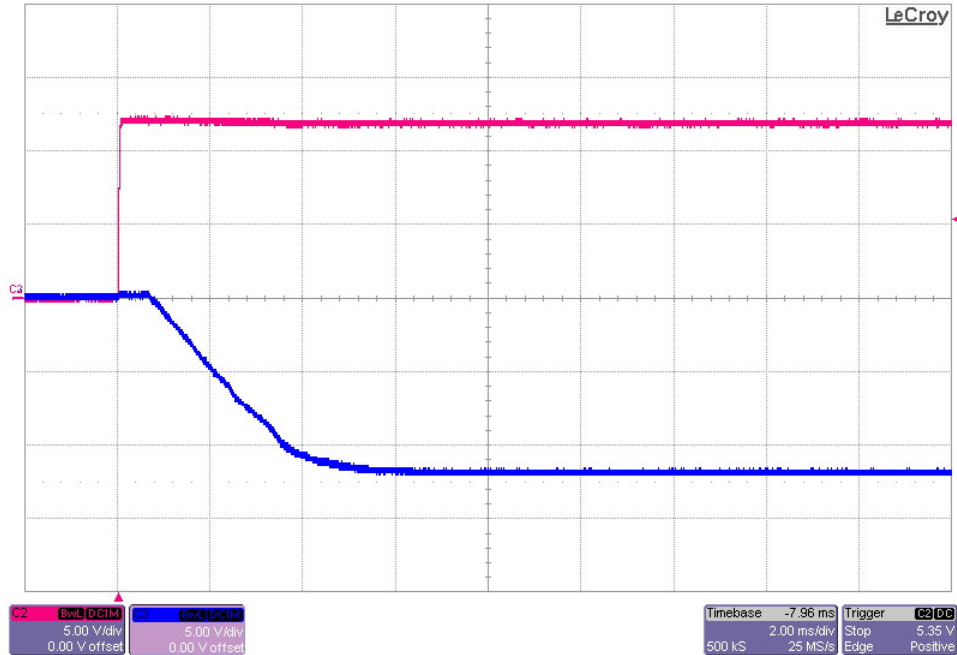
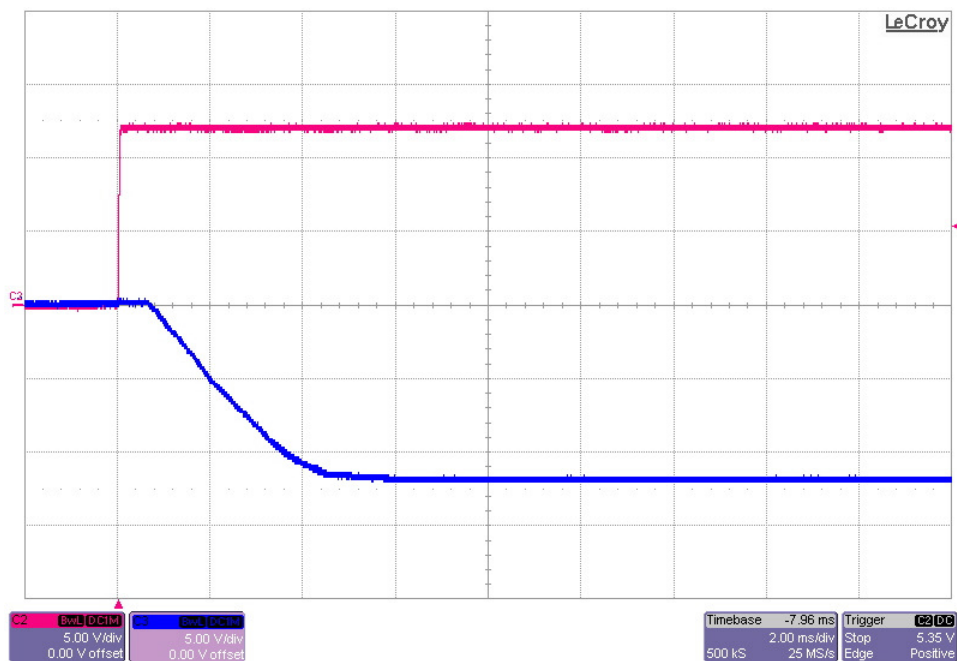


