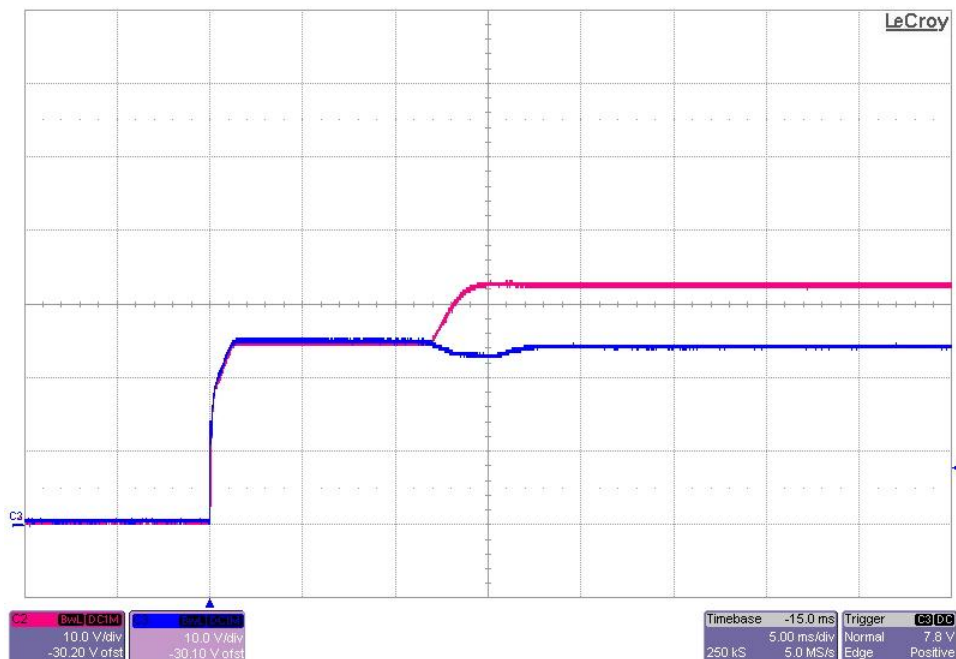


1 Startup

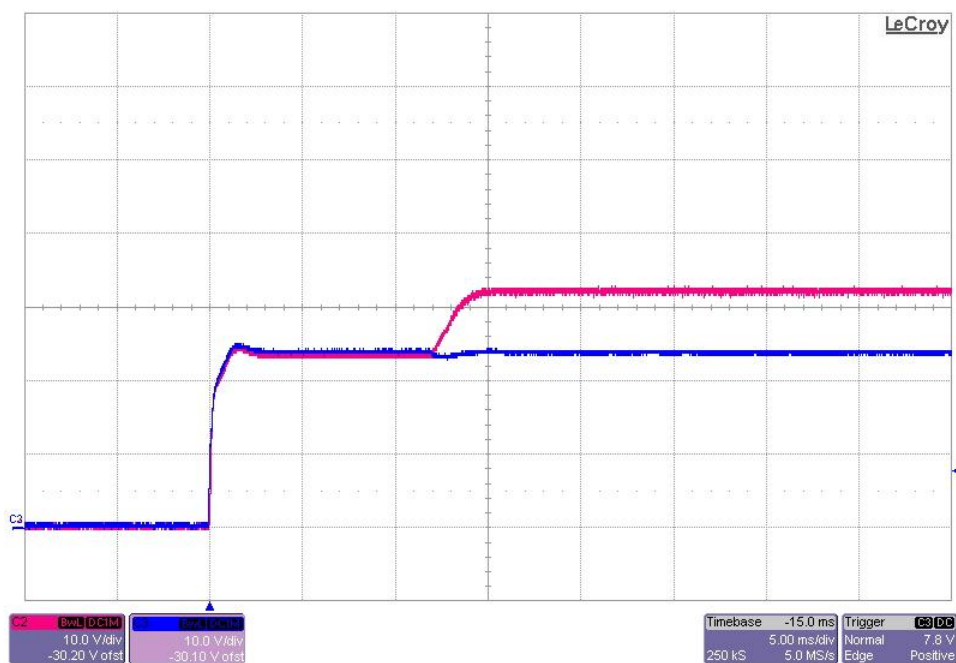
The photo below shows the 32V output voltage startup waveforms after the application of 24Vdc in. The output was unloaded.

(10V/DIV, 5mS/DIV)



