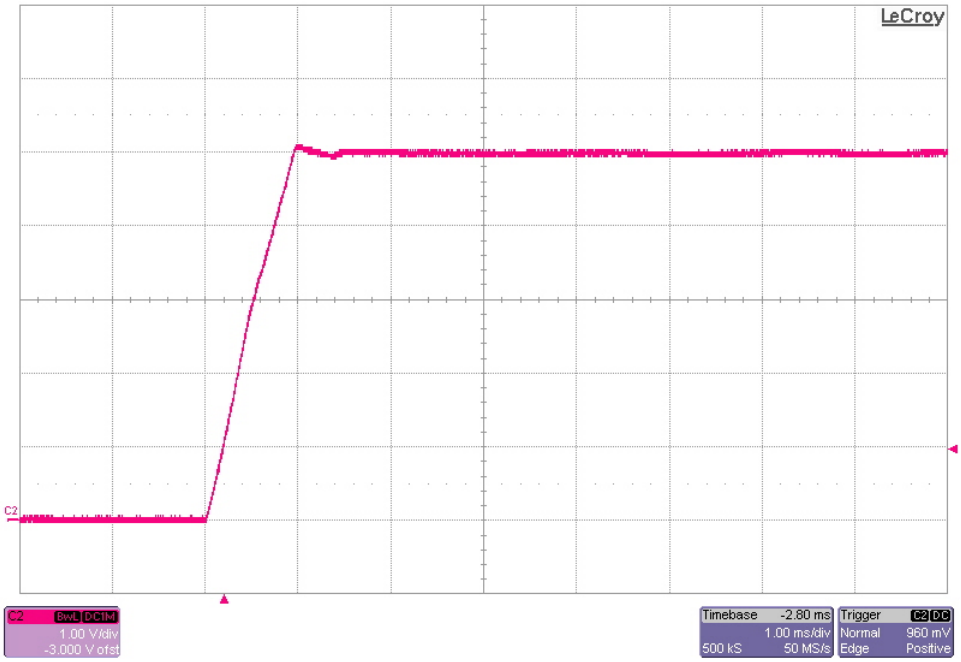
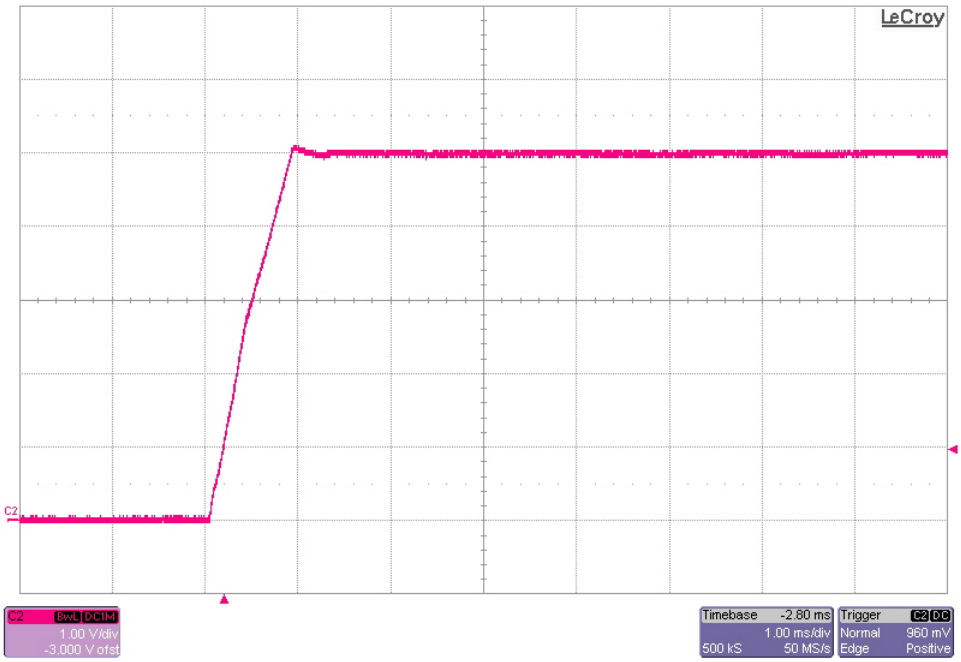
1 Startup

