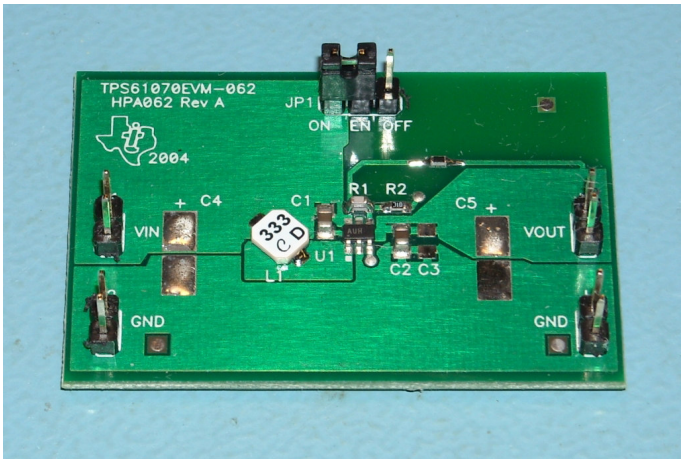
## TPS61070 Boost Circuit - 5.0V @ 70mA

- Input 3.0..3.6V DC
- Output 5.0V @ 70mA
- Modified TPS61070EVM-062



# 1 Startup

The startup waveform is shown in Figure 1. The input voltage is set at 3.3V, with no load on the 5.0V output.

Channel C1: **Input voltage**
1V/div, 100us/div

Channel C2: **Output voltage**
1V/div, 100us/div

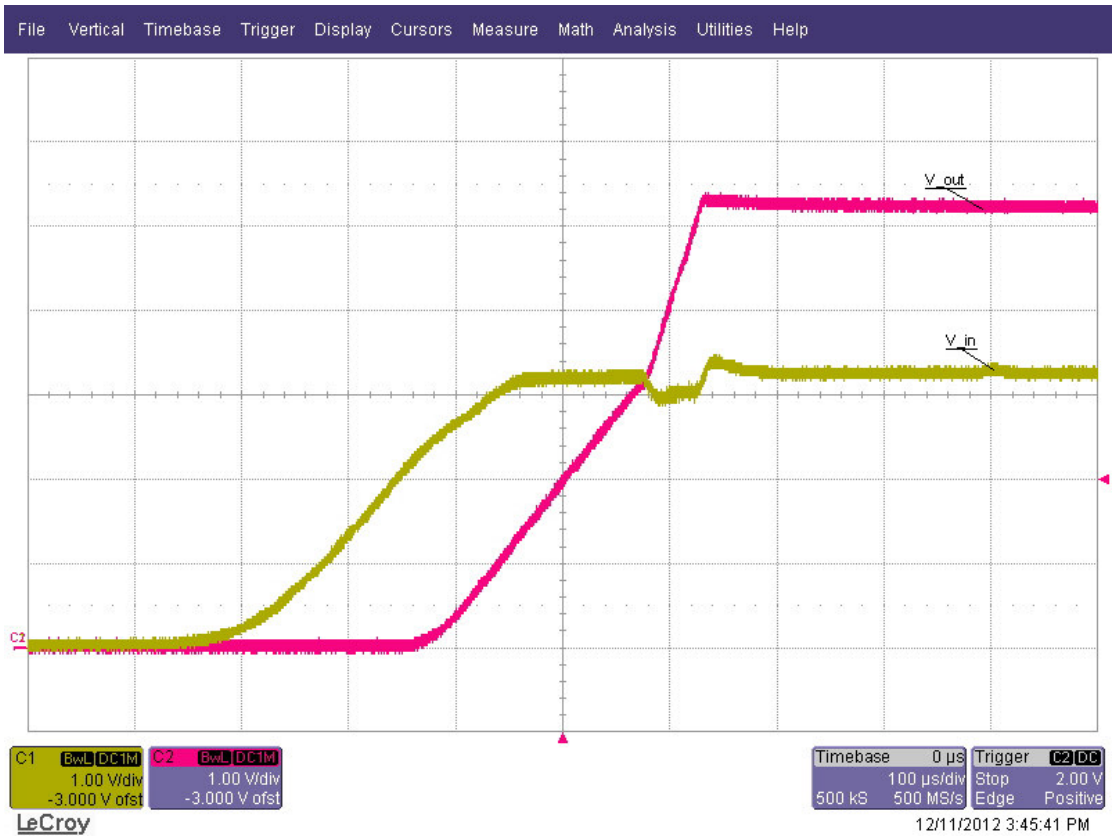



**Figure 1**

## 2 Shutdown

The shutdown waveform is shown in Figure 2. The input voltage is set at 3.3V with a 70mA load on the 5.0V output.