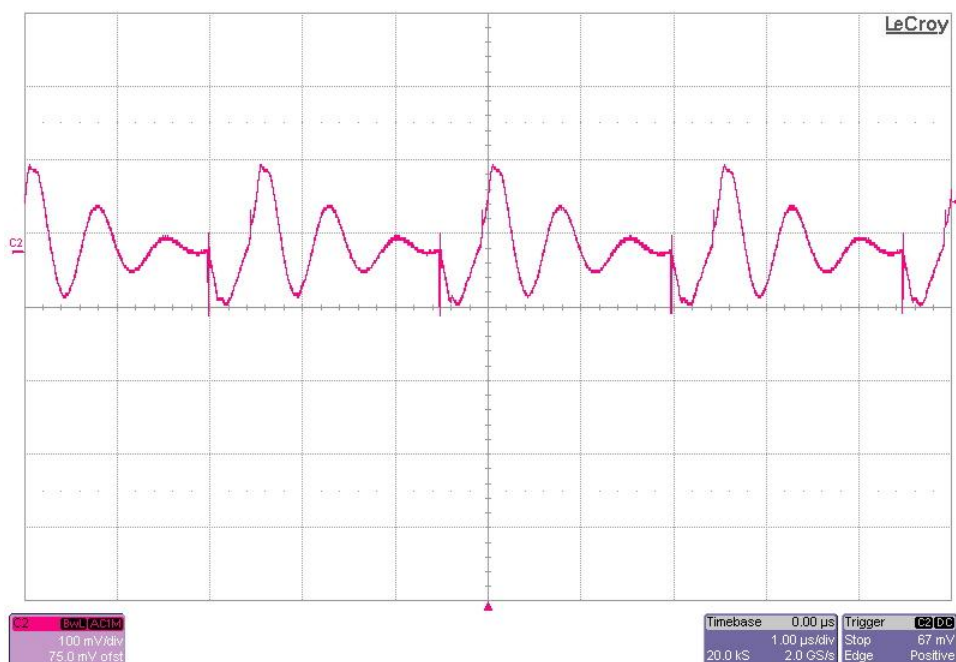
The photo below shows the 32V output voltage startup waveforms after the application of 24Vdc in. The output was loaded to 3A.

(10V/DIV, 5mS/DIV)

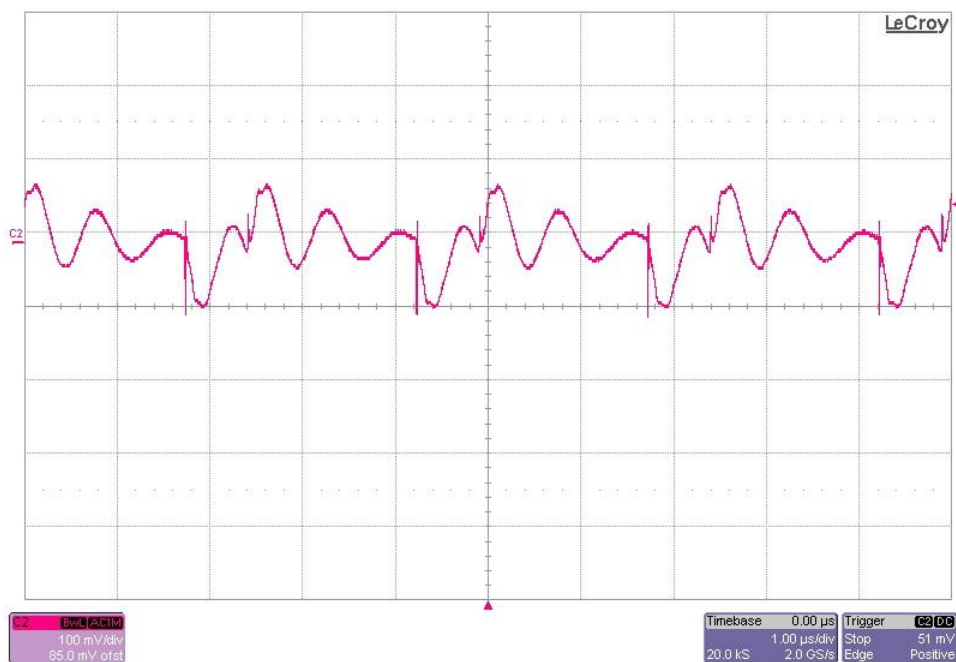


2 Output Ripple Voltage

The 32V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 3A and the input voltage set to 27Vdc. (100mV/DIV, 1uS/DIV)



The 32V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 3A and the input voltage set to 24Vdc. (100mV/DIV, 1uS/DIV)