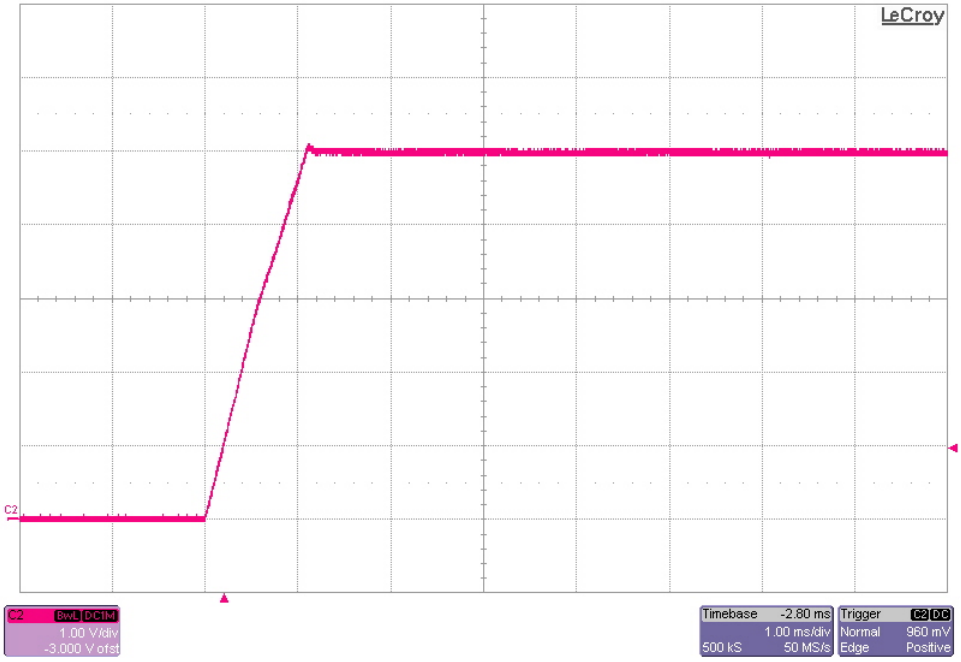
The photo below shows the 5V output voltage startup waveforms after the application of 12Vdc in. The output was loaded to 0A. (1V/DIV, 1mS/DIV)



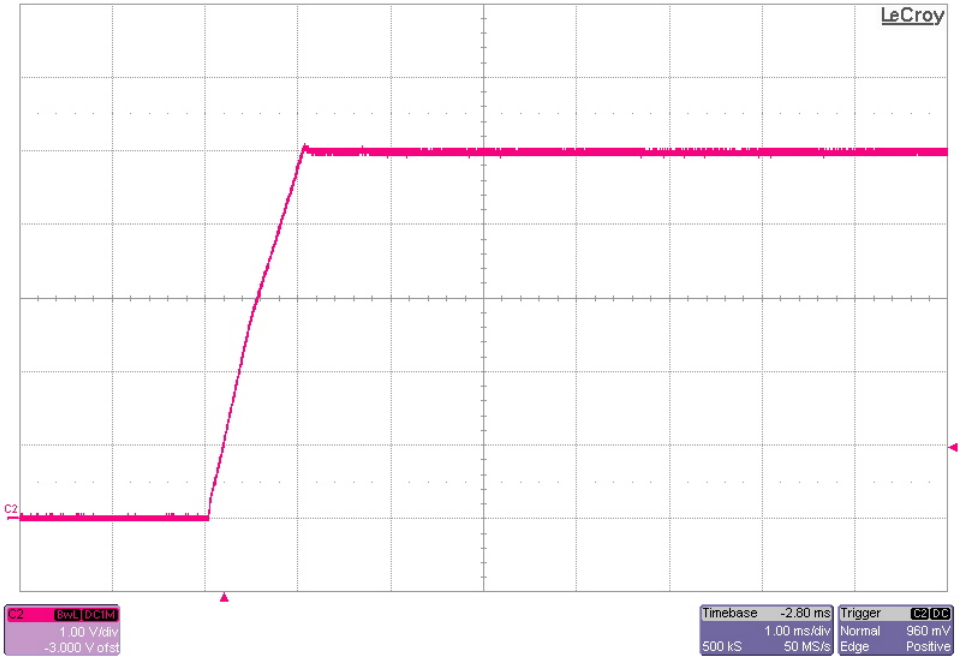
The photo below shows the 5V output voltage startup waveforms after the application of 20Vdc in. The output was loaded to 0A. (1V/DIV, 1mS/DIV)



The photo below shows the 5V output voltage startup waveforms after the application of 12Vdc in. The output was loaded to 150mA. (1V/DIV, 1mS/DIV)

