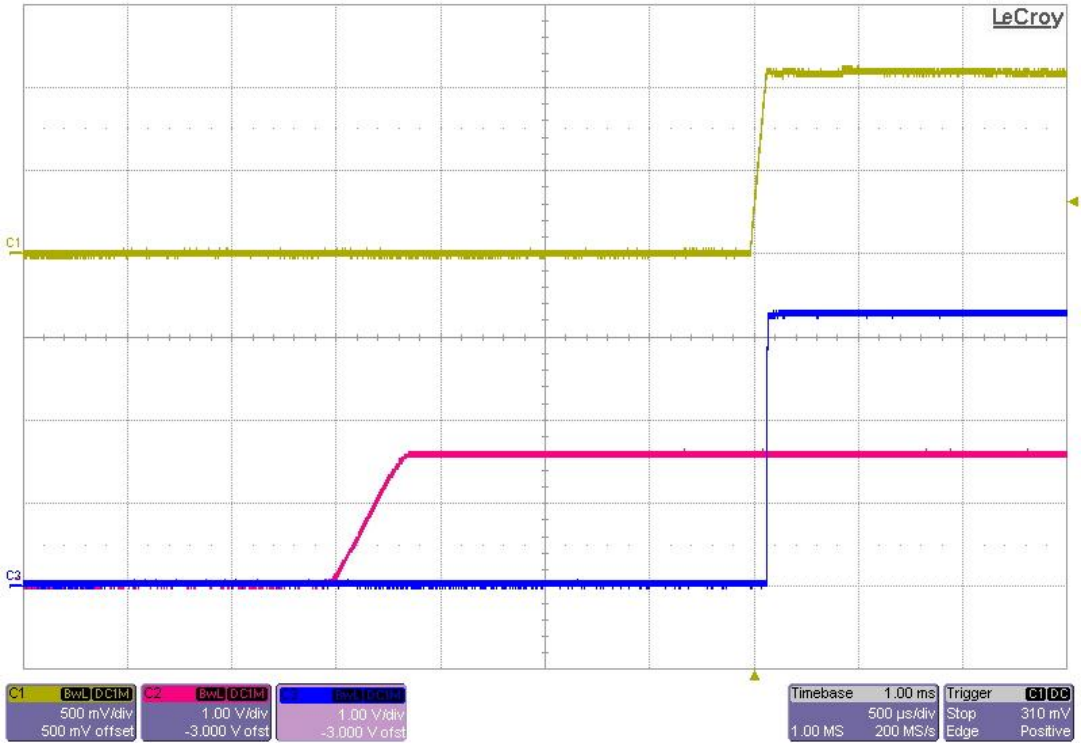
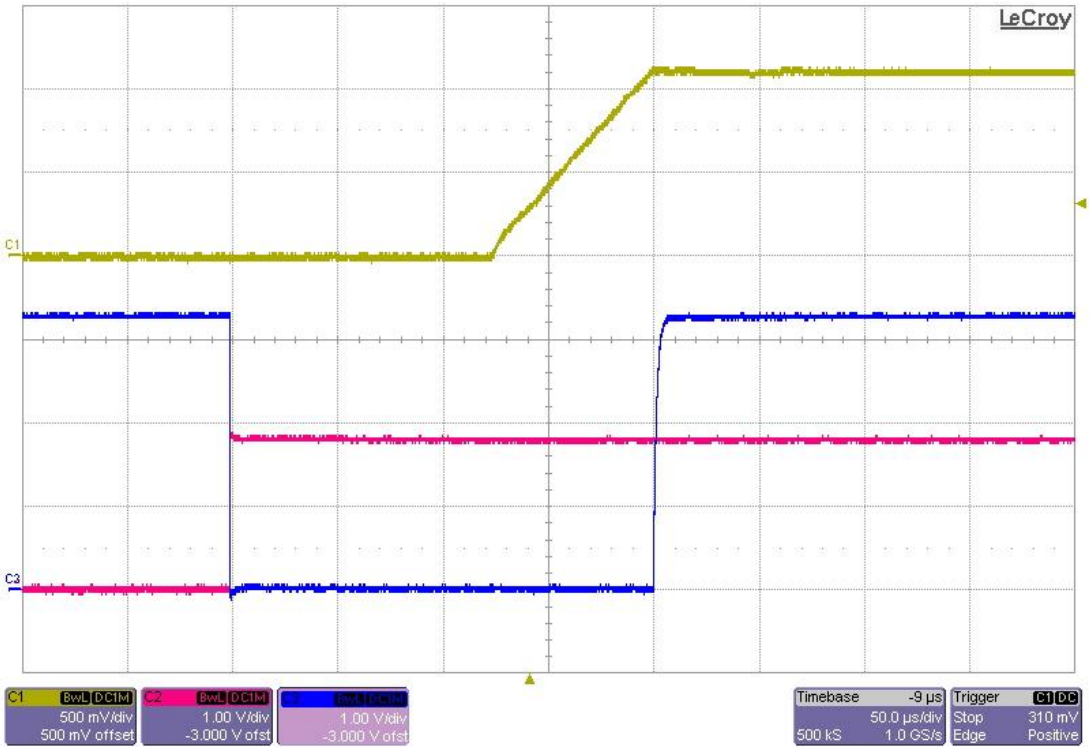
1 Turn On

The photo below shows Vout (Yellow, Ch1), EN (Pink, Ch2), and PGood (Blue, Ch3), during a cold boot.

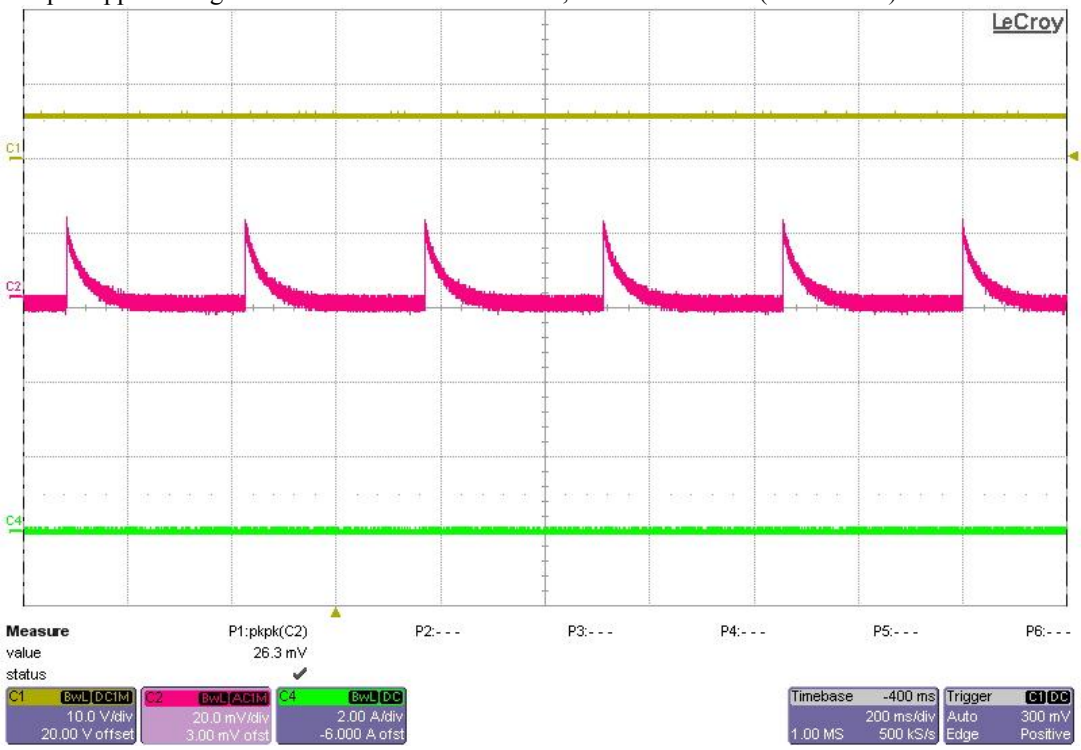


The photo below shows Vout (Yellow, Ch1), EN (Pink, Ch2), and PGood (Blue, Ch3), when EN is toggled.

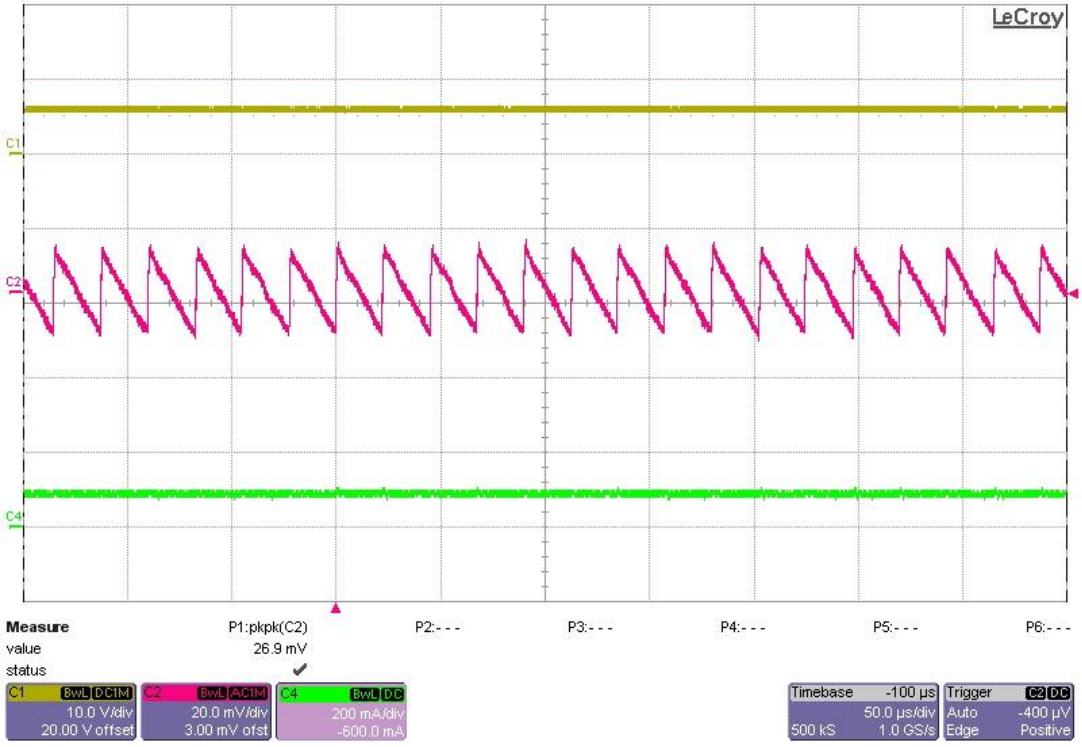


2 Output Ripple Voltage - 6Vin

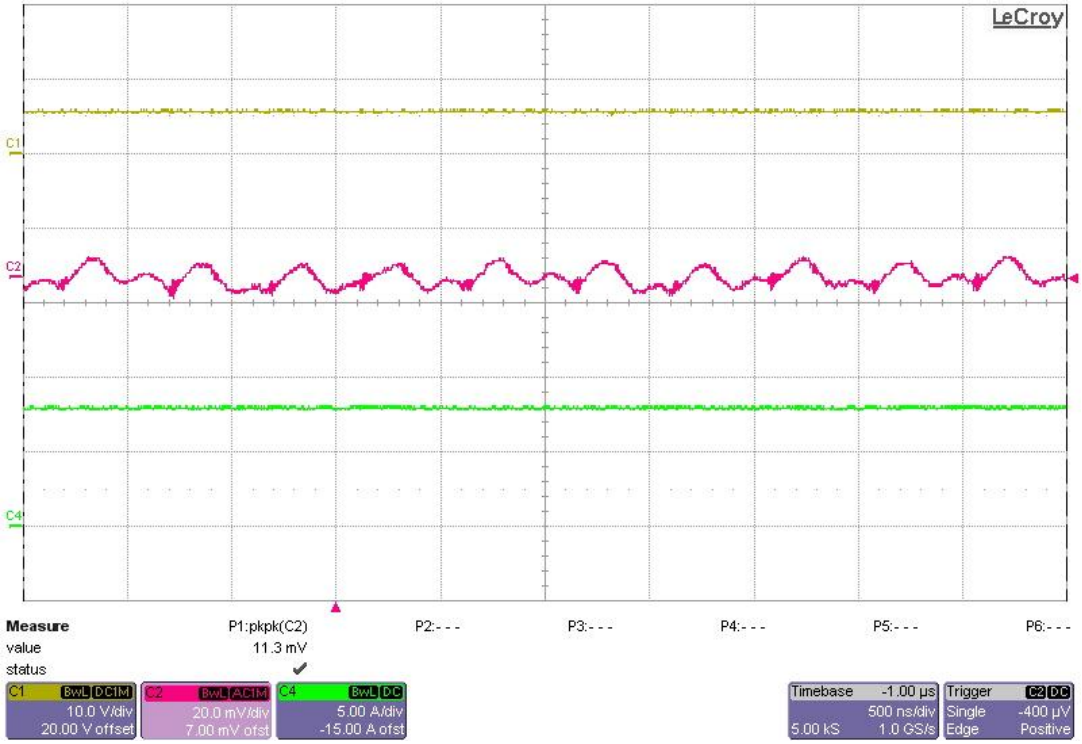
The output ripple voltage is shown below with Vin =6V, Iout = No load. (20mV/DIV)



