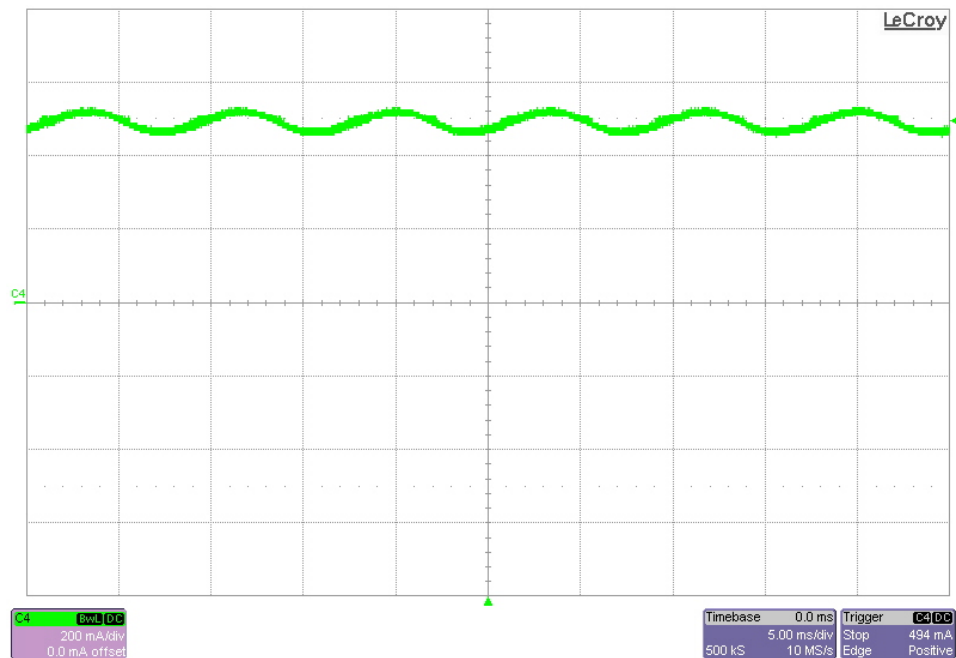
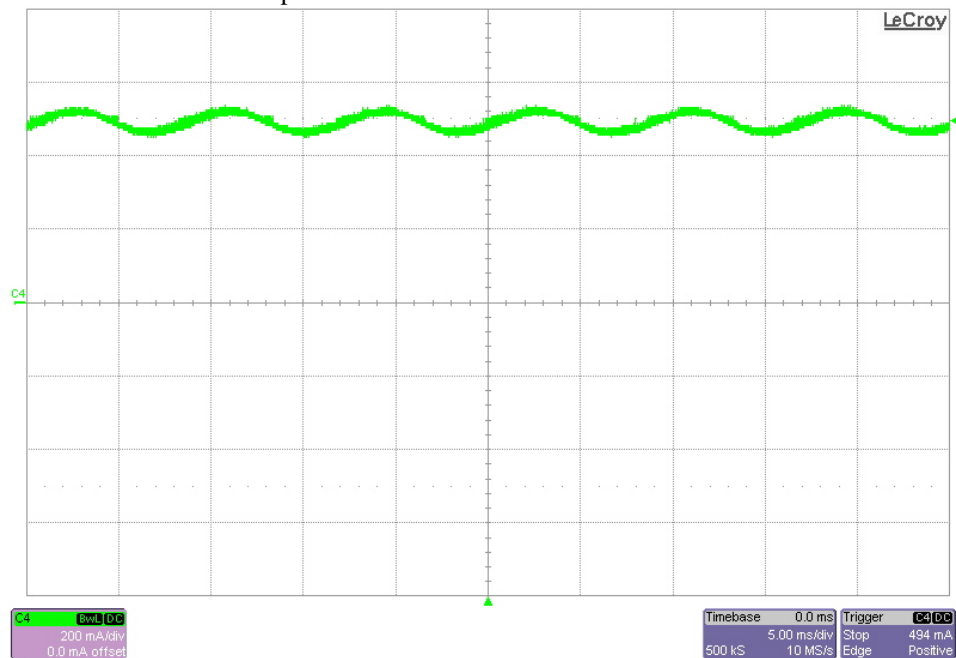
4.1 50V Load

The images below show the current in a 50V LED string. The top image is with an 115VAC/60Hz input, and the bottom image is with a 277VAC/60Hz input.