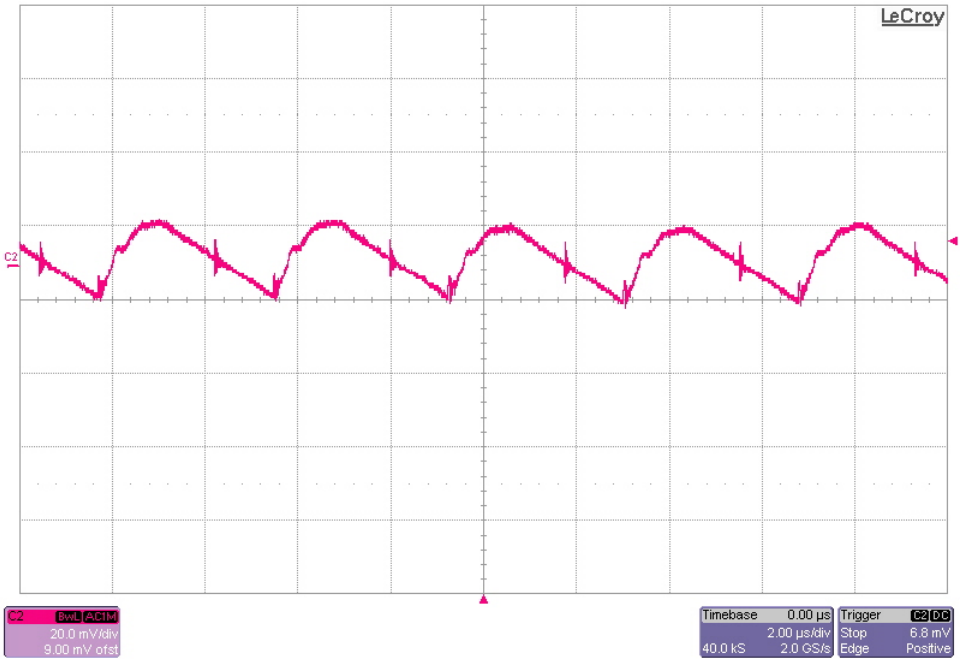


The photo below shows the 5V output voltage startup waveforms after the application of 20Vdc in. The output was loaded to 150mA. (1V/DIV, 1mS/DIV)

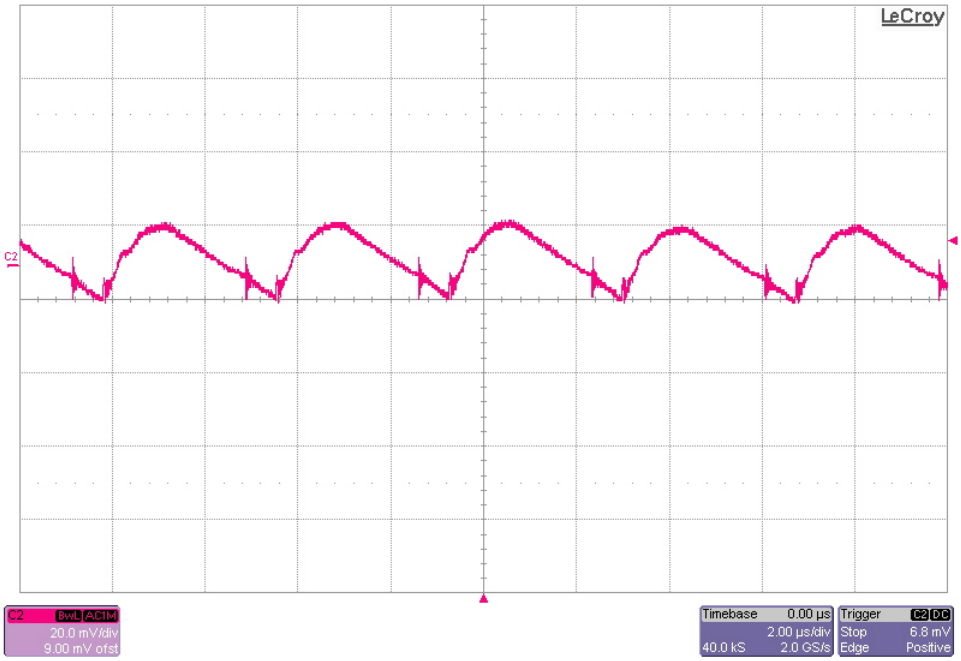


2 Output Ripple Voltage

The 5V output ripple voltage is shown in the figure below. The image was taken with the output loaded to 150mA and the input voltage set to 10Vdc. (20mV/DIV, 2uS/DIV)

