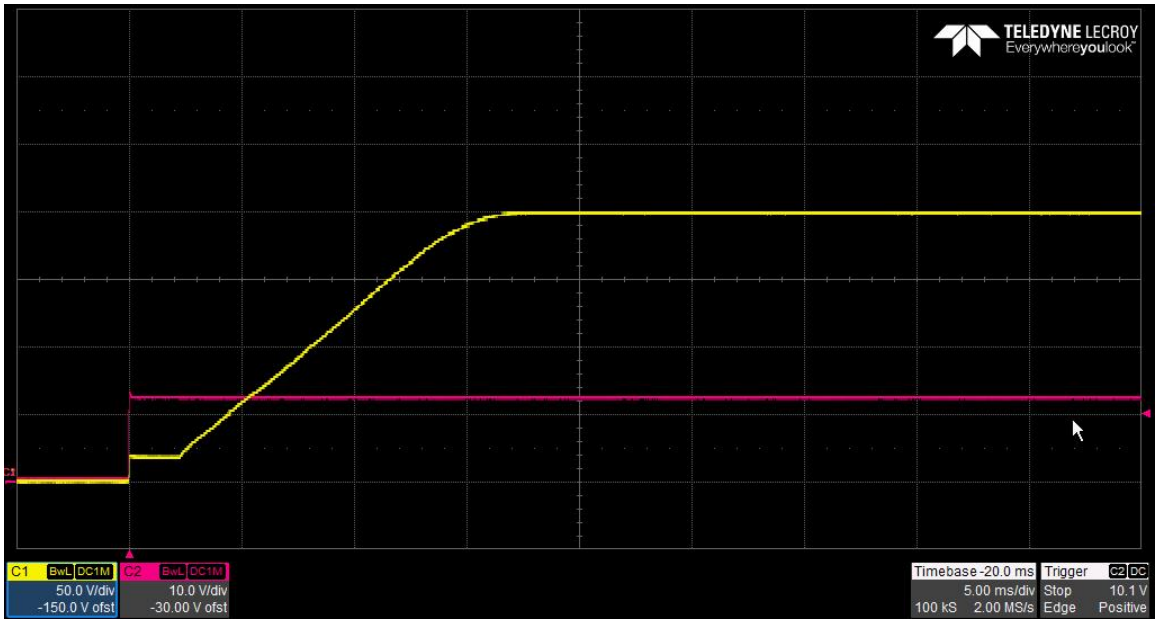
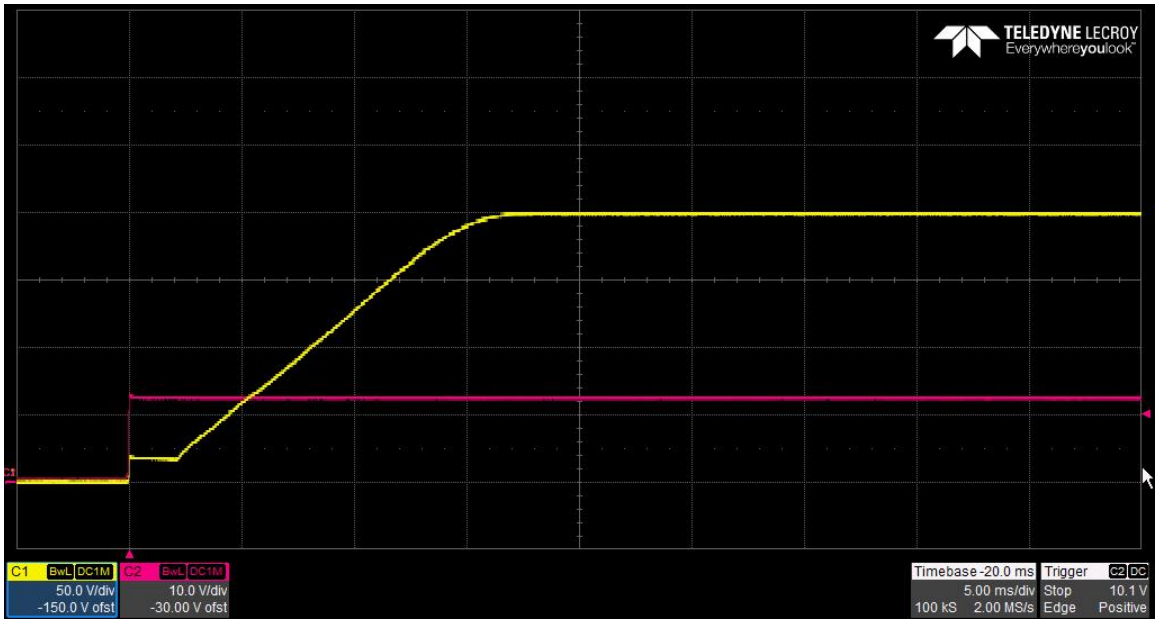
1 Startup

The photo below shows the output voltage startup waveform after the application of 12V in. The 200V output was loaded to 0A. (Vin is 10V/DIV, Vout is 50V/DIV, 5mS/DIV)