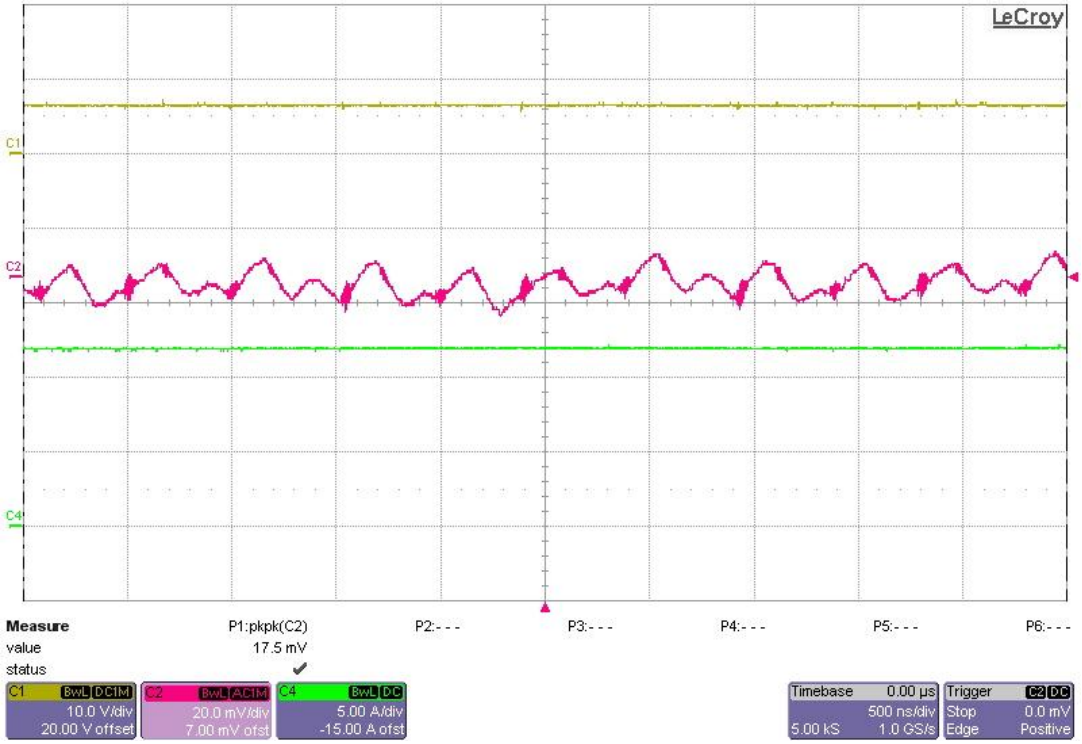
The output ripple voltage is shown in the figure below with Vin=6V, Iout = 100mA. (20mV/DIV)



The output ripple voltage is shown below with Vin =6V, Iout = 8A. (20mV/DIV)

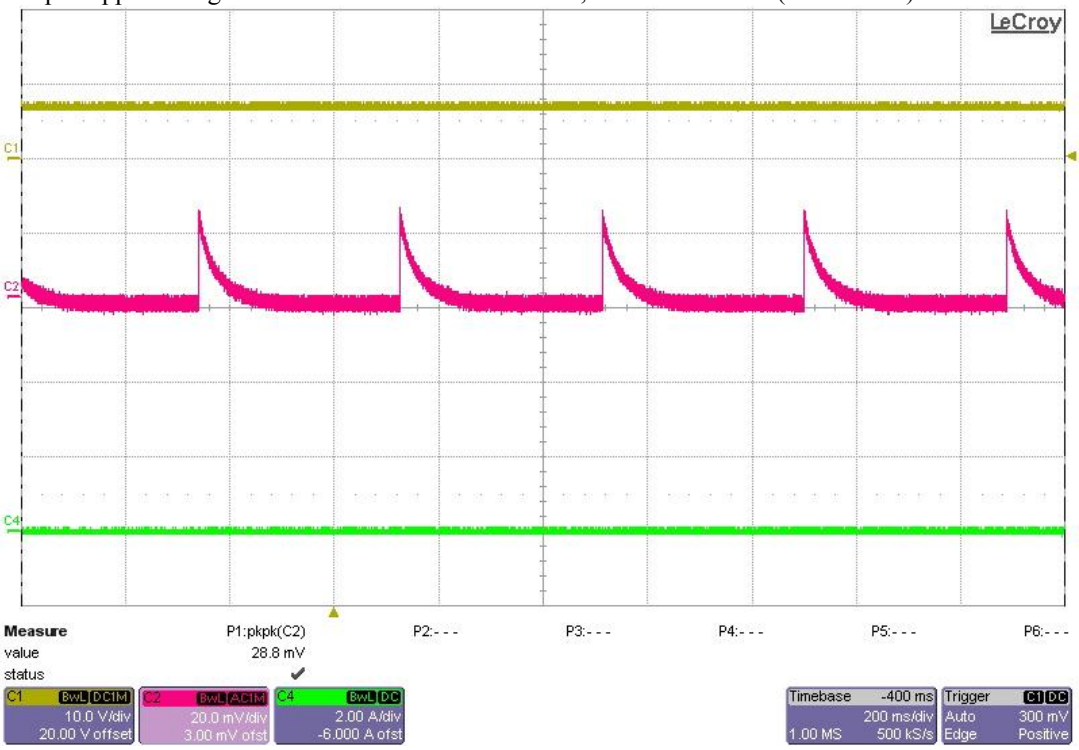


The output ripple voltage is shown in the figure below with Vin=6V, Iout = 12A. (20mV/DIV)

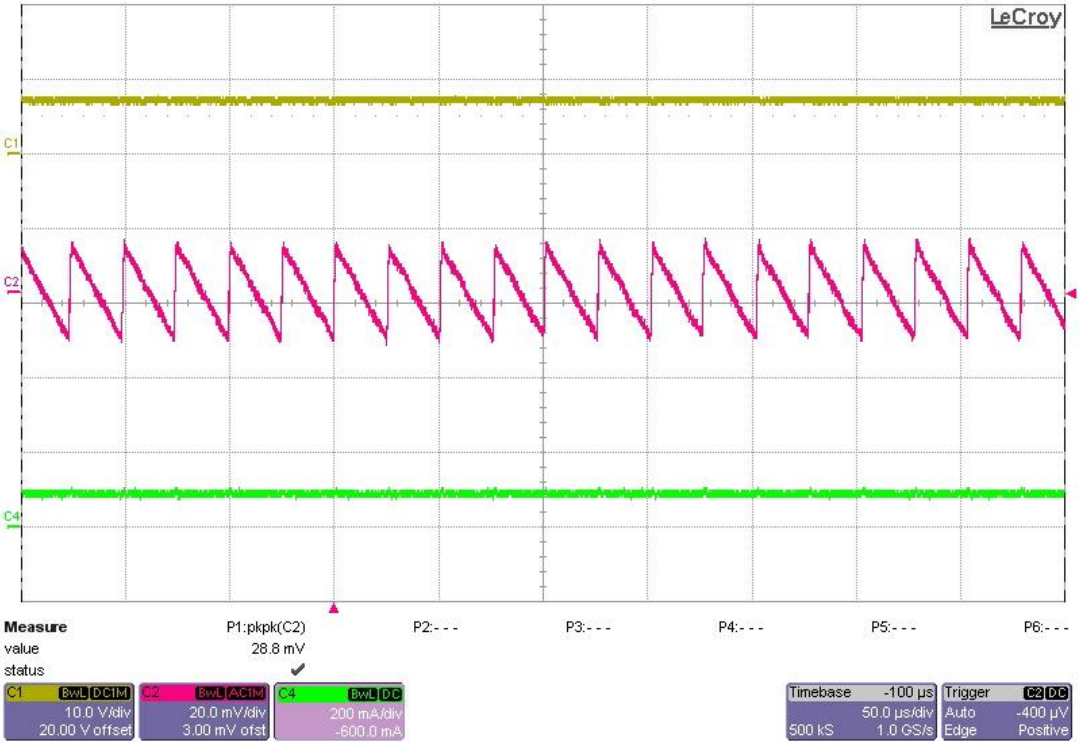


3 Output Ripple Voltage – 7.2Vin

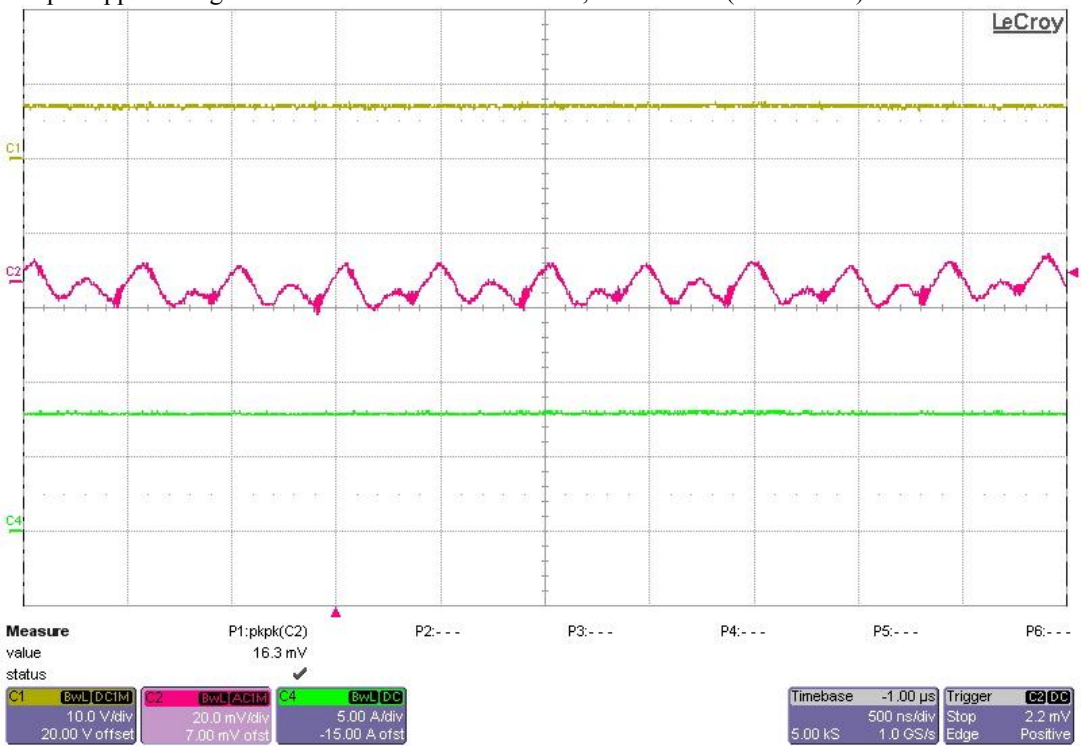
The output ripple voltage is shown below with Vin =7.2V, Iout = No load. (20mV/DIV)