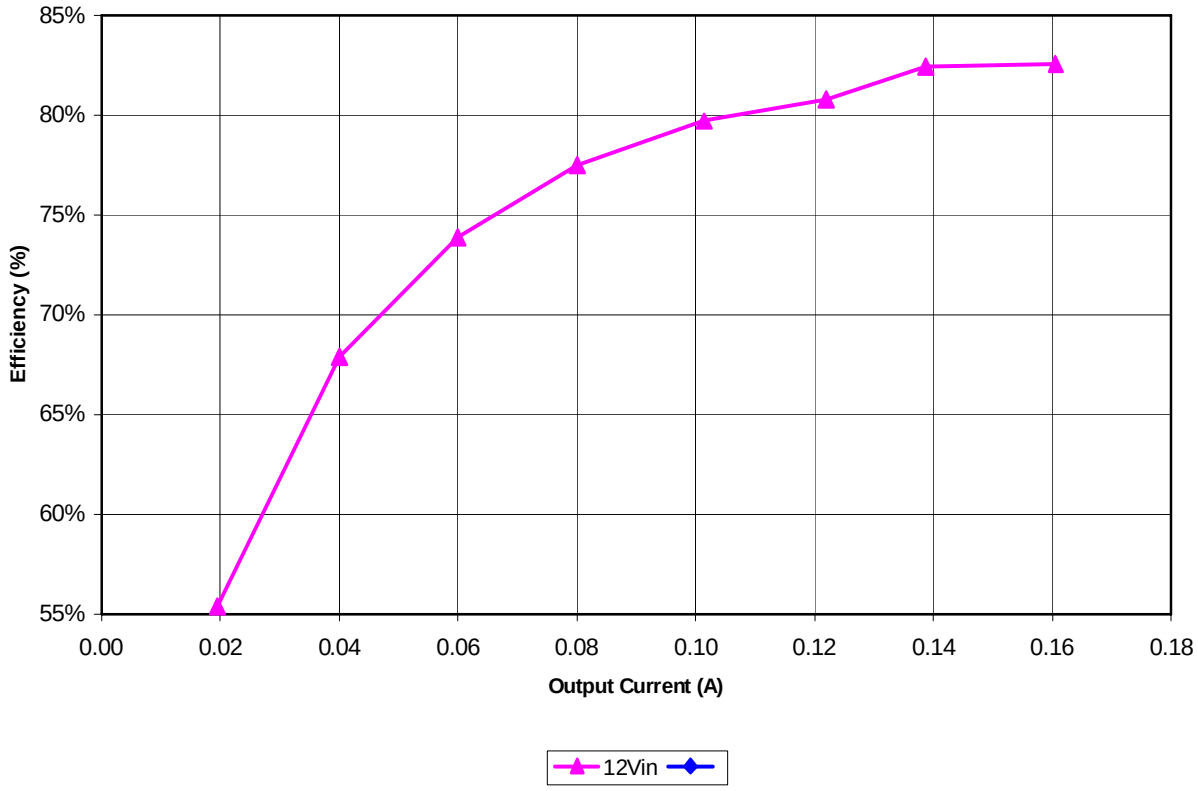


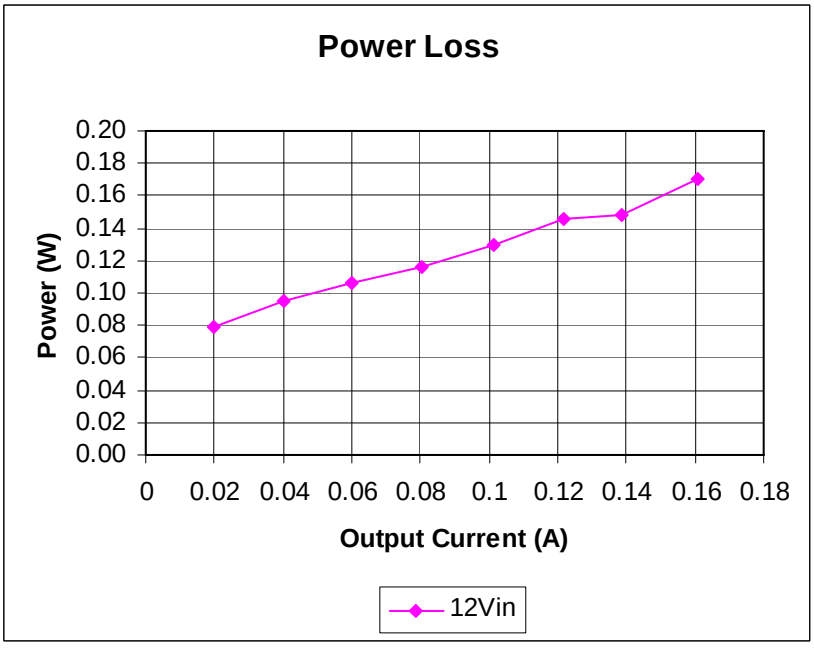
The 5V output ripple voltage is shown in the figure below. The image was taken with the output loaded to 150mA and the input voltage set to 20Vdc. (20mV/DIV, 2uS/DIV)



3 Efficiency

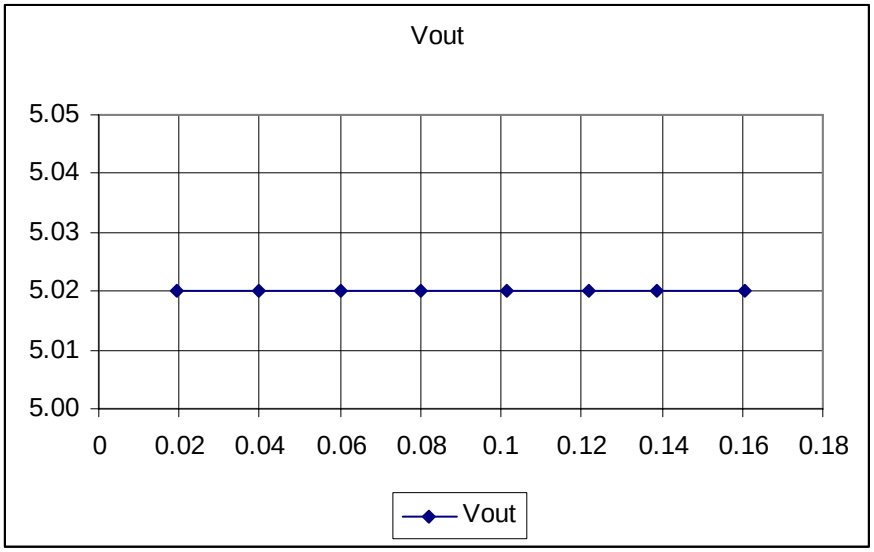
The converter efficiency is shown in the figure below.