1 Startup

The photo below shows the output voltage startup waveform after the application of 12V in. The output is -12V at 100mA. (5V/DIV, 2mS/DIV)

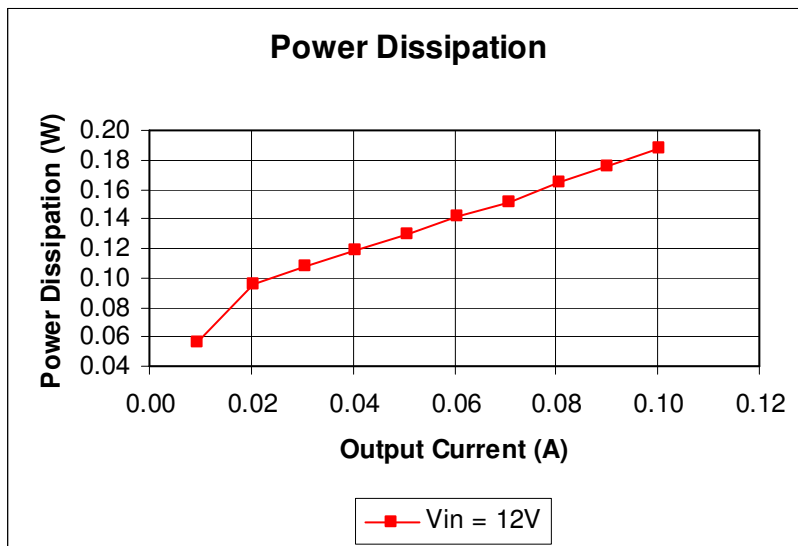
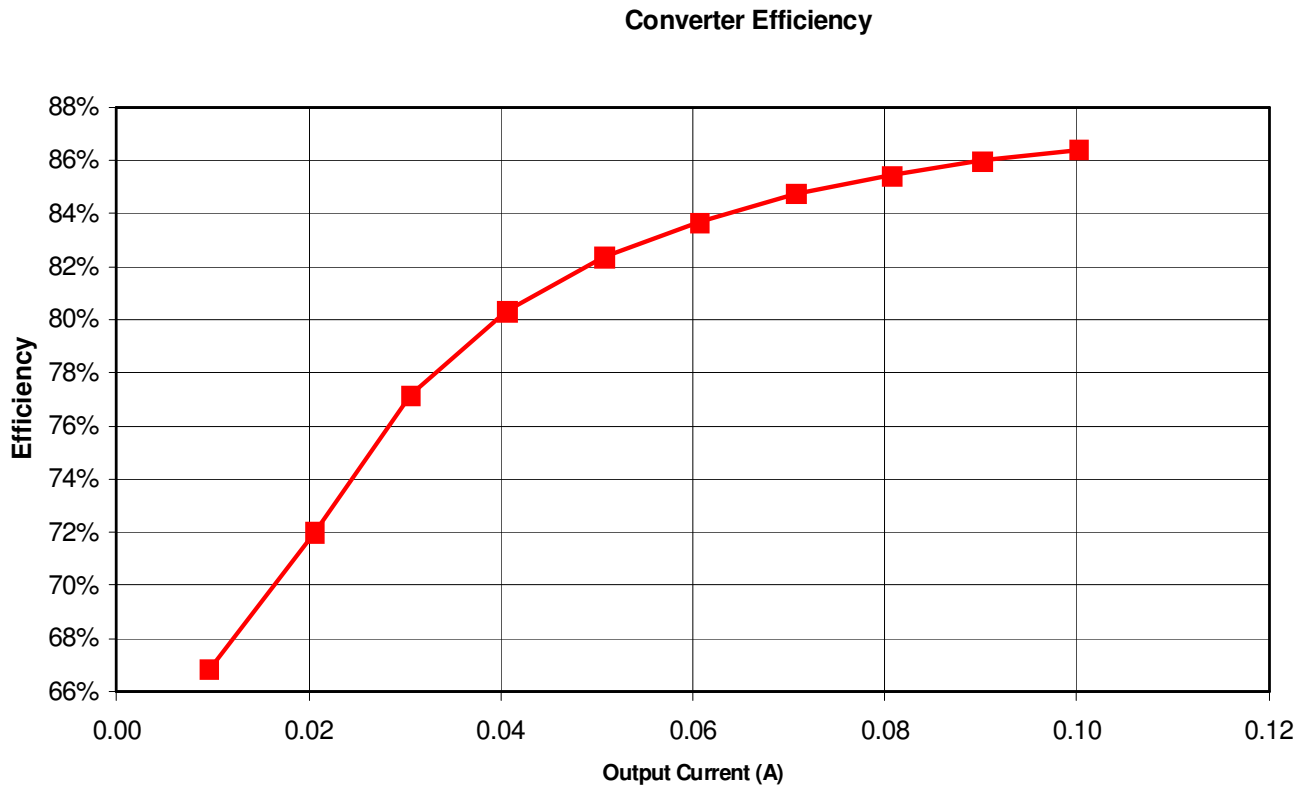