4.2 100V Load

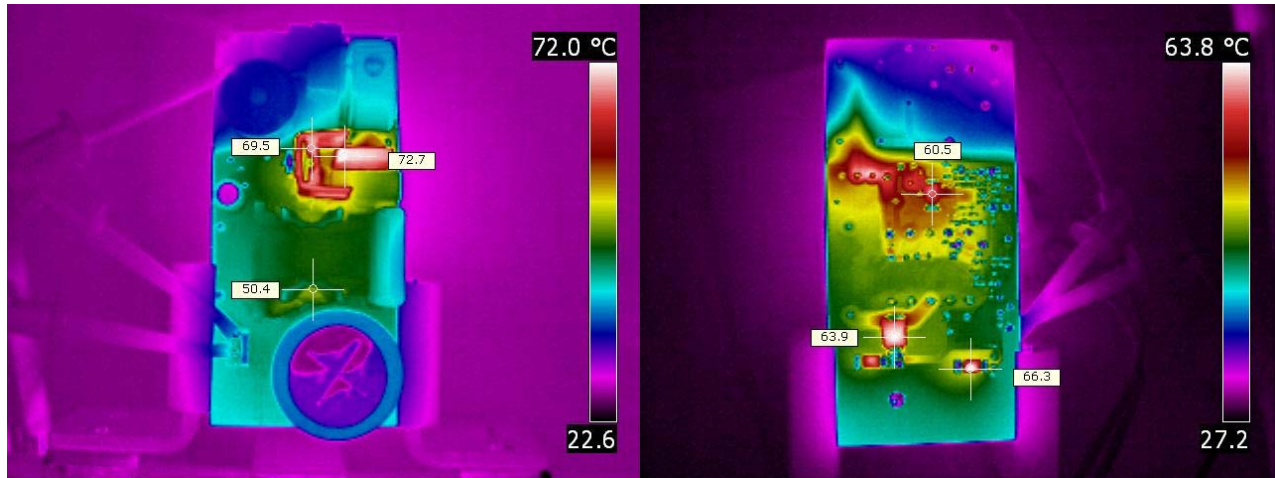
The images below show the current in a 100V LED string. The top image is with an 115VAC/60Hz input, and the bottom image is with a 277VAC/60Hz input.



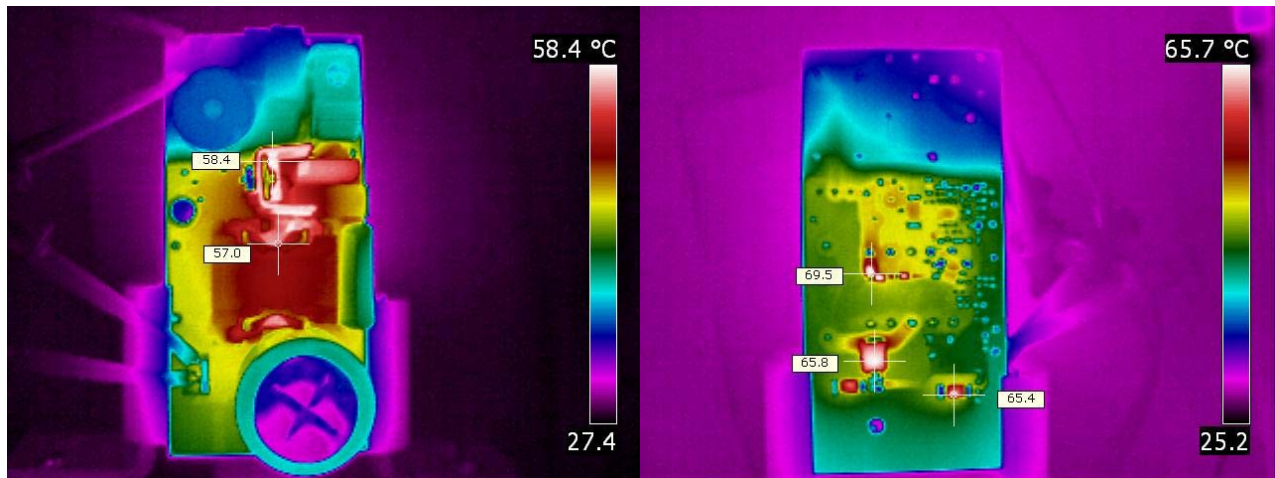
5 Thermal Images

The images below show thermal images of the board. The ambient temperature was 26°C with no forced air flow. The images on the left show a top view, while the images on the right show a bottom view. The load consisted of a 100V string of LEDs.

