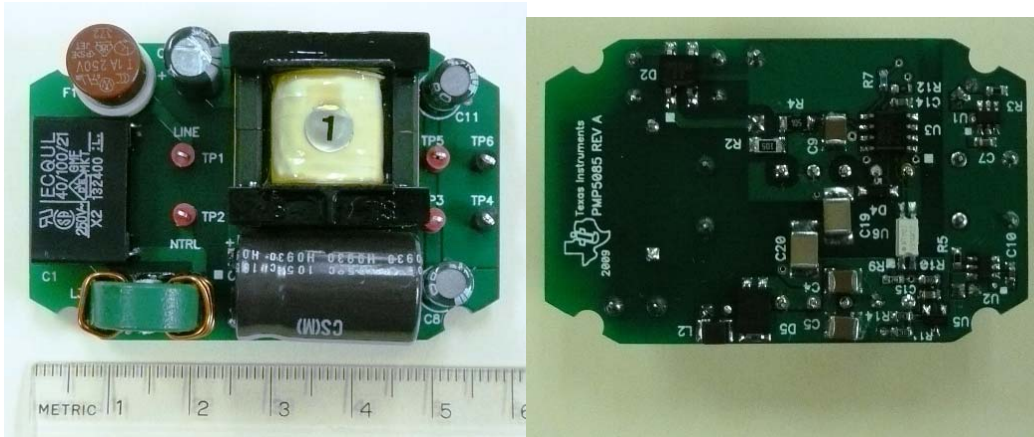


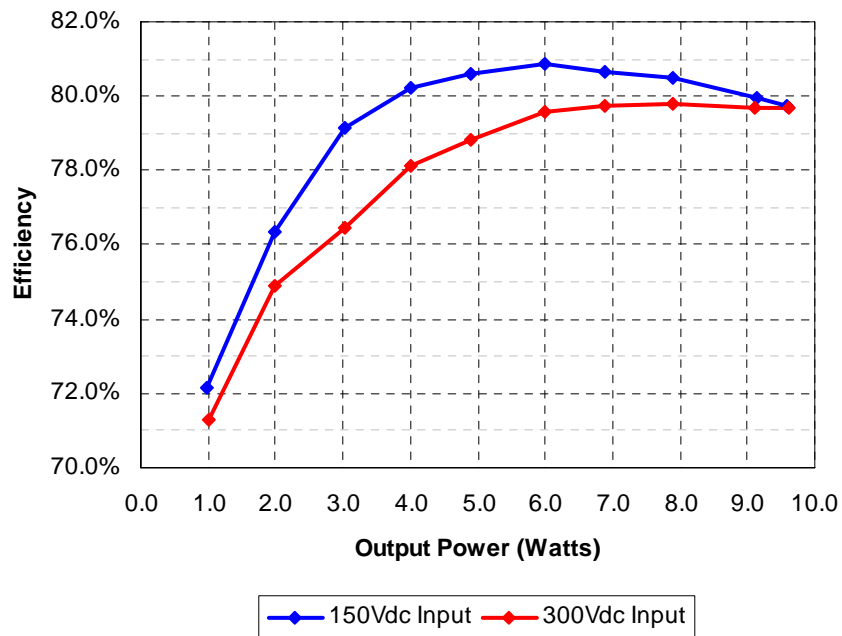
1 Photo

The photographs below show the top and bottom views of the PMP5085 Rev B demo board. The circuit is built on a PMP5085 Rev A PWB.



2 Efficiency

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



| 150Vdc | | | | | | | | | |
|-------------------|-------------------|-------------------|-------------------|-----------------------|-------------------------------------|-----------------|------------------|--------|------------|
| I _{out1} | V _{out1} | I _{out2} | V _{out2} | V _{in} (Vdc) | I _{in} (mA _{dc}) | P _{in} | P _{out} | Losses | Efficiency |
| 0.100 | 4.99 | 0.098 | 5.00 | 150.0 | 9.14 | 1.37 | 0.99 | 0.38 | 72.1% |
| 0.201 | 4.98 | 0.200 | 4.99 | 150.0 | 17.45 | 2.62 | 2.00 | 0.62 | 76.4% |
| 0.308 | 4.97 | 0.300 | 4.98 | 149.9 | 25.50 | 3.82 | 3.02 | 0.80 | 79.1% |
| 0.408 | 4.96 | 0.399 | 4.97 | 149.9 | 33.31 | 4.99 | 4.01 | 0.99 | 80.2% |
| 0.486 | 4.96 | 0.500 | 4.96 | 149.9 | 40.48 | 6.07 | 4.89 | 1.18 | 80.6% |
| 0.609 | 4.94 | 0.602 | 4.95 | 149.9 | 49.4 | 7.41 | 5.99 | 1.42 | 80.9% |
| 0.694 | 4.94 | 0.701 | 4.94 | 149.9 | 57.0 | 8.54 | 6.89 | 1.65 | 80.7% |
| 0.802 | 4.93 | 0.800 | 4.93 | 149.8 | 65.5 | 9.81 | 7.90 | 1.91 | 80.5% |
| 0.956 | 4.91 | 0.901 | 4.92 | 149.8 | 76.2 | 11.41 | 9.13 | 2.29 | 80.0% |
| 0.954 | 4.91 | 1.000 | 4.91 | 149.8 | 80.3 | 12.03 | 9.59 | 2.43 | 79.8% |