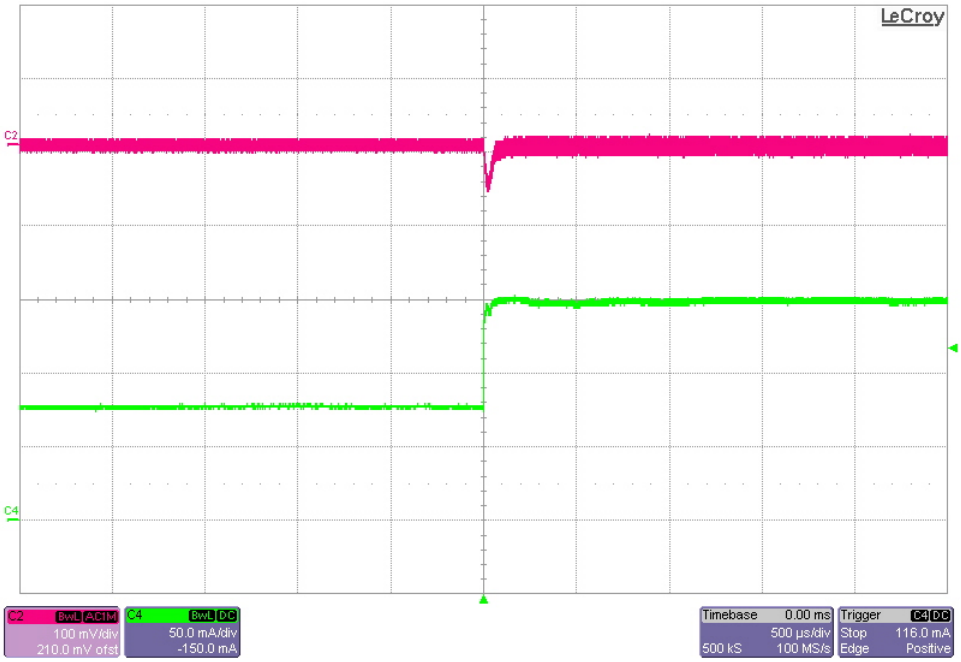
4 Load Regulation

The converters output voltage regulation is shown in the figure below. Vin = 12V

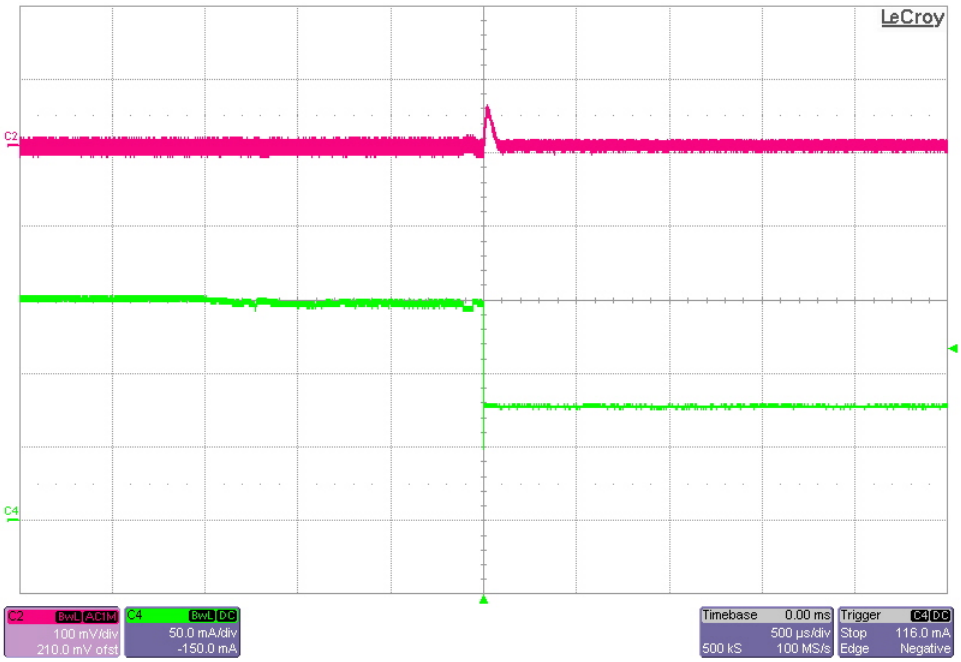


5 Load Transients

The photo below shows the 5V output voltage (top) when the load current is increased from 75mA to 150mA. Vin = 12Vdc. (100mV/DIV- ac coupled, 50mA/DIV, 500uS/DIV)