Channel C1: **Input voltage**
1V/div, 500us/div

Channel C2: **Output voltage**
1V/div, 500us/div

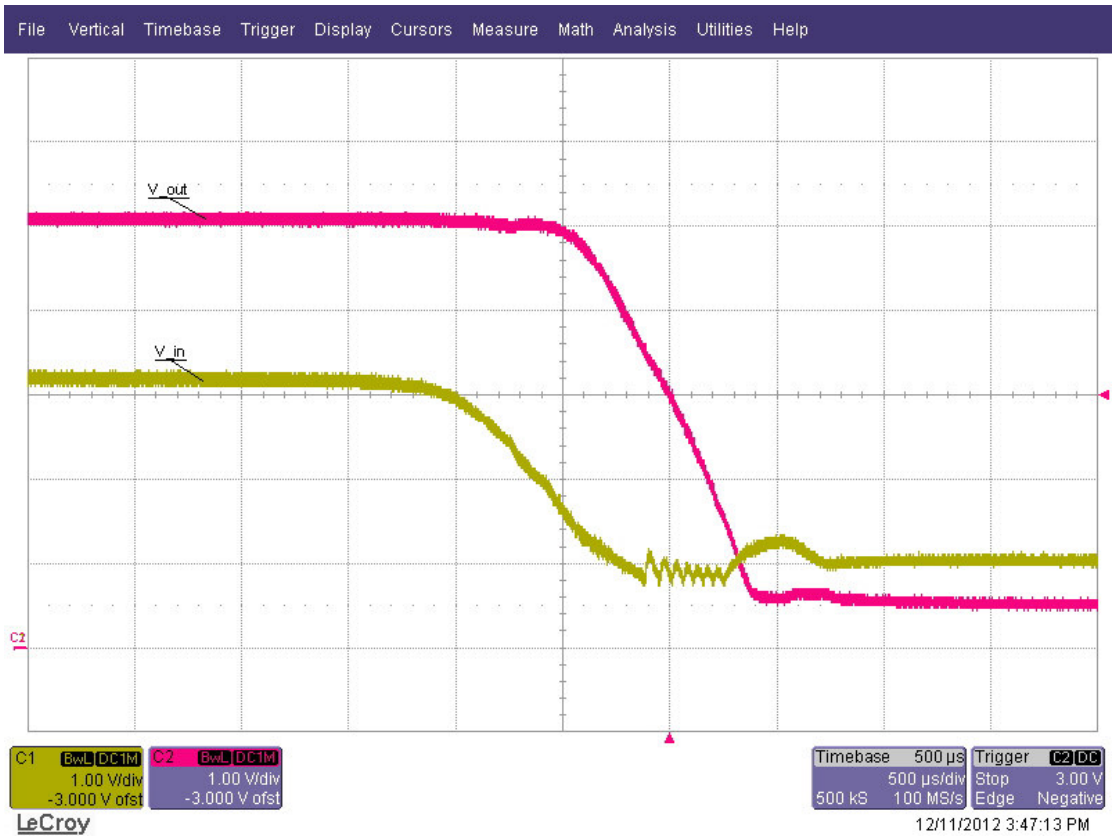



**Figure 2**

# 3 Efficiency

The efficiency and load regulation at 3.3V input voltage is shown in Figure 3 and Figure 4.