The photo below shows the output voltage startup waveform after the application of 12V in. The output is -12V at 0A. (5V/DIV, 2mS/DIV)



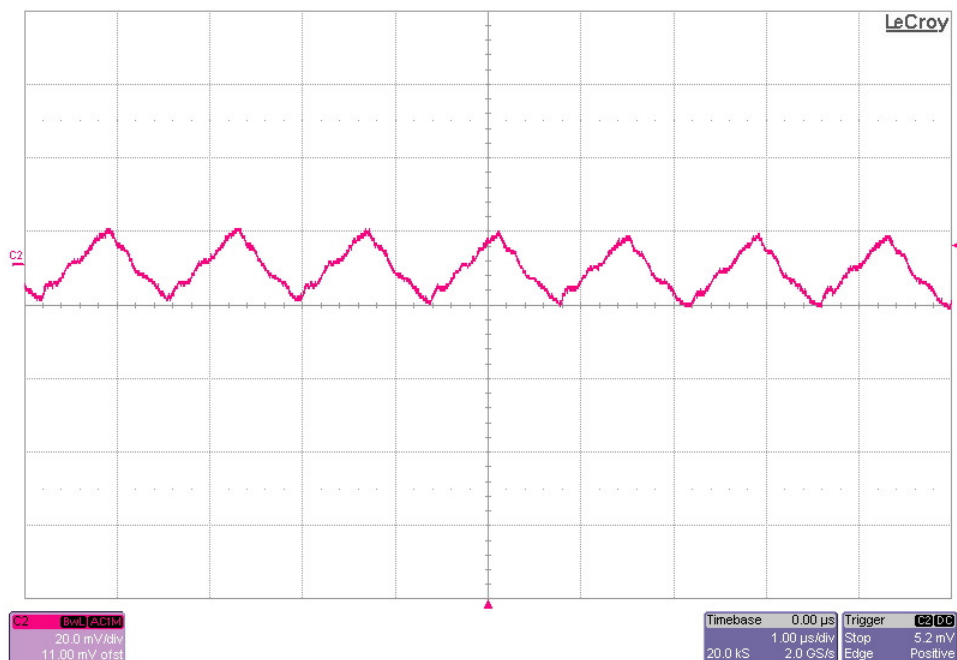
2 Efficiency

The converter efficiency is shown in the figure below. $V_{in} = 12V$, $V_{out} = -12V$



