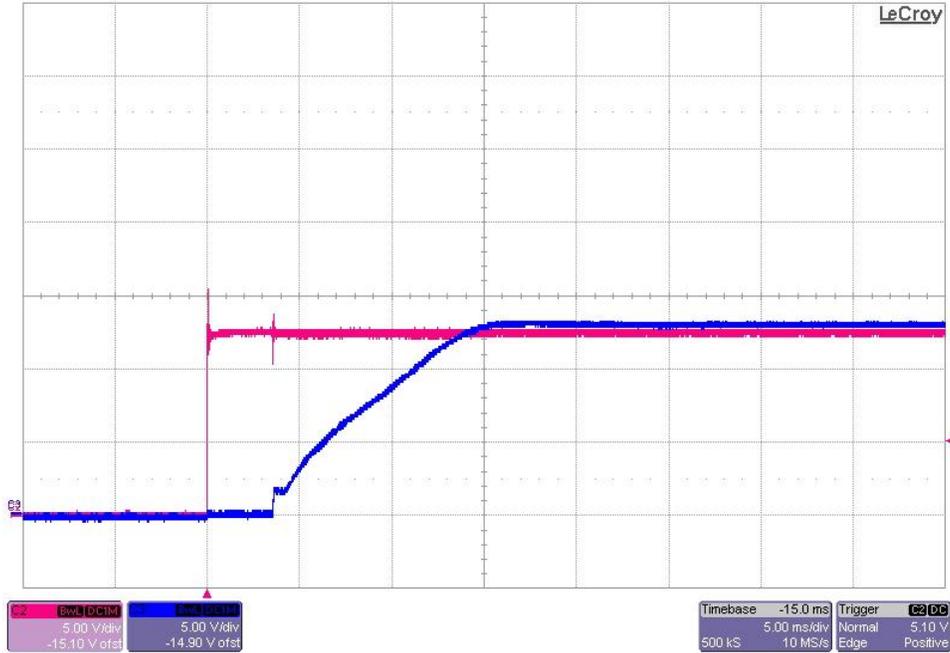
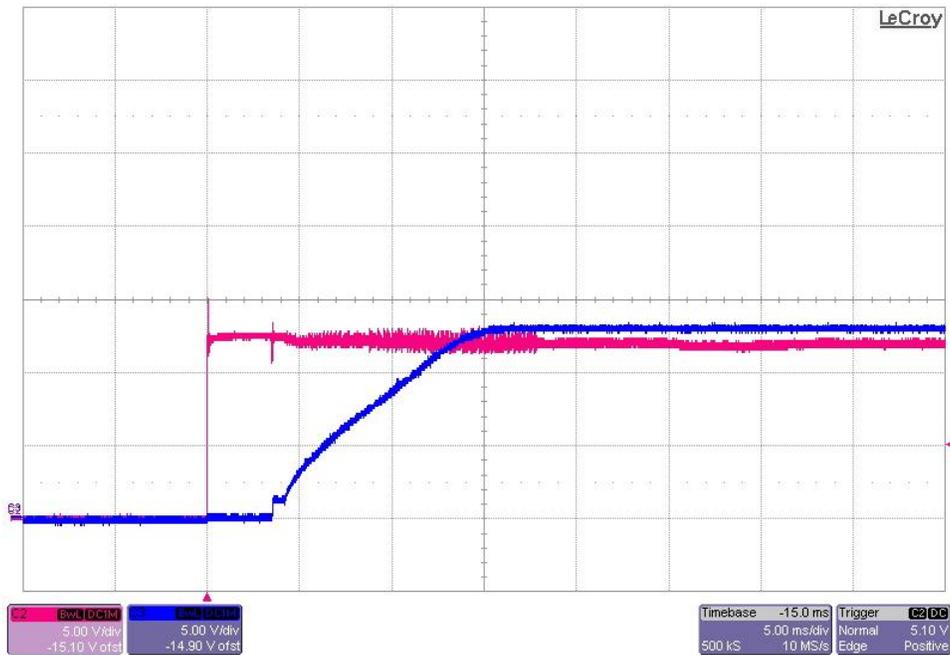


## 1 Startup

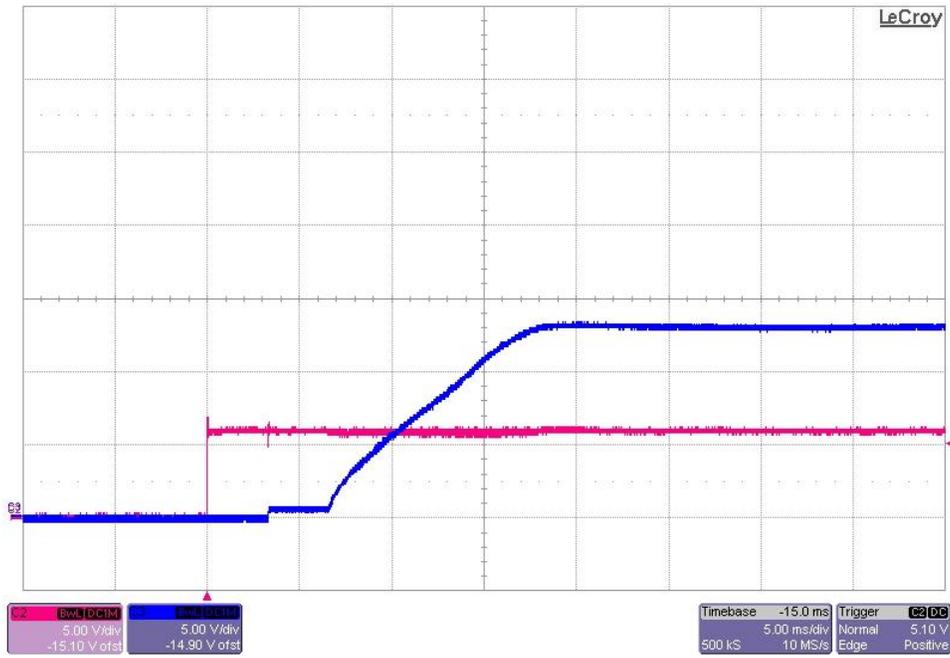
The photo below shows the output voltage startup waveform after the application of 12V in. The 13.2V output was loaded to 0A. (5V/DIV, 5mS/DIV)