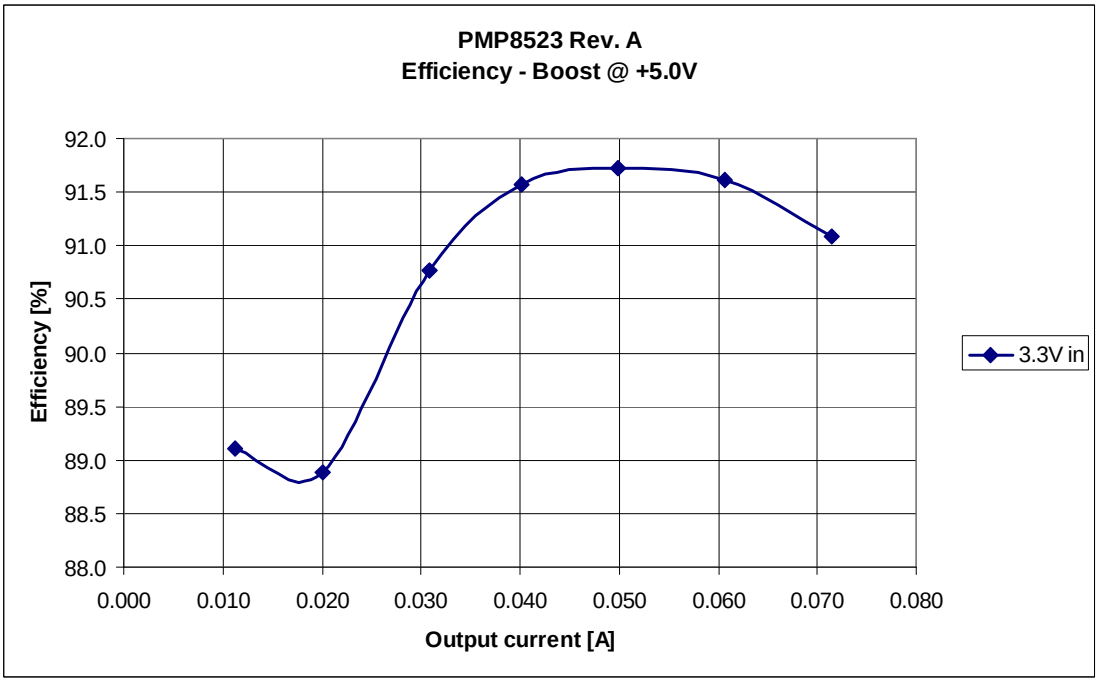



**Figure 3**

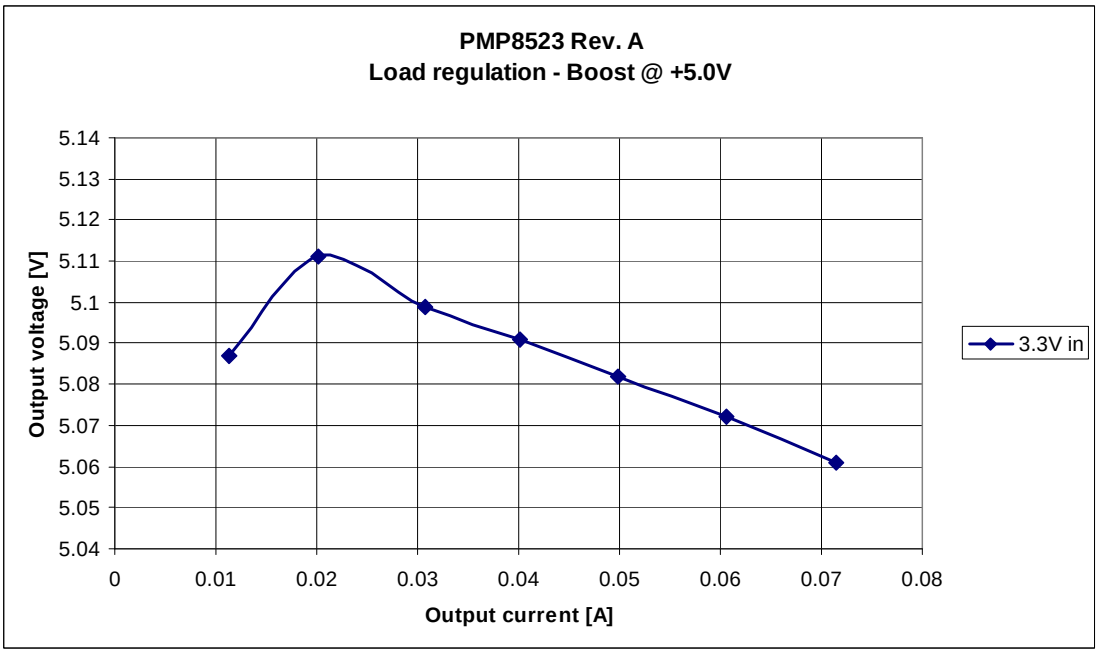



**Figure 4**

# 4 Output ripple voltage

The output ripple voltage at 70mA load and 3.3V input voltage is shown in Figure 5.