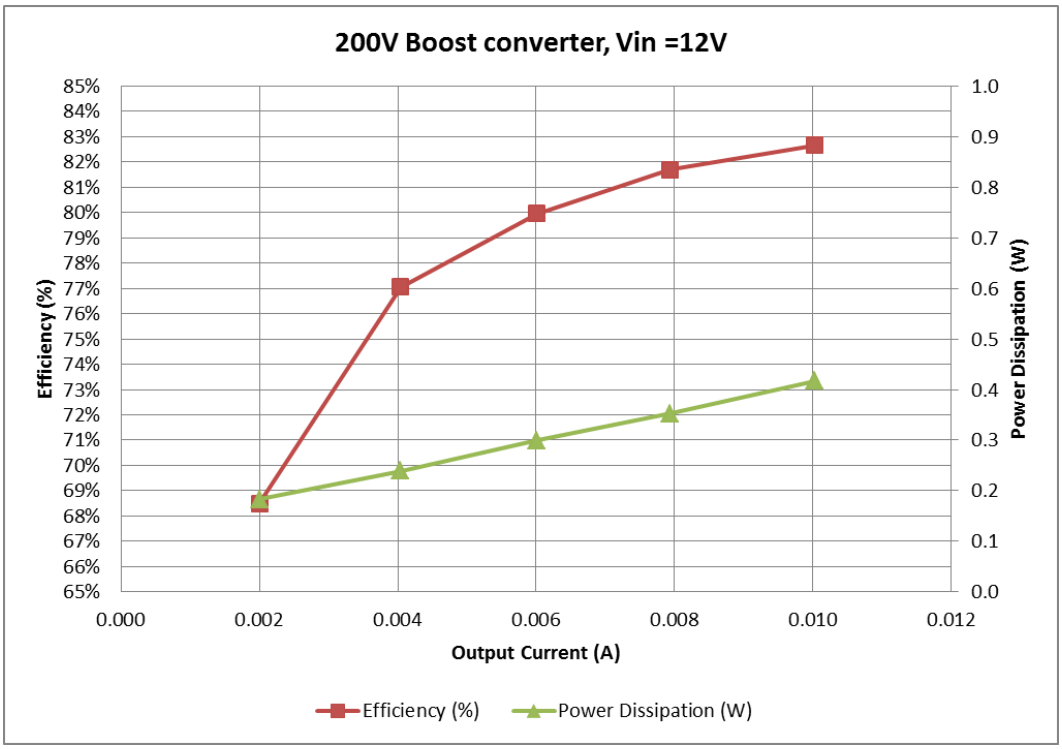


The photo below shows the output voltage startup waveform after the application of 12V in. The 200V output was loaded to 10mA. (Vin is 10V/DIV, Vout is 50V/DIV, 5mS/DIV)

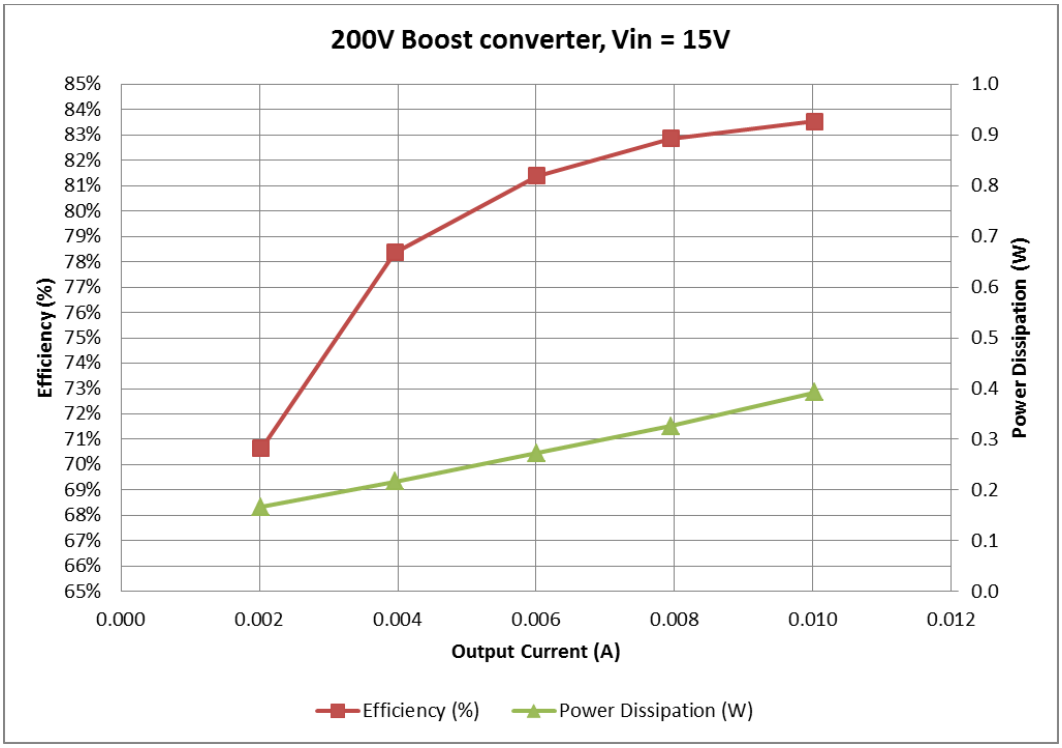


2 Efficiency

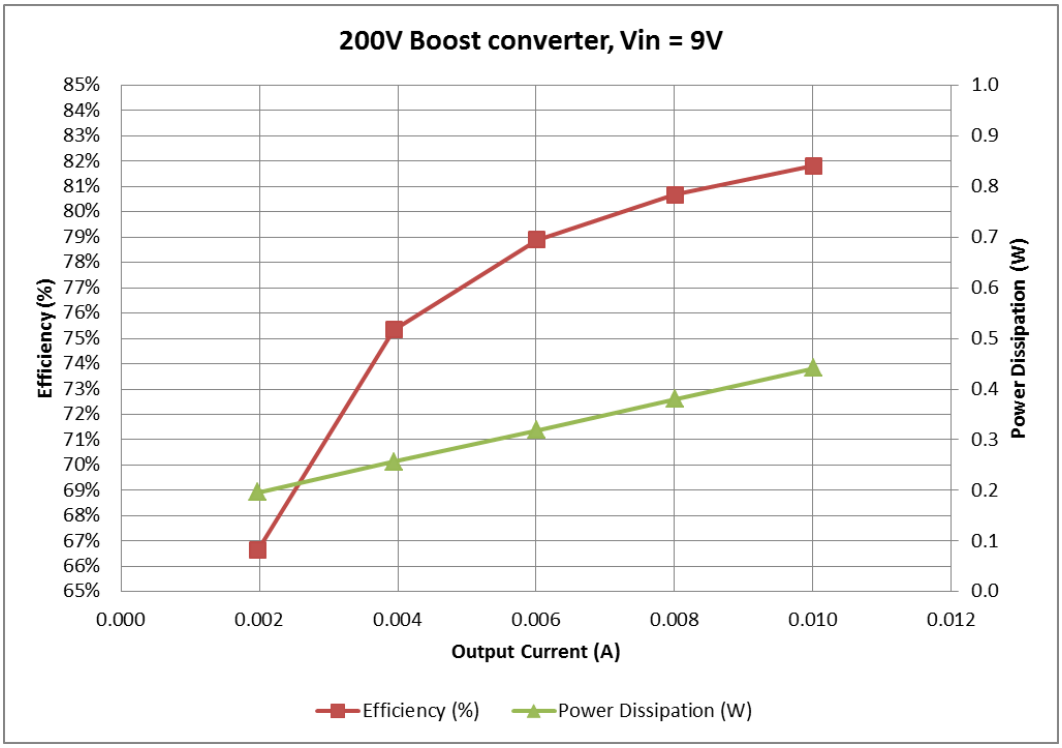
The converter efficiency is shown below for Vin = 12V and Vout = 200V.



The converter efficiency is shown below for Vin = 15V and Vout = 200V.