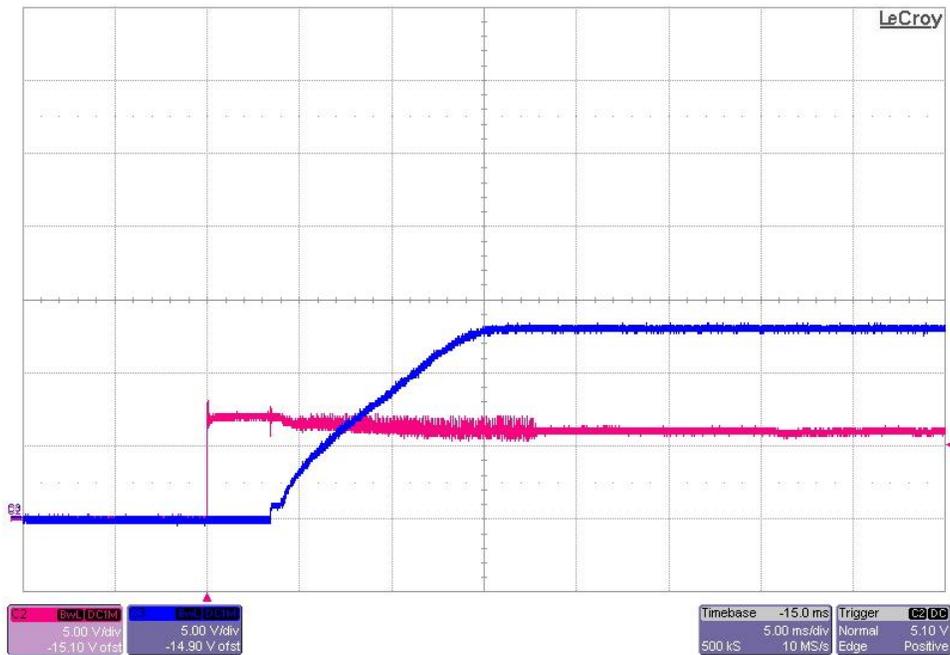
The photo below shows the output voltage startup waveform after the application of 12V in. The 13.2V output was loaded to 3A. (5V/DIV, 5mS/DIV)



The photo below shows the output voltage startup waveform after the application of 6V in. The 13.2V output was loaded to 0A. (5V/DIV, 5mS/DIV)

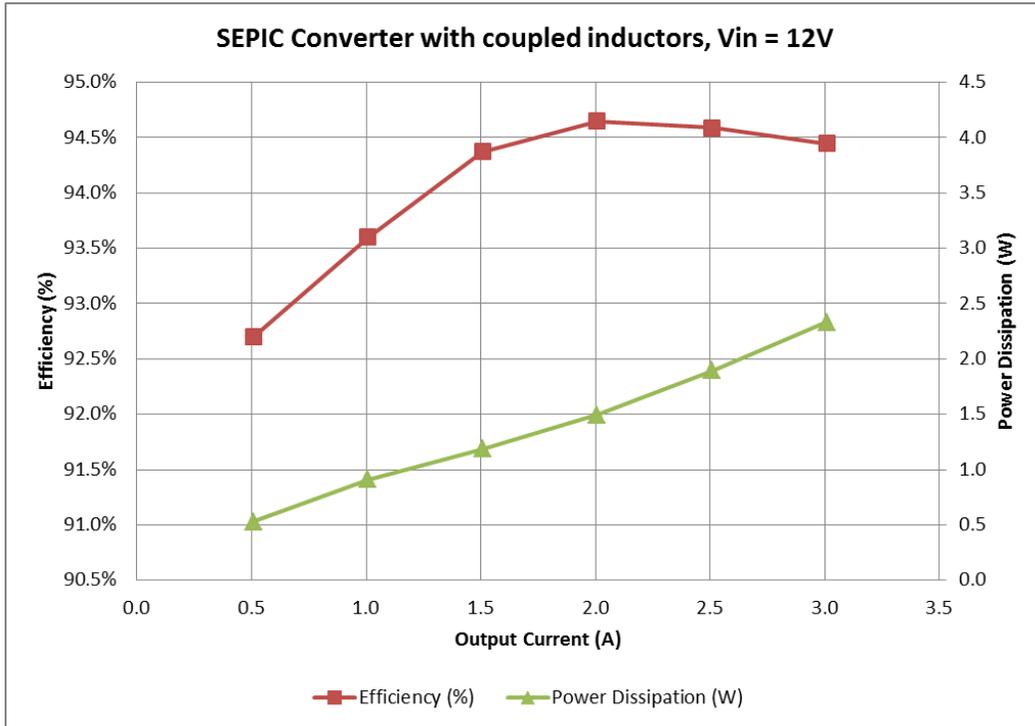


The photo below shows the output voltage startup waveform after the application of 6V in. The 13.2V output was loaded to 3A. (5V/DIV, 5mS/DIV)