Channel C2: **Output voltage**, AC coupled, 10mV peak-peak
20mV/div, 1us/div

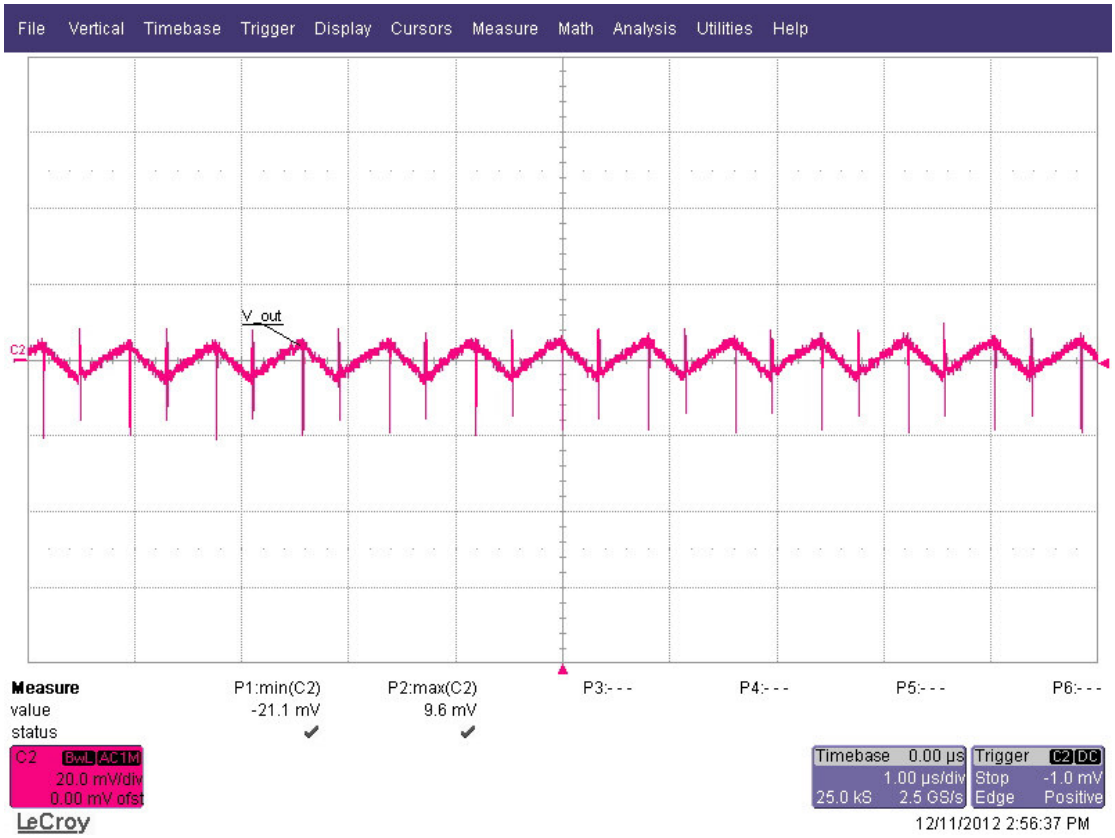



**Figure 5**

## 5 Frequency response

Figure 6 shows the loop response of the 5.0V output with 3.3V input voltage.