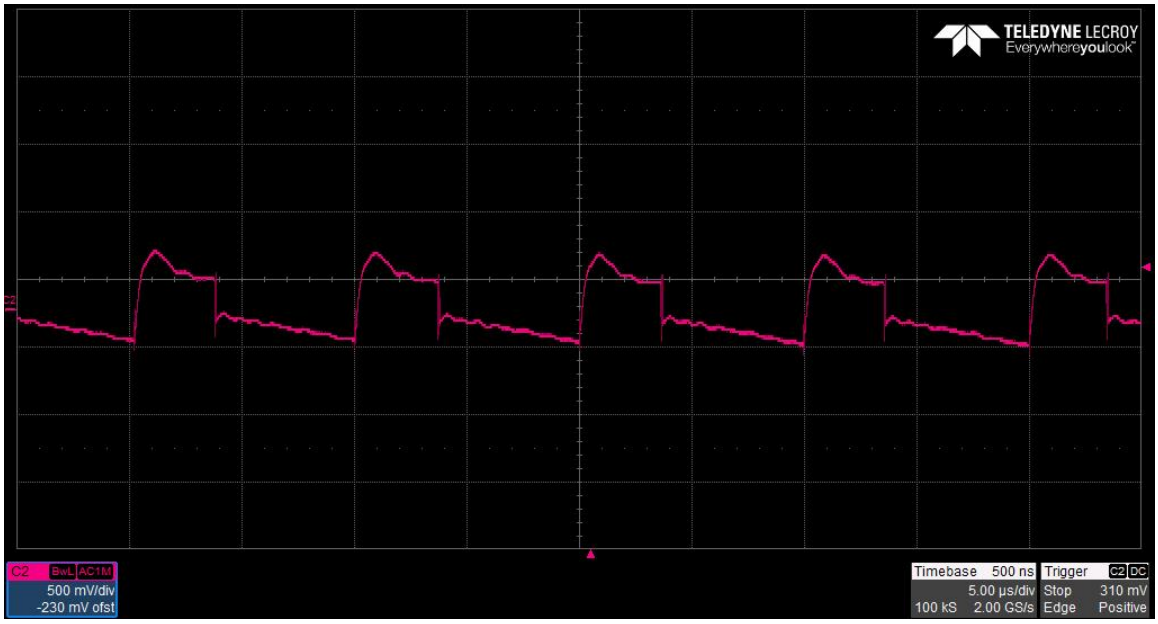


The converter efficiency is shown below for Vin = 9V and Vout = 200V.

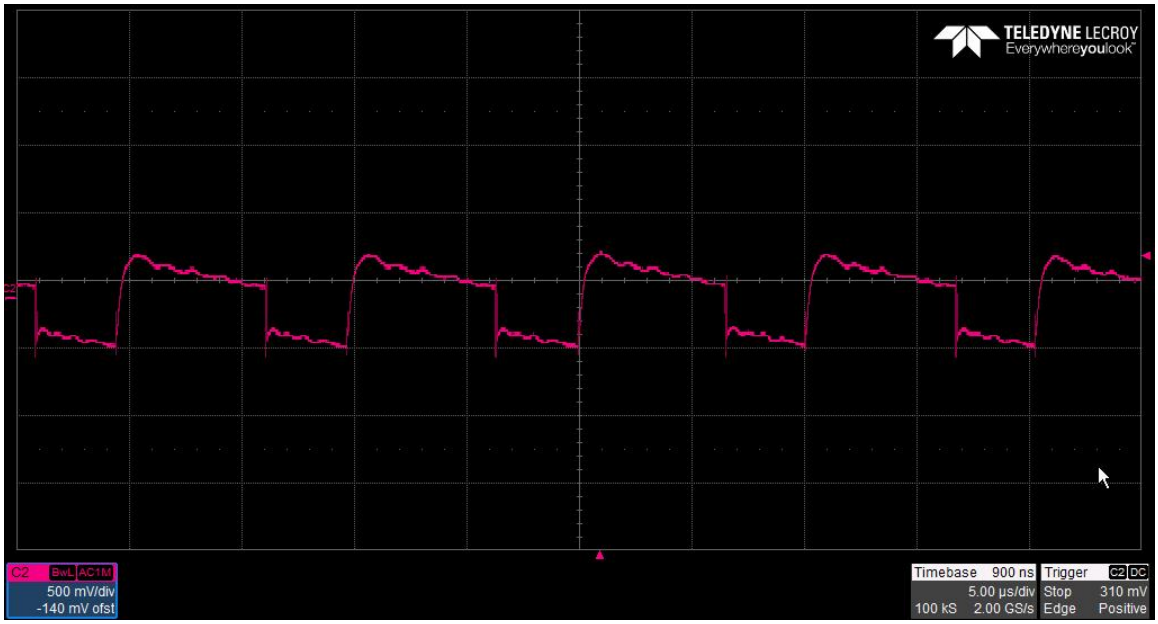


3 Output Ripple Voltage

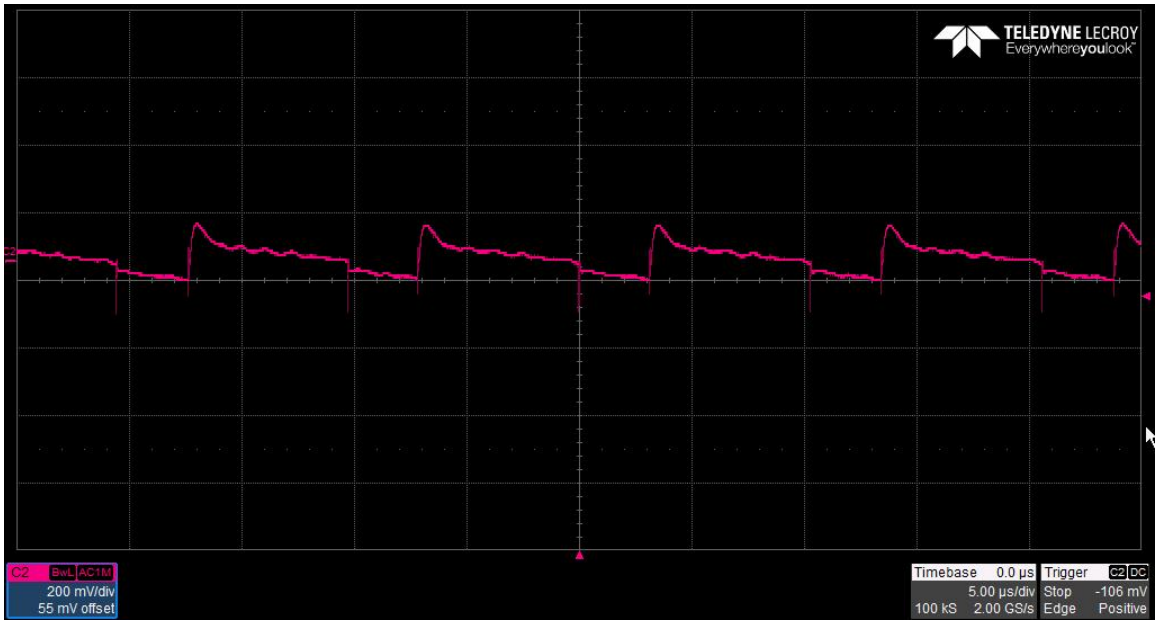
The 200V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 10mA. The input voltage is set to 9V. (500mV/DIV, 5uS/DIV)