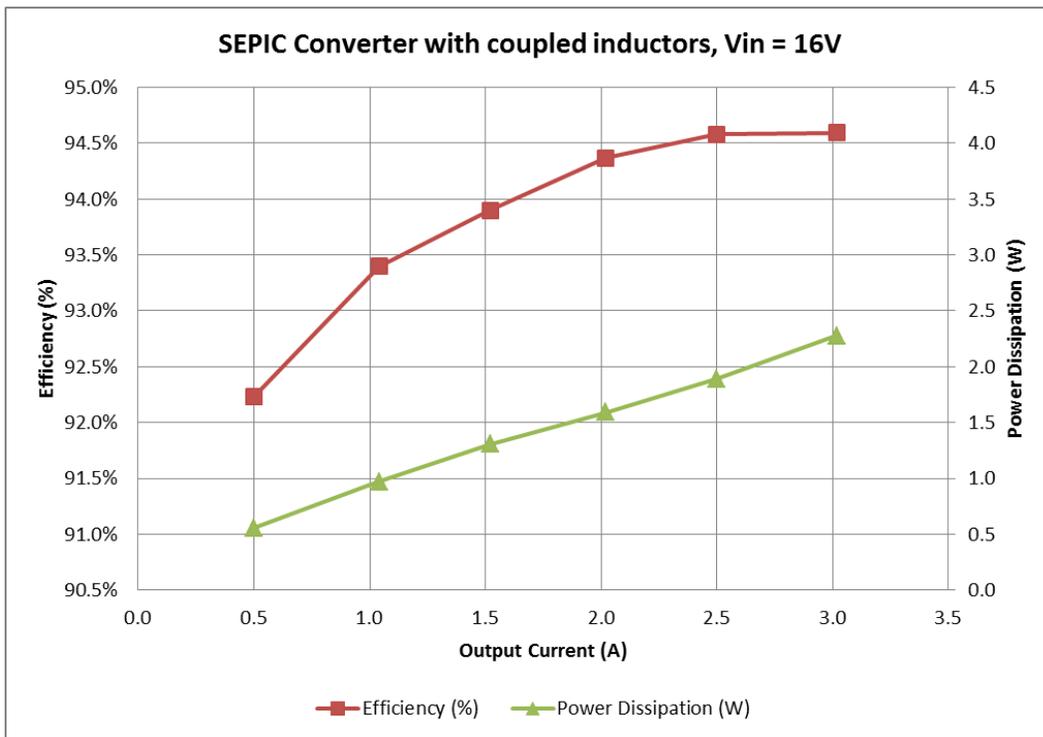


## 2 Efficiency

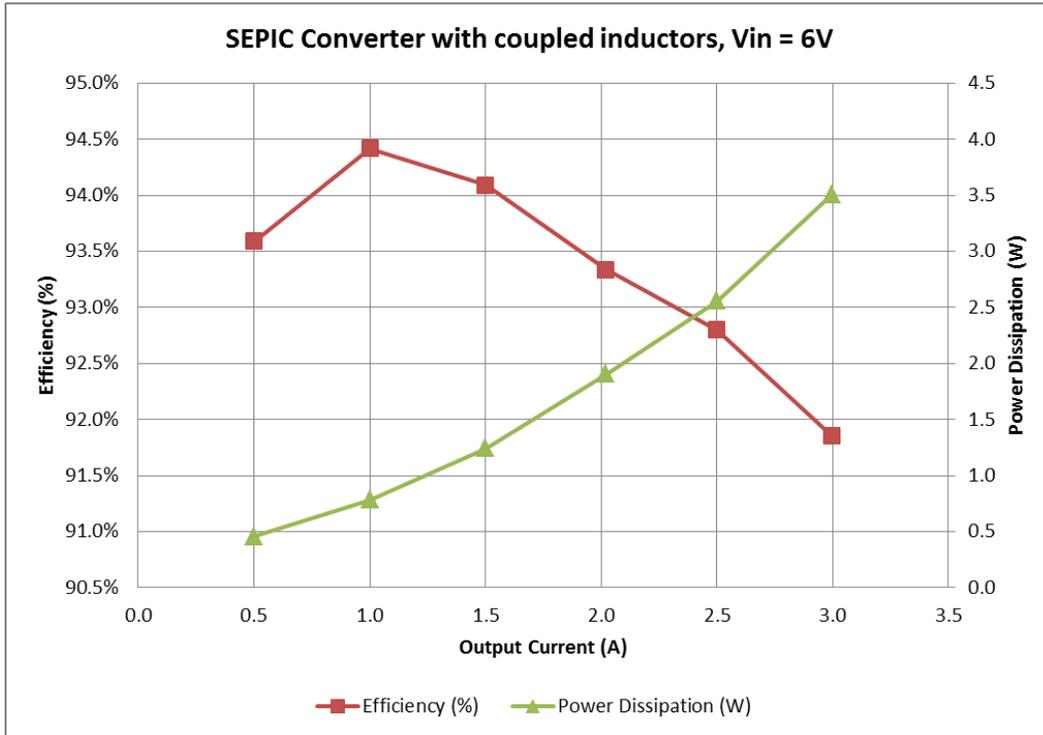
The converter efficiency is shown below for  $V_{in} = 12V$  and  $V_{out} = 13.2V$ .



The converter efficiency is shown below for  $V_{in} = 16V$  and  $V_{out} = 13.2V$ .

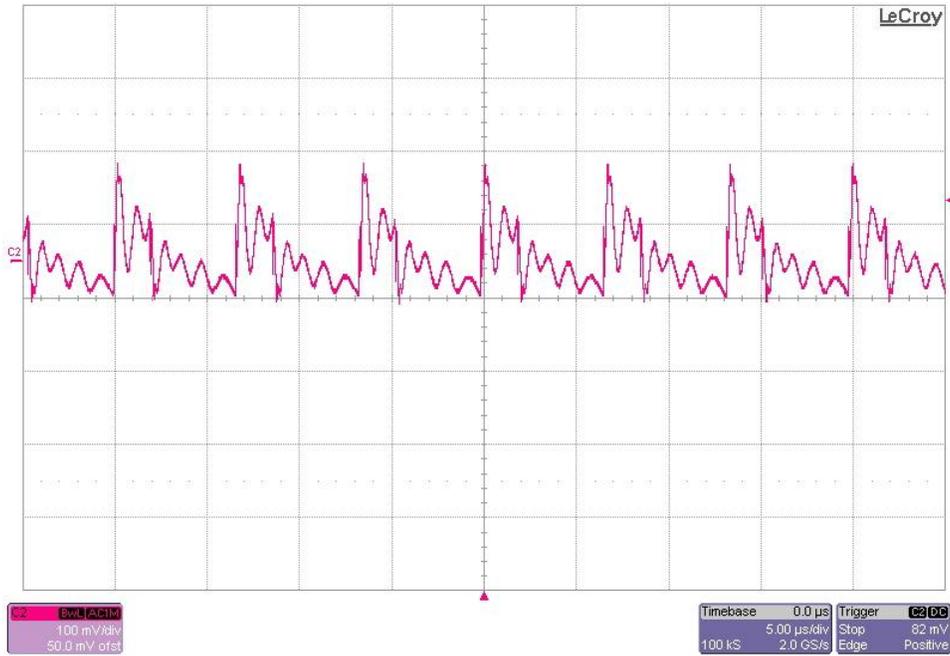


The converter efficiency is shown below for  $V_{in} = 6V$  and  $V_{out} = 13.2V$ .