5.1 115VAC/60Hz

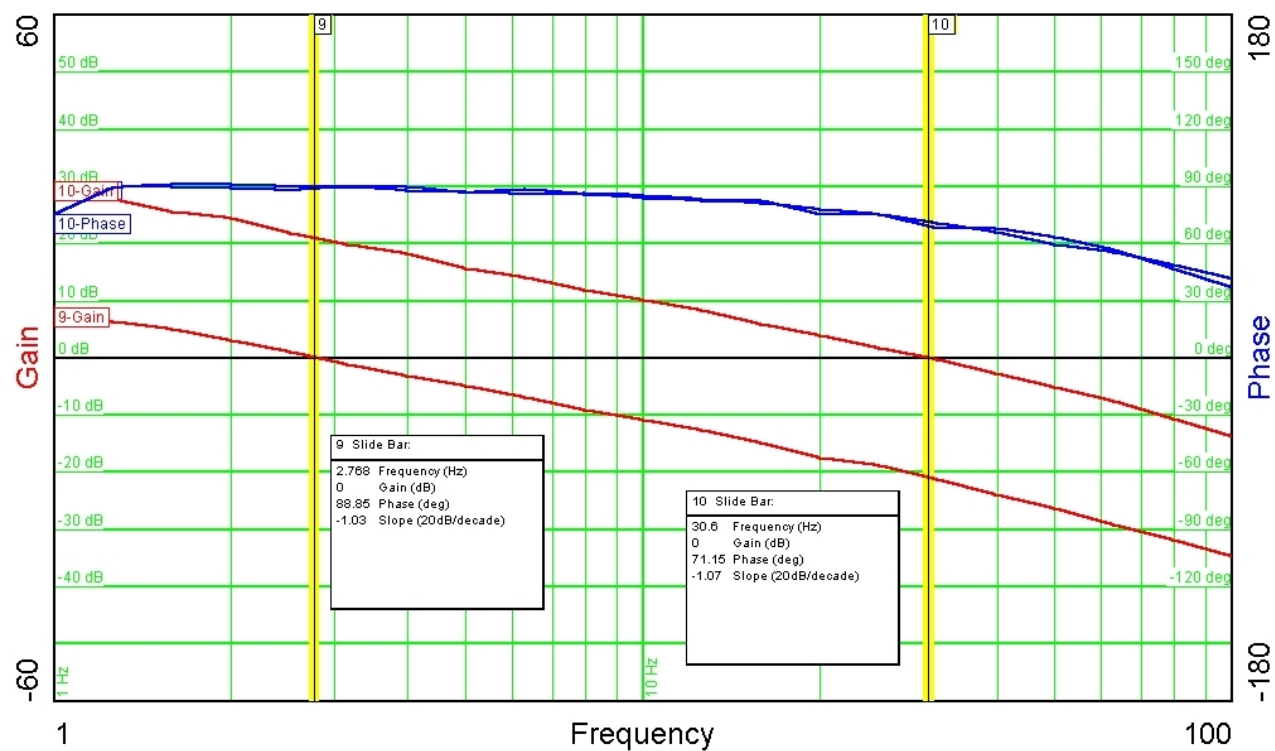
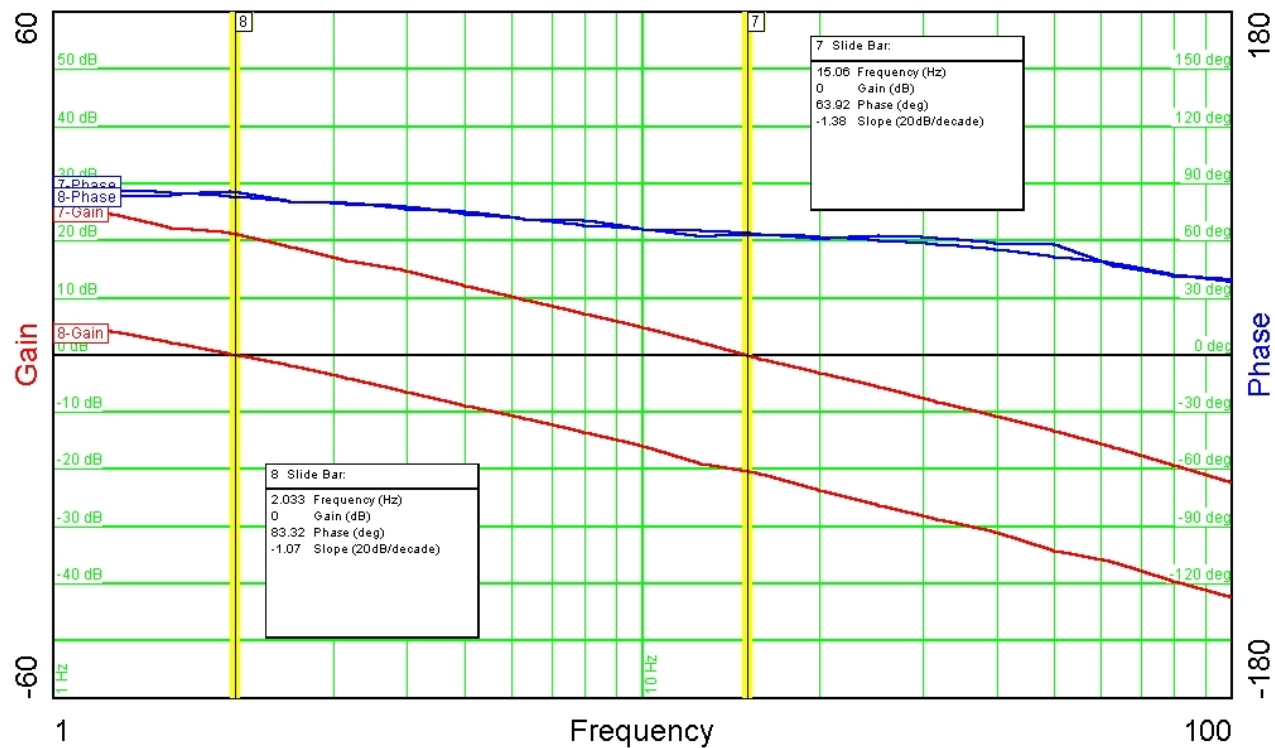