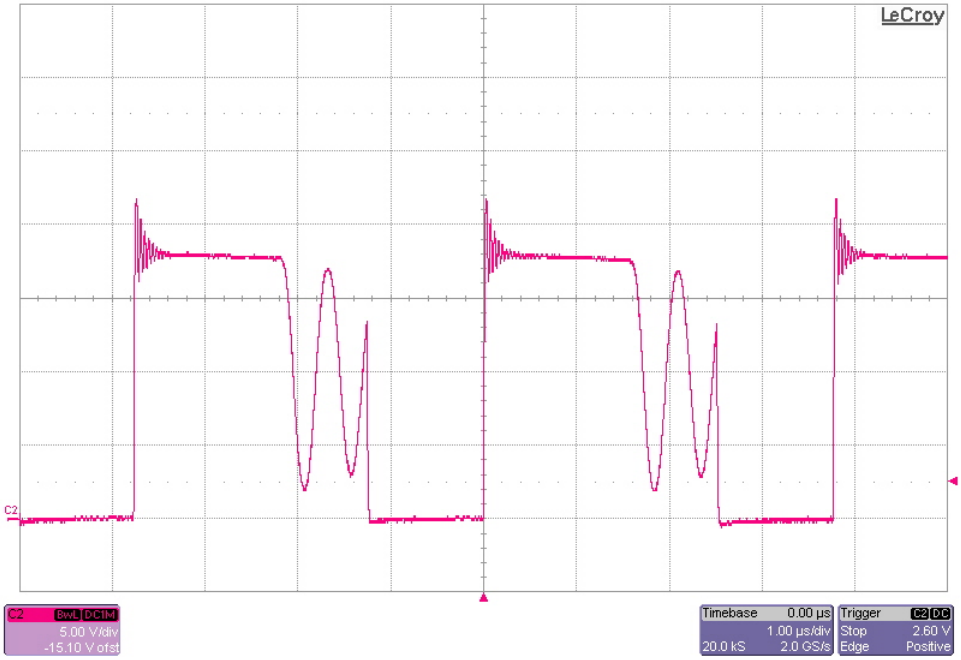


The photo below shows the 5V output voltage (top) when the load current is decreased from 150mA to 75mA. Vin = 12Vdc. (100mV/DIV- ac coupled, 50mA/DIV, 500uS/DIV)

