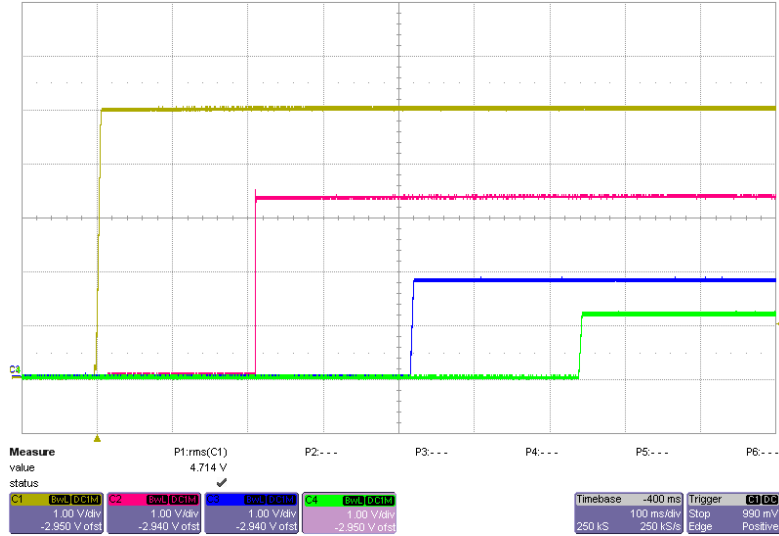


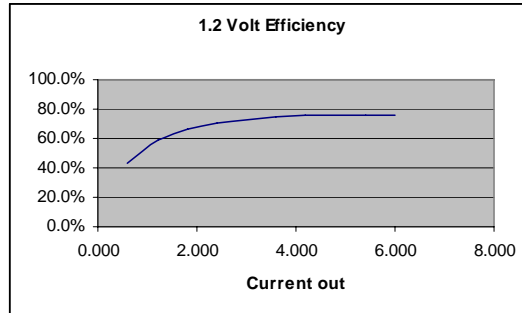
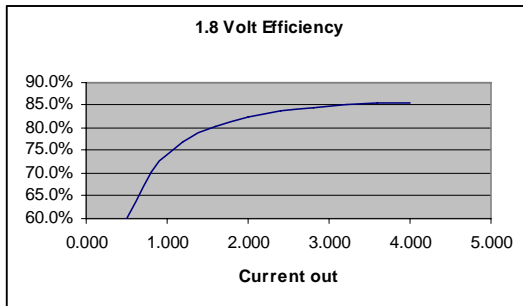
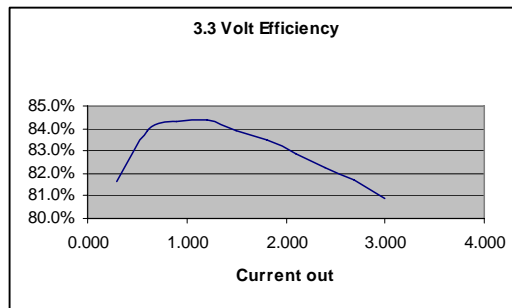
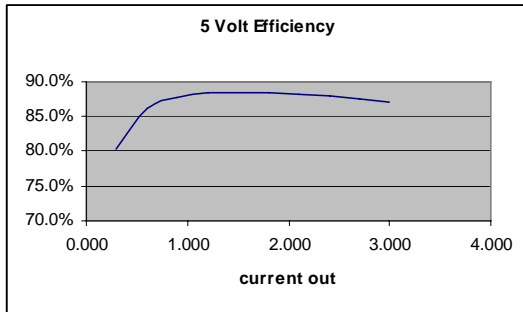
1 Startup

The startup waveform is shown in the figure below. The input voltage was set at 12V, with no load on the outputs. 100 mSec/div horizontal.



2 Efficiency

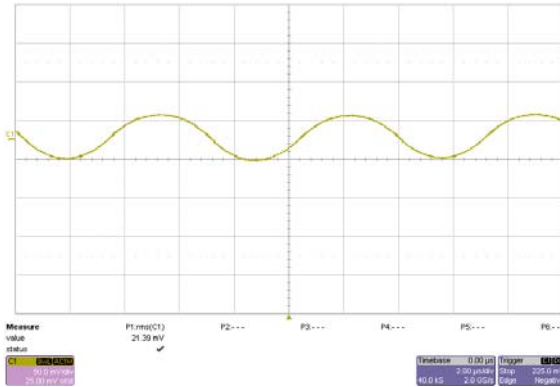
The efficiency is shown in the figures below.



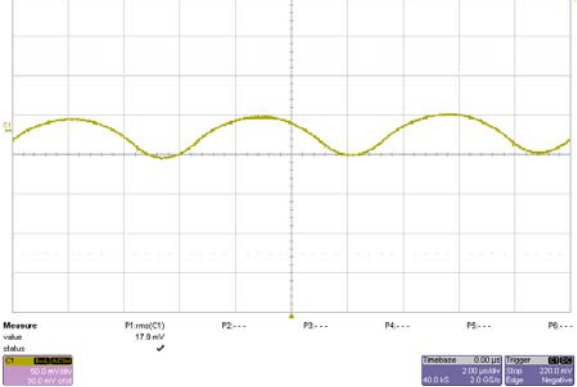
3 Output Ripple Voltage

The output ripple voltage is shown in the figures below.