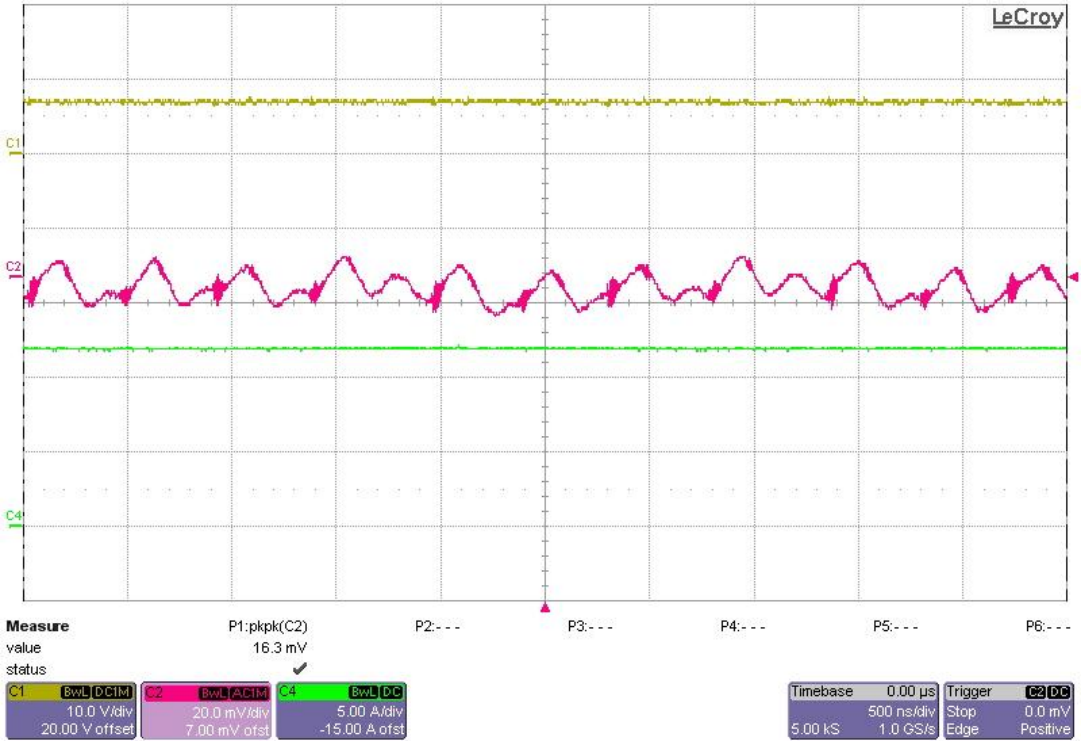
The output ripple voltage is shown in the figure below with Vin=7.2V, Iout = 100mA. (20mV/DIV)



The output ripple voltage is shown below with Vin =7.2V, Iout = 8A. (20mV/DIV)

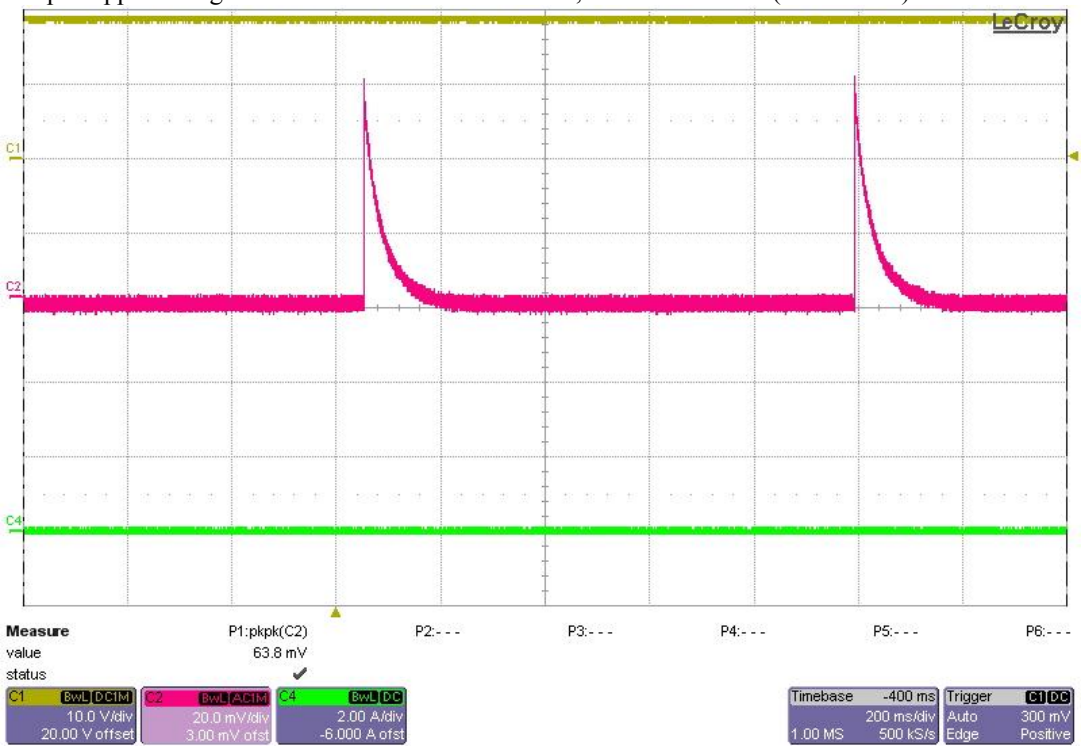


The output ripple voltage is shown in the figure below with Vin=7.2V, Iout = 12A. (20mV/DIV)

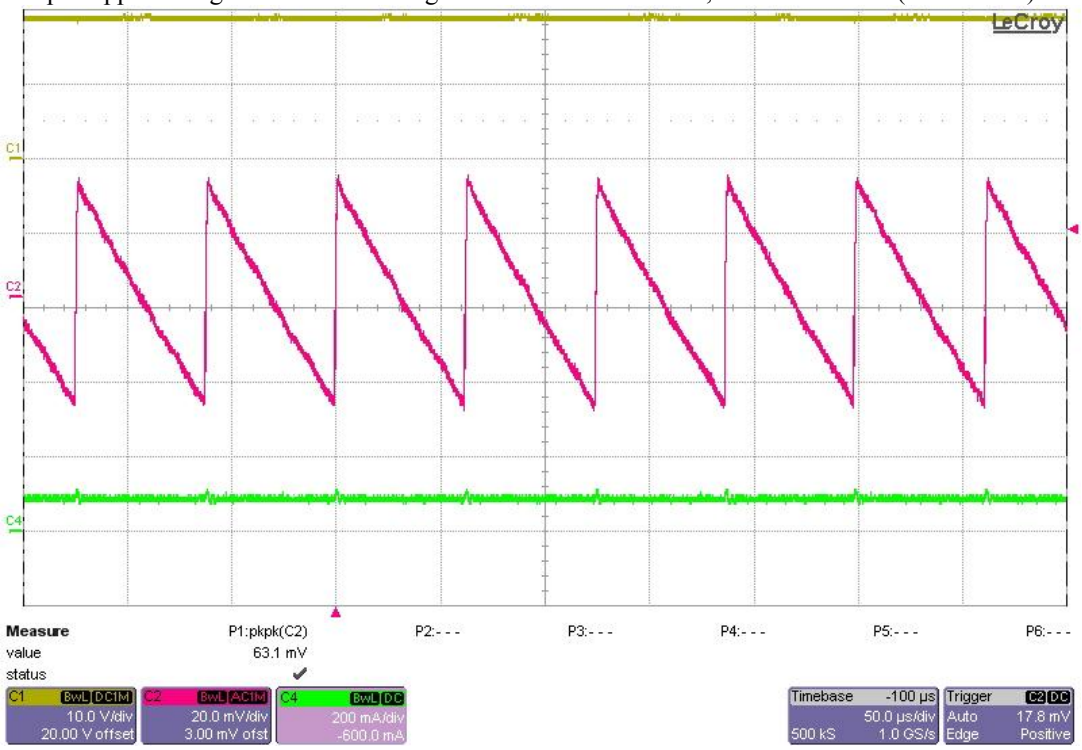


4 Output Ripple Voltage – 19Vin

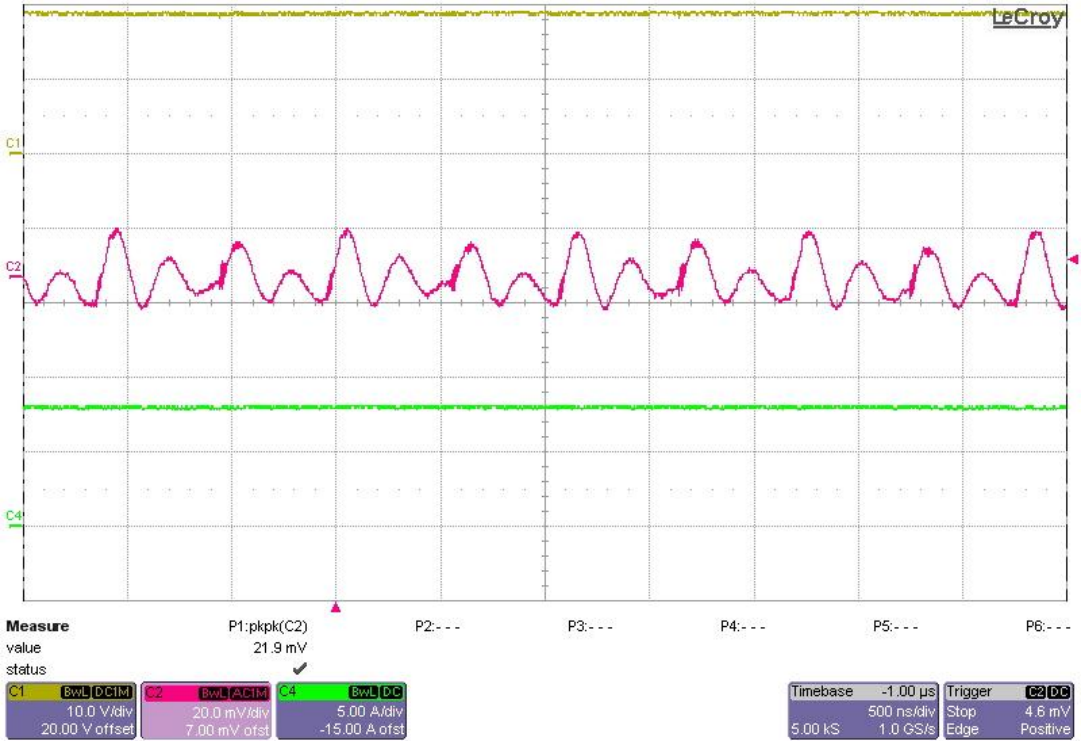
The output ripple voltage is shown below with Vin =19V, Iout = No load. (20mV/DIV)