## 3 Output Ripple Voltage

The 13.2V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 3A. The input voltage is set to 6V. (100mV/DIV, 5uS/DIV)



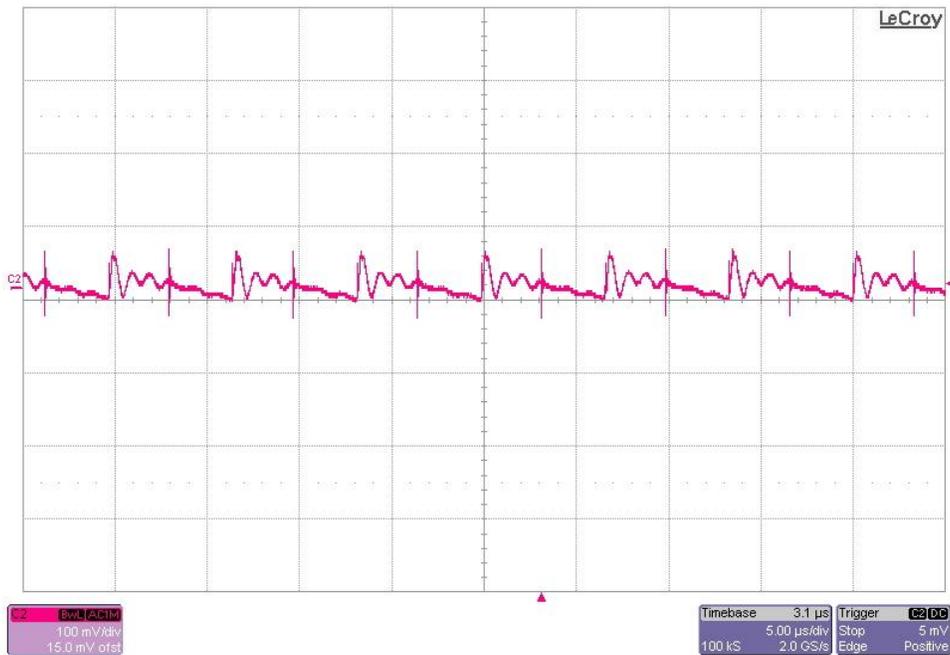
The 13.2V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 3A. The input voltage is set to 16V. (100mV/DIV, 5uS/DIV)



The 13.2V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 3A. The input voltage is set to 12V. (100mV/DIV, 5uS/DIV)

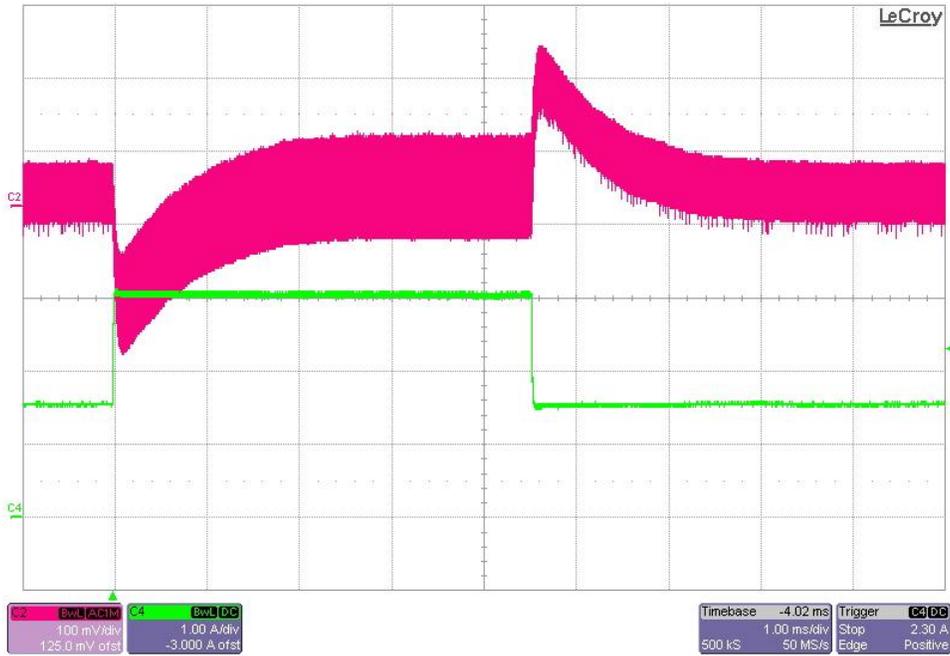


The 13.2V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 1A. The input voltage is set to 12V. (100mV/DIV, 5uS/DIV)