300Vdc

| lout1 | Vout1 | lout2 | Vout2 | Vin (Vdc) | Iin (mAdc) | Pin | Pout | Losses | Efficiency |
|-------|-------|-------|-------|-----------|------------|-------|------|--------|------------|
| 0.101 | 5.00 | 0.100 | 5.00 | 302.6 | 4.66 | 1.41 | 1.01 | 0.41 | 71.3% |
| 0.201 | 4.99 | 0.200 | 4.99 | 302.6 | 8.83 | 2.67 | 2.00 | 0.67 | 74.9% |
| 0.308 | 4.98 | 0.300 | 4.98 | 302.6 | 13.09 | 3.96 | 3.03 | 0.93 | 76.4% |
| 0.408 | 4.96 | 0.401 | 4.97 | 302.6 | 16.99 | 5.14 | 4.02 | 1.12 | 78.1% |
| 0.486 | 4.96 | 0.502 | 4.96 | 302.6 | 20.54 | 6.22 | 4.90 | 1.31 | 78.8% |
| 0.609 | 4.95 | 0.600 | 4.95 | 302.6 | 24.86 | 7.52 | 5.98 | 1.54 | 79.6% |
| 0.694 | 4.94 | 0.700 | 4.94 | 302.6 | 28.53 | 8.63 | 6.89 | 1.75 | 79.8% |
| 0.802 | 4.93 | 0.801 | 4.93 | 302.6 | 32.73 | 9.90 | 7.90 | 2.00 | 79.8% |
| 0.956 | 4.91 | 0.899 | 4.92 | 302.6 | 37.80 | 11.44 | 9.12 | 2.32 | 79.7% |
| 0.955 | 4.91 | 1.001 | 4.91 | 302.6 | 39.84 | 12.06 | 9.60 | 2.45 | 79.7% |

3 Standby Mode Power Consumption

The tables below show the input power and efficiency during light load operation.

150Vdc

| lout1 | Vout1 | lout2 | Vout2 | Vin (Vdc) | Iin (mA) | Pin (mW) | Pout (mW) | Losses | Efficiency |
|-------|-------|-------|-------|-----------|----------|----------|-----------|--------|------------|
| 0.000 | 5.01 | 0.000 | 5.01 | 152.0 | 0.30 | 46 | 0 | 46 | 0.0% |
| 0.010 | 5.00 | 0.010 | 5.00 | 152.0 | 1.22 | 185 | 100 | 85 | 53.9% |
| 0.025 | 5.00 | 0.025 | 5.00 | 152.0 | 2.66 | 404 | 250 | 154 | 61.8% |

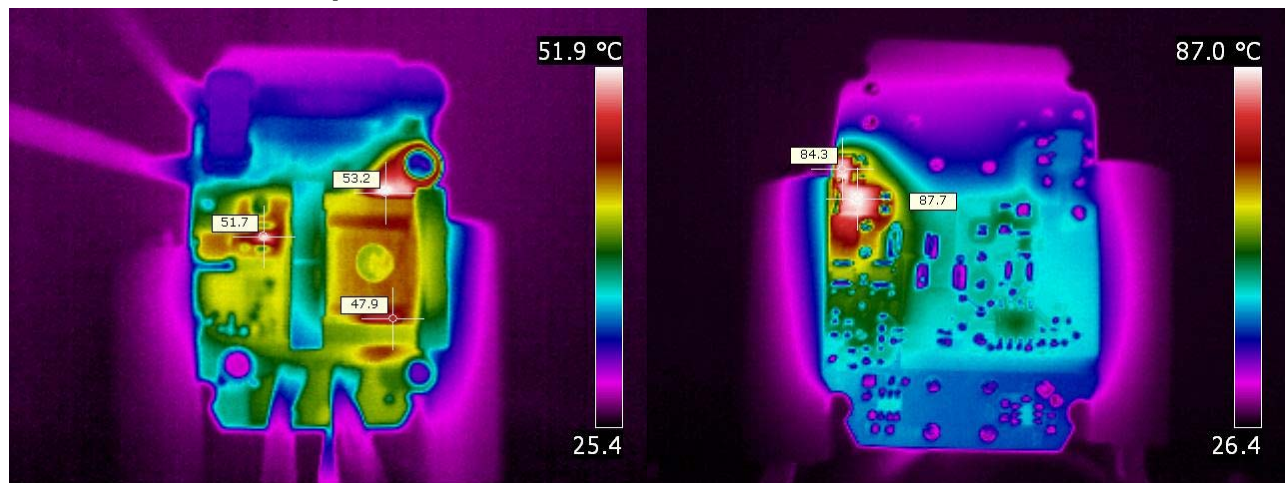
300Vdc

| lout1 | Vout1 | lout2 | Vout2 | Vin (Vdc) | Iin (mA) | Pin (mW) | Pout (mW) | Losses | Efficiency |
|-------|-------|-------|-------|-----------|----------|----------|-----------|--------|------------|
| 0.000 | 5.01 | 0.000 | 5.01 | 300.0 | 0.28 | 84 | 0 | 84 | 0.0% |
| 0.010 | 5.00 | 0.010 | 5.00 | 300.0 | 0.76 | 228 | 100 | 128 | 43.9% |
| 0.025 | 5.00 | 0.025 | 5.00 | 300.0 | 1.49 | 447 | 250 | 197 | 55.9% |