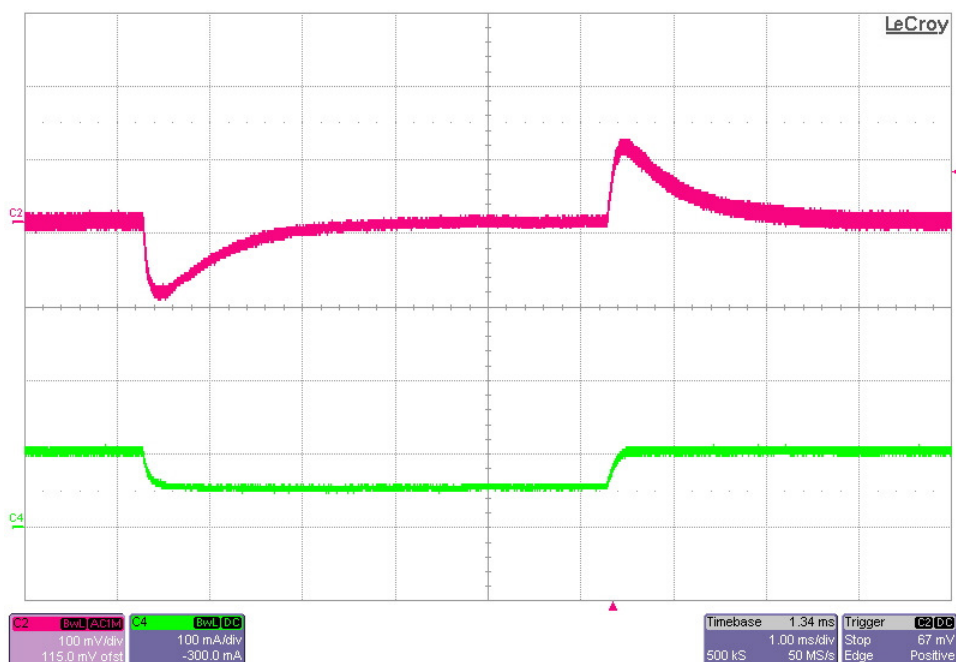
3 Ripple Voltage

The -12V ripple voltage (AC coupled) is shown in the figure below. The output was loaded to 100mA and the input voltage set to 12V. (20mV/DIV, 1uS/DIV)

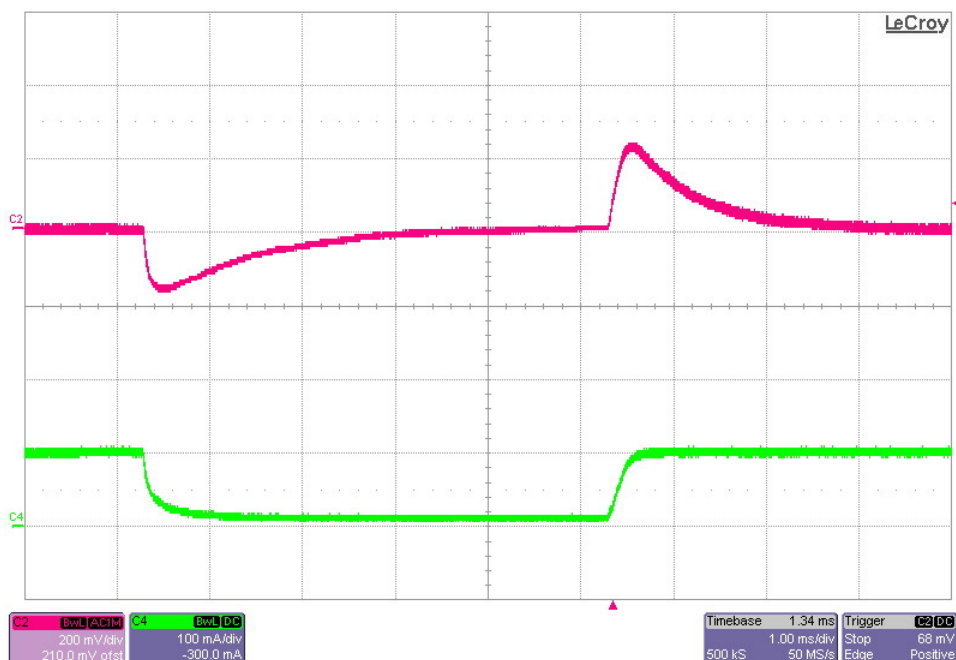


4 Load Transients

The photo below shows the -12V output voltage (ac coupled) when the load current is stepped between 50mA and 100mA. $V_{in} = 12V_{dc}$. (100mV/DIV, 100mA/DIV, 1mS/DIV)