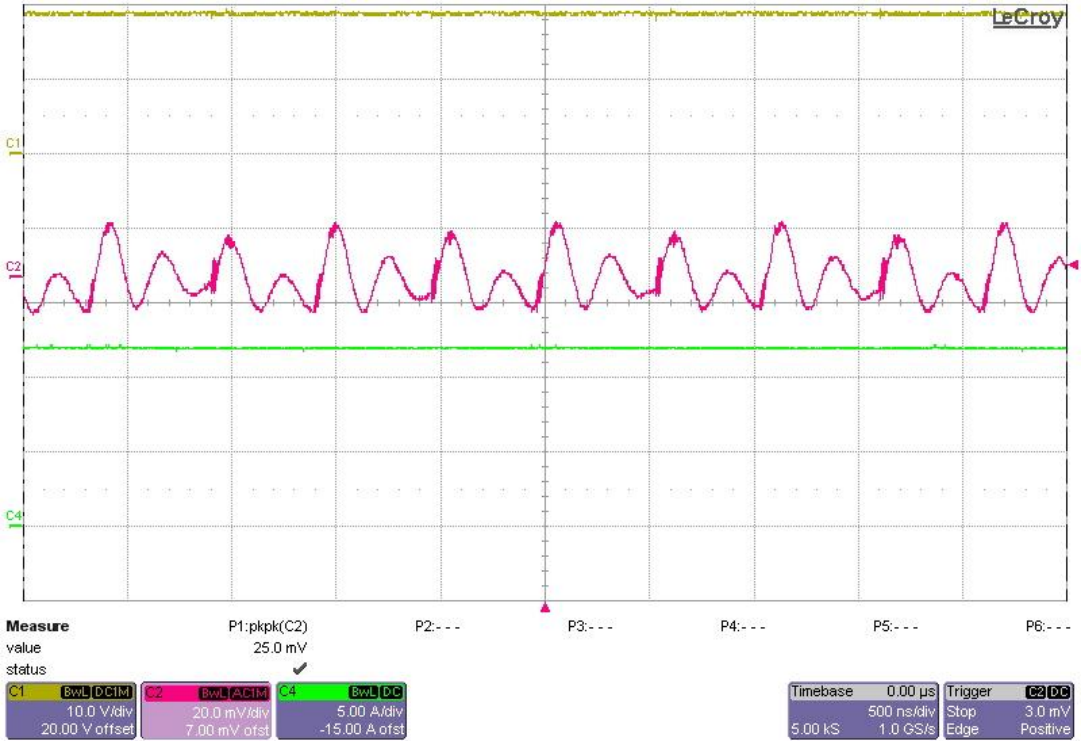
The output ripple voltage is shown in the figure below with Vin=19V, Iout = 100mA. (20mV/DIV)



The output ripple voltage is shown below with Vin =19V, Iout = 8A. (20mV/DIV)

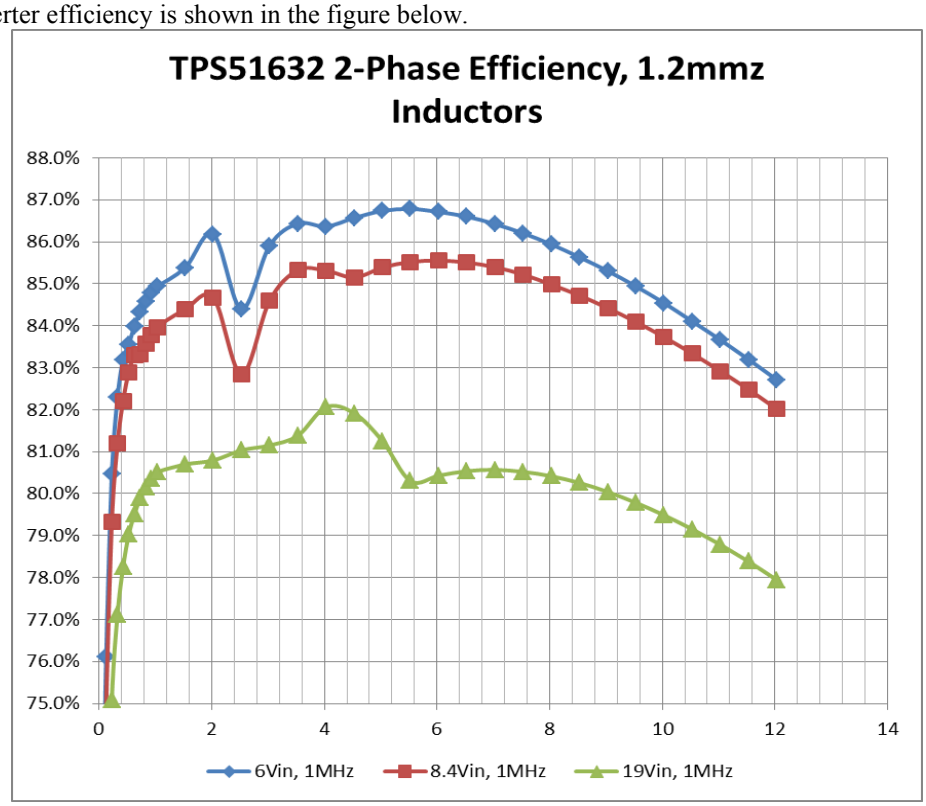


The output ripple voltage is shown in the figure below with Vin=19V, Iout = 12A. (20mV/DIV)



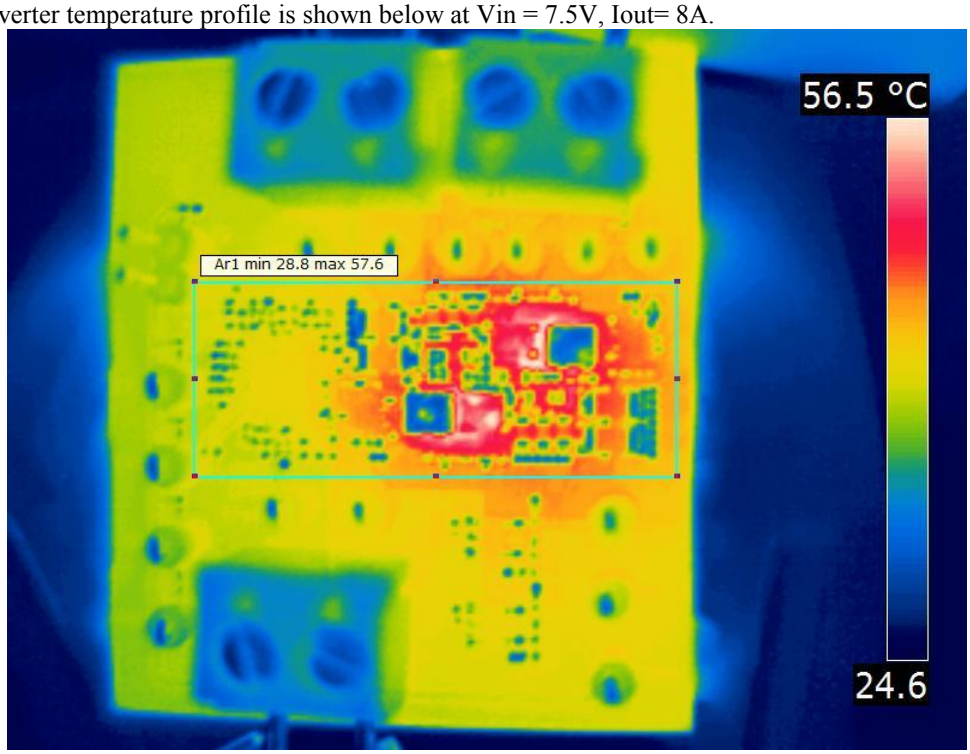
5 Efficiency

The converter efficiency is shown in the figure below.

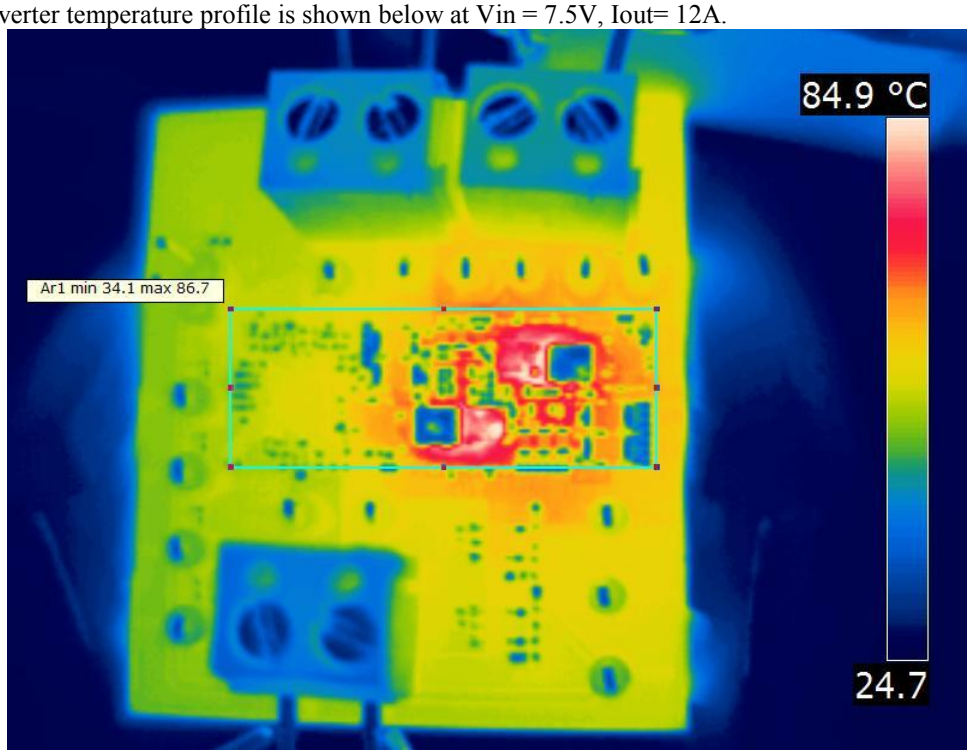


6 Thermal

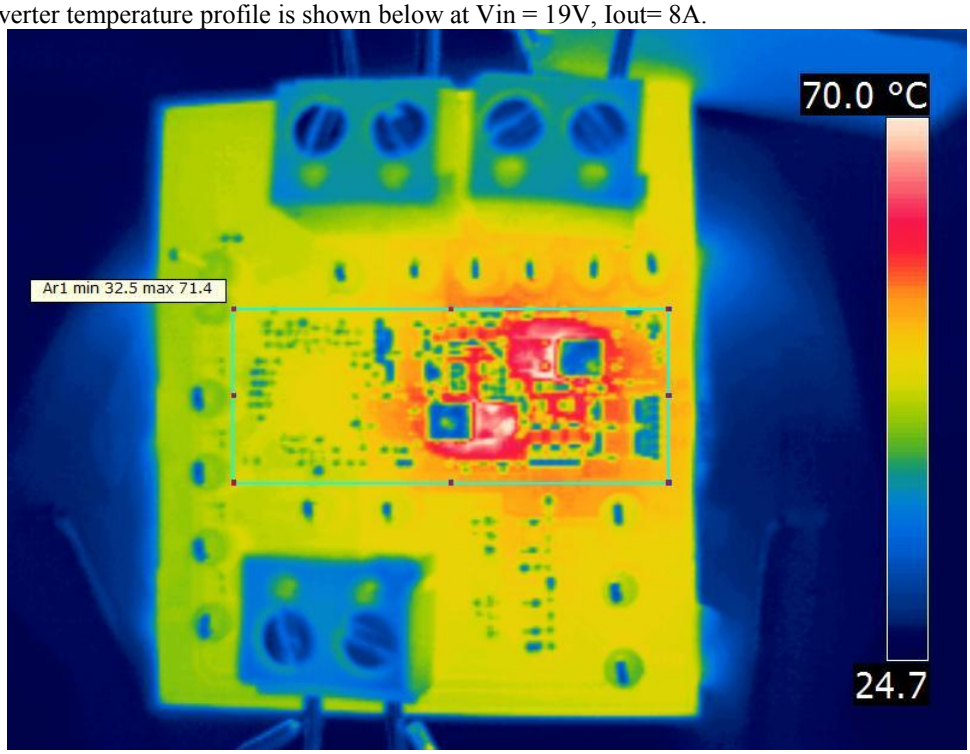
The converter temperature profile is shown below at Vin = 7.5V, Iout= 8A.