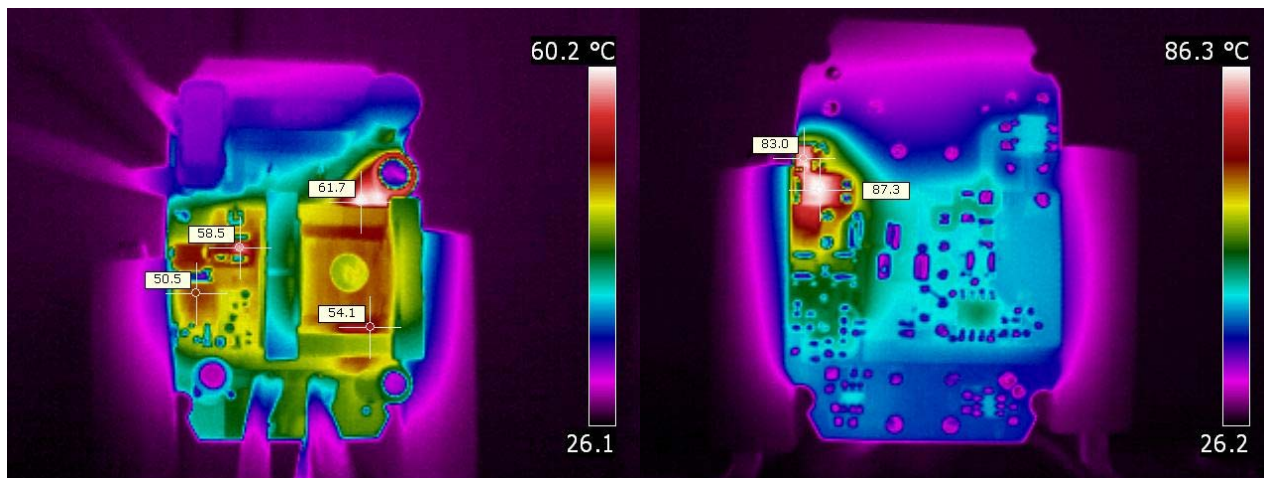
4 Thermal Images

The thermal images below show a top view (left) and bottom view (right) of the board. The ambient temperature was 26°C with no forced air flow. Both outputs were loaded with 1A each. For the top view images, the input capacitor (C9) was moved to provide an unobstructed view of the board-mounted components.