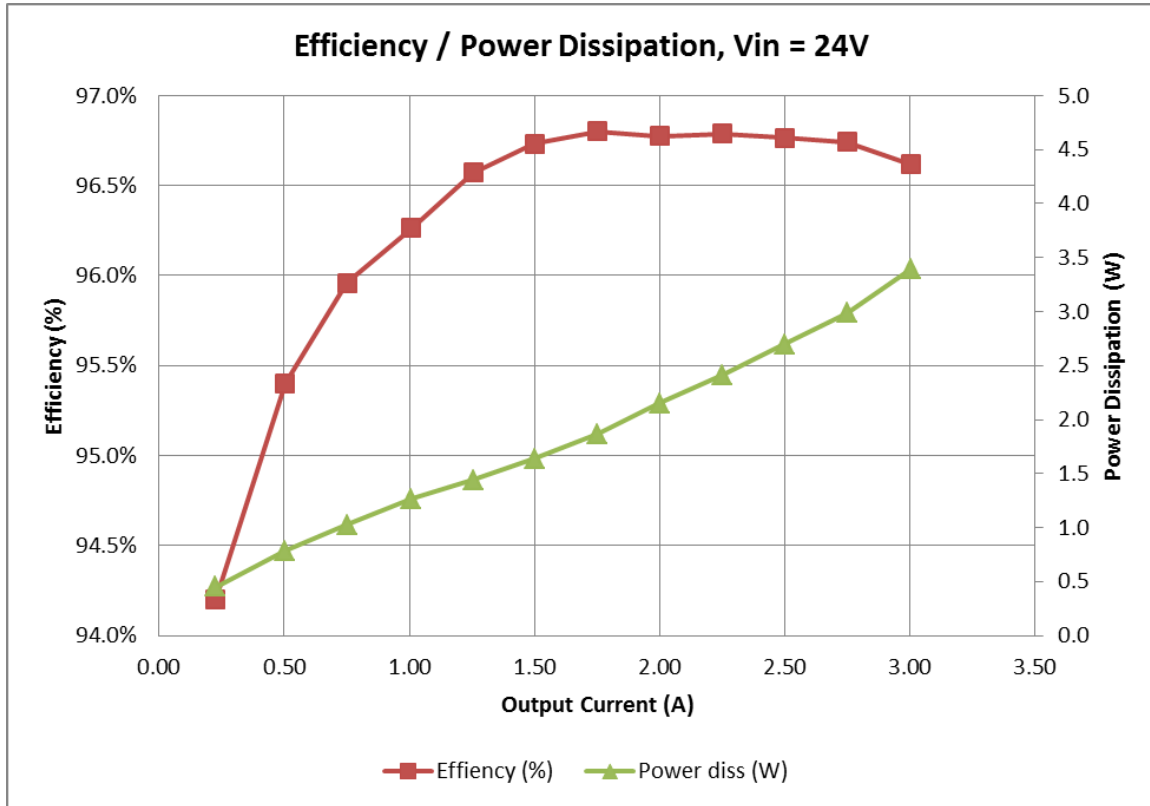


The 32V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 3A and the input voltage set to 20Vdc. (100mV/DIV, 1uS/DIV)



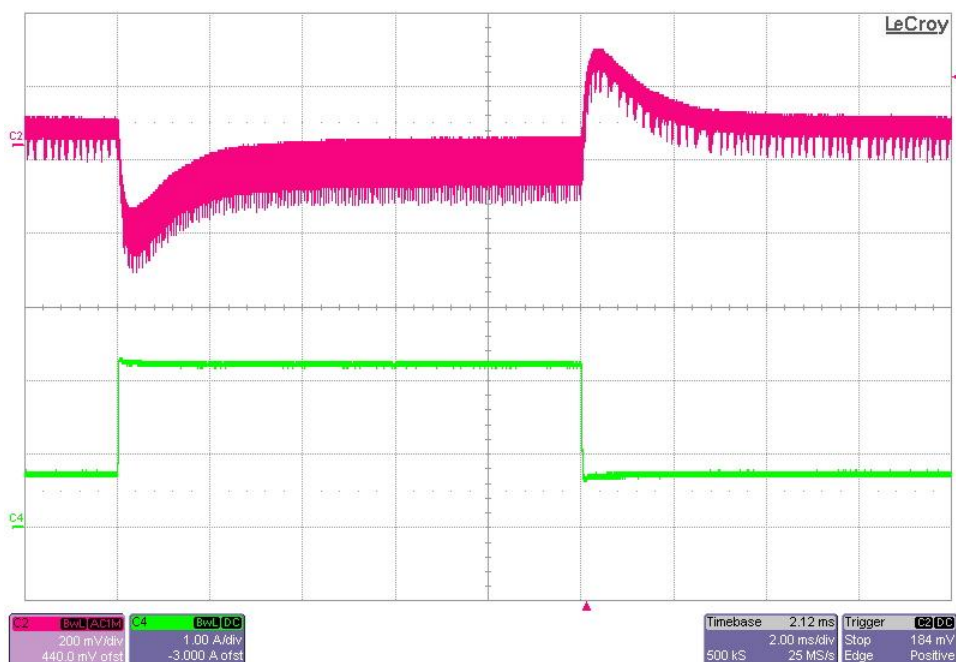
3 Efficiency

The converter efficiency is shown in the figure below.