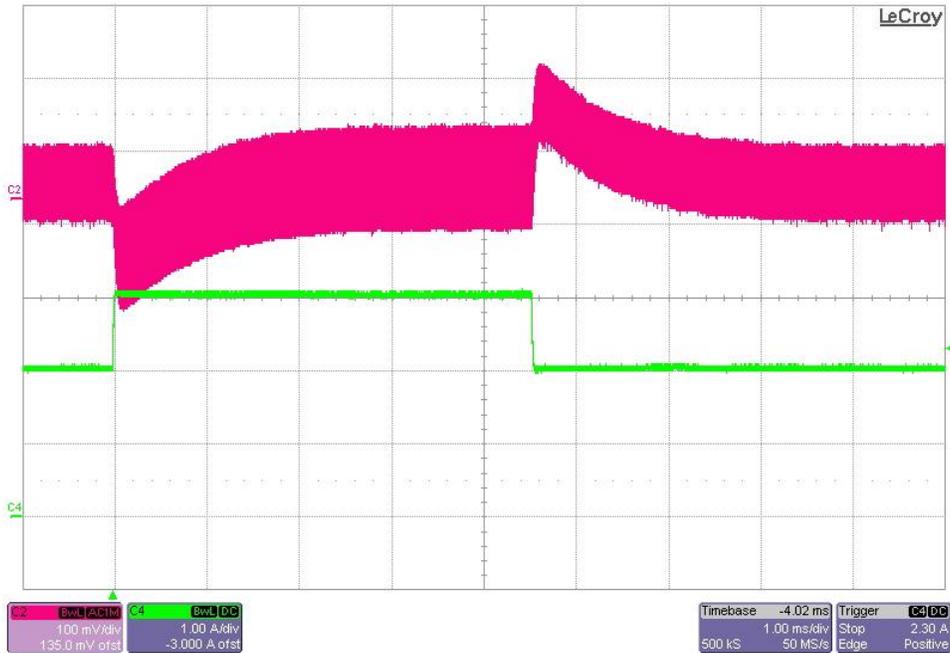


## 4 Load Transients

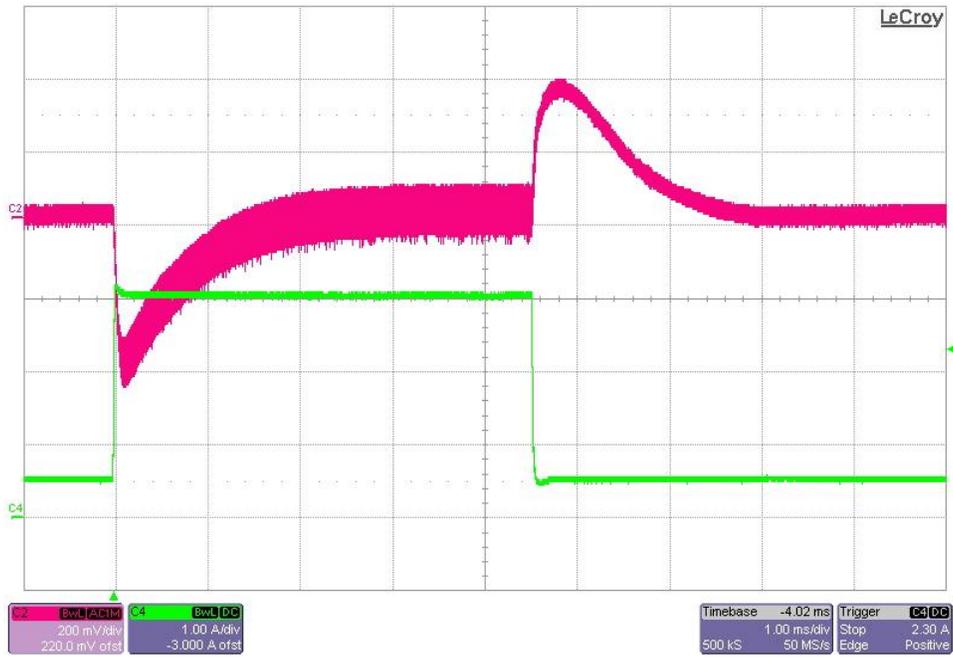
The photo below shows the 13.2V output voltage (ac coupled) when the load current is stepped between 1.5A and 3A.  $V_{in} = 12V$ . (100mV/DIV, 1A/DIV, 1mS/DIV)



The photo below shows the 13.2V output voltage (ac coupled) when the load current is stepped between 2A and 3A.  $V_{in} = 12V$ . (100mV/DIV, 1A/DIV, 1mS/DIV)



The photo below shows the 13.2V output voltage (ac coupled) when the load current is stepped between 0.5A and 3A.  $V_{in} = 12V$ . (200mV/DIV, 1A/DIV, 1mS/DIV)

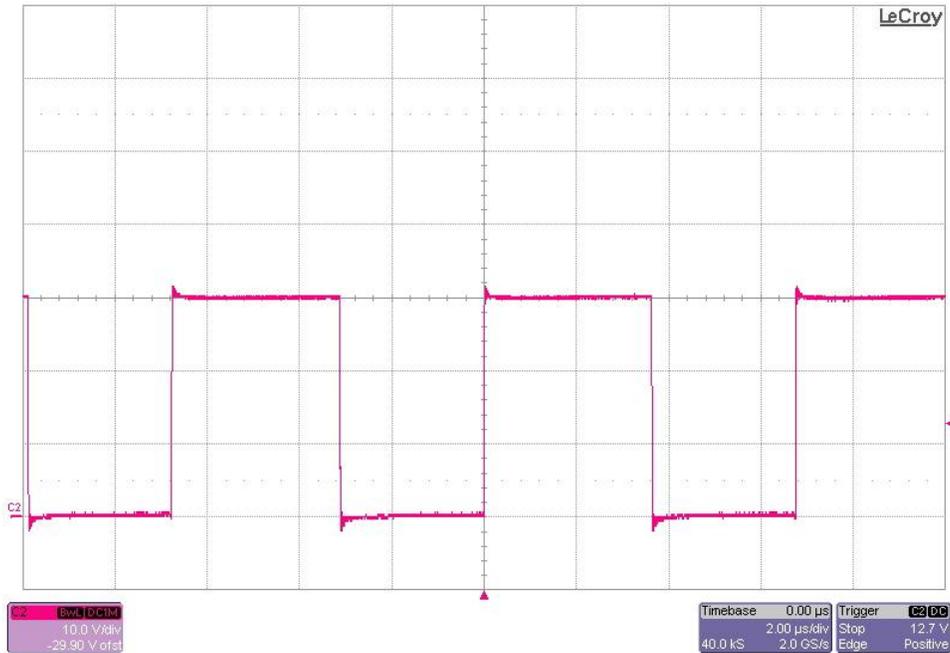


## 5 Switch Node Waveforms

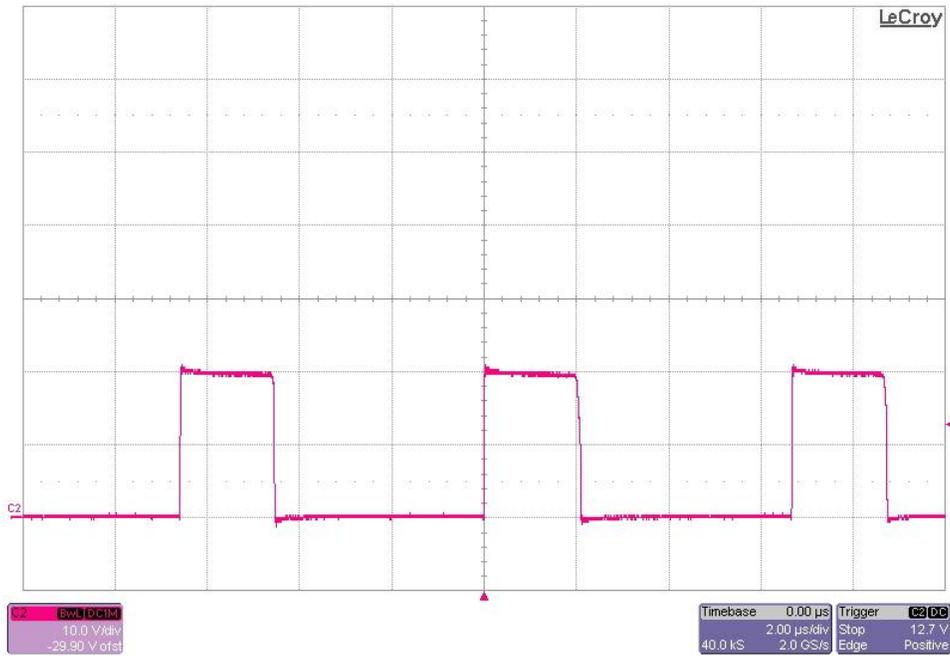
The photo below shows the FET switching voltage (TP4) for an input voltage of 6V and a 3A load. (10V/DIV, 2uS/DIV)



