

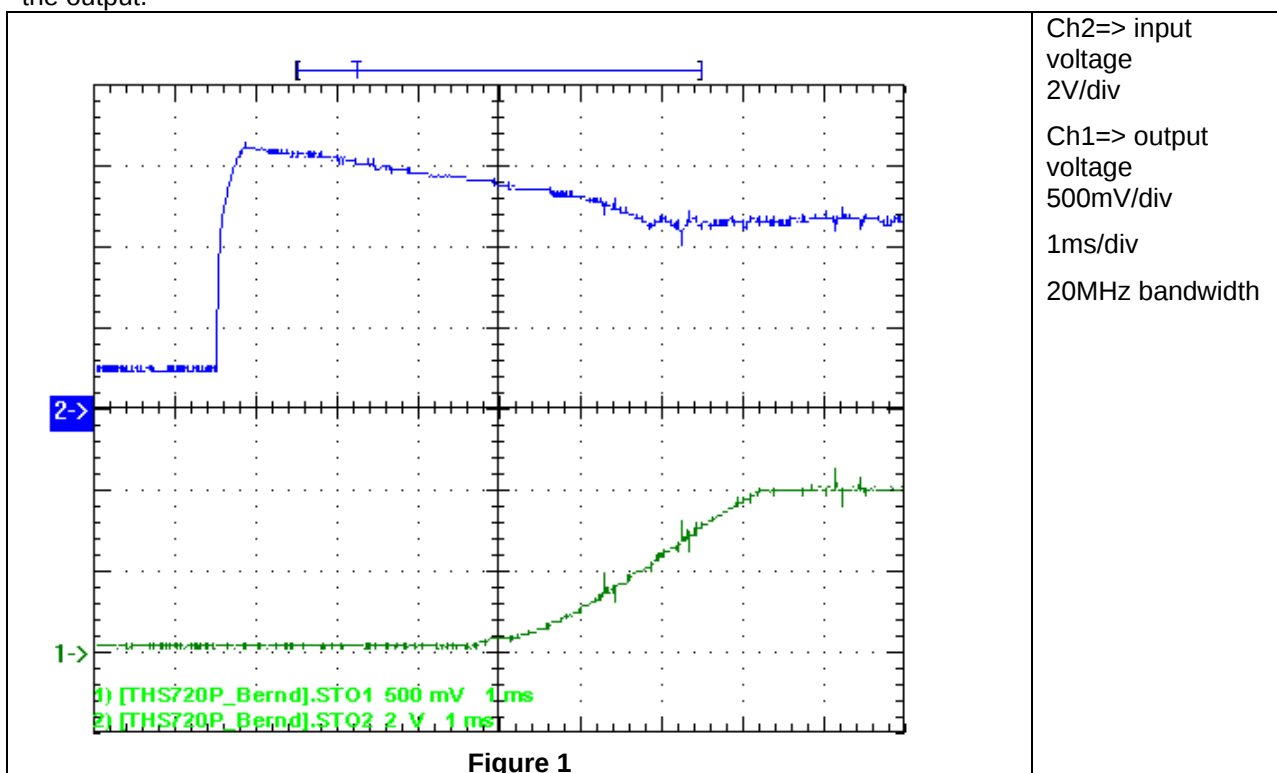
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