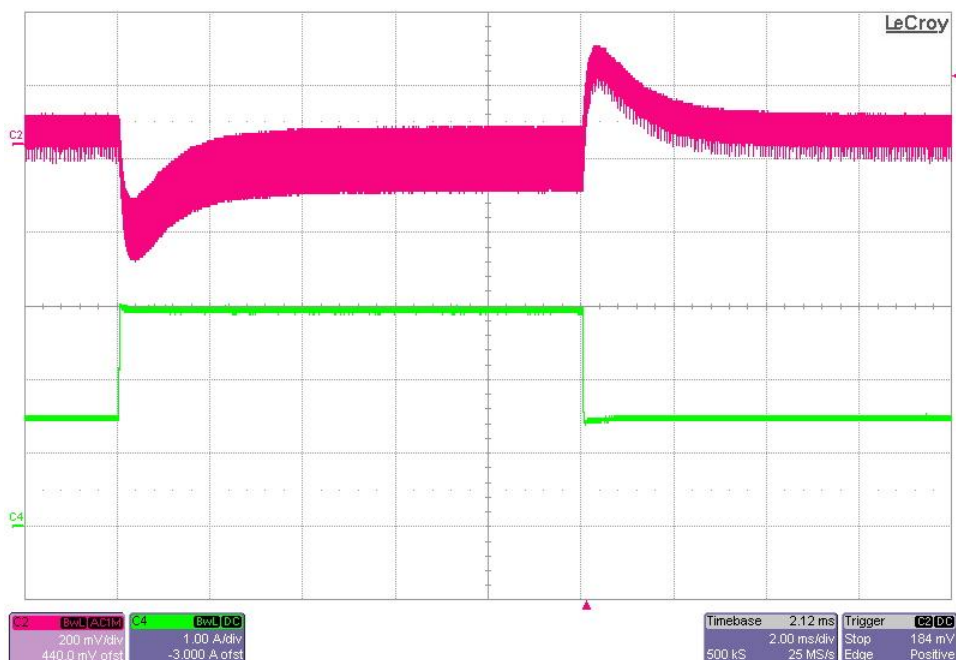


4 Load Transients

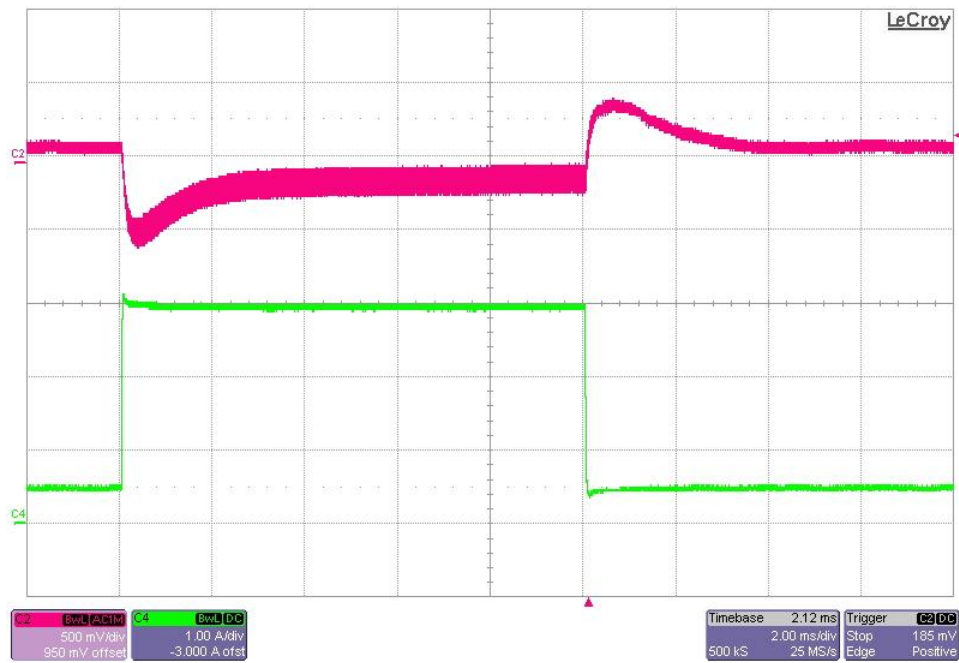
The photo below shows the 32V output voltage (AC coupled) when the load current is stepped from 0.75A to 2.25A (25% - 75%). $V_{in} = 24V_{dc}$ (200mV/DIV, 1A/DIV, 2mS/DIV)



The photo below shows the 32V output voltage (AC coupled) when the load current is stepped from 1.5A to 3A (50% - 100%). $V_{in} = 24V_{dc}$ (200mV/DIV, 1A/DIV, 2mS/DIV)

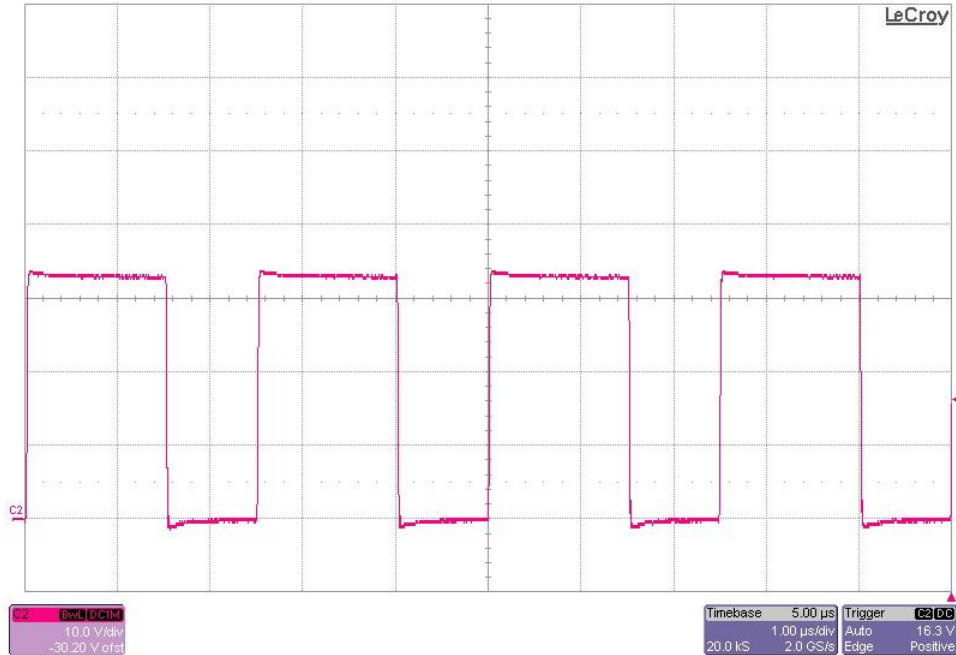


The photo below shows the 32V output voltage (AC coupled) when the load current is stepped from 0.5A to 3A (16% - 100%). $V_{in} = 24V_{dc}$ (500mV/DIV, 1A/DIV, 2mS/DIV)