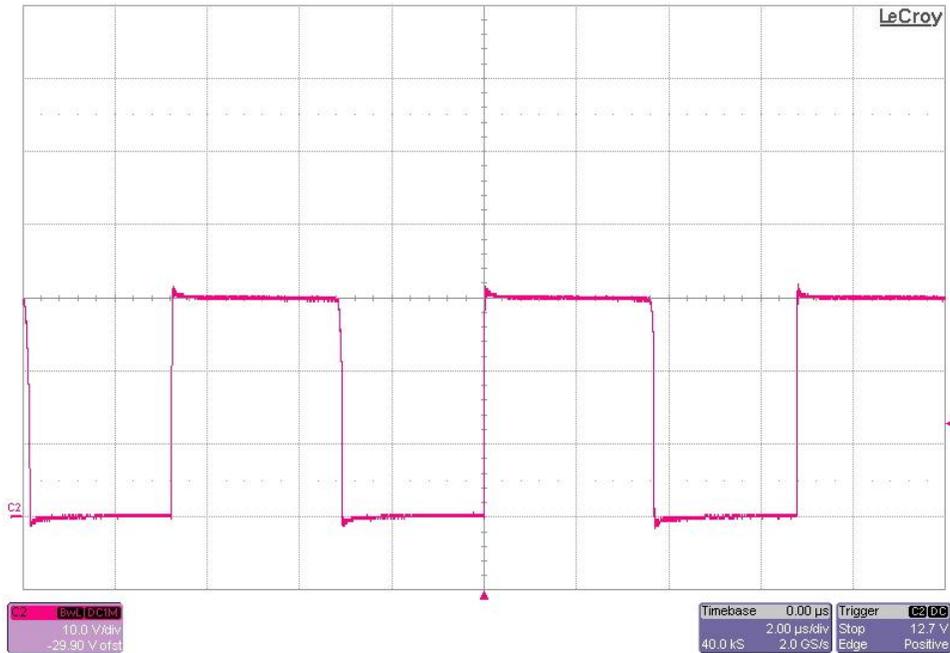
The photo below shows the FET switching voltage (TP4) for an input voltage of 16V and a 3A load. (10V/DIV, 2uS/DIV)



The photo below shows the FET switching voltage (TP4) for an input voltage of 6V and a 0.35A load. The converter is operating in DCM. (10V/DIV, 2uS/DIV)



The photo below shows the FET switching voltage (TP4) for an input voltage of 16V and a 1.15A load. The converter is operating in DCM. (10V/DIV, 2uS/DIV)



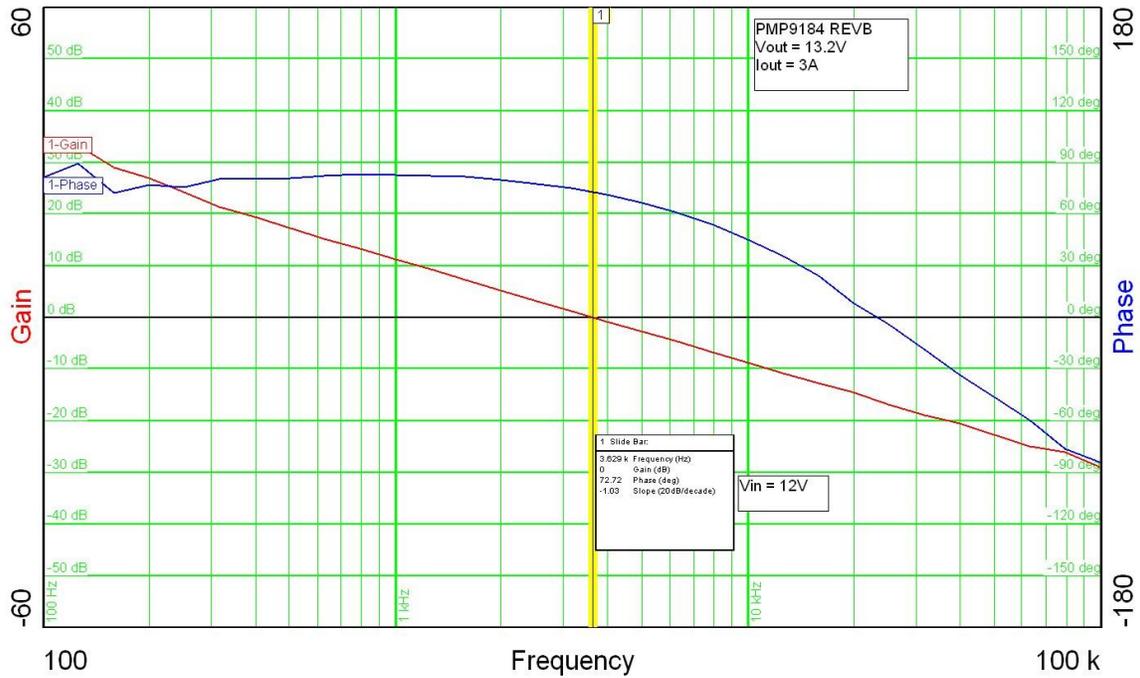
## 6 Loop Gain

The plot below shows the loop gain with the input voltage set to 12V and the output set to 3A.