5.2 277VAC/60Hz



6 Frequency Response

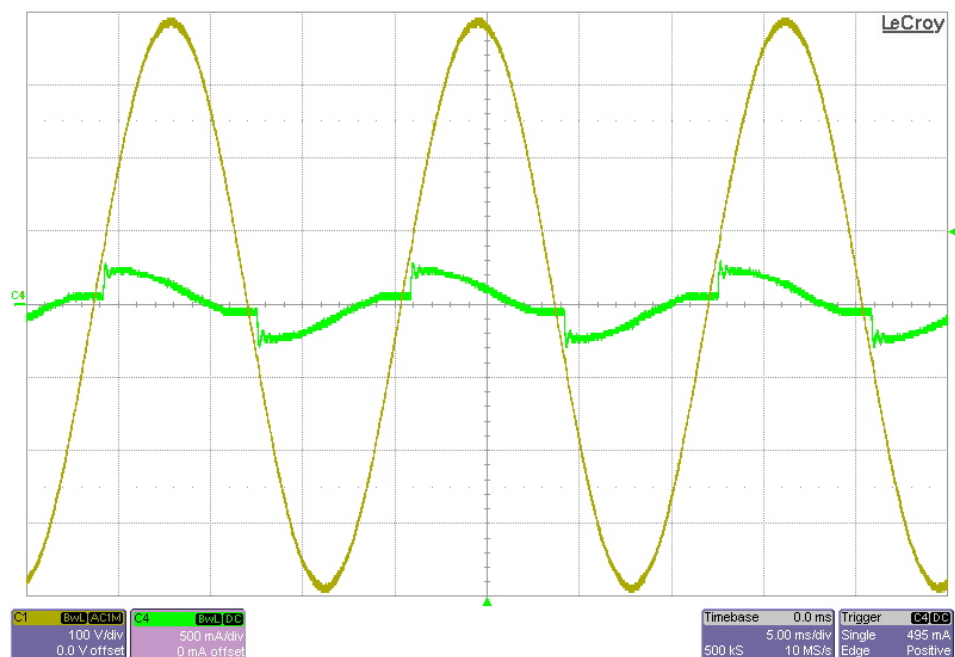
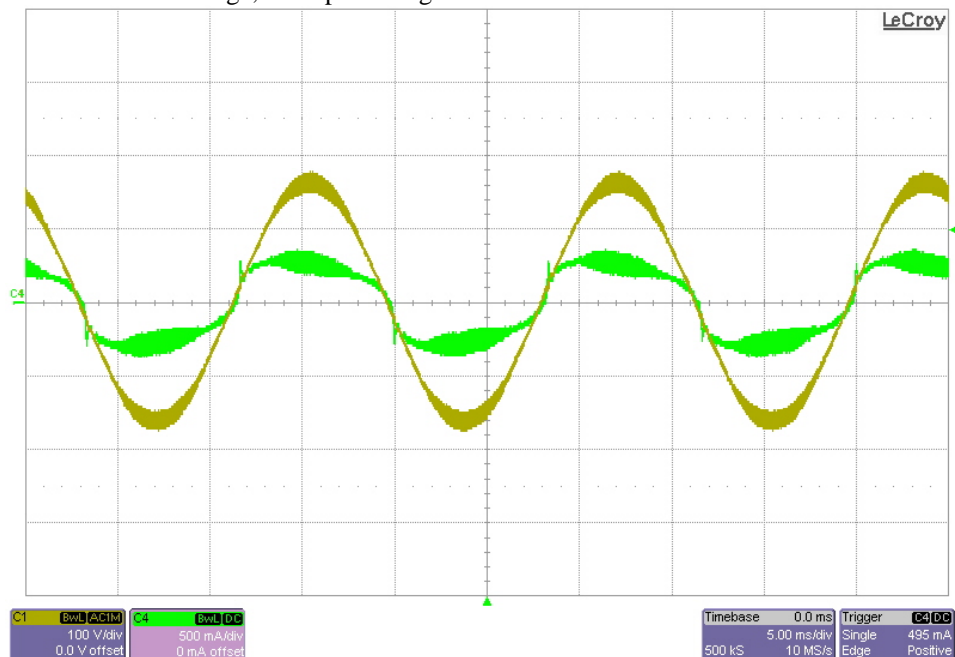
The frequency response of the feedback loop is shown in the plots below. The lower gain/phase plot was taken with a 100VDC input. The upper gain/phase plot was taken with a 430VDC input. *Note that loop compensation might need to be adjusted if different LEDs are used for the load.*