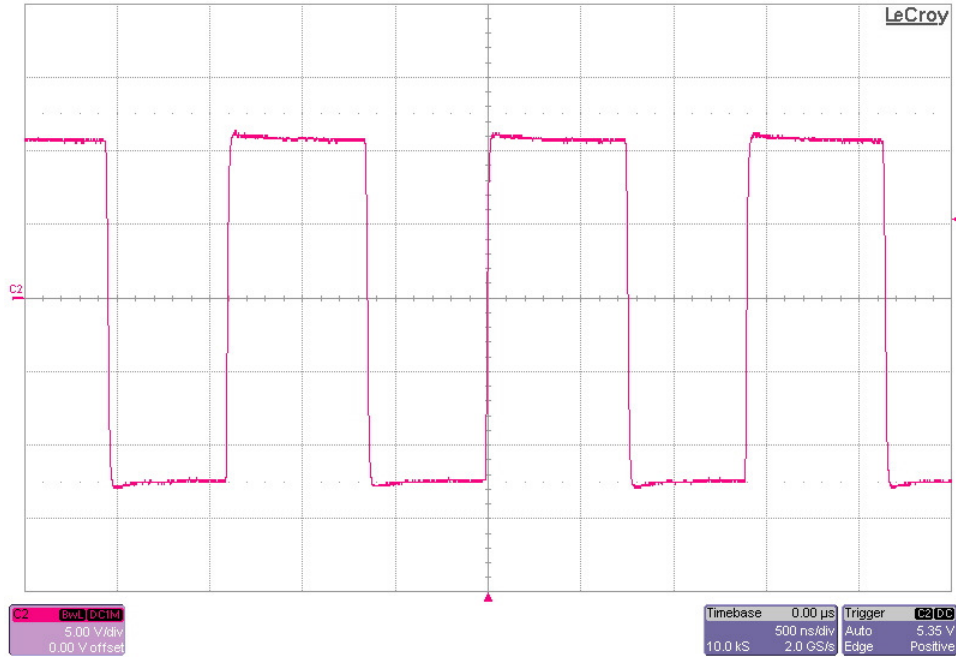


The photo below shows the -12V output voltage (ac coupled) when the load current is stepped between 10mA and 100mA. $V_{in} = 12V_{dc}$. (200mV/DIV, 100mA/DIV, 1mS/DIV)