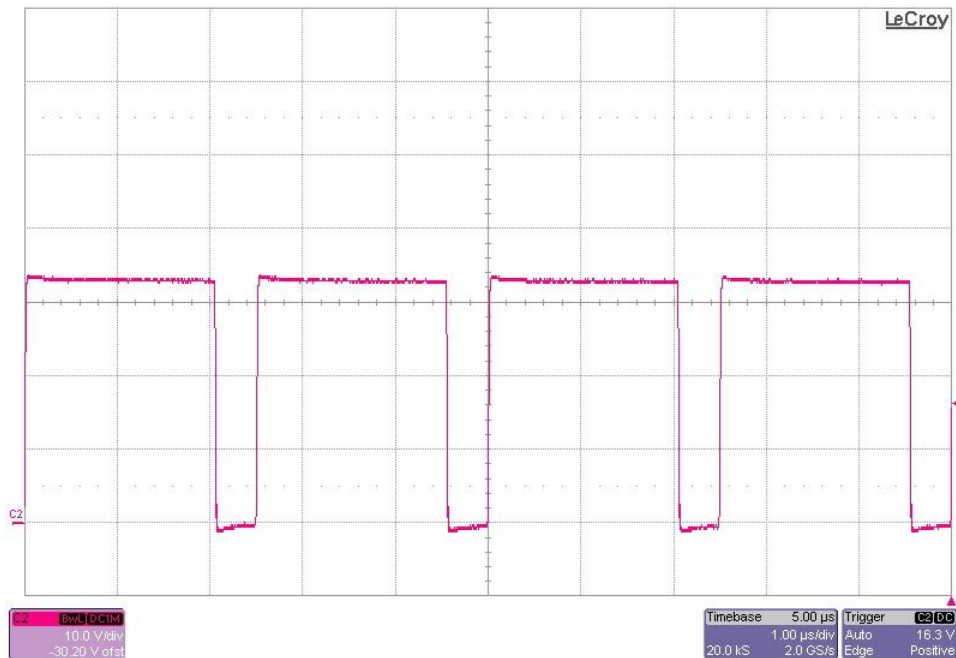


5 Switching Waveforms

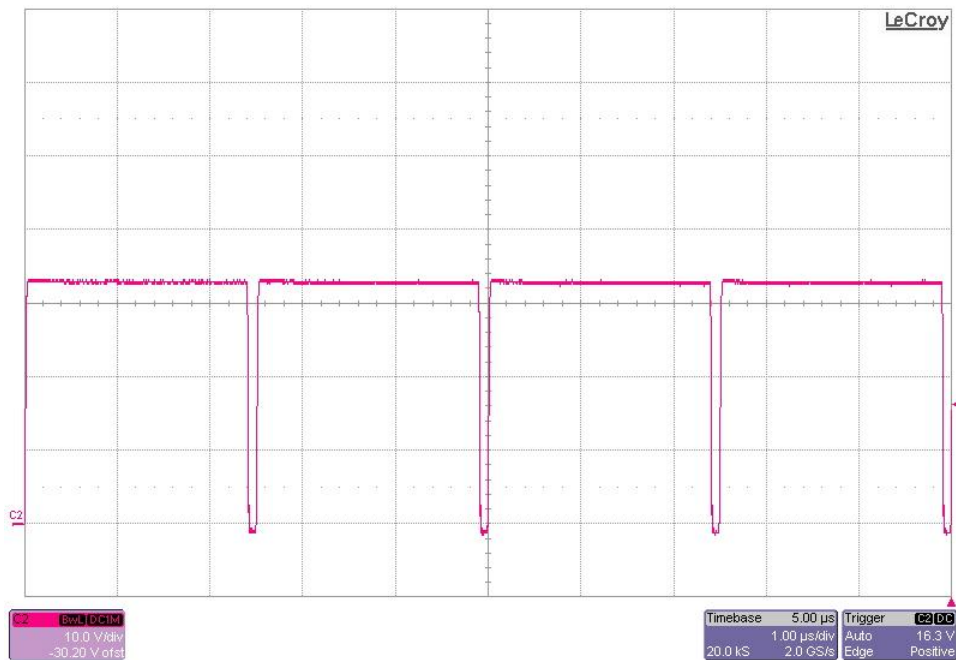
The photo below is the switch-node waveform (TP5). The input voltage is 20V and the output is loaded to 3A.
(10V/DIV, 1uS/DIV)