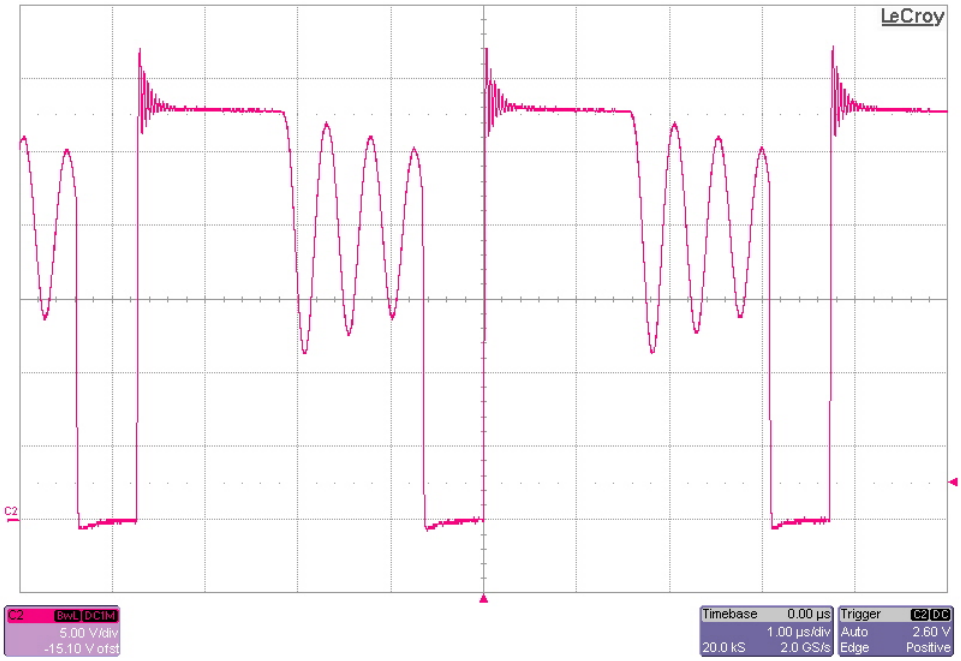


6 Waveforms

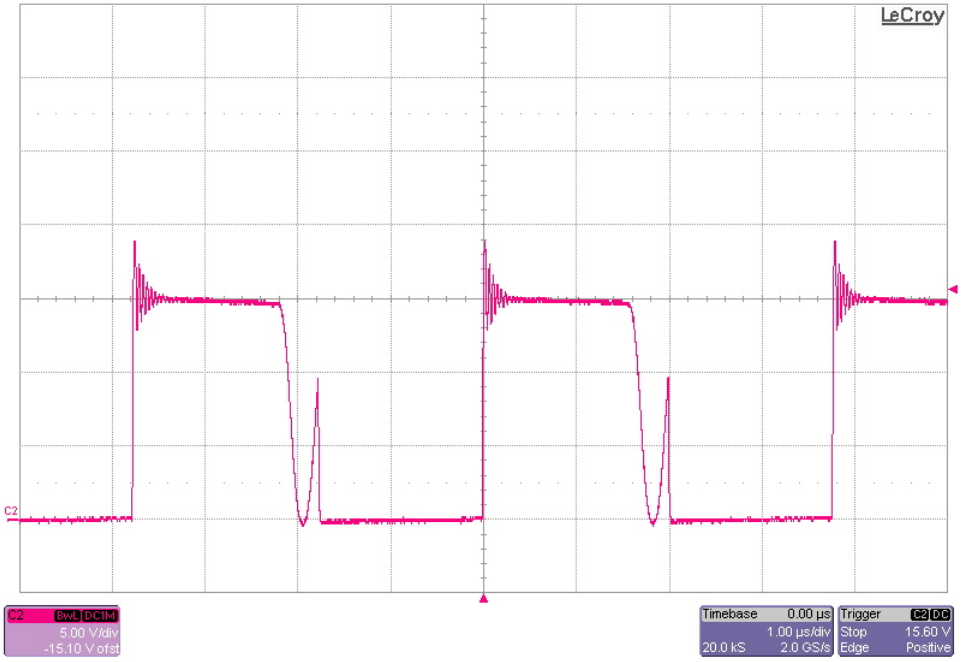
The photo below is of the N-ch FET drain waveform. The input voltage is 10Vand the output is loaded to 150mA. (5V/DIV, 1uS/DIV)



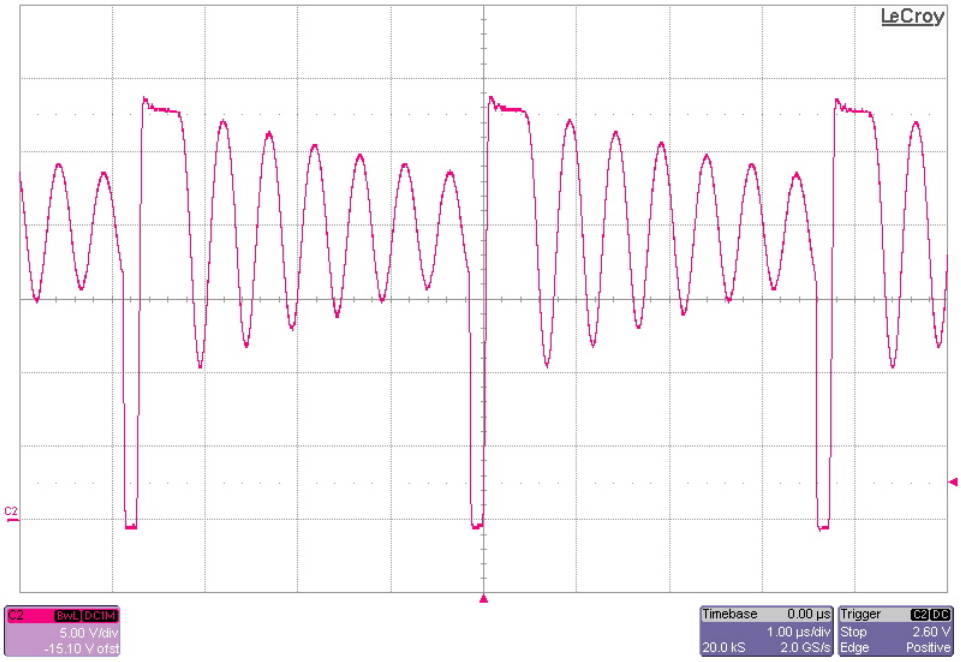
The photo below is of the N-ch FET drain waveform. The input voltage is 20Vand the output is loaded to 150mA. (5V/DIV, 1uS/DIV)



The photo below is of the N-ch FET drain waveform. The input voltage is 7Vand the output is loaded to 150mA. (5V/DIV, 1uS/DIV)