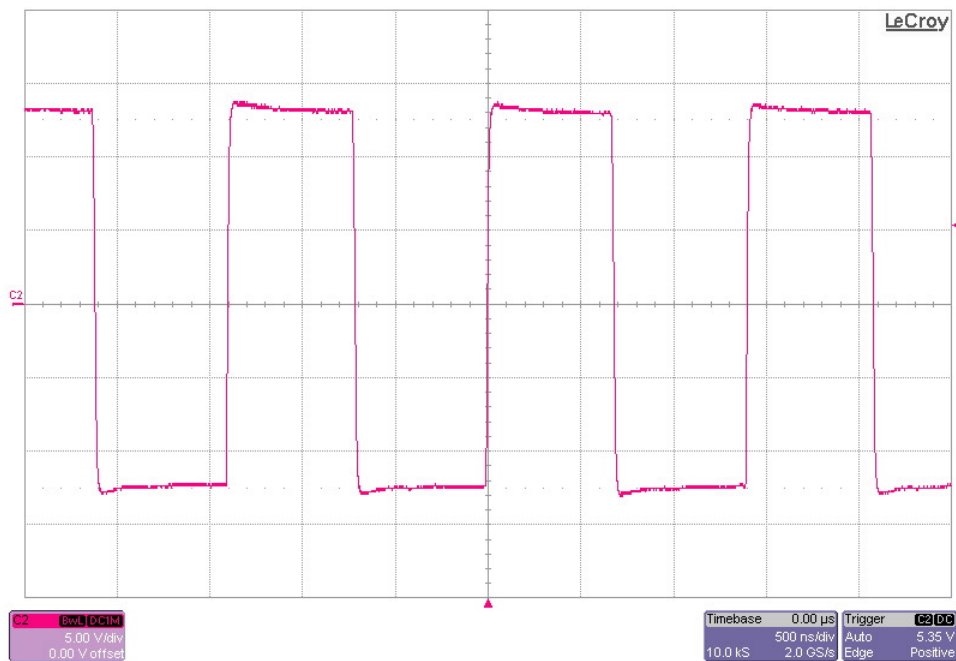


5 Switch Node Waveforms

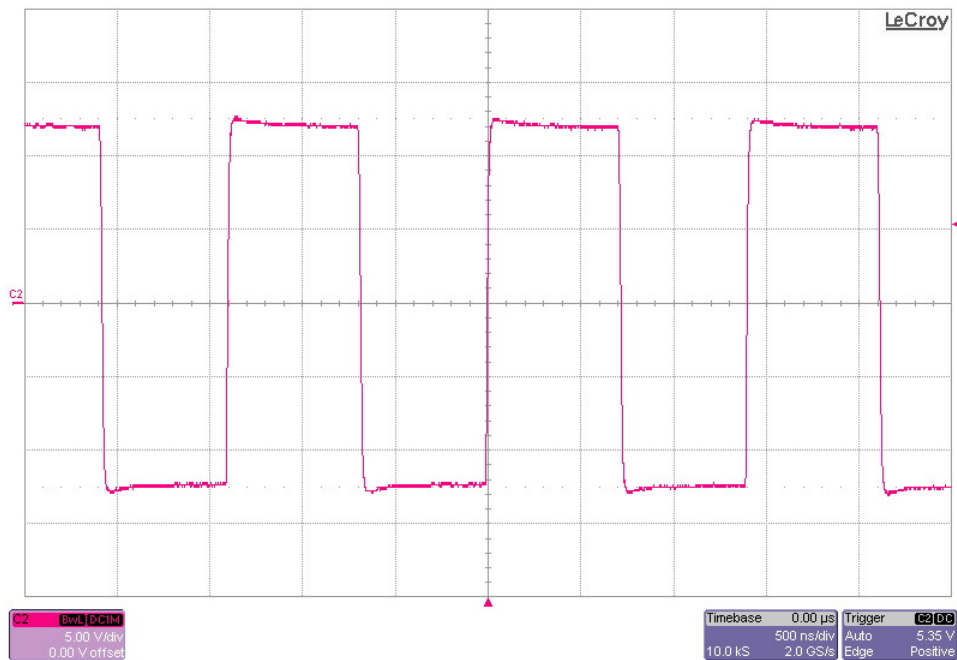
The photo below shows the FET switch node voltage (TP6). The input voltage is 10.8V and the output is -12V at 100mA. (5V/DIV, 500nS/DIV)