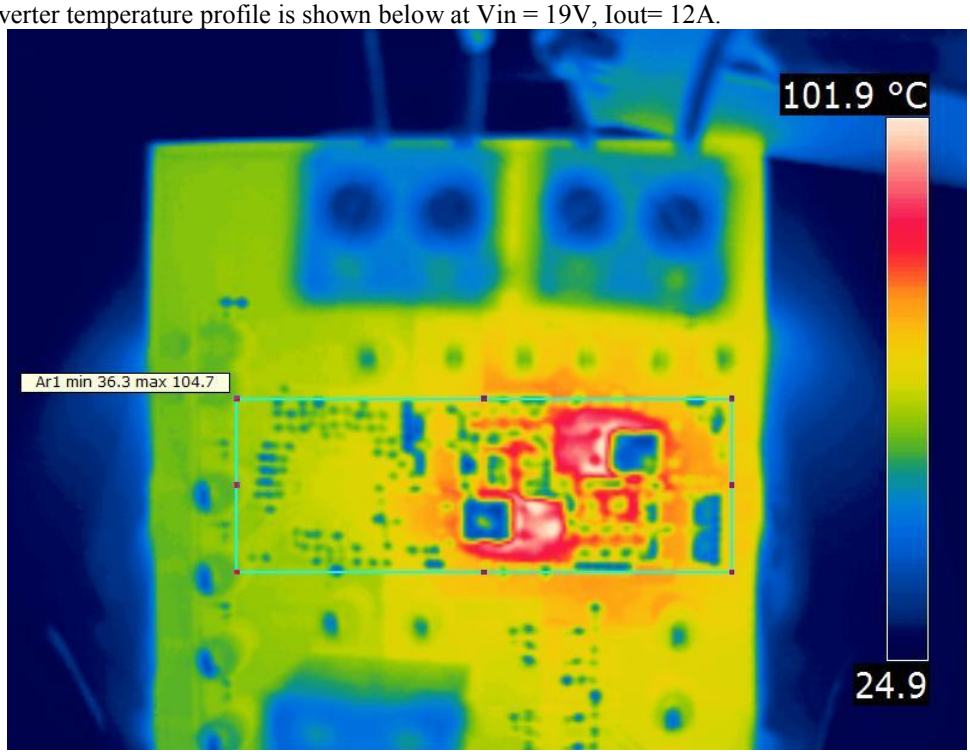
The converter temperature profile is shown below at Vin = 7.5V, Iout= 12A.



The converter temperature profile is shown below at Vin = 19V, Iout= 8A.

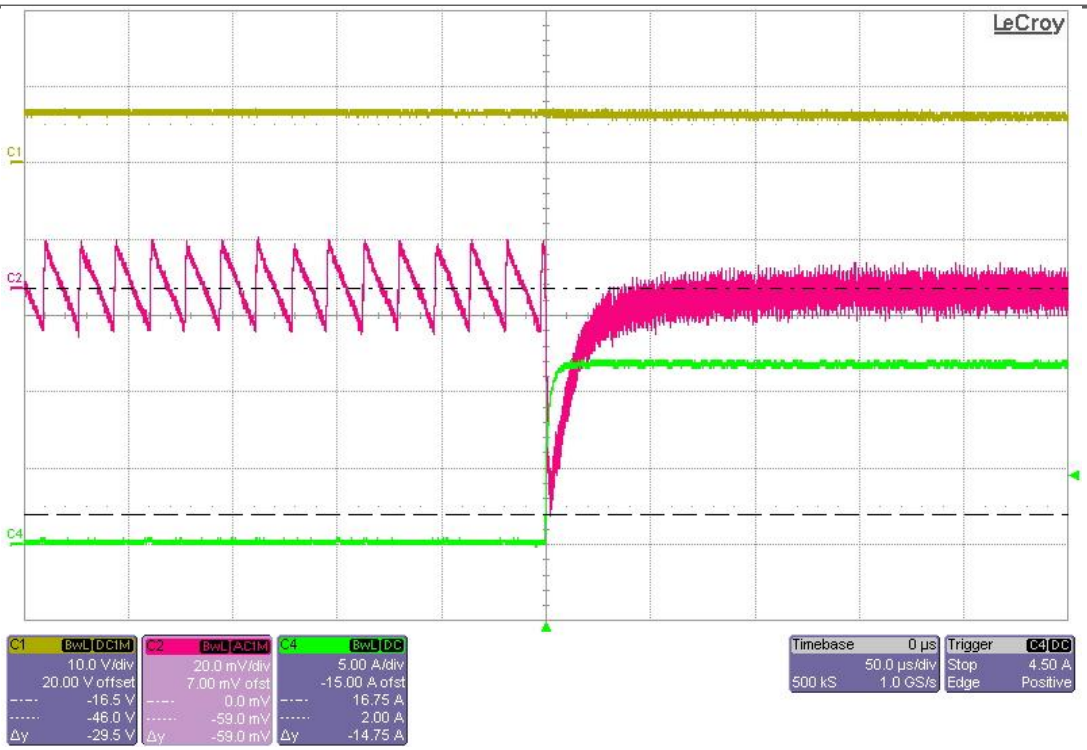


The converter temperature profile is shown below at Vin = 19V, Iout= 12A.

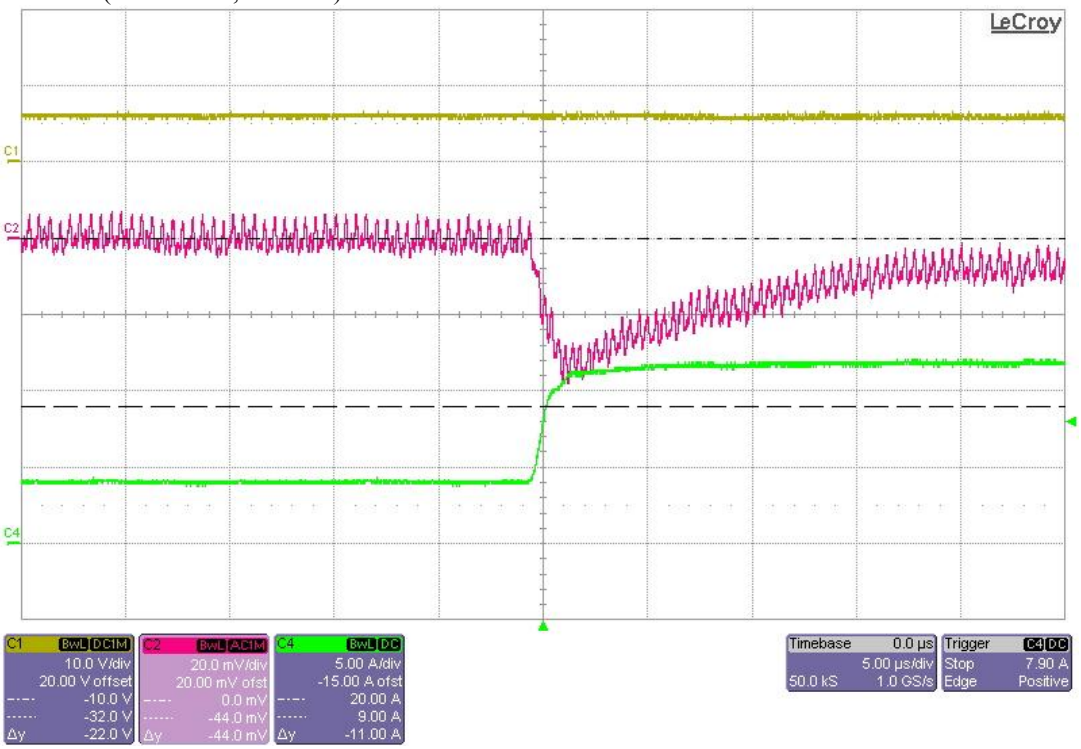


7 Load Transients, Rising – 6Vin

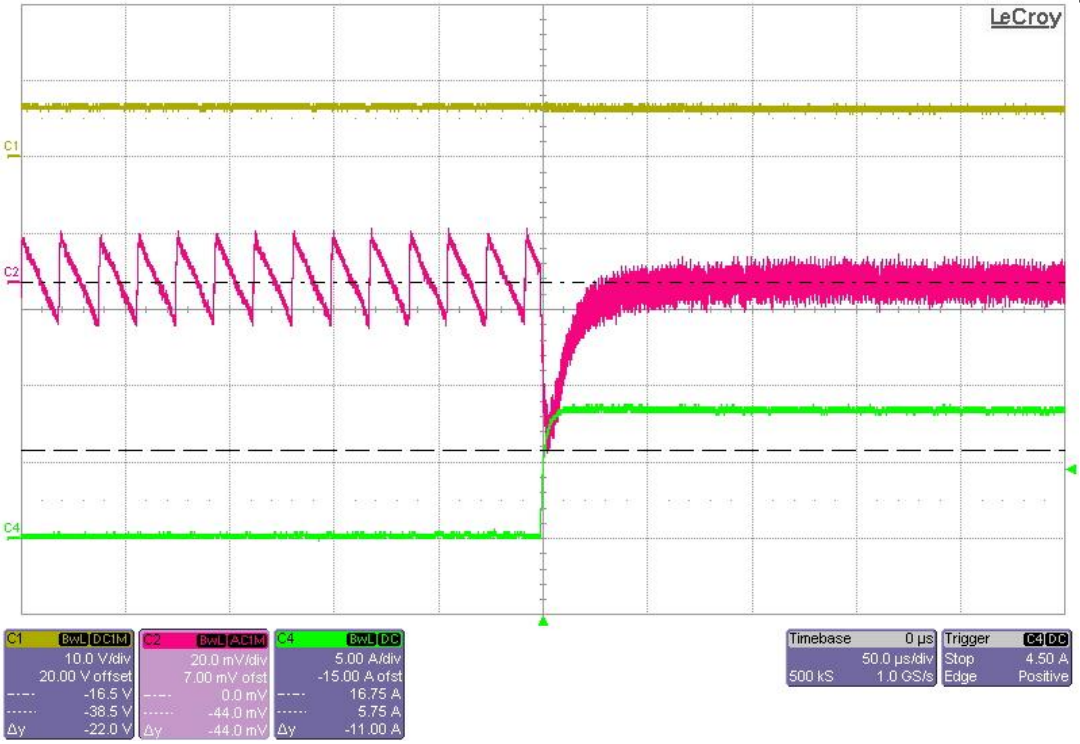
The photo below shows the output voltage when the load current is pulsed from 100mA to 12A.
Vin = 6Vdc. (20mV/DIV, 5A/DIV)



The photo below shows the output voltage when the load current is pulsed from 4A to 12A.
Vin = 6Vdc. (20mV/DIV, 5A/DIV)

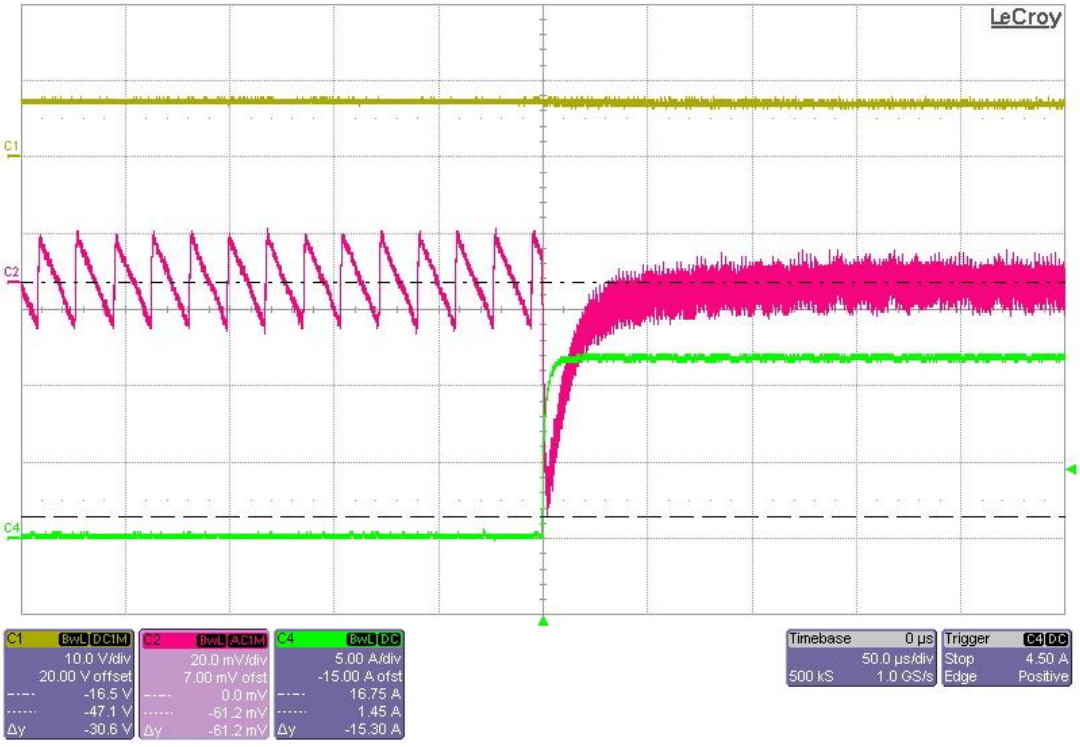


The photo below shows the output voltage deviation of 44mV (~4%Vout) when the load current is pulsed from 0A to 7.5A. Vin = 6Vdc. (20mV/DIV, 5A/DIV)