4.1 115VAC, 60Hz Input

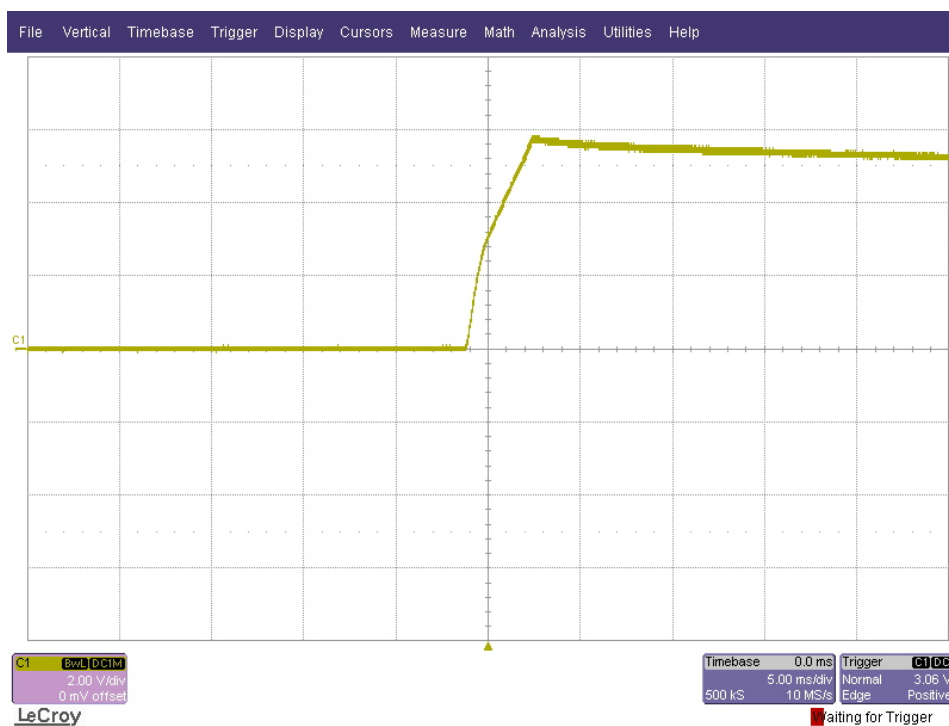


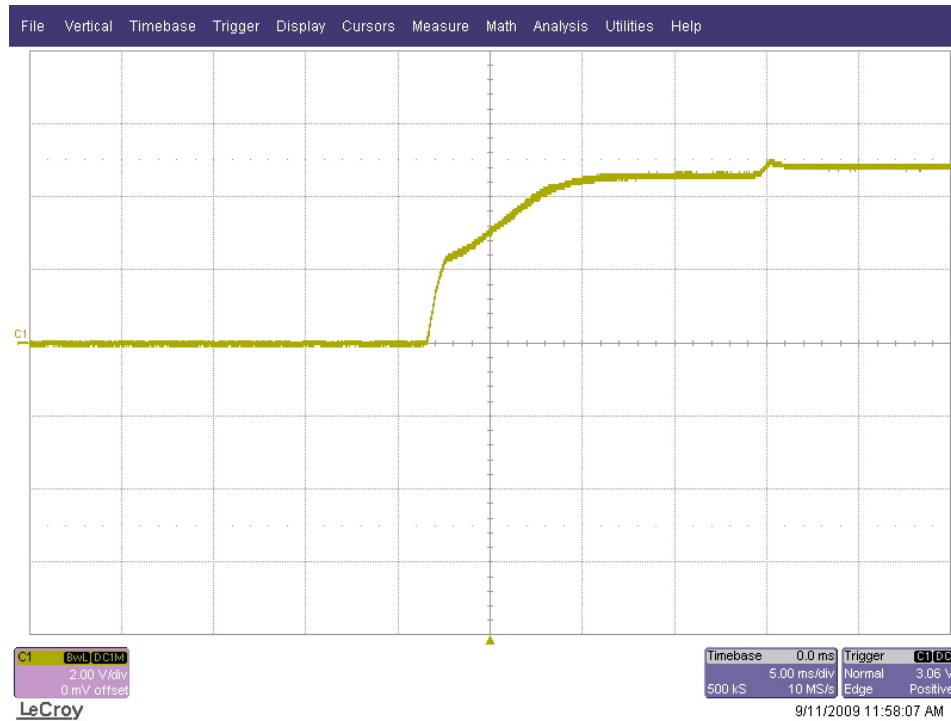
4.2 220VAC, 50Hz Input



5 Startup

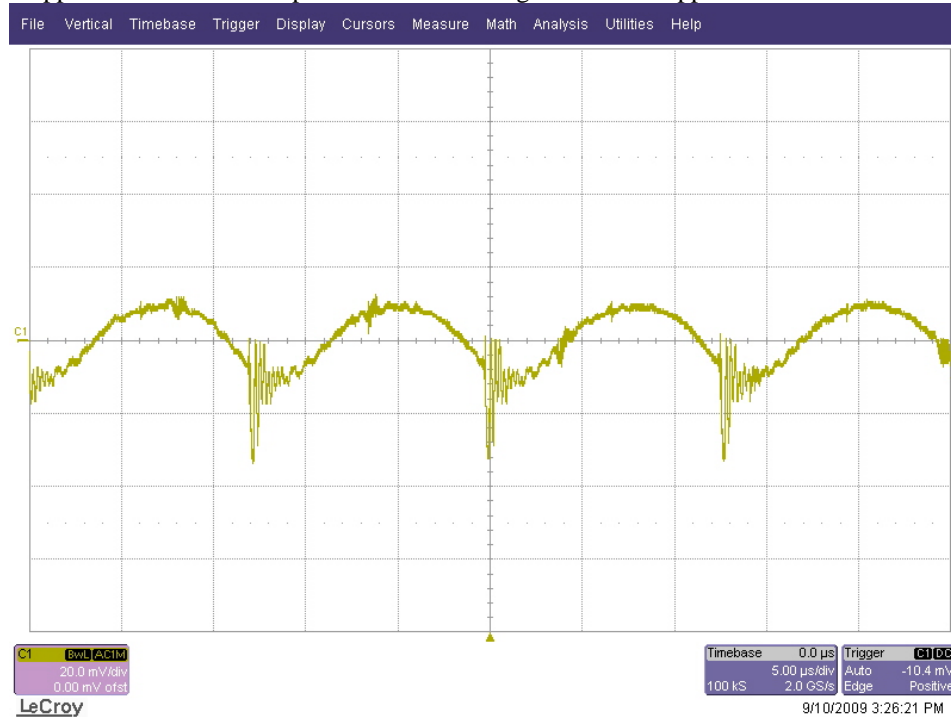
The output voltage at startup is shown in the images below. The input was 150VDC. For the top image, the outputs were unloaded. For the bottom image, both outputs were loaded with 1A each.