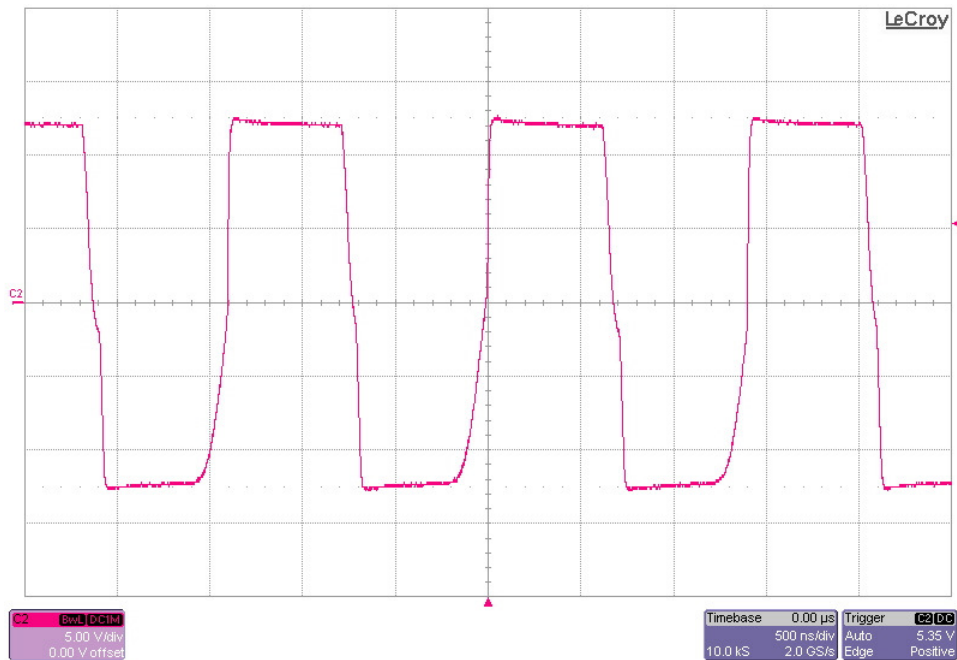
The photo below shows the FET switch node voltage (TP6). The input voltage is 13.2V and the output is -12V at 100mA. (5V/DIV, 500nS/DIV)



The photo below shows the FET switch node voltage (TP6). The input voltage is 12V and the output is -12V at 100mA. (5V/DIV, 500nS/DIV)



The photo below shows the FET switch node voltage (TP6). The input voltage is 12V and the output is -12V at 10mA. The converter is operating in discontinuous mode. (5V/DIV, 500nS/DIV)



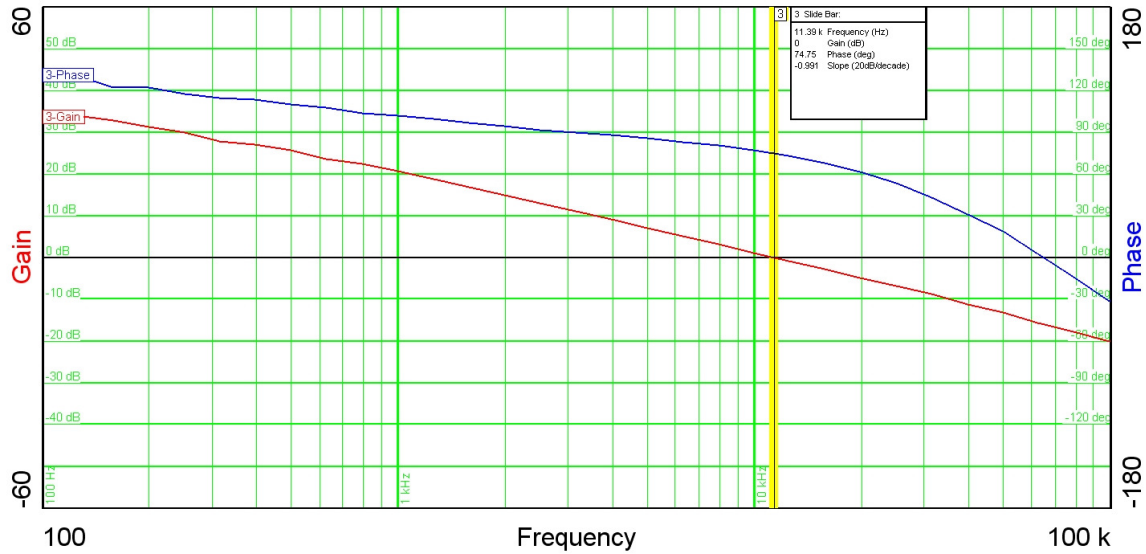
6 Control Loop Gain / Stability

The plot below shows the loop gain and phase margin with the -12V output loaded to 100mA. The input voltage was set to 12V.