Loop Gain ( $V_{in} = 12V$ )

BW: 3.63KHz

PM: 73 degrees

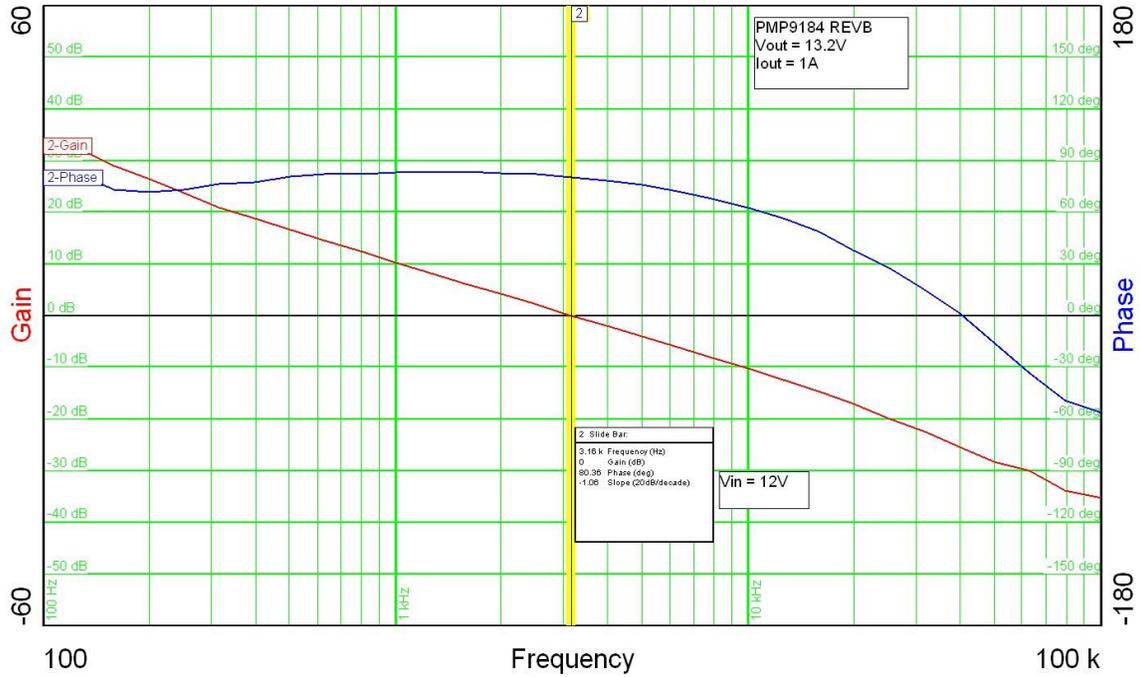


The plot below shows the loop gain with the input voltage set to 12V and the output set to 1A.

Loop Gain (Vin = 12V)

BW: 3.16KHz

PM: 80 degrees

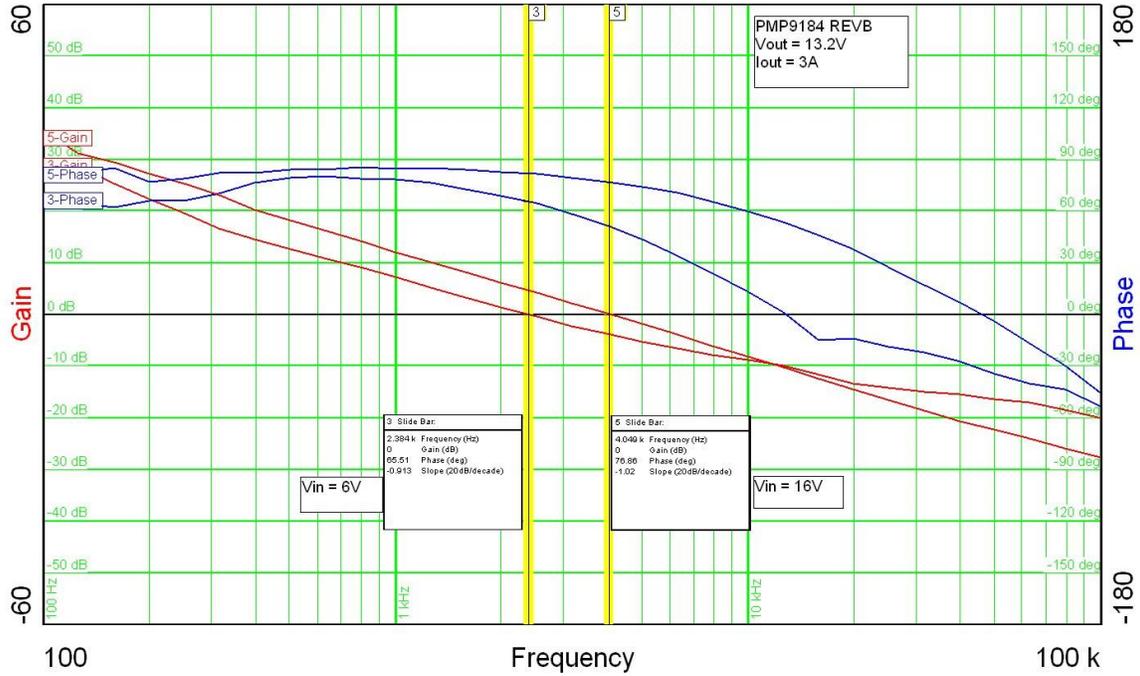


The plot below shows the loop gain with the input voltage set to 6V and 16V and the output set to 3A.