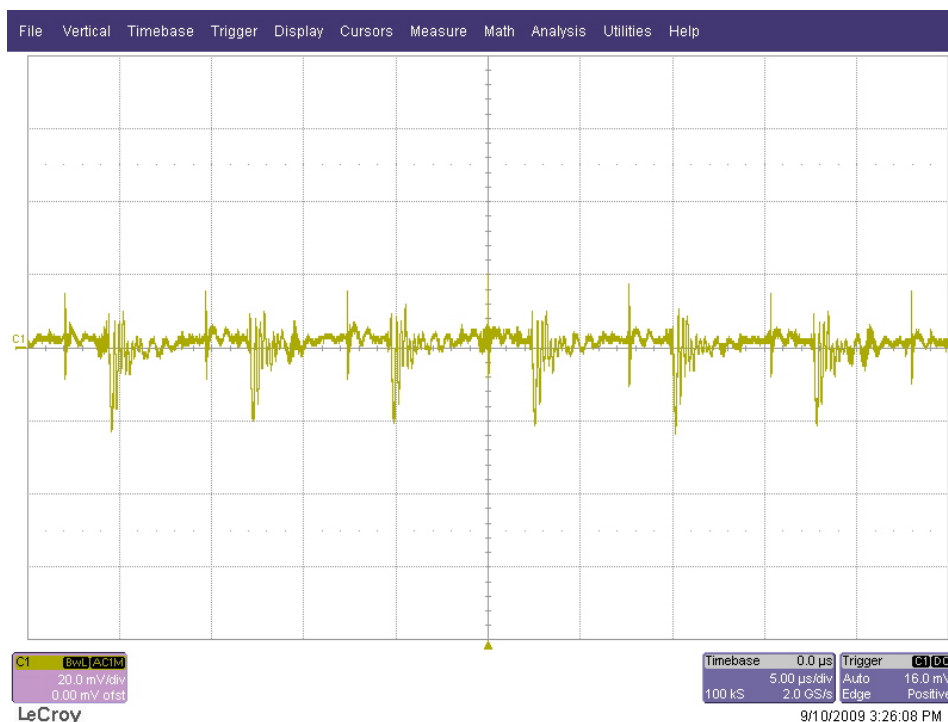




6 Output Ripple Voltage – Full Load

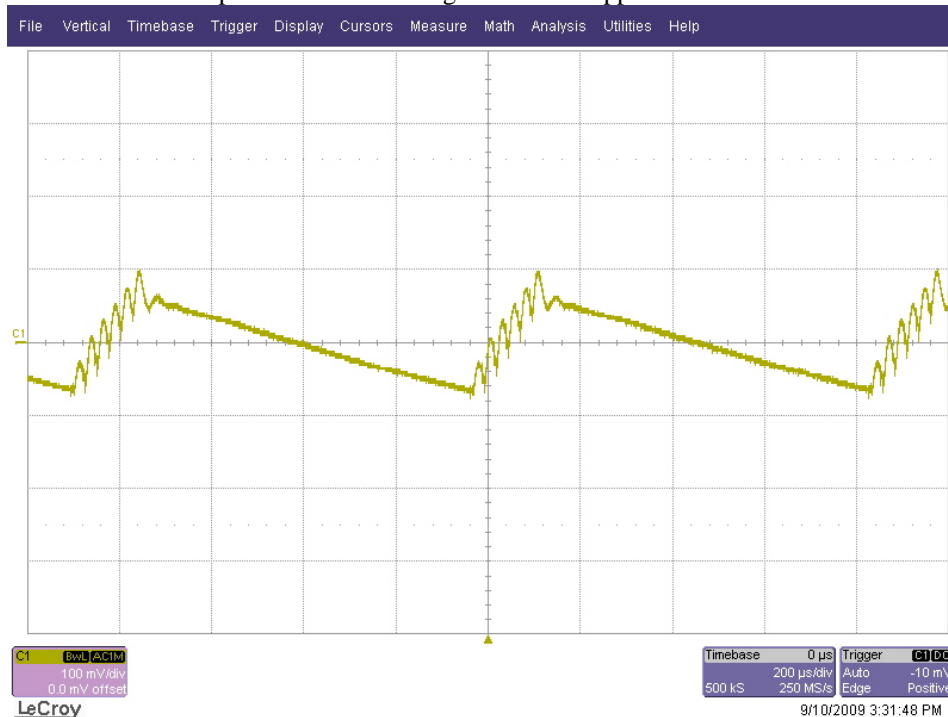
The output ripple voltage during full load operation (1A load on each output) is shown in the plots below. The top image shows the ripple with a 150VDC input. The bottom image shows the ripple with a 300VDC.