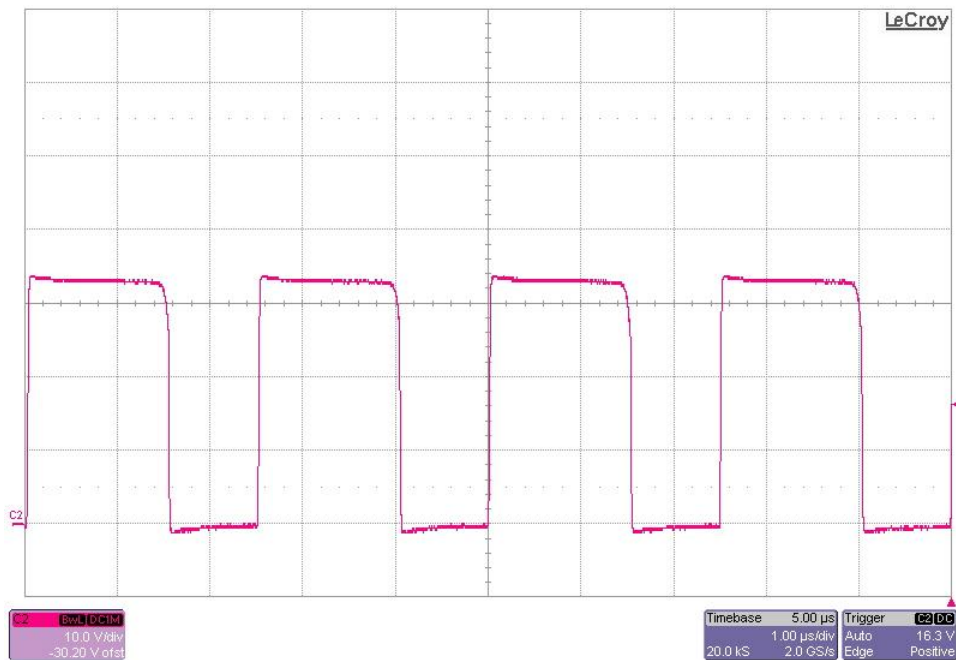
The photo below is the switch-node waveform (TP5). The input voltage is 27V and the output is loaded to 3A.
(10V/DIV, 1uS/DIV)



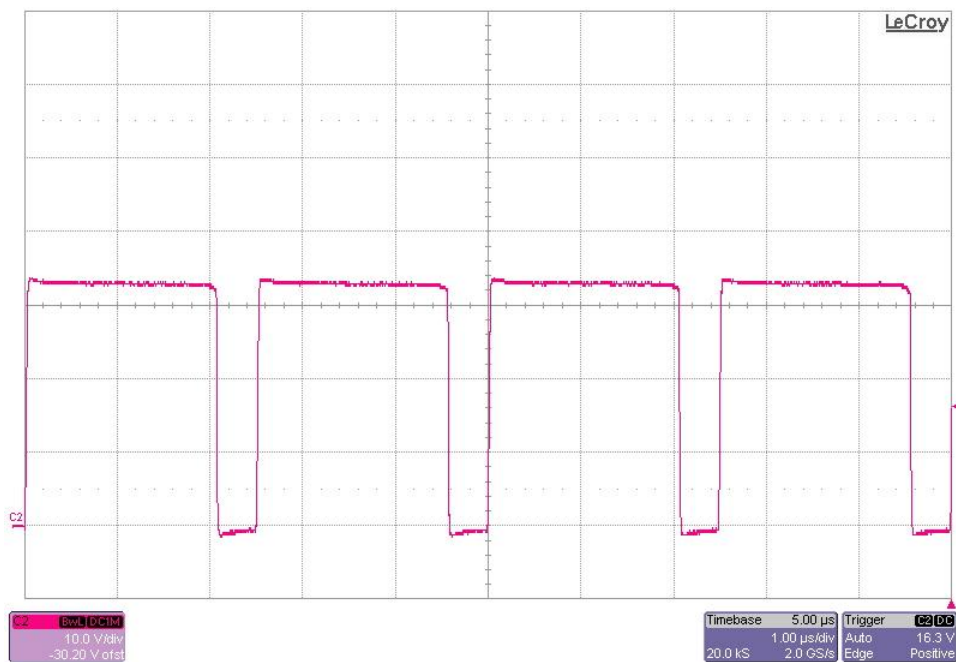
The photo below is the switch-node waveform (TP5). The input voltage is 31.5V and the output is loaded to 3A. Above this input voltage pulse skipping occurs. (10V/DIV, 1uS/DIV)



The photo below is the switch-node waveform (TP5). The input voltage is 20V and the output is loaded to 0.51A. The converter operates in CCM above this current level. (10V/DIV, 1uS/DIV)



The photo below is the switch-node waveform (TP5). The input voltage is 27V and the output is loaded to 0.45A. The converter operates in CCM above this current level. (10V/DIV, 1uS/DIV)



6 Loop Gain

The plot below shows the loop gain with the input voltage set to 20V and 27V and the output loaded to 3A.

Loop Gain (Vin = 20V)