**35mA load** 67 deg phase margin @ crossover frequency 12.6 kHz
-17 db gain margin

**70mA load** 71 deg phase margin @ crossover frequency 11.9 kHz
-15 db gain margin

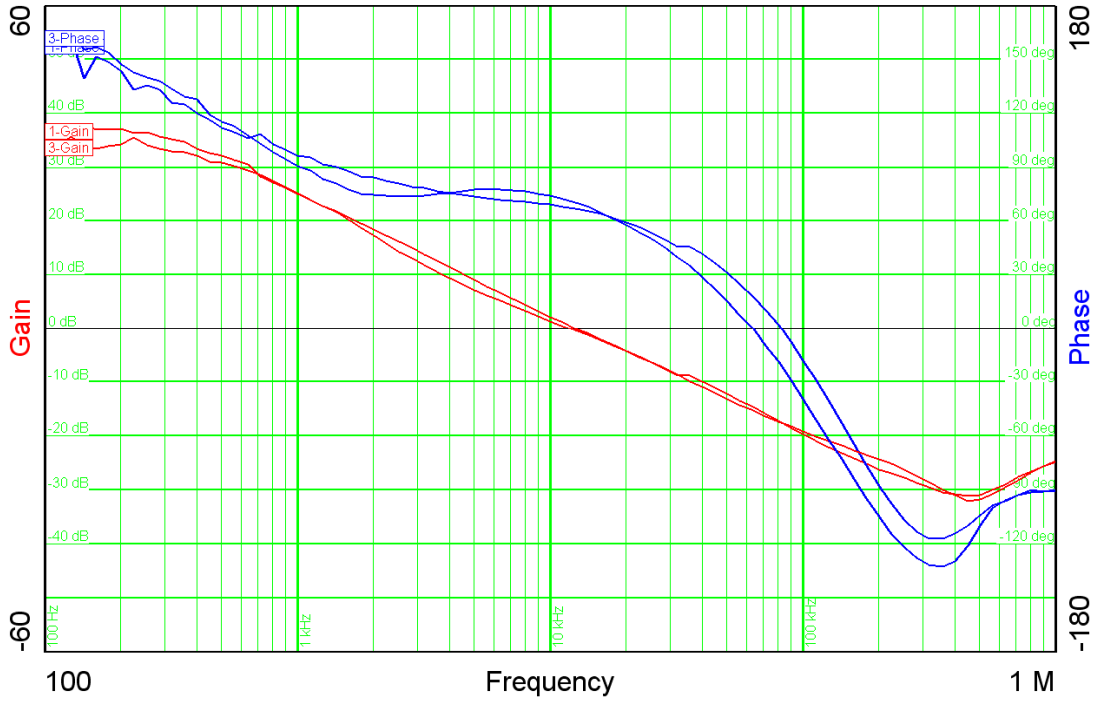



**Figure 6**

# 6 Miscellaneous waveforms

The drain-source voltage on the switching node is shown in Figure 7. The image was captured with 3.3V input and 70mA load.

Channel C2: **Drain-source voltage**, -0.3V minimum voltage, 6.3V maximum voltage
1V/div, 500ns/div

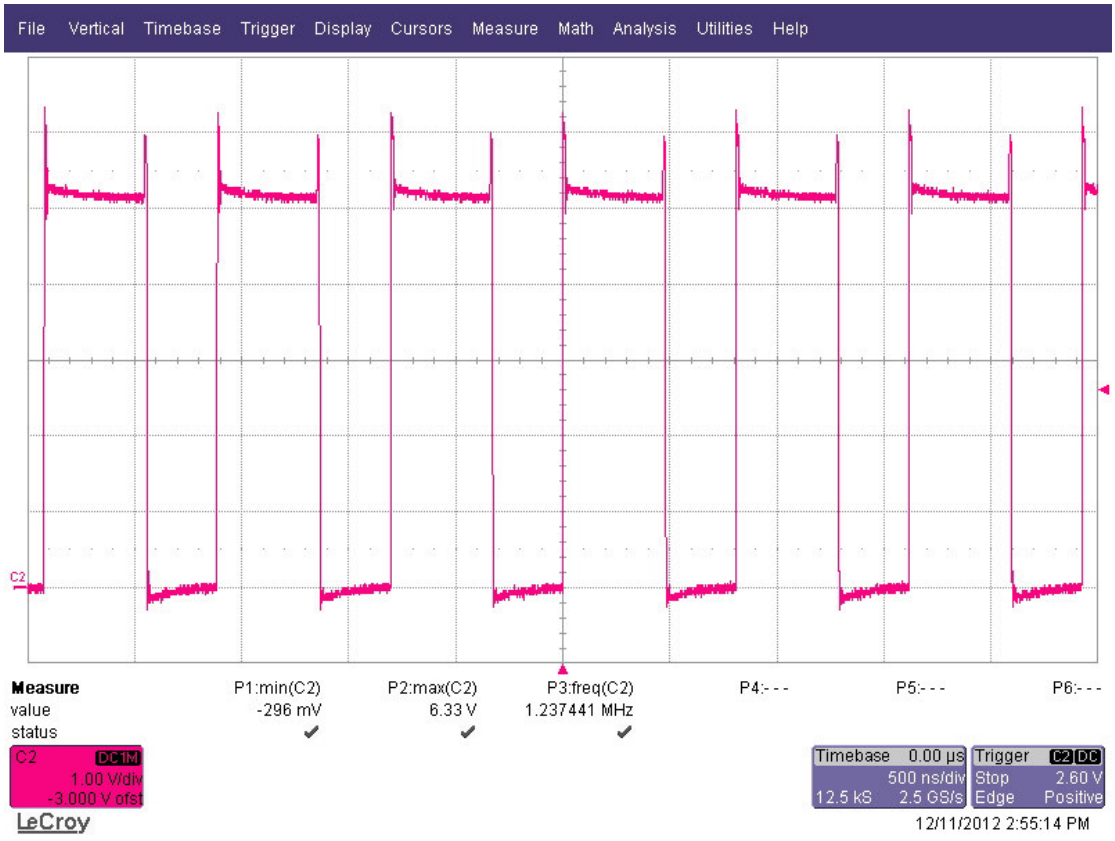



**Figure 7**

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