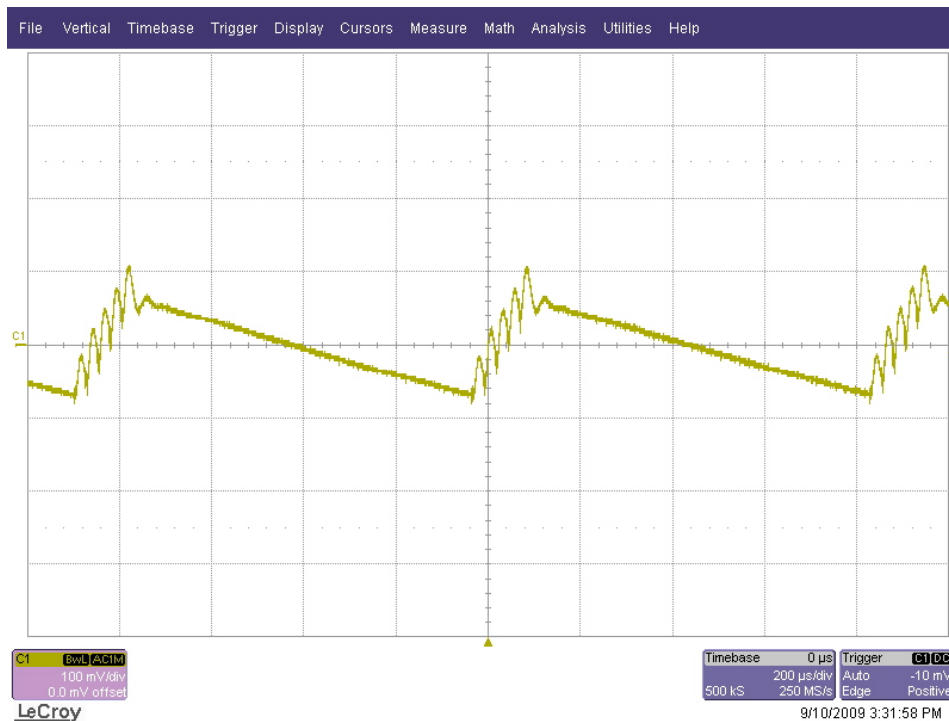




7 Output Ripple Voltage – Light Load

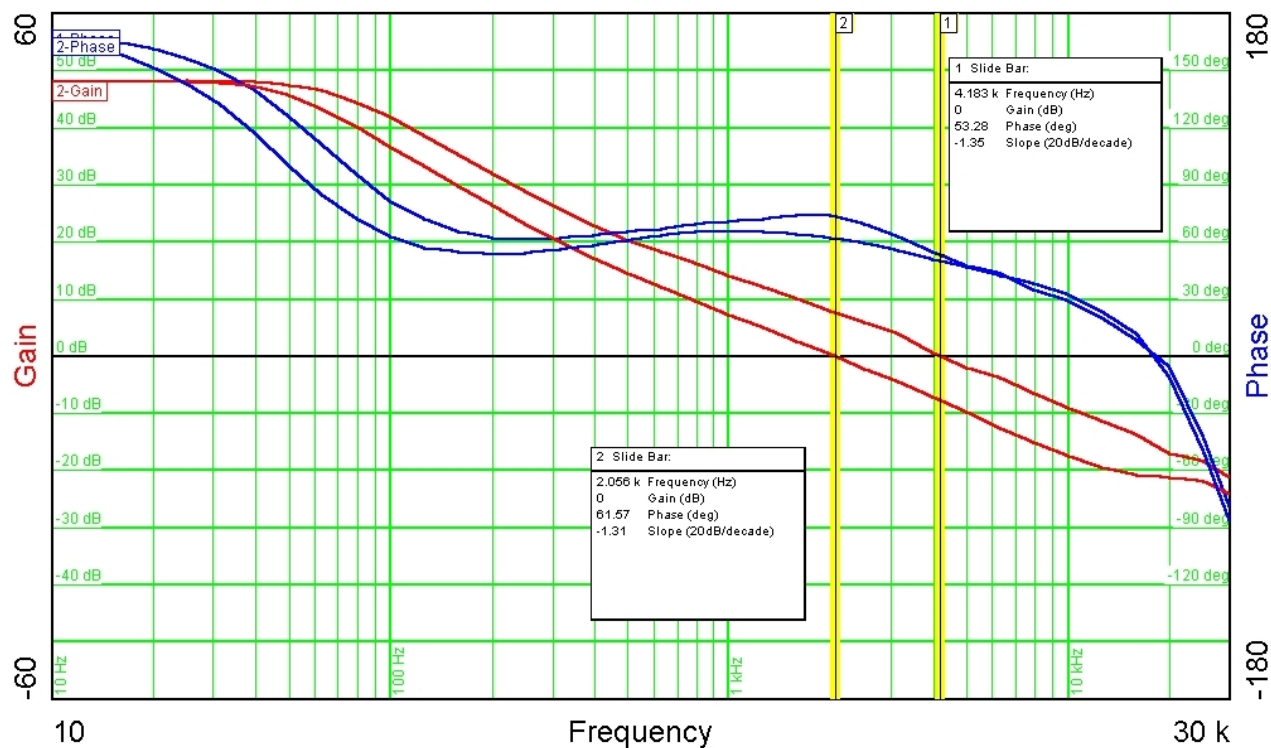
The output ripple voltage during light load operation (100mA total load) is shown in the plots below. The top image shows the ripple with a 150VDC input. The bottom image shows the ripple with a 300VDC.