6.1 50V Load**6.2 100V Load**

7 Line Voltage and Current

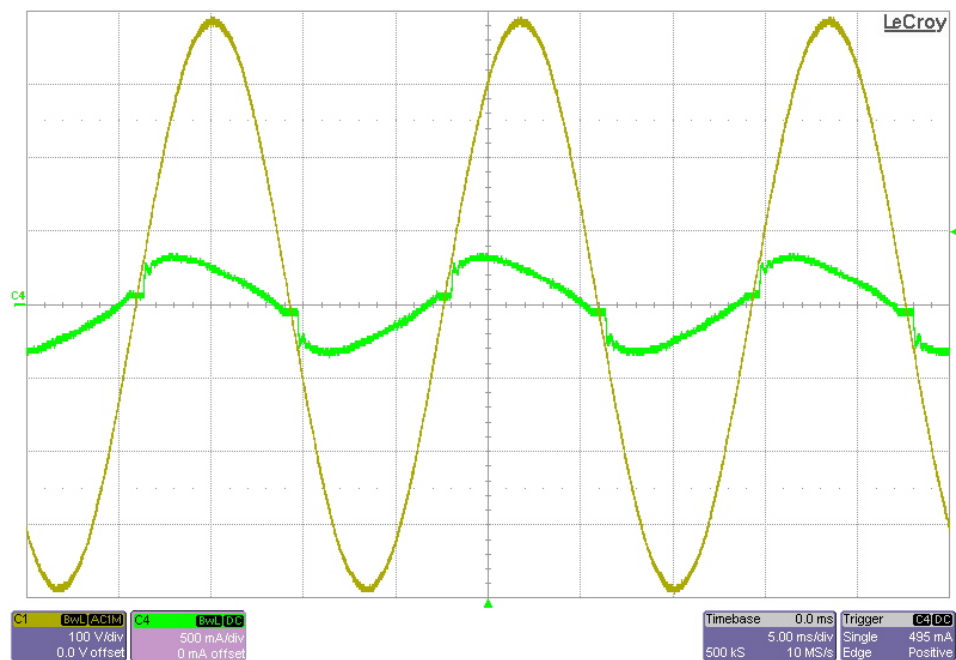
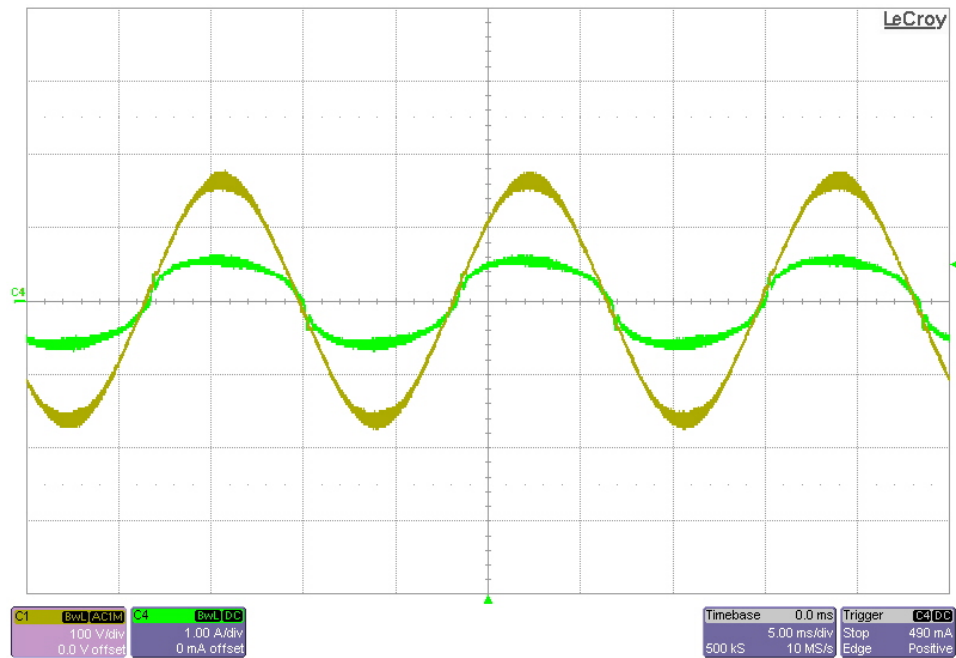
7.1 50V Load