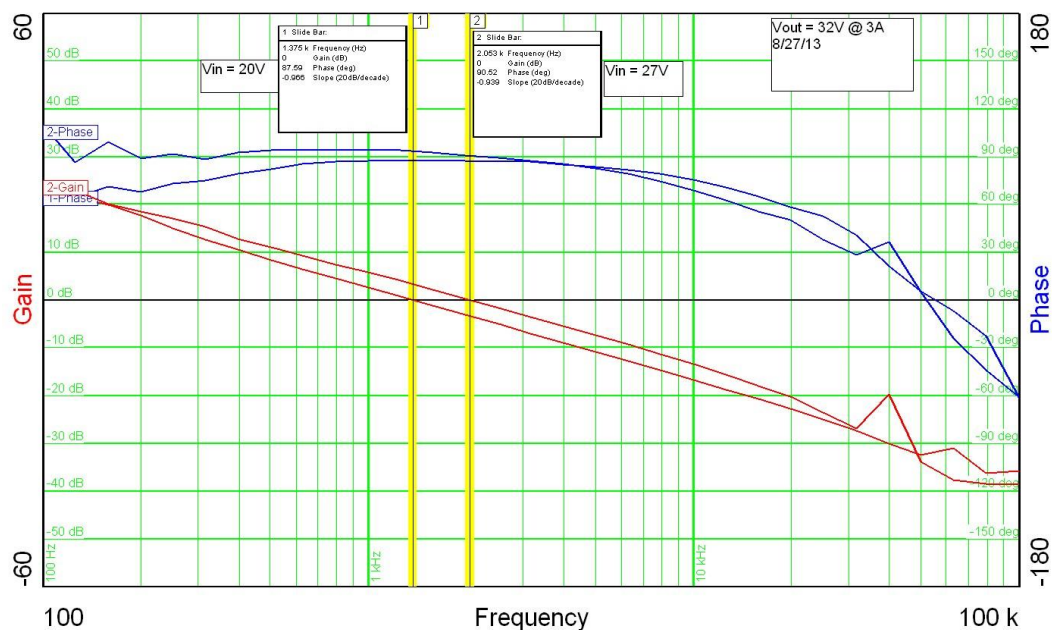
BW: 1.38KHz

PM: 88 degrees

Loop Gain (Vin = 27V)

BW: 2.05KHz

PM: 91 degrees



The plot below shows the loop gain with the input voltage set to 20V and 27V and the output loaded to 1A.

Loop Gain (Vin = 20V)

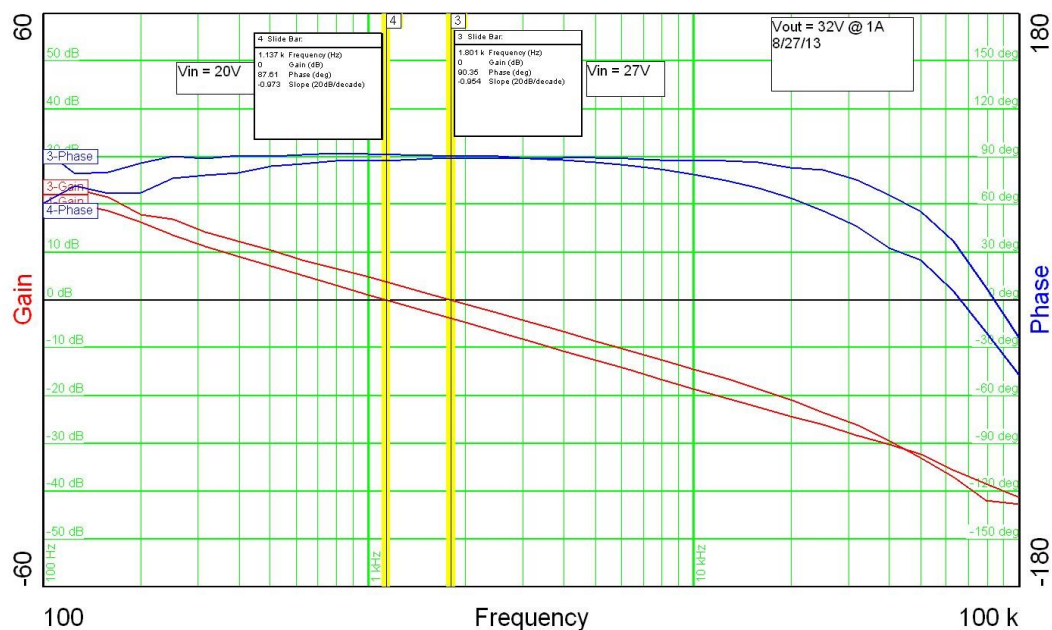
BW: 1.14KHz

PM: 88 degrees

Loop Gain (Vin = 27V)