8 Loop Response

The image below shows the loop response of the converter. The upper gain/phase plot was measured with a 300Vdc input, and a 2A total load. The lower gain/phase plot was measured with a 150Vdc input and a 2A total load.

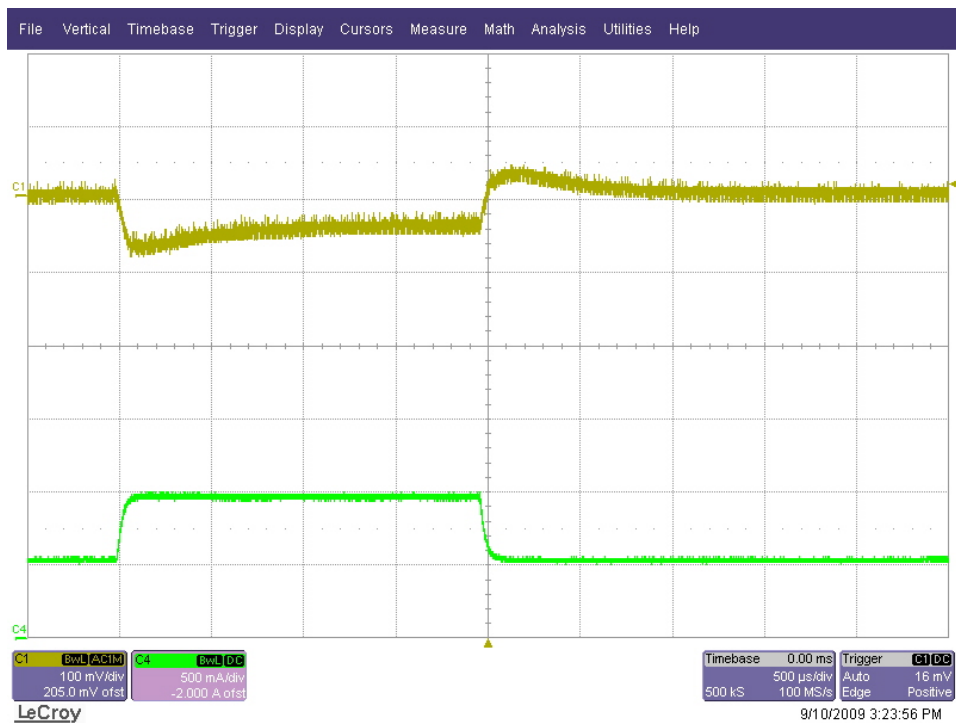
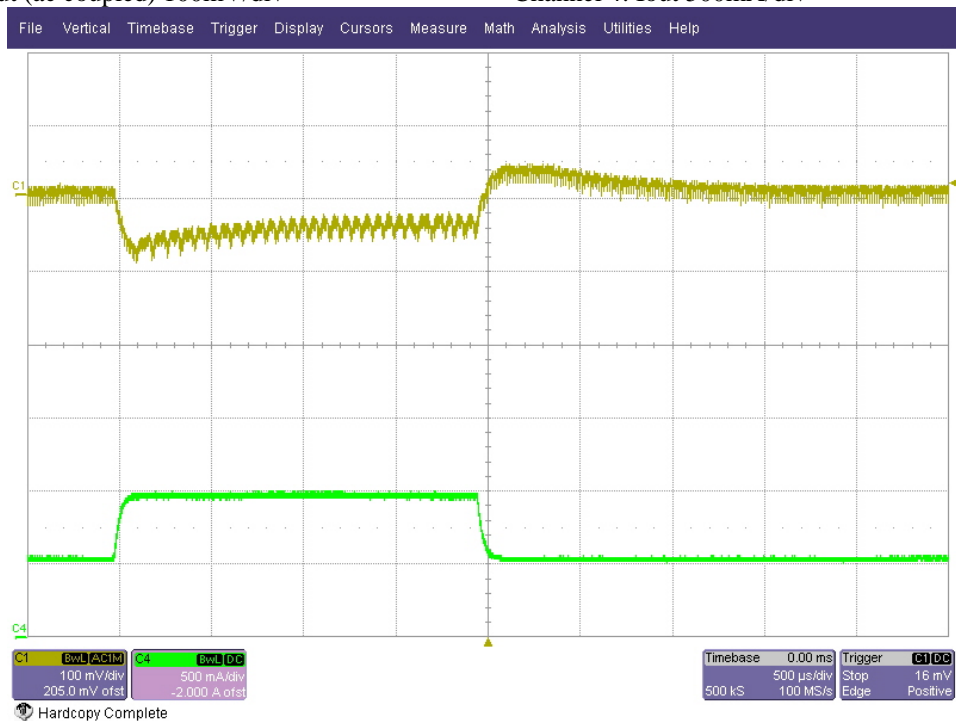


9 Load Transients

The images below show the response to a 0.5A to 1A load transient. For the top image, the input voltage was set to 150VDC. For the bottom image, the input was set to 300VDC.