The images below show the input voltage and current for a 50V load. For the top image, the input voltage was 115VAC/60Hz. For the bottom image, the input voltage was 277VAC/60Hz.



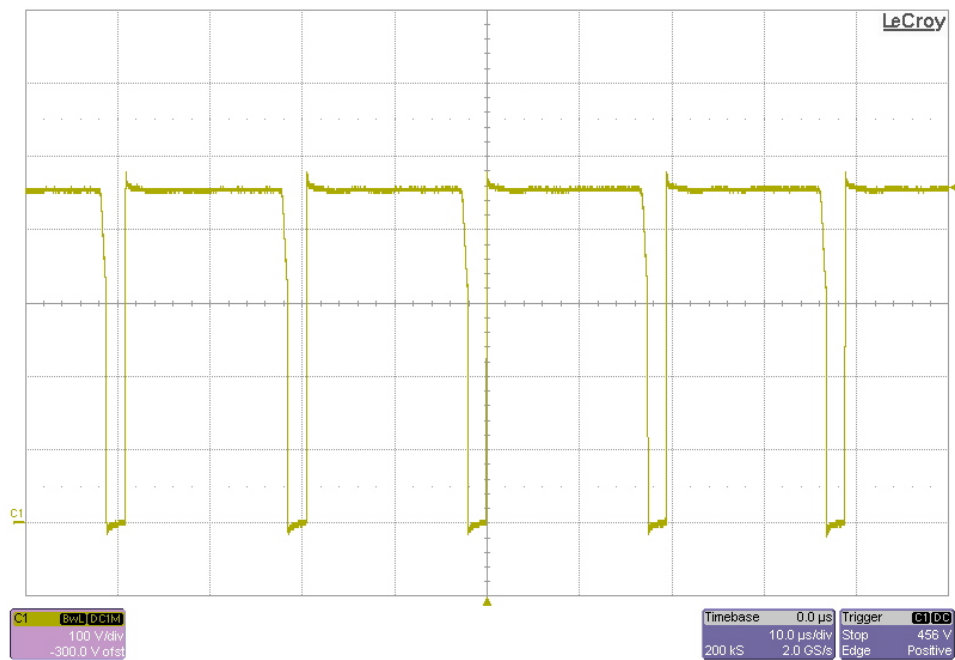
7.2 100V Load

The images below show the input voltage and current for a 100V load. For the top image, the input voltage was 115VAC/60Hz. For the bottom image, the input voltage was 277VAC/60Hz.



8 MOSFET Voltage Waveform

The image below shows the drain-to-source voltage on Q3. The input was set to 277VAC/60Hz, and the image was captured near the peak of the 60Hz sinewave.



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