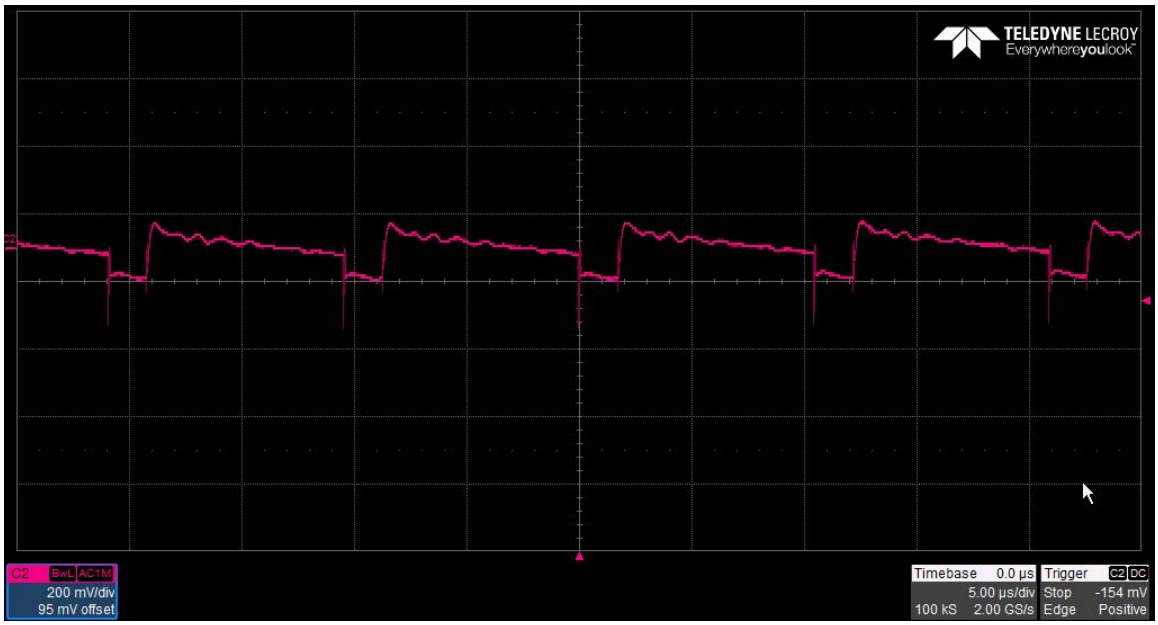
The 200V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 10mA. The input voltage is set to 15V. (500mV/DIV, 5uS/DIV)



The 200V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 2mA. The input voltage is set to 9V. (200mV/DIV, 5uS/DIV)

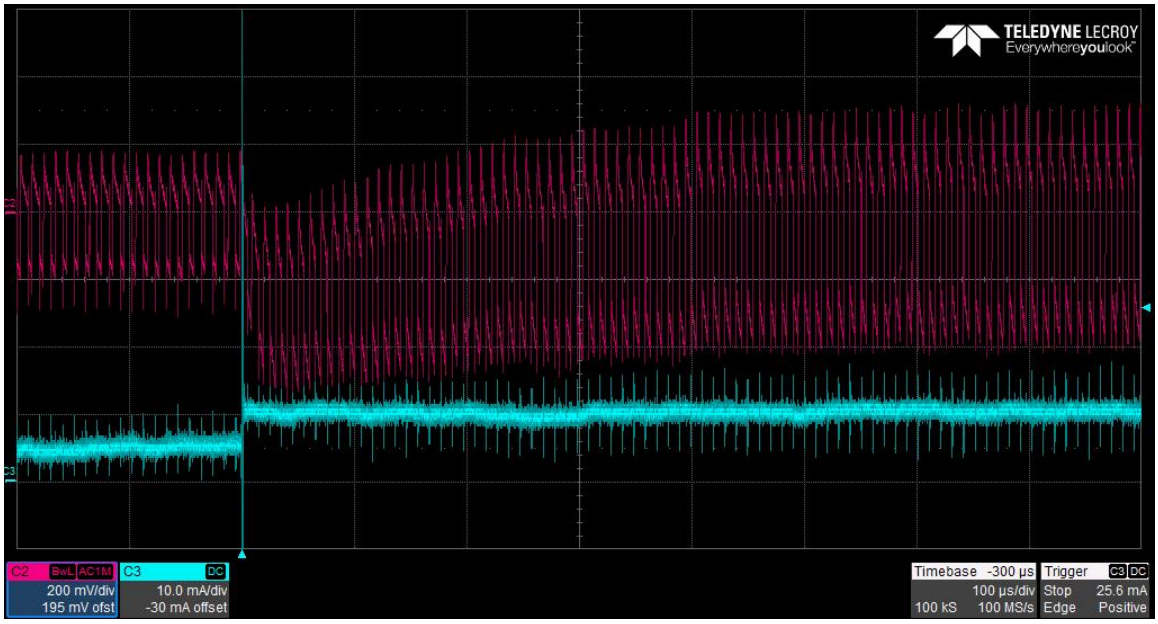


The 200V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 2mA. The input voltage is set to 15V. (200mV/DIV, 5uS/DIV)