Loop Gain (Vin = 6V)  
 Loop Gain (Vin = 16V)

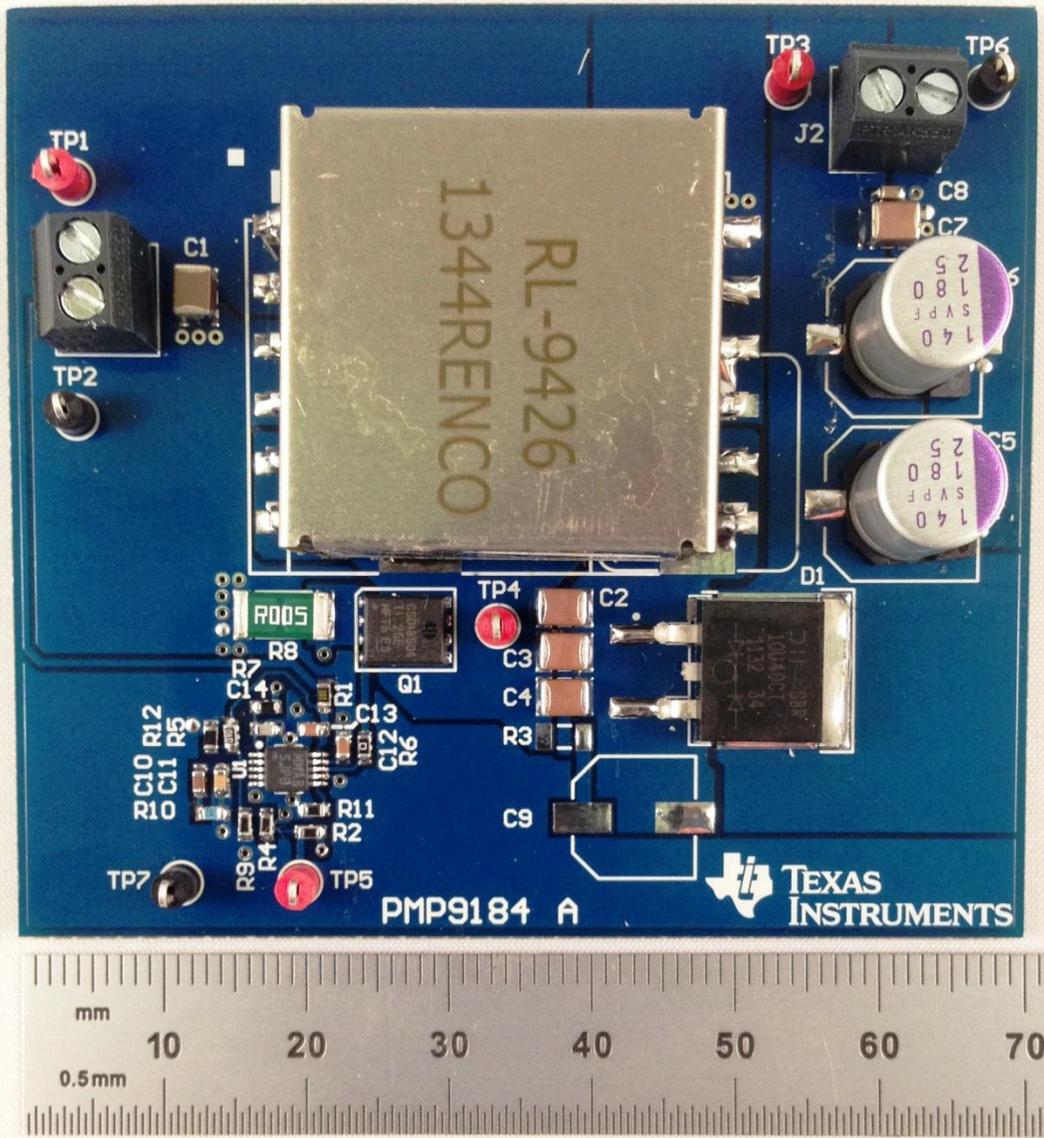
BW: 2.38KHz  
 BW: 4.05KHz

PM: 66 degrees  
 PM: 77 degrees



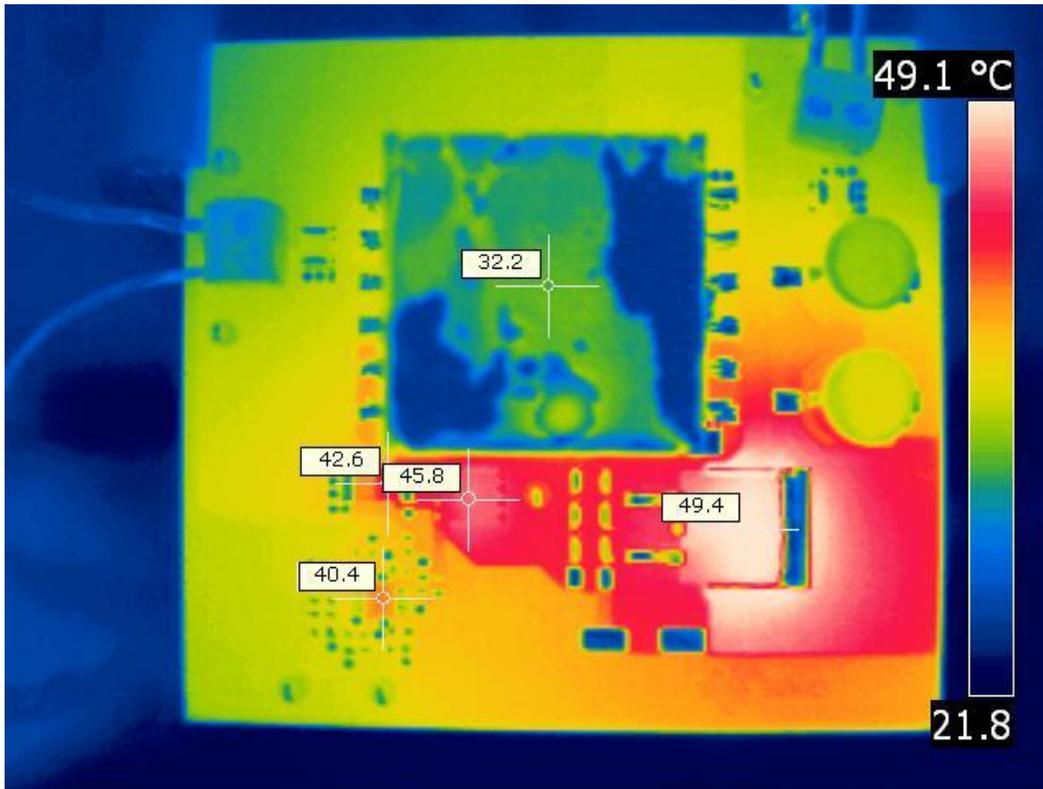
## 7 Photo

The photo below shows the PMP9184 REVB assy.



## 8 Thermal Image

A thermal image is shown below operating at 12V input and 13.2V@3A output (room temp, no airflow).



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