Band Width = 11.4KHz

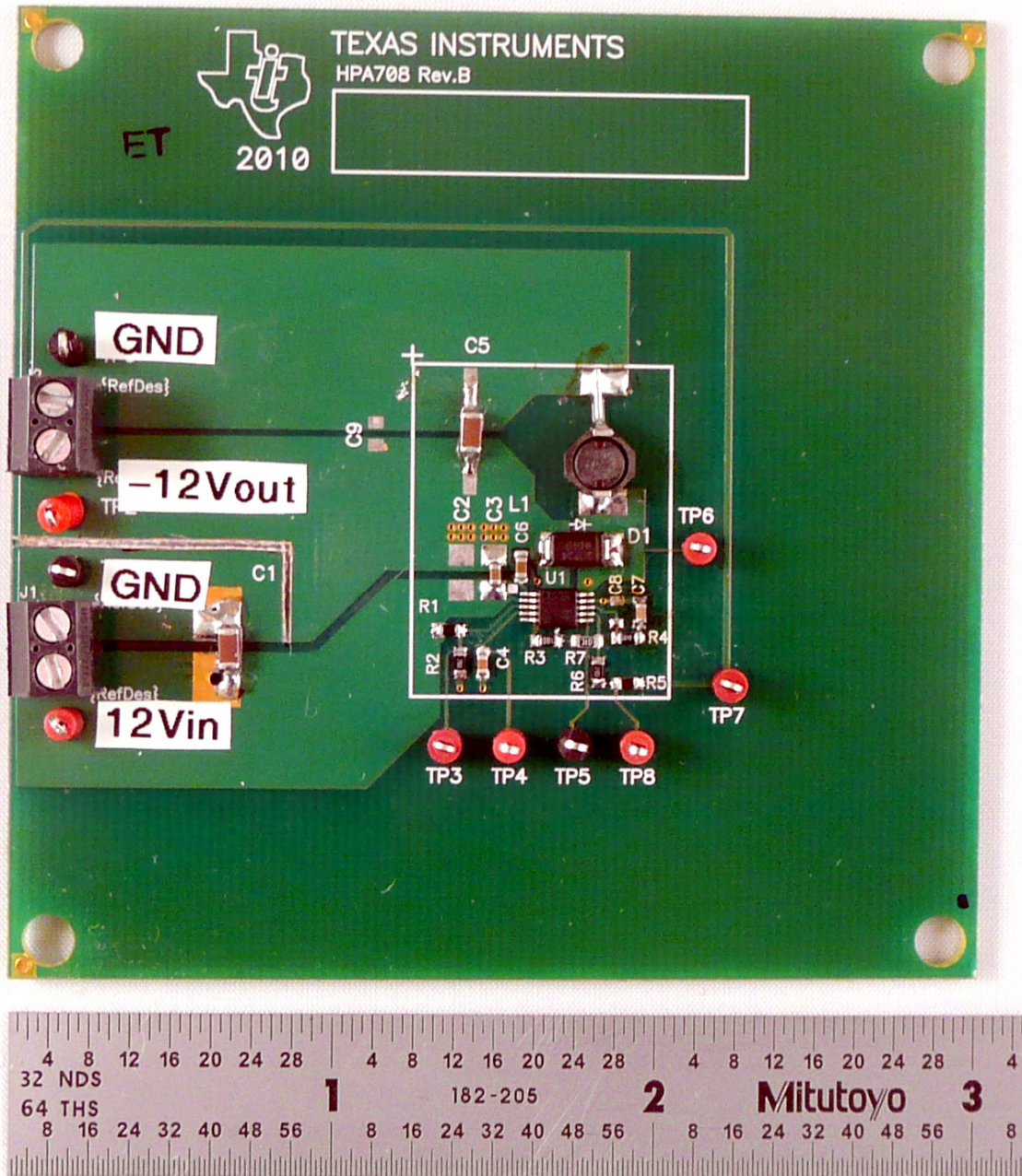
Phase Margin = 75 degrees

(12Vin)



7 Photo

The photo below shows the PMP7330 REVB assy, built on the HPA708 REVB PWB with mods.



8 Thermal Image

A thermal image is shown below while operating at 12V input and -12V at 100mA output, with no airflow.



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