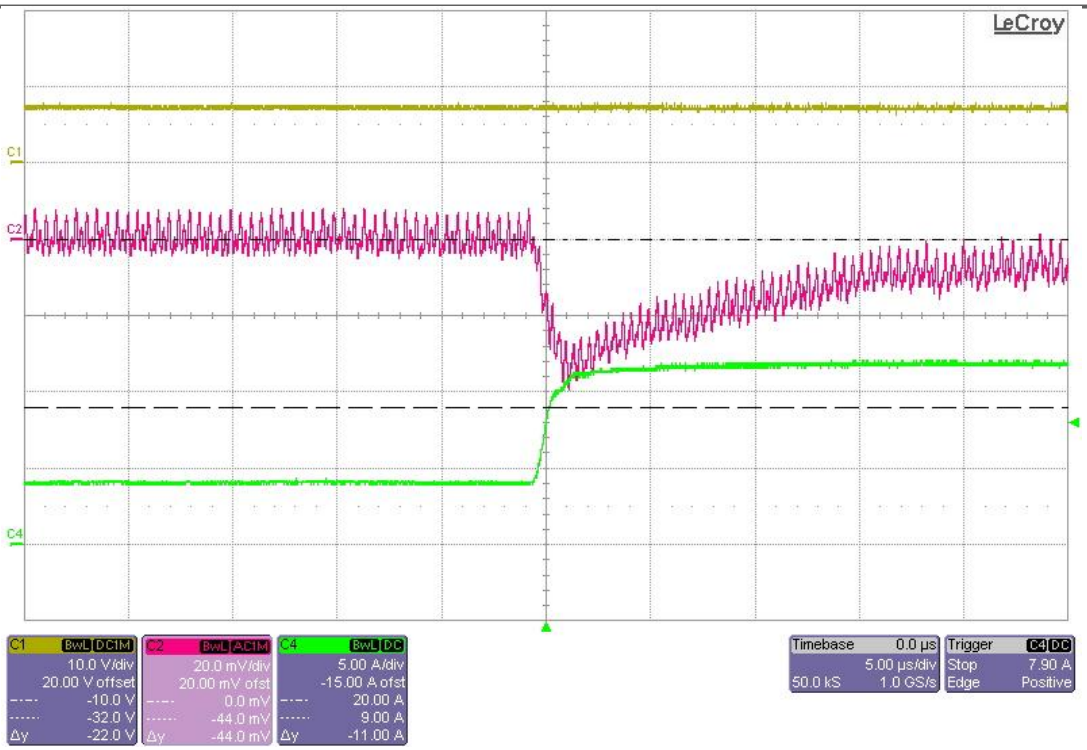


8 Load Transients, Rising – 7.2Vin

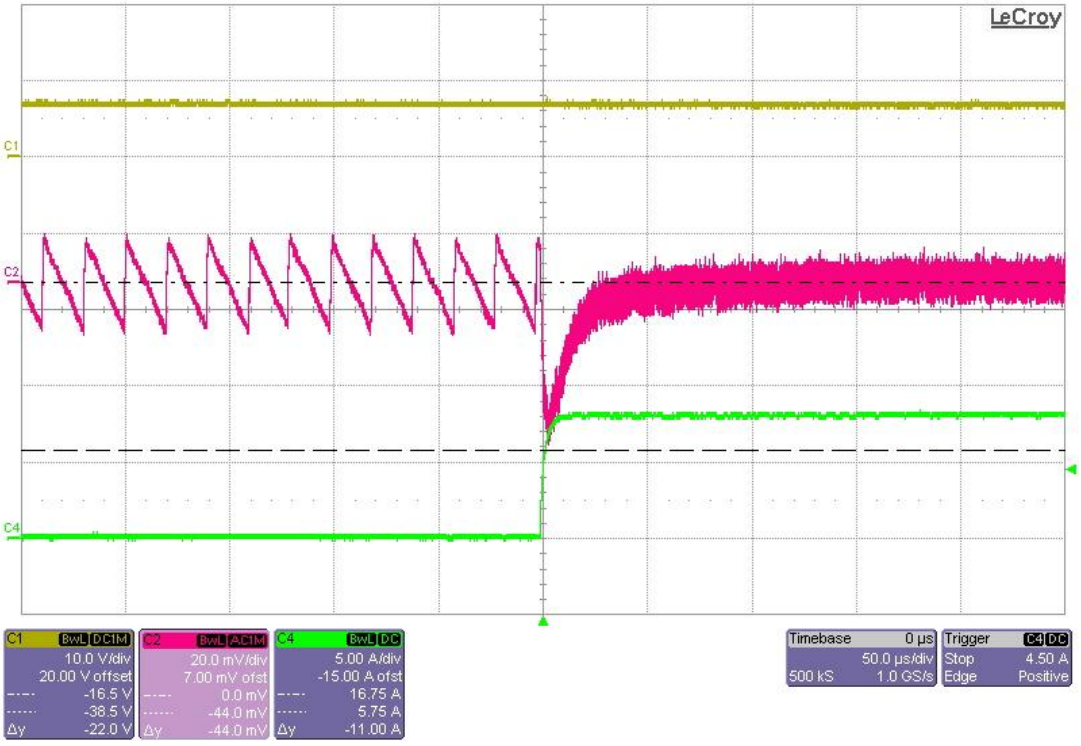
The photo below shows the output voltage when the load current is pulsed from 100mA to 12A.
Vin = 7.2Vdc. (20mV/DIV, 5A/DIV)



The photo below shows the output voltage when the load current is pulsed from 4A to 12A.
Vin = 7.2Vdc. (20mV/DIV, 5A/DIV)

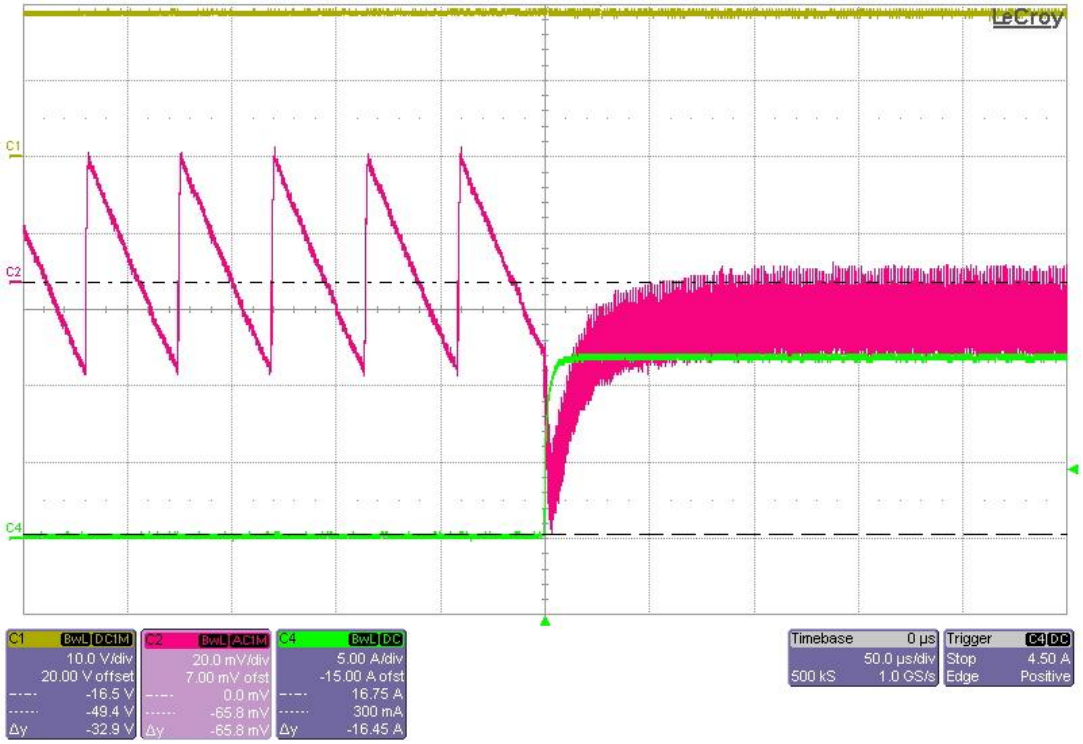


The photo below shows the output voltage deviation of 44mV (~4%Vout) when the load current is pulsed from 0A to 7.5A. Vin = 7.2Vdc. (20mV/DIV, 5A/DIV)