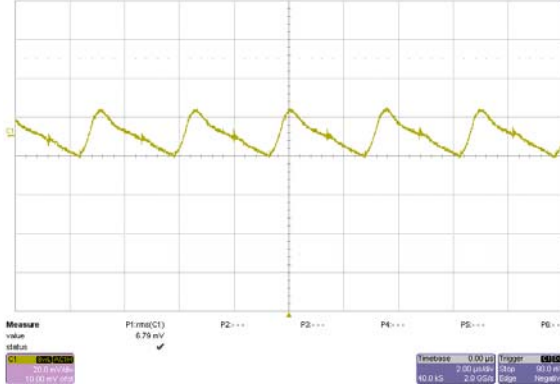
This image is the 5V at 3A load. (50mV/div)



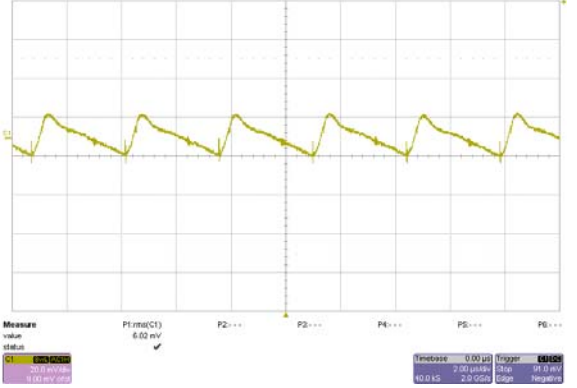
This is the 3.3V at 3A load (50 mV/div)



Here is the 1.8V at 4A load (20mV/div)

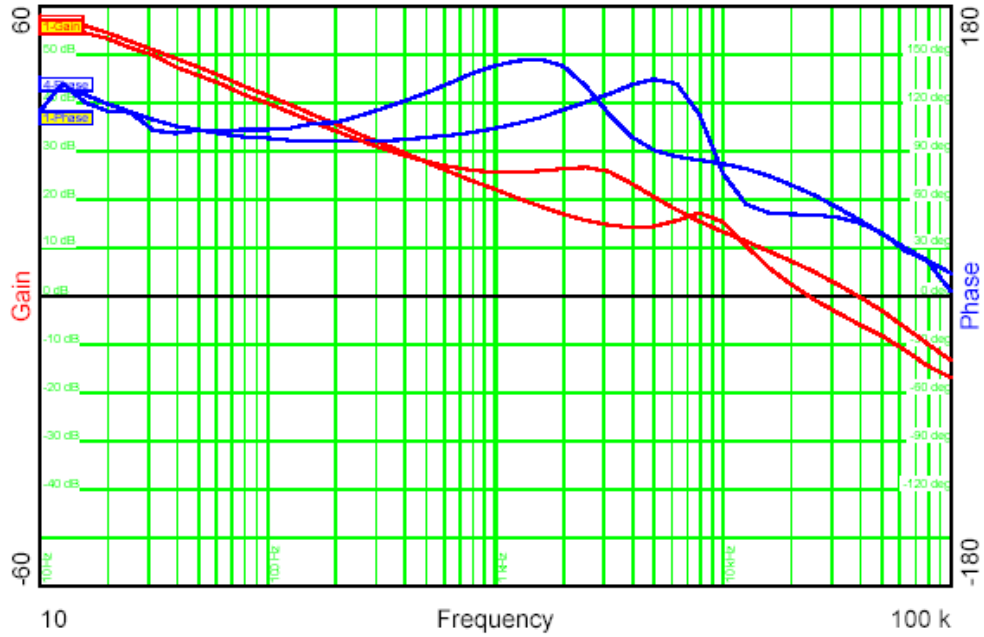


and the 1.2V at 6A load (20mV/div)



4 Frequency Response

The figure below shows the loop responses of the two types of switchers with a 12V input, and a nominal load. The TPS40190 loop has the greater bandwidth. Each has greater than 45 degrees phase margin and 10 dB gain margin.



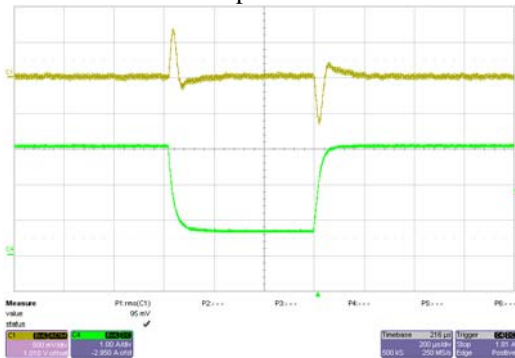
5 Load Transients

The figures below show the response of the 5V output to load transients. The input voltage was set to 12V.

