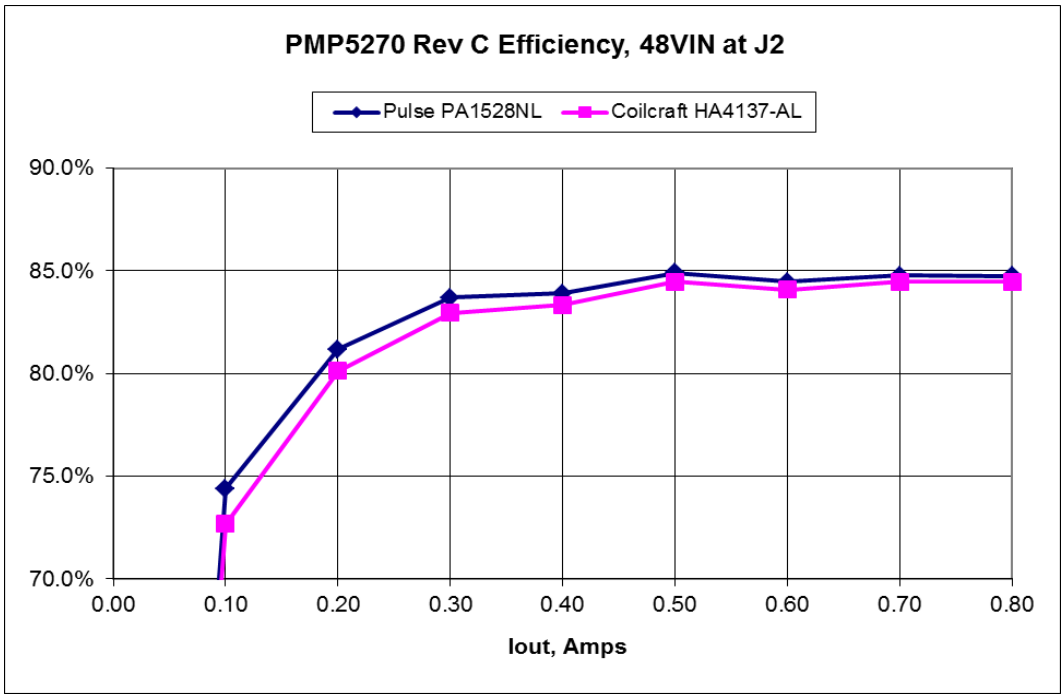
Efficiency

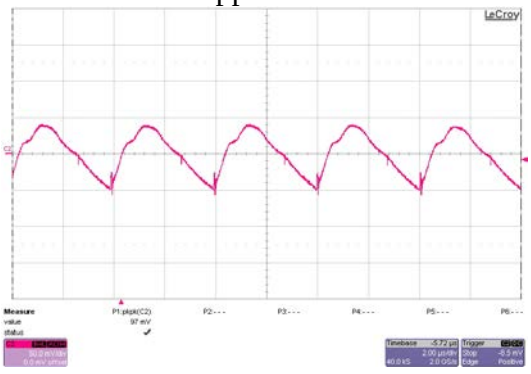
The efficiency of the converter is shown below:



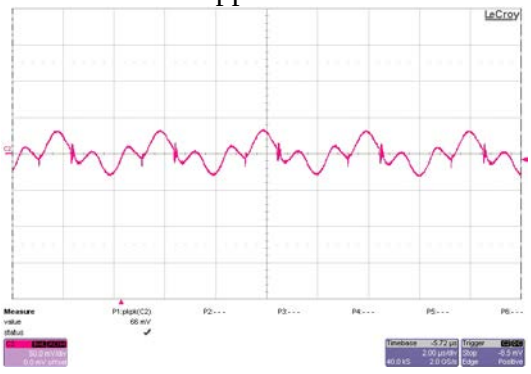
Ripple and Noise

Ripple measurements taken with a 48V input and maximum load on all outputs. The test data is taken with the Coilcraft HA4137-AL transformer. The Pulse PA1528NL transformer test data is virtually identical.

15V ripple across C26, 50mV/div
Measured 97mVpp:

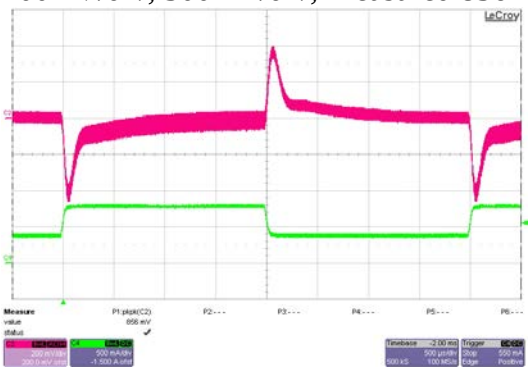


Input ripple across C6, 50mV/div
Measured 66mVpp:



Dynamic Loading

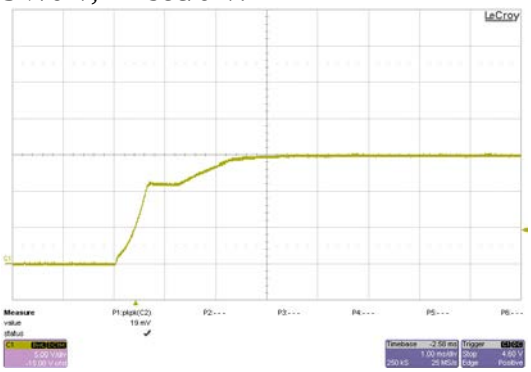
Output load step, 400mA to 800mA, 500usec/div, slew rate 10mA/usec
200mV/div, 500mA/div; Measured 856mVpp:



Turn On Response

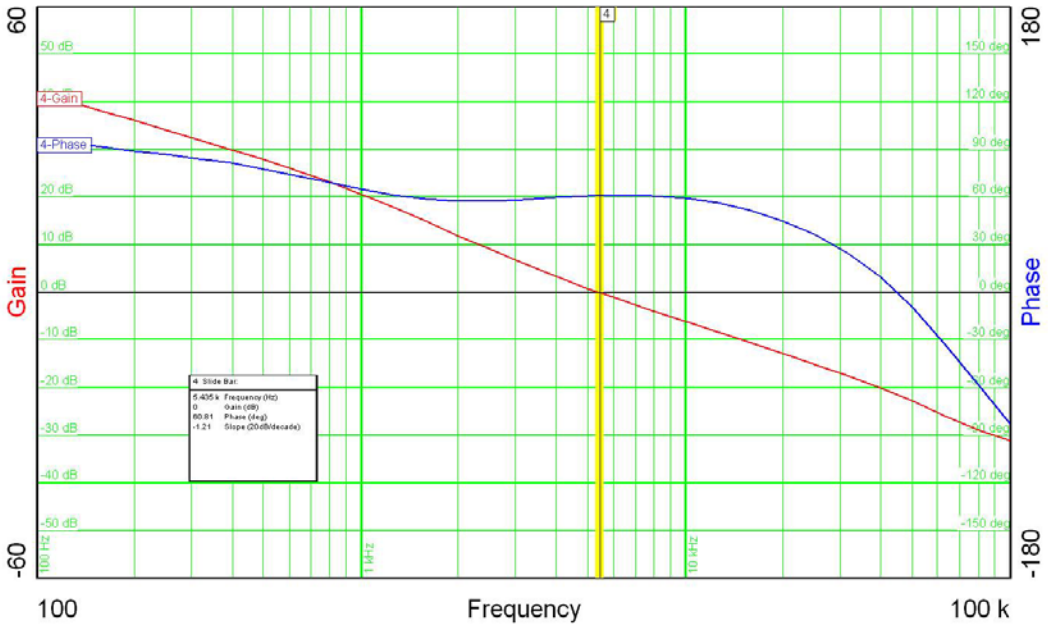
Turn-on response: 48Vin, 800mA load
5V/div; 1msec/div:

Turn-on response: 48Vin, 0A load
5V/div, 1msec/div:

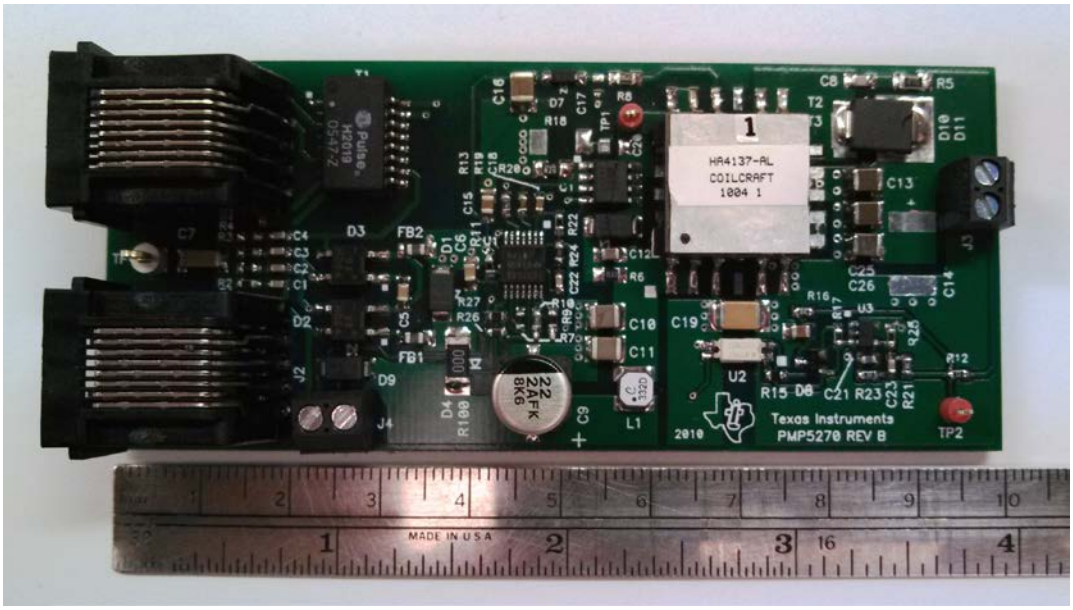


Stability Analysis (Loop Gain)

The figure below is the loop gain of the converter with a 48V input and a 720mA load using the Coilcraft HA4137-AL transformer. The Bandwidth is 5.4 KHz, the Phase Margin is 60 degrees, and the Gain Margin is 23 dB.



Photo



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