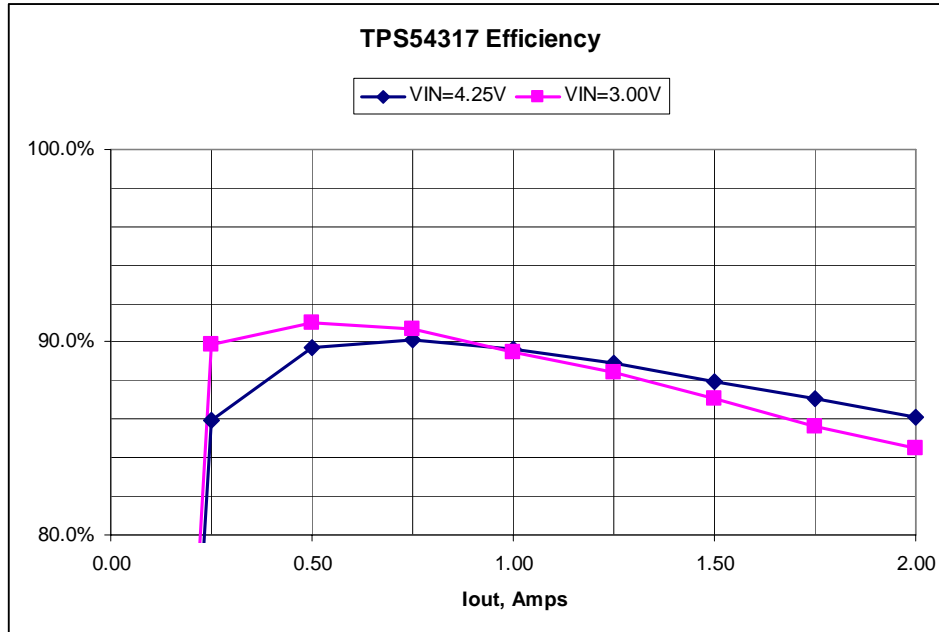


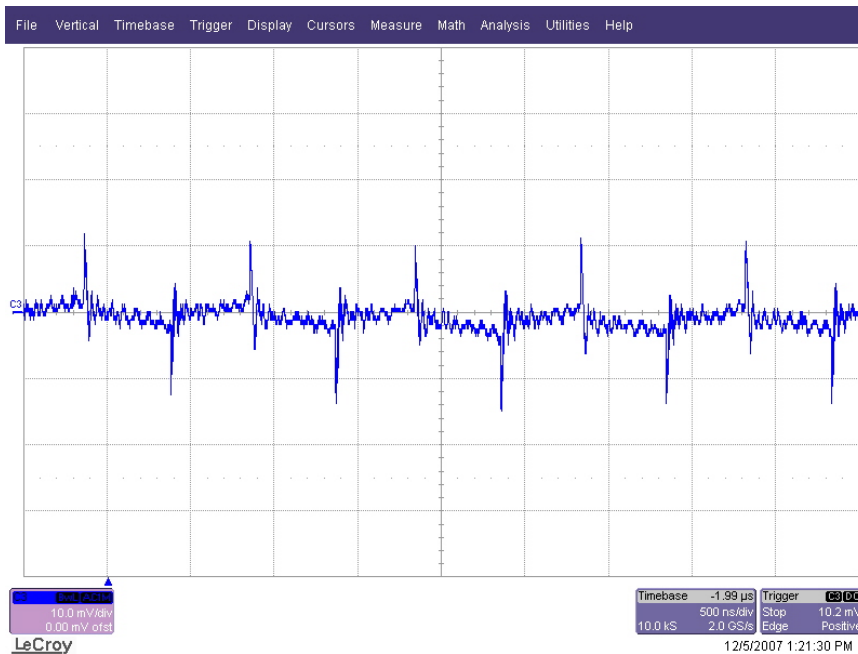
## Efficiency

The efficiency of the TPS54317 converter with a 4.25V and 3.00V input is shown below (input was at C16 and output was at D3 anode):



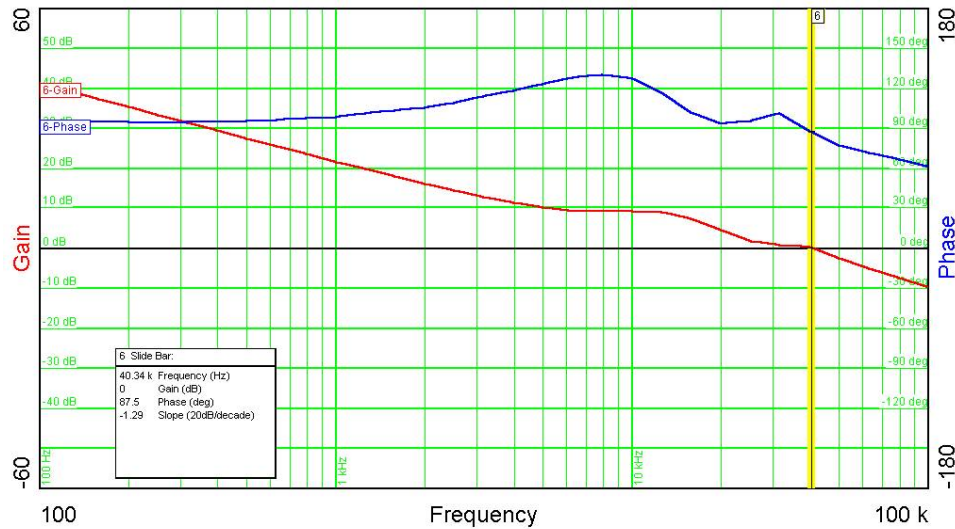
## Output Ripple and Noise

TPS54317 output voltage ripple with 4.25V input and 2A load:



### **Stability Analysis (Loop Gain)**

The figure below is the loop gain of the TPS54317 converter with a 4.25V input and a 2A load. The bandwidth is 40 KHz, the phase margin is 87.5 degrees, and the gain margin is greater than 20dB.



### **Charge Time for Hold Up Capacitors**

With a nominal 1.8V input, the hold up capacitors charge to 4.27V in 6 minutes, 35 seconds. At this point, the TPS61030 converter turns off. When the hold up voltage drops to 4.22V, the TPS61030 converter turns back on to re-charge the hold up capacitors to 4.27V.

The hold up capacitors charge directly from the 1.8V input until the hold up voltage is greater than 1.8V; at this point, the TPS61030 converter turns on. This takes approximately 2 minutes and 30 seconds.

### **Hold Up Time**

The hold up time was measured between 57 and 60 seconds with a 2A load at J2.

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