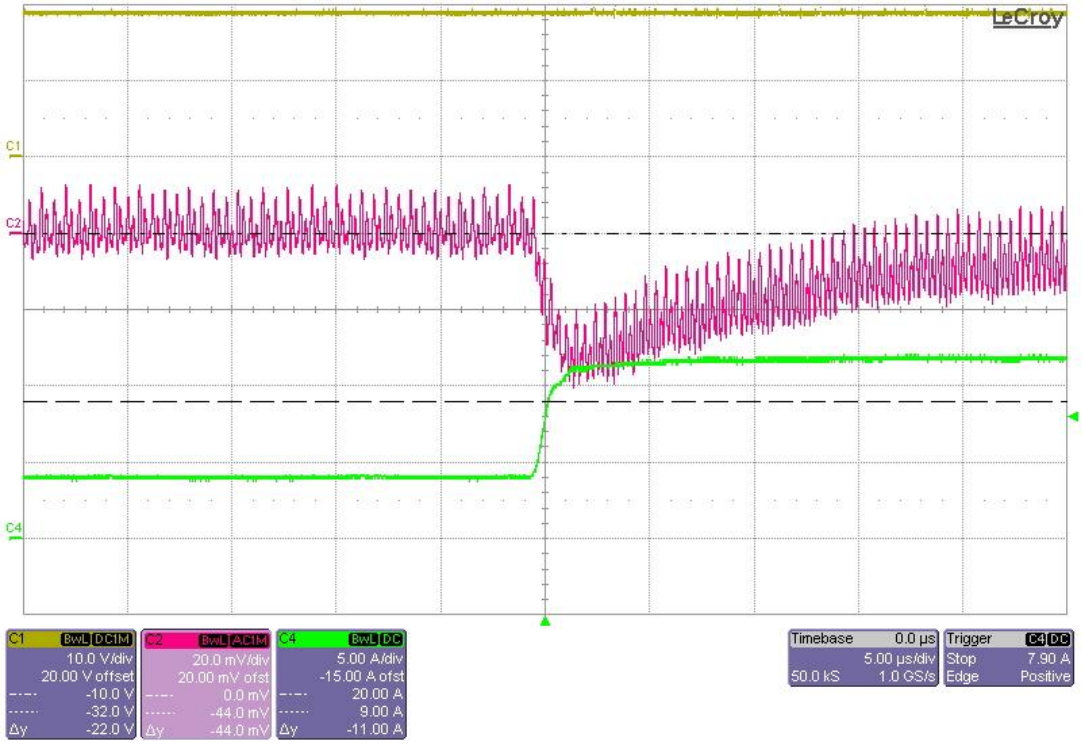


9 Load Transients, Rising – 19Vin

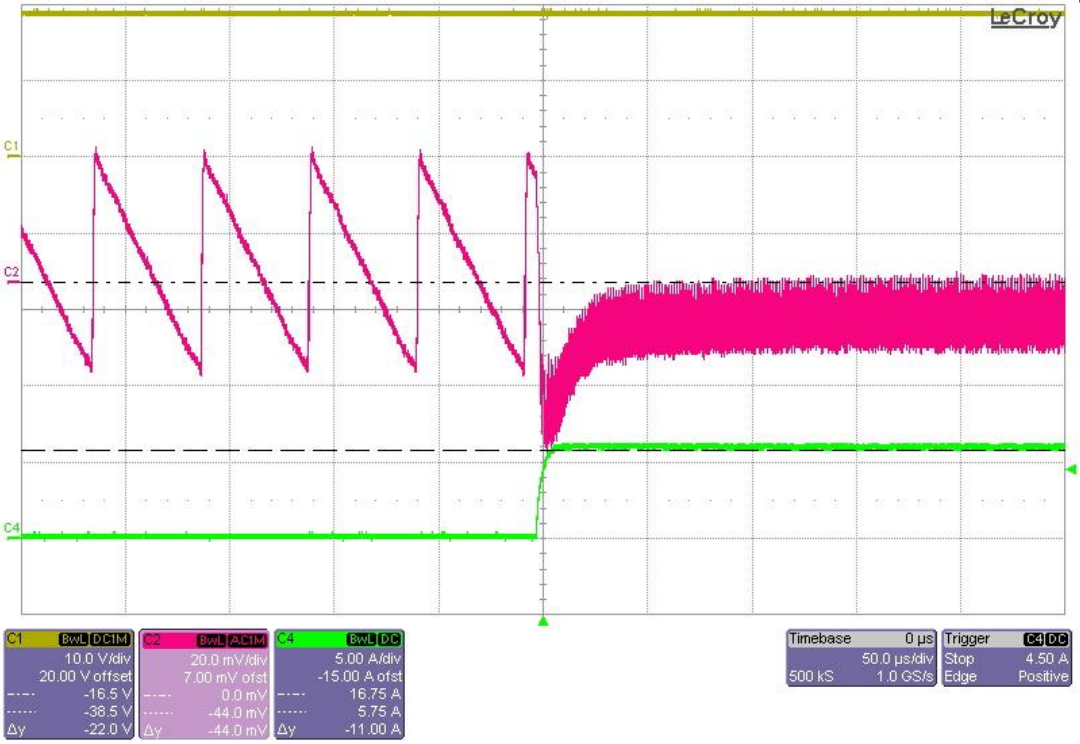
The photo below shows the output voltage when the load current is pulsed from 100mA to 12A. Vin = 19Vdc. (20mV/DIV, 5A/DIV)



The photo below shows the output voltage when the load current is pulsed from 4A to 12A. Vin = 19Vdc. (20mV/DIV, 5A/DIV)

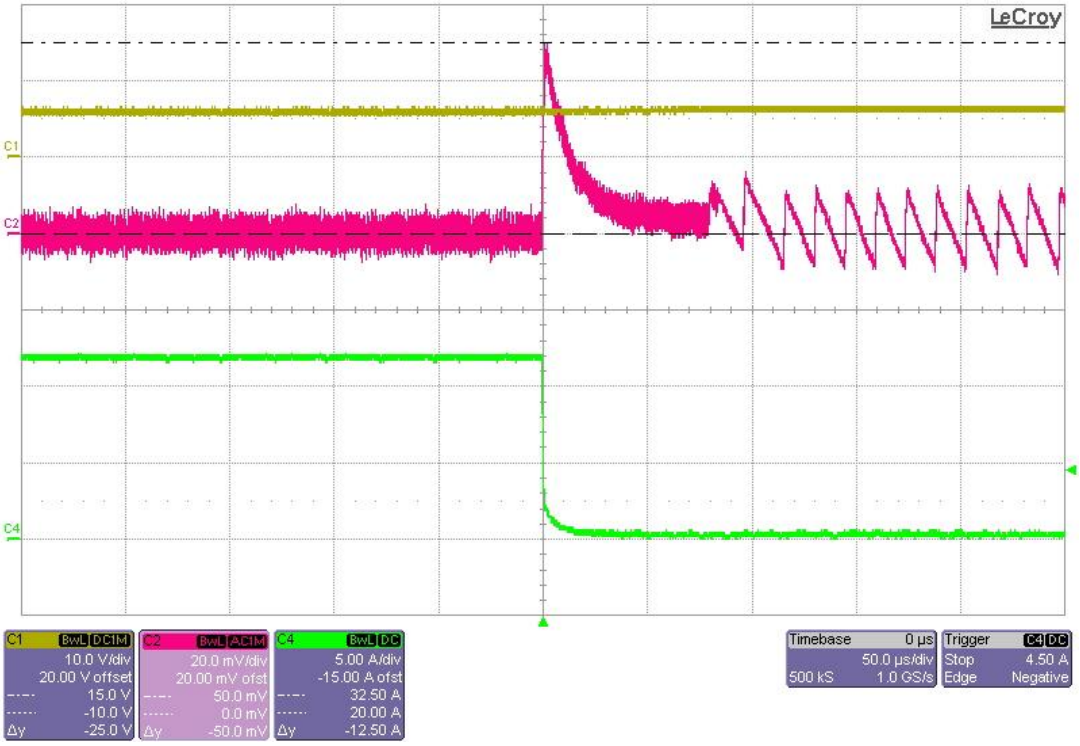


The photo below shows the output voltage deviation of 44mV (~4%Vout) when the load current is pulsed from 0A to 6A. Vin = 19Vdc. (20mV/DIV, 5A/DIV)



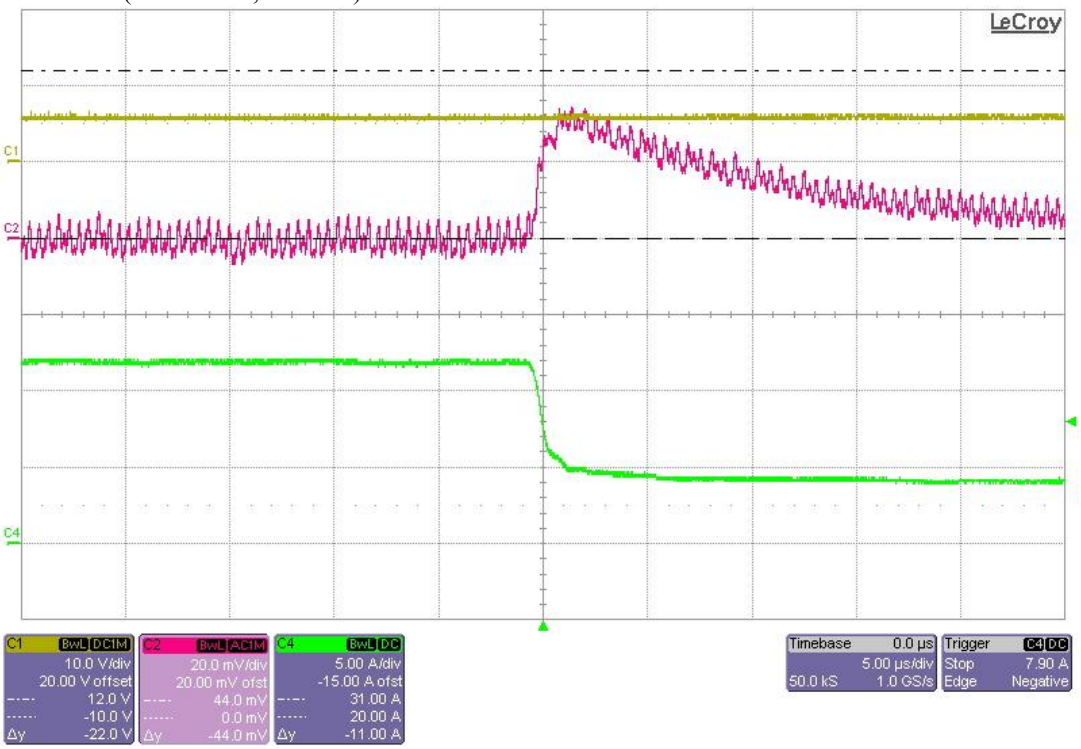
10 Load Transients, Falling – 6Vin

The photo below shows the output voltage when the load current is pulsed from 12A to 100mA.
Vin = 7.2Vdc. (20mV/DIV, 5A/DIV)



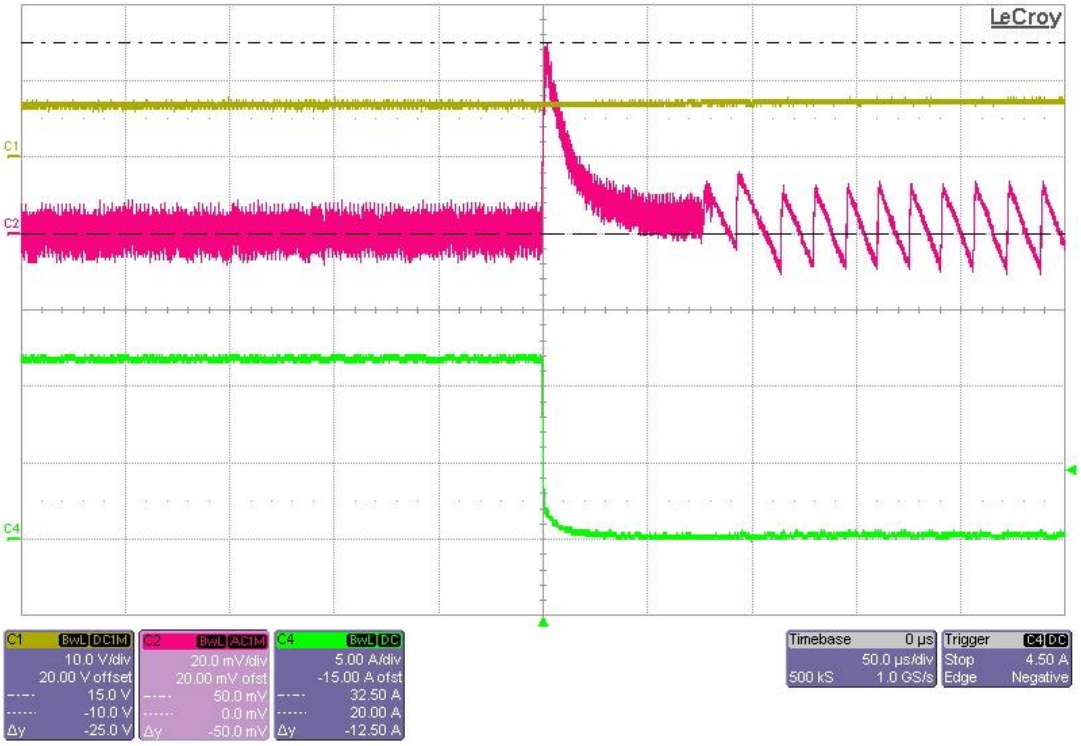
The photo below shows the output voltage when the load current is pulsed from 12A to 4A.