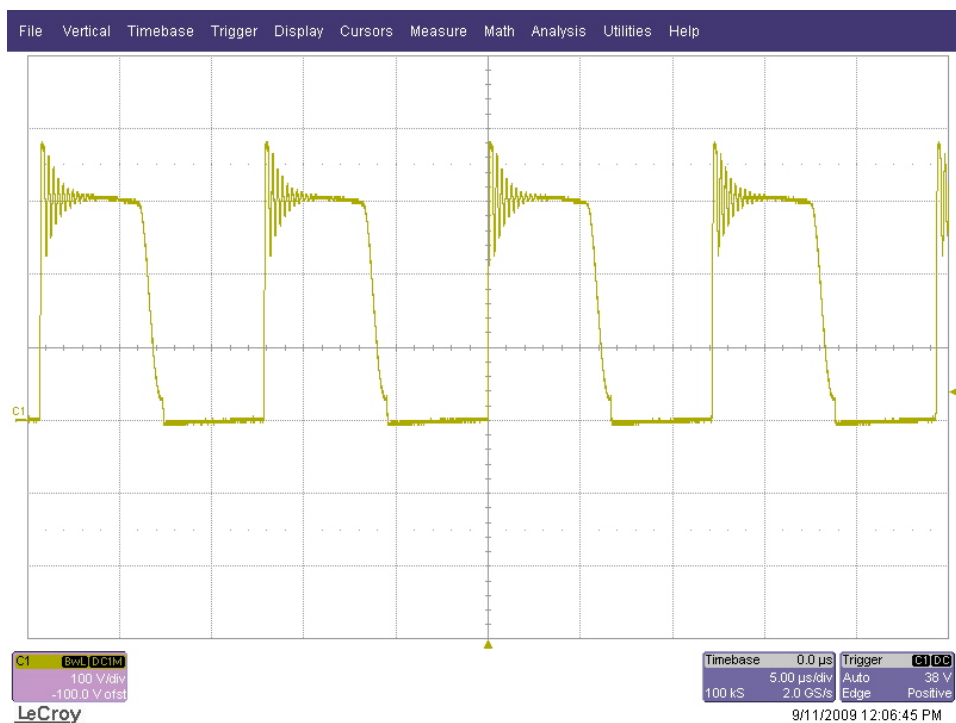
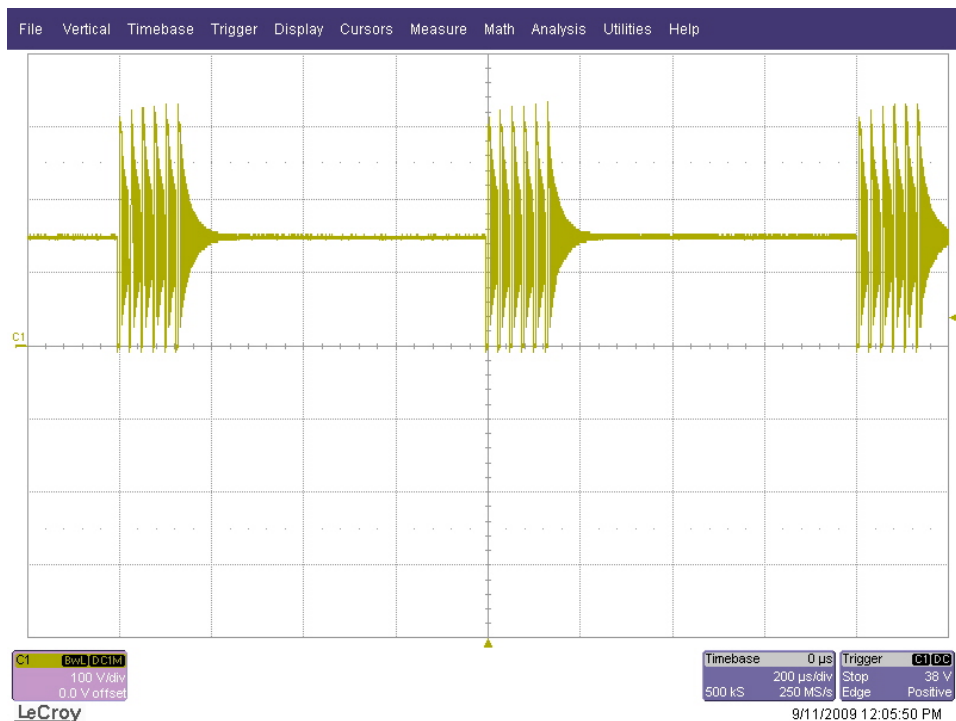
Channel 1: Vout (ac coupled) 100mV/div

Channel 4: Iout 500mA/div



10 Switching Waveforms

The images below show the drain-to-source voltage waveform on the primary MOSFET (Q2). The top image demonstrates burst mode operation, where the total load was 100mA and the input was set to 150VDC. In the bottom image, the total load was 2A and the input was 150VDC.



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