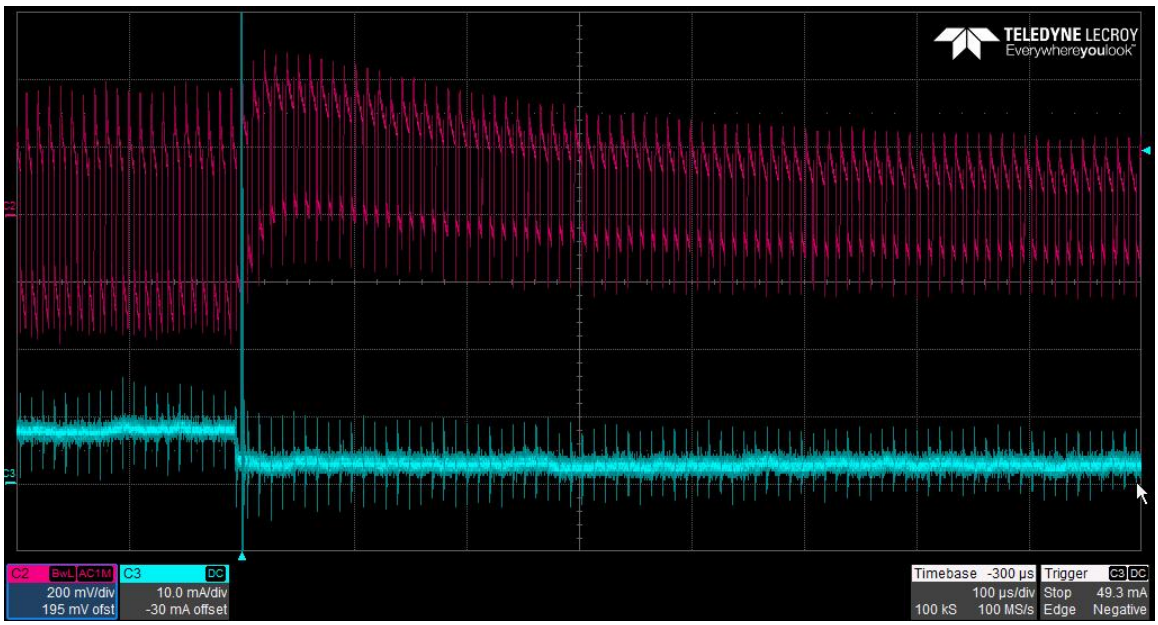


4 Load Transients

The photo below shows the 200V output voltage (ac coupled) when the load current is stepped between 5mA and 10mA. Vin = 12V. (200mV/DIV, 10mA/DIV, 100uS/DIV)

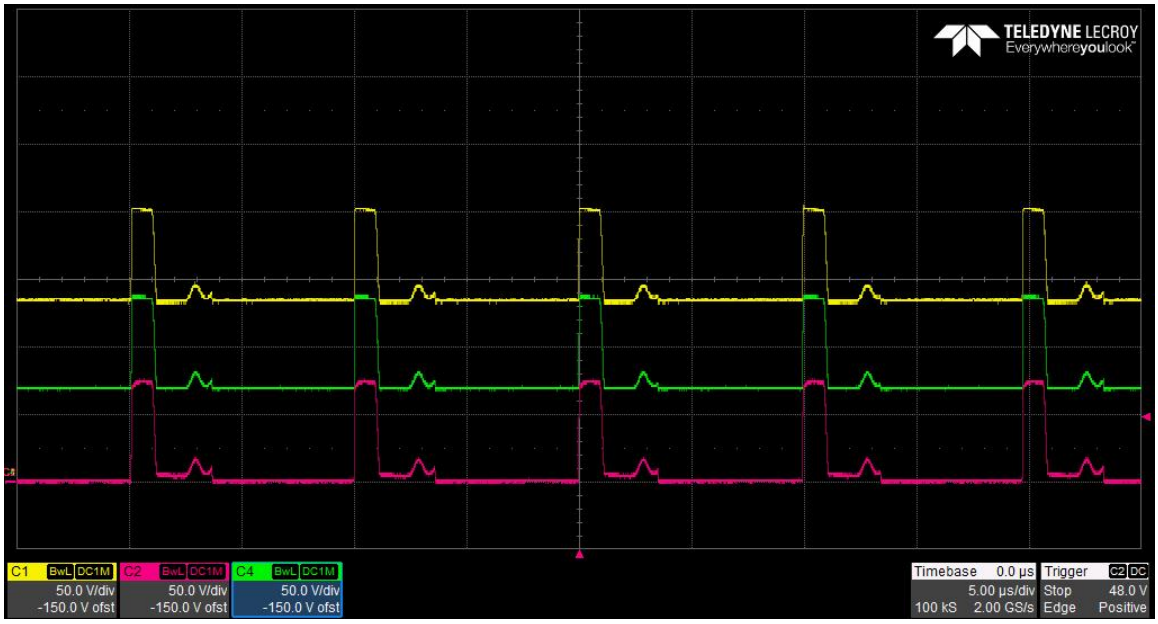


The photo below shows the 200V output voltage (ac coupled) when the load current is stepped between 10mA and 5mA. Vin = 12V. (200mV/DIV, 10mA/DIV, 100uS/DIV)