Vin = 7.2Vdc. (20mV/DIV, 5A/DIV)



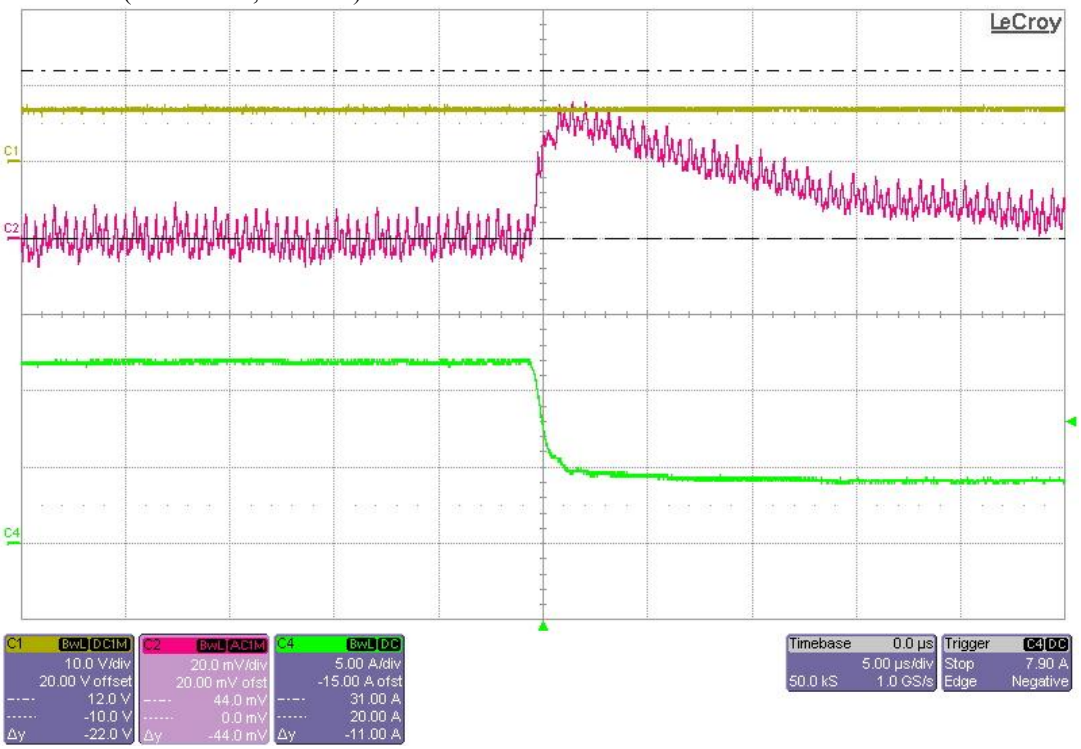
11 Load Transients, Falling – 7.2Vin

The photo below shows the output voltage when the load current is pulsed from 12A to 100mA.
Vin = 7.2Vdc. (20mV/DIV, 5A/DIV)



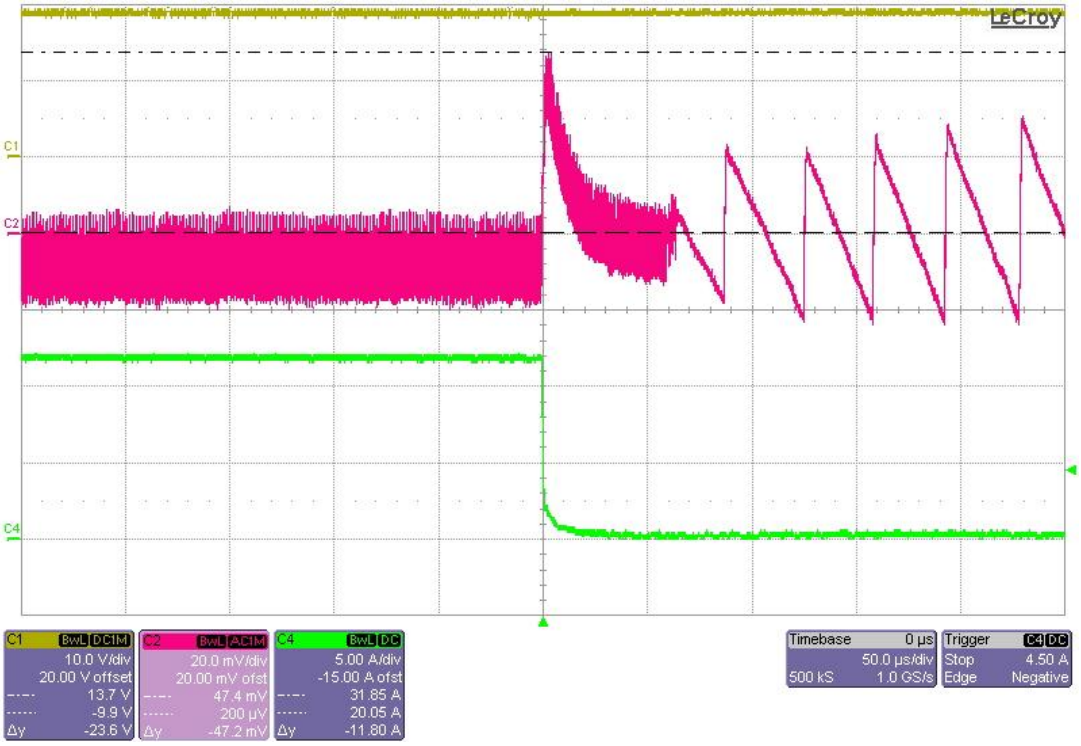
The photo below shows the output voltage when the load current is pulsed from 12A to 4A.

Vin = 7.2Vdc. (20mV/DIV, 5A/DIV)



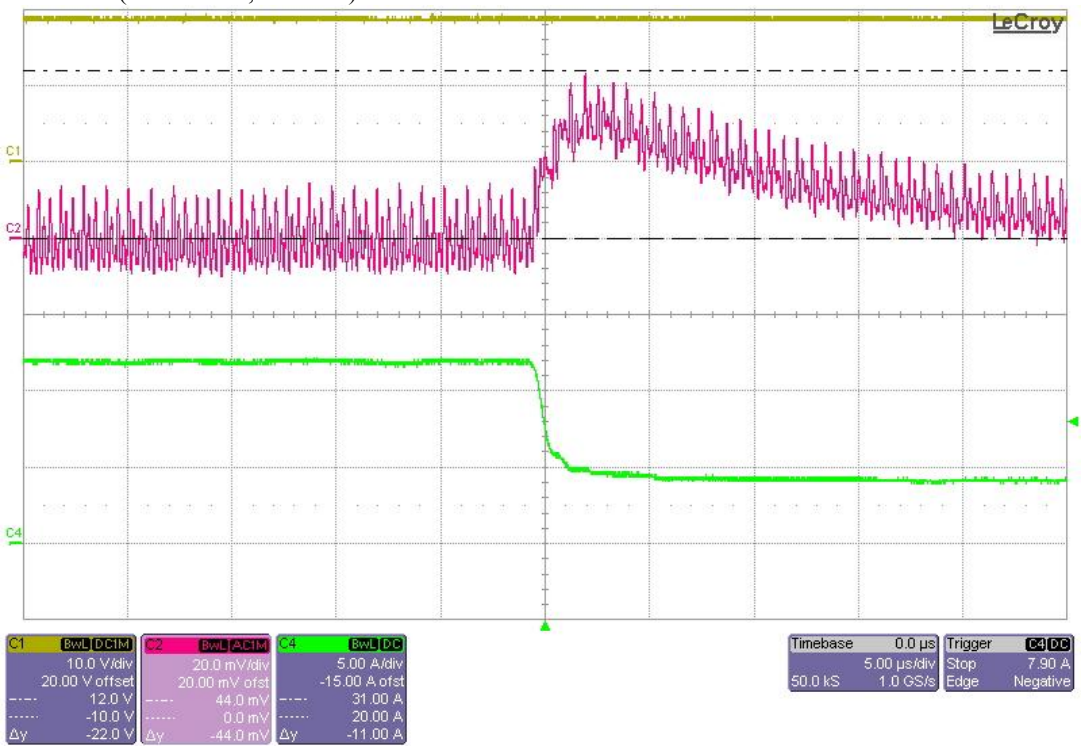
12 Load Transients, Falling – 19Vin

The photo below shows the output voltage when the load current is pulsed from 12A to 100mA.
Vin = 19Vdc. (20mV/DIV, 5A/DIV)



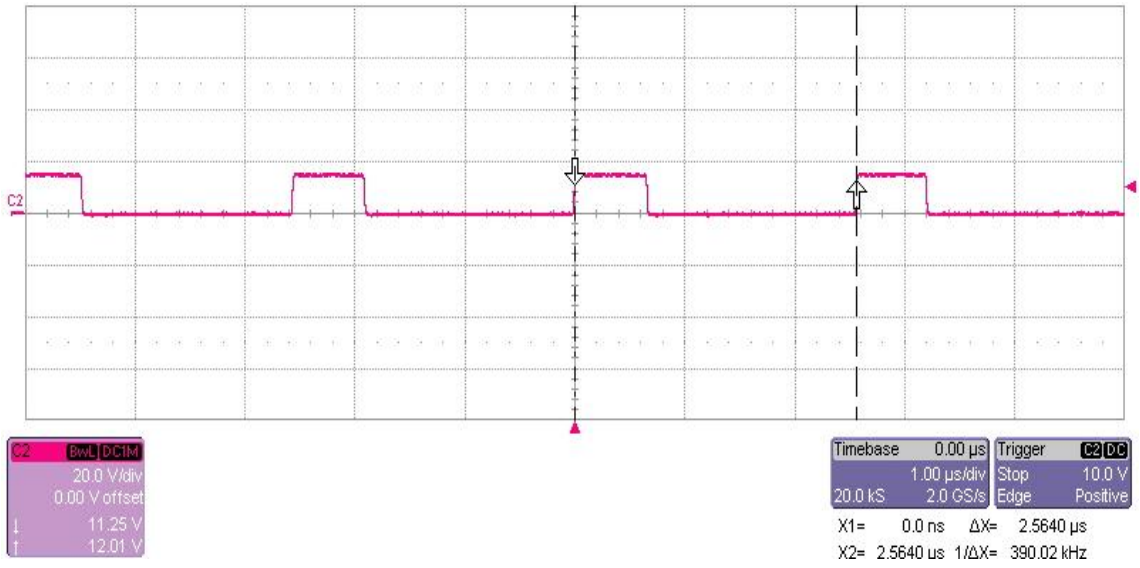
The photo below shows the output voltage when the load current is pulsed from 12A to 4A.

Vin = 19Vdc. (20mV/DIV, 5A/DIV)



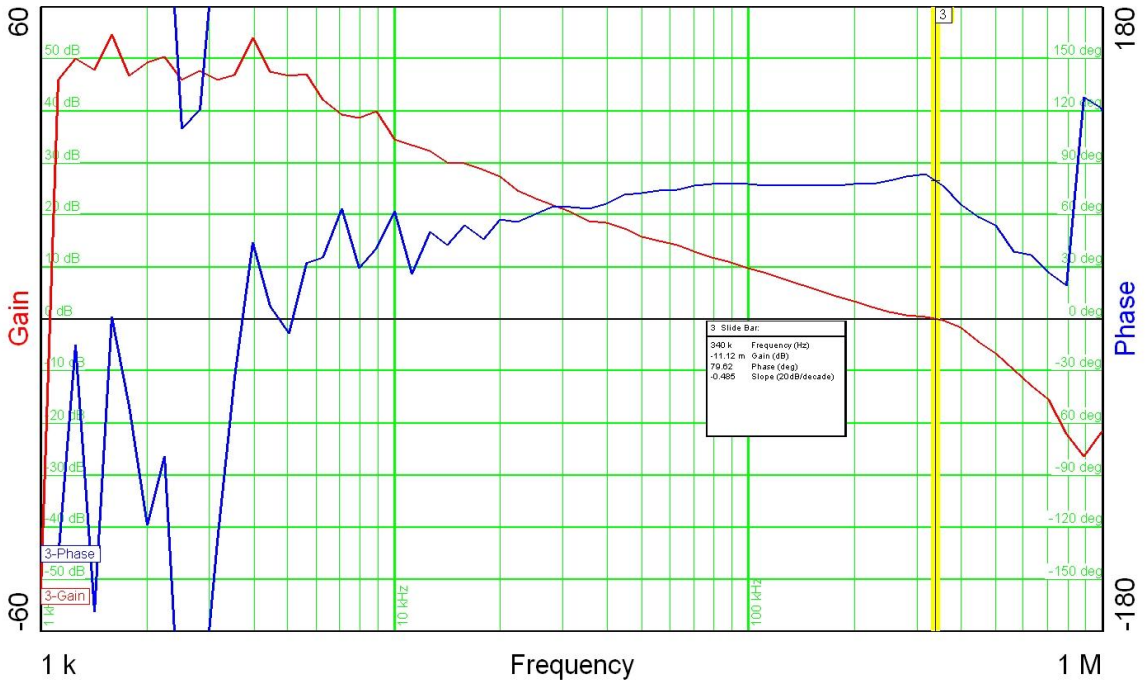
13 Switch Node Waveforms

The photo below shows the switching node waveform. The input voltage is 15V and the output is loaded to 2A. Curser measurement shows switching frequency at 390kHz.



14 Control Loop Gain / Stability

The plot below shows the loop gain and phase margin. Bandwidth = 340KHz, Phase Margin = 79 degrees.



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