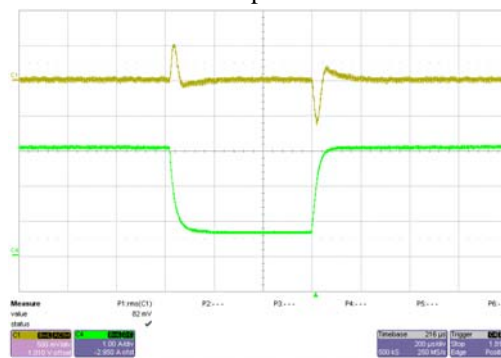
Channel 1 : Vout (AC coupled)

Channel 4 : Load current

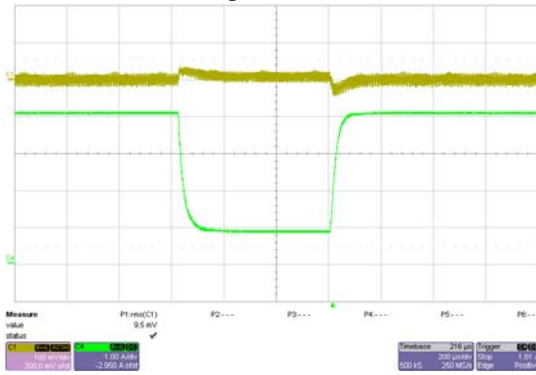
5V @ 500mV/div pulsed from .6A to 3A



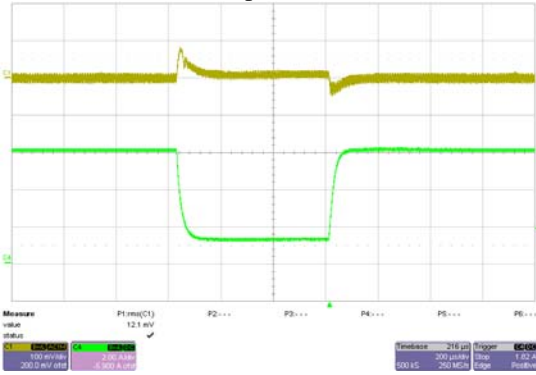
3.3V @ 500mV/div pulsed from .6A to 3A



1.8V @ 100mV/div pulsed from .8A to 4A



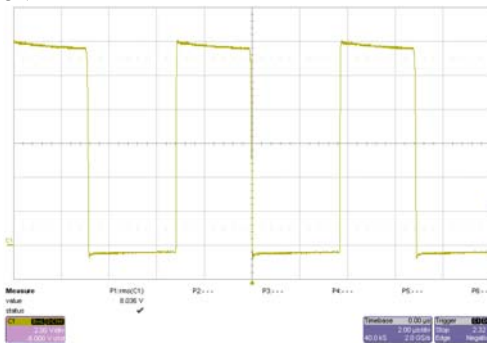
1.2V @ 100mV/div pulsed from 1.2A to 6A



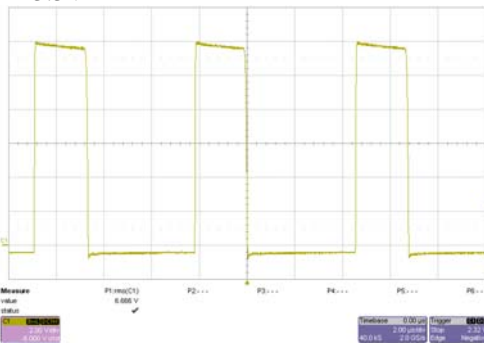
6 Miscellaneous Waveforms

The figure below shows the voltage waveform on the phase nodes

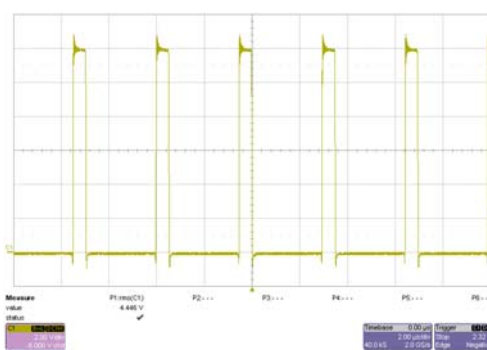
5V



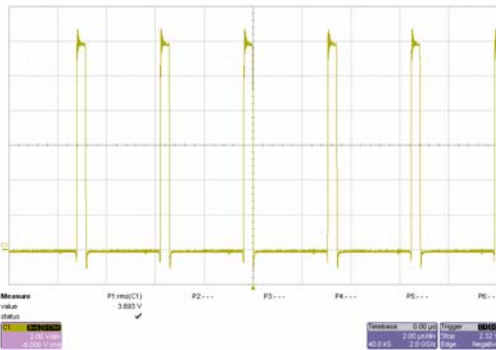
3.3V



1.8V



1.2V



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