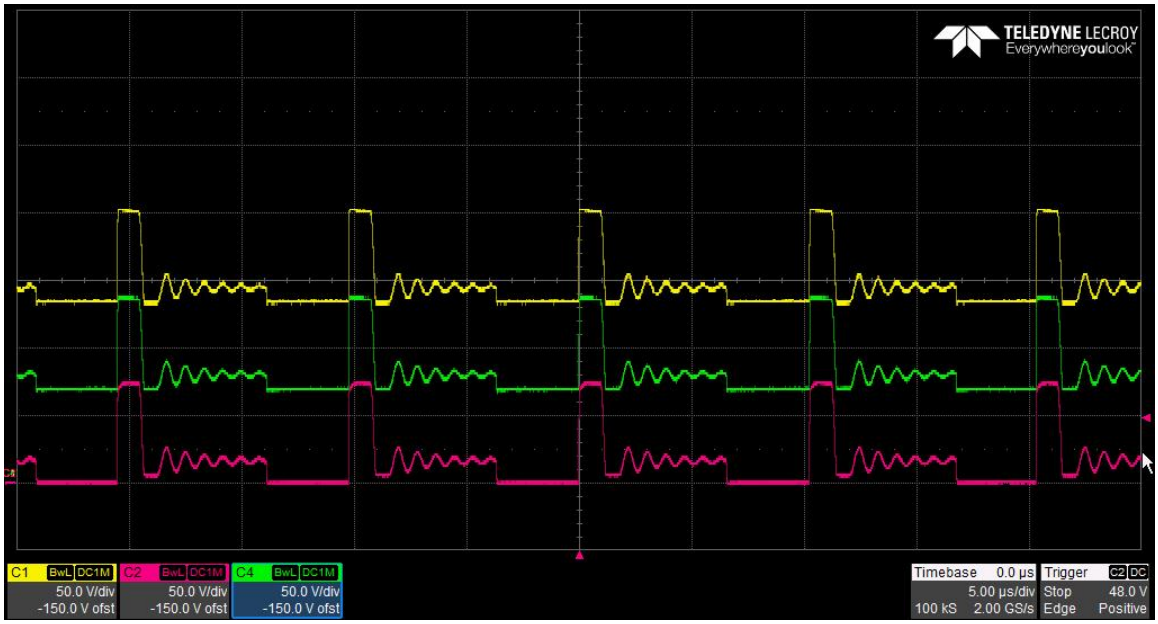


5 Switch Node Waveforms

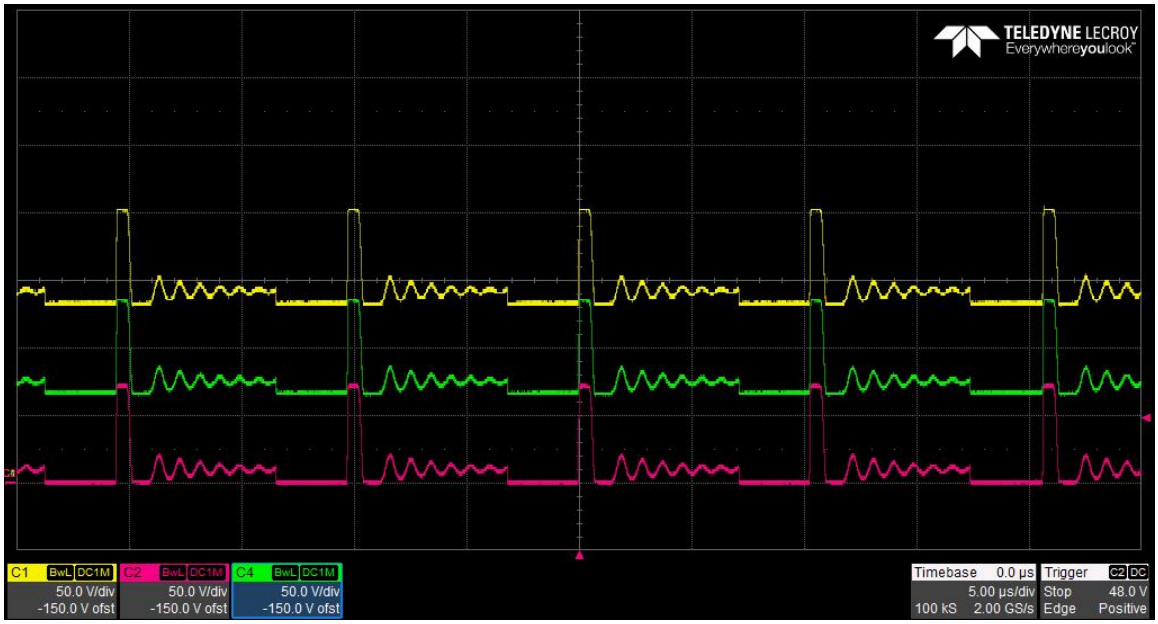
The photo below shows the FET switching voltage at TP4 (Red), the voltage at D2-cathode (Green) and D100-cathode (Yellow) for an input voltage of 9V and a 10mA load. (50V/DIV, 5uS/DIV)



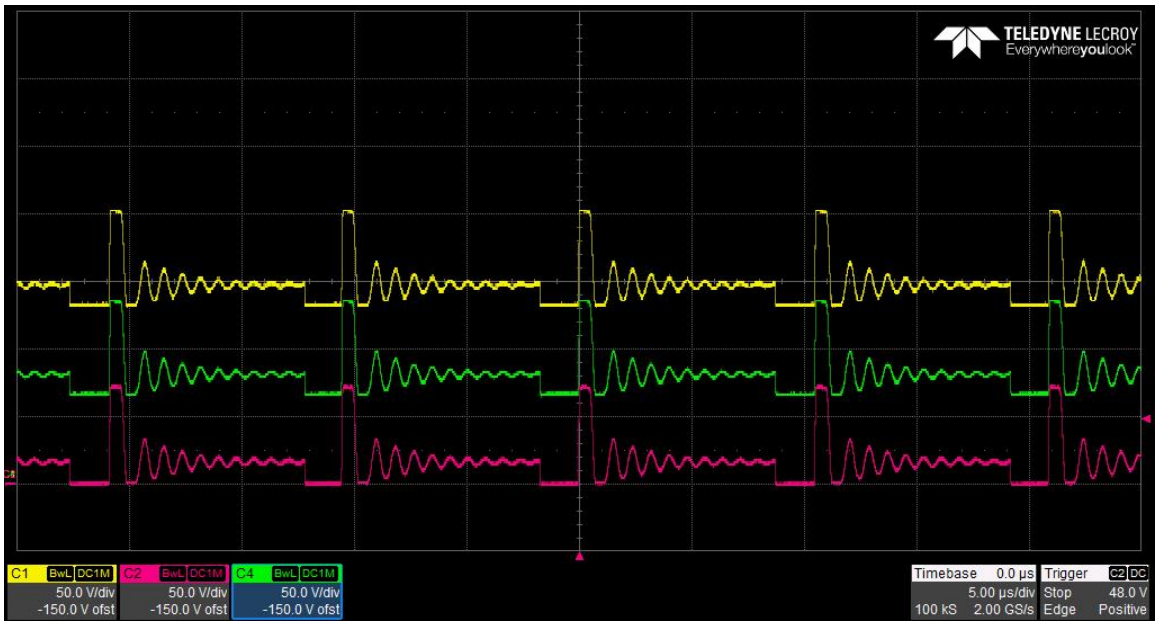
The photo below shows the FET switching voltage at TP4 (Red), the voltage at D2-cathode (Green) and D100-cathode (Yellow) for an input voltage of 15V and a 10mA load. (50V/DIV, 5uS/DIV)