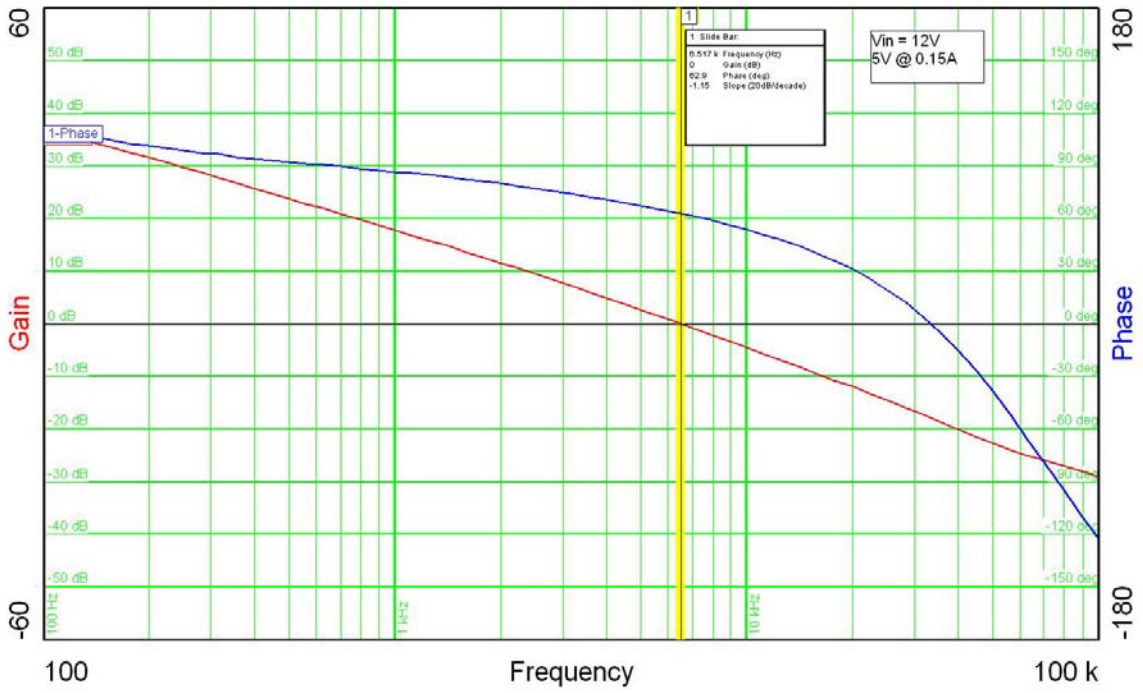
The photo below is of the N-ch FET drain waveform. The input voltage is 20Vand the output is loaded to 5mA. (5V/DIV, 1uS/DIV)



7 Loop Gain

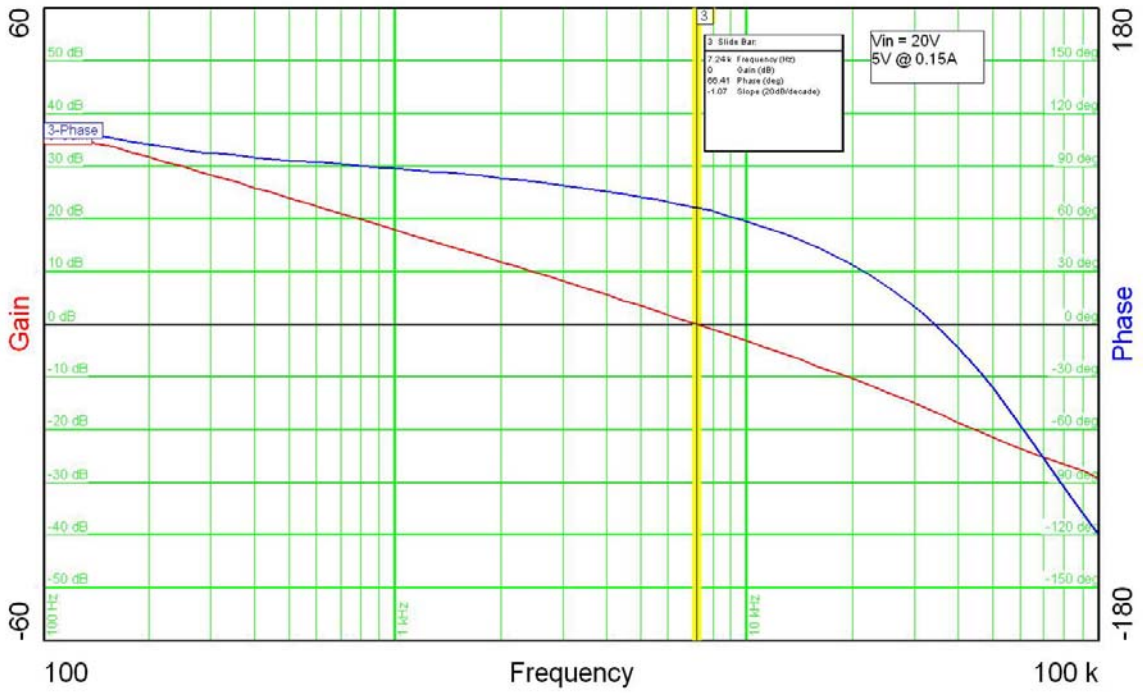
The plot below shows the loop gain at 12V input voltage. The output loaded at 150mA.

Loop Gain ; BW: 6.5KHz PM: 63 degrees



The plot below shows the loop gain at 20V input voltage. The output loaded at 150mA.

Loop Gain ; BW: 7.2KHz PM: 66 degrees



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