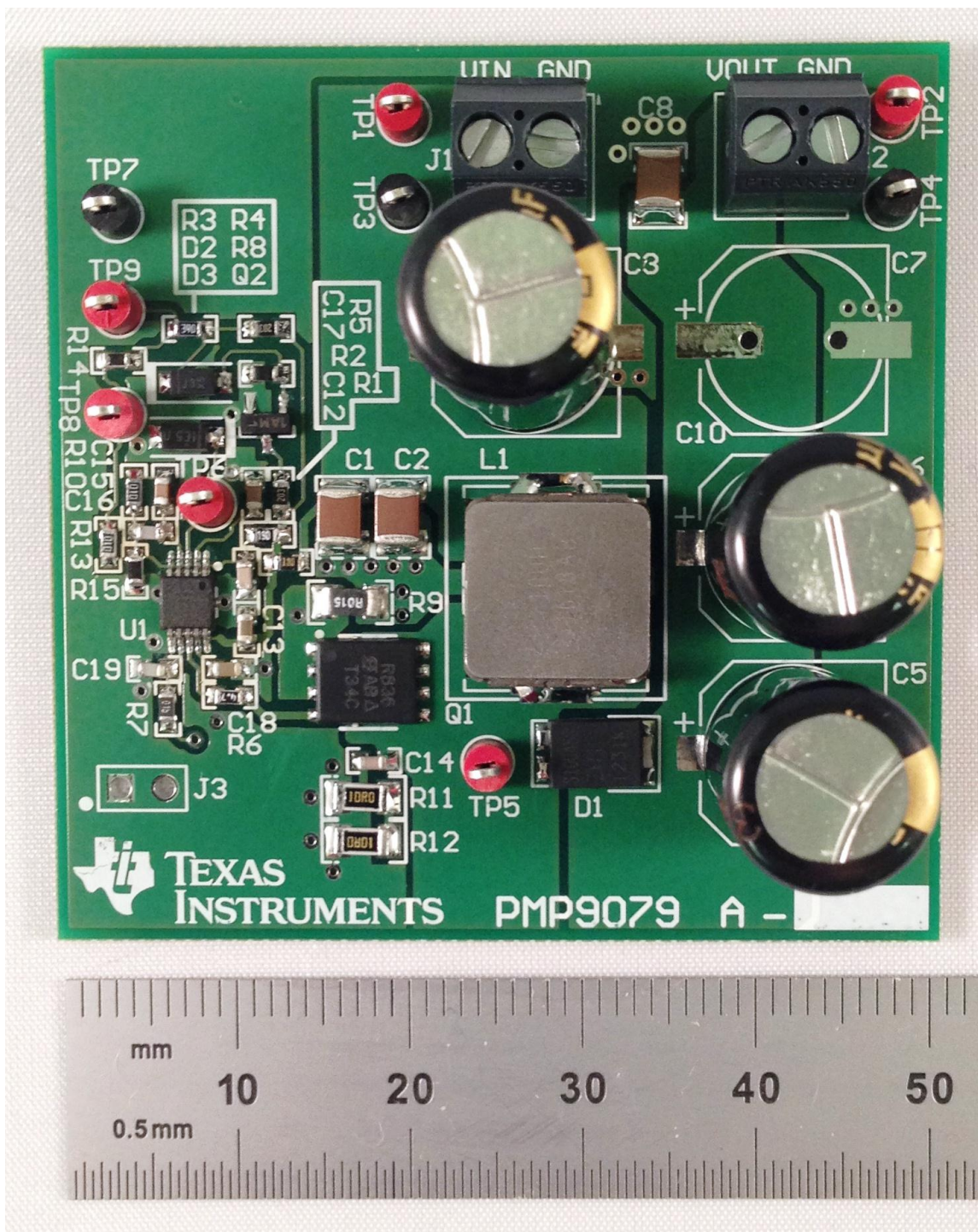
BW: 1.80KHz

PM: 90 degrees



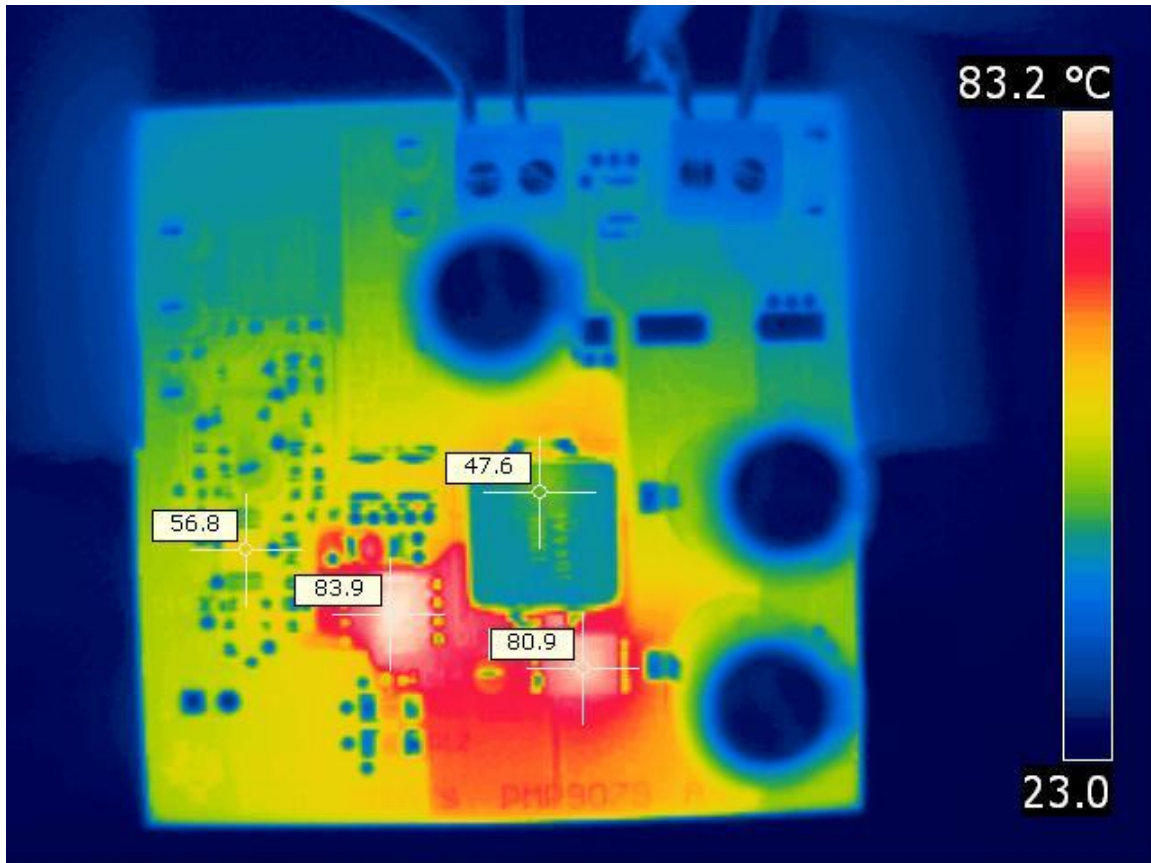
7 Photo

The photo below shows the PMP9079 REVA assembly.



8 Thermal Image

A thermal image is shown below when operating at 24Vin and 3A output, no air flow.



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