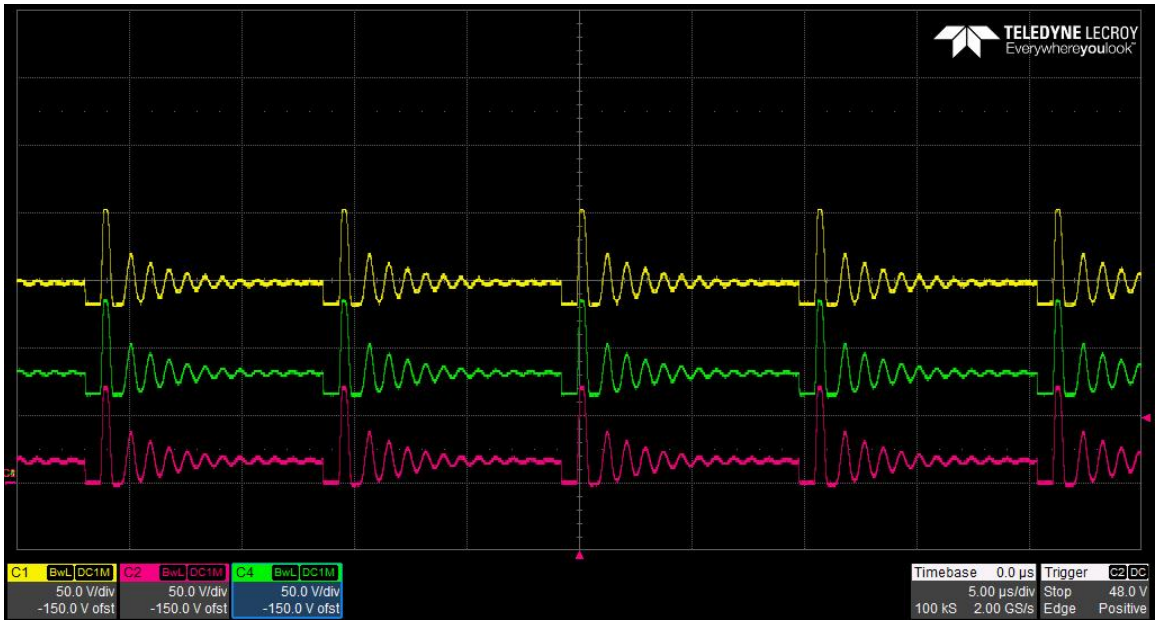
The photo below shows the FET switching voltage at TP4 (Red), the voltage at D2-cathode (Green) and D100-cathode (Yellow) for an input voltage of 9V and a 2mA load. (50V/DIV, 5uS/DIV)



The photo below shows the FET switching voltage at TP4 (Red), the voltage at D2-cathode (Green) and D100-cathode (Yellow) for an input voltage of 15V and a 2mA load. (50V/DIV, 5uS/DIV)



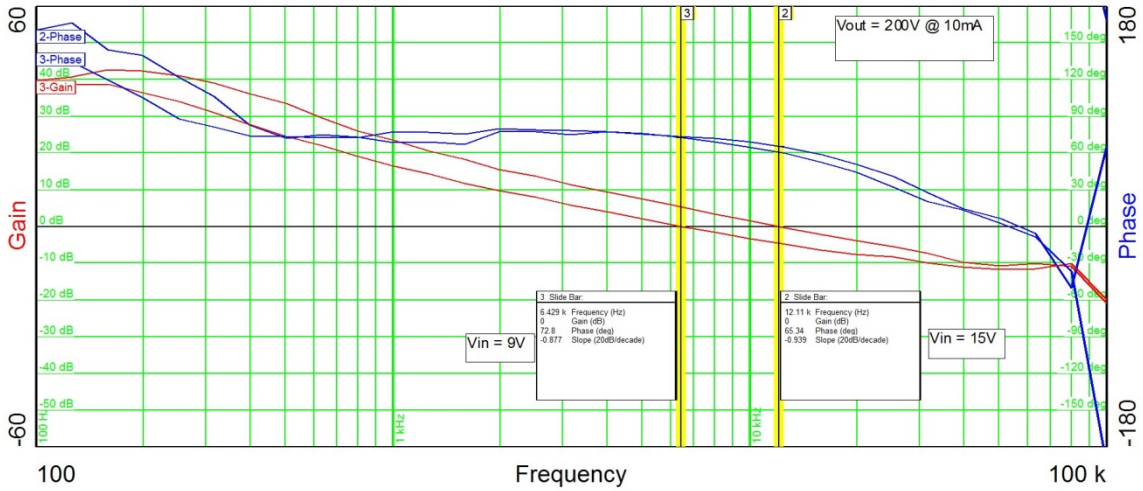
The photo below shows the FET switching voltage at TP4 (Red), the voltage at D2-cathode (Green) and D100-cathode (Yellow) for an input voltage of 15V and a 0mA load. (50V/DIV, 5uS/DIV)



6 Loop Gain

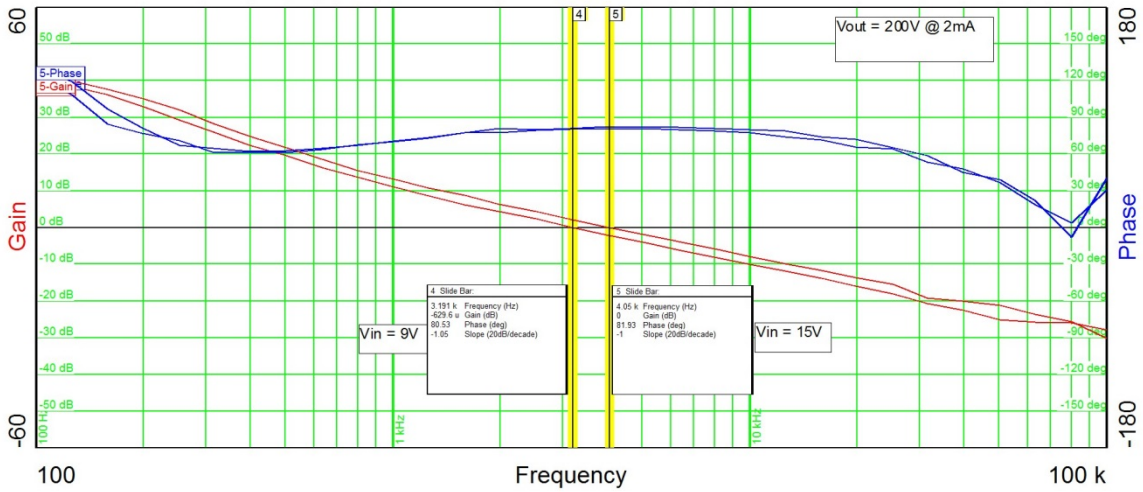
The plot below shows the loop gain with the input voltage set to 9V and 15V with the output set to 10mA.

Loop Gain (Vin = 9V)	BW: 6.43KHz	PM: 73 degrees
Loop Gain (Vin = 15V)	BW: 12.1KHz	PM: 65 degrees



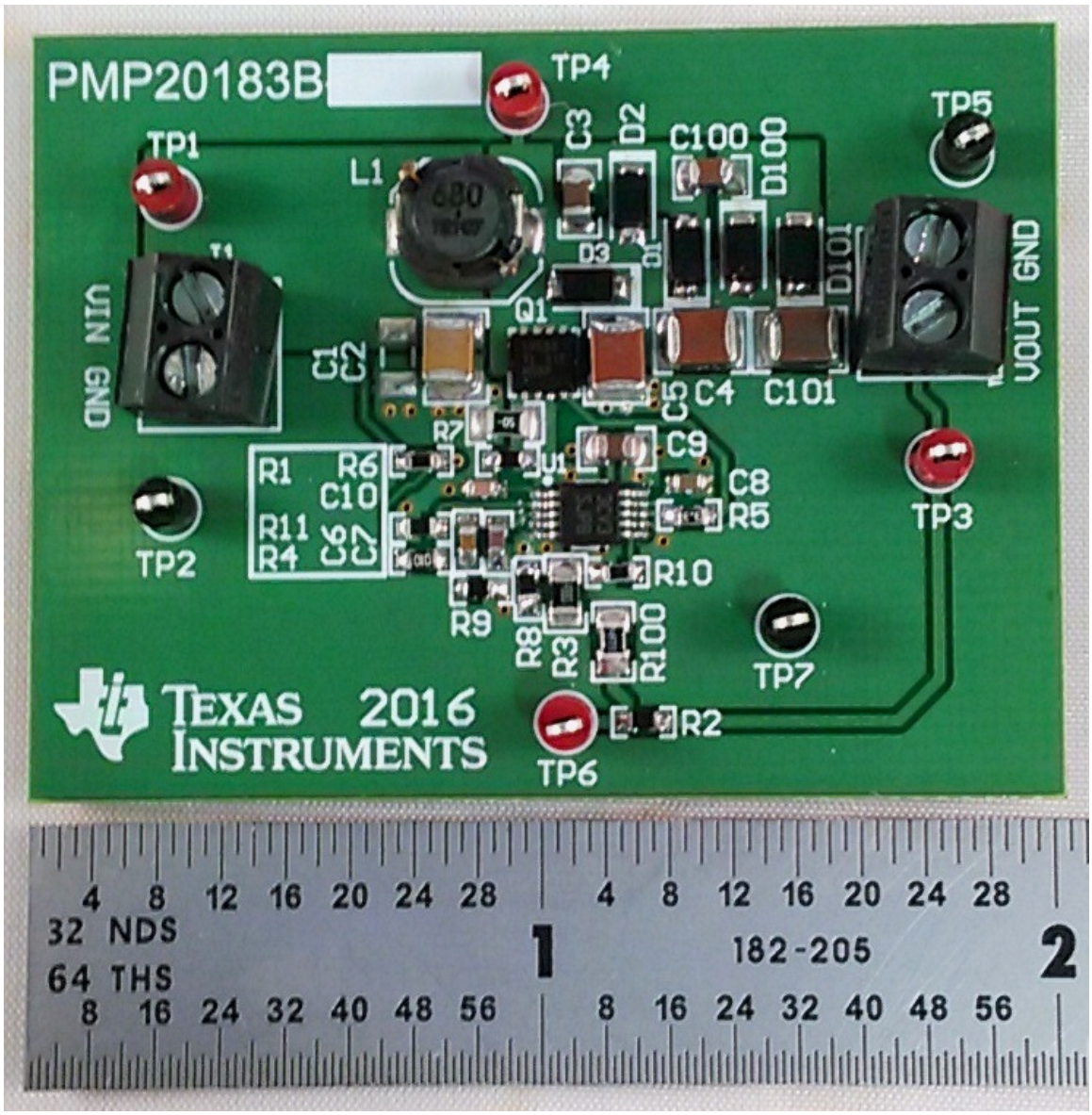
The plot below shows the loop gain with the input voltage set to 9V and 15V with the output set to 2mA.

Loop Gain (Vin = 9V)	BW: 3.19KHz	PM: 81 degrees
Loop Gain (Vin = 15V)	BW: 4.05KHz	PM: 82 degrees



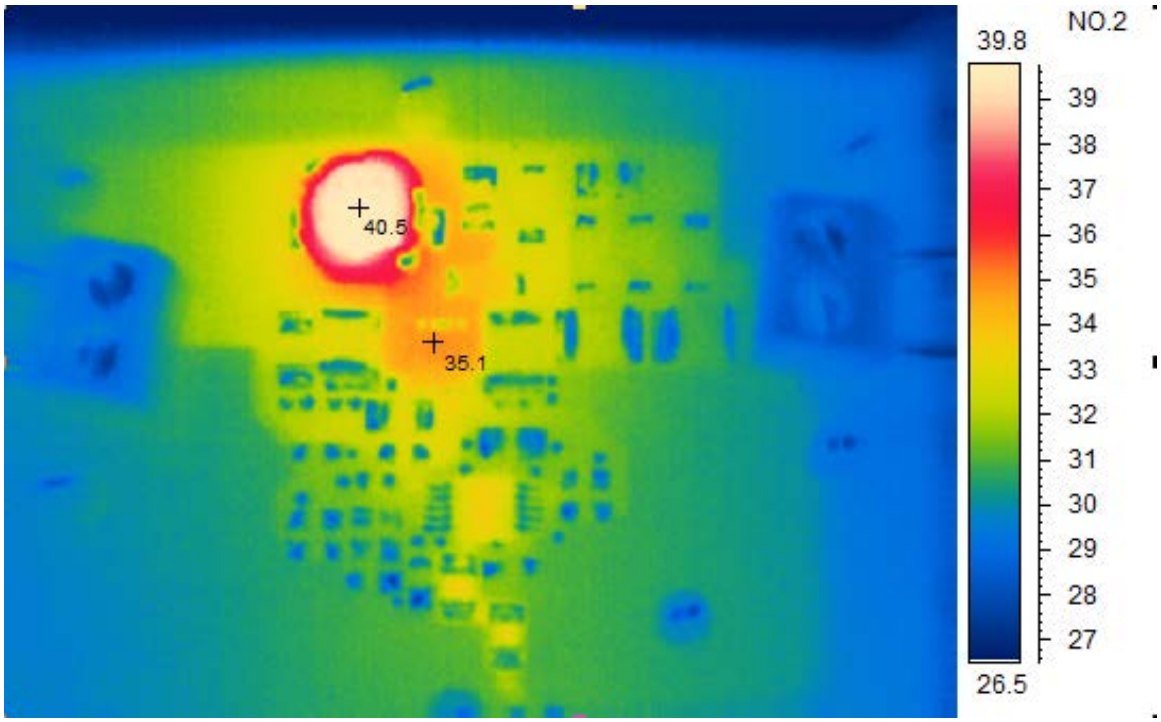
7 Photo

The photo below shows the PMP20183 REVB assy built on the PMP8956 REVA PCB with modifications.



8 Thermal Image

A thermal image is shown below operating at 12V input and 200V@10mA output (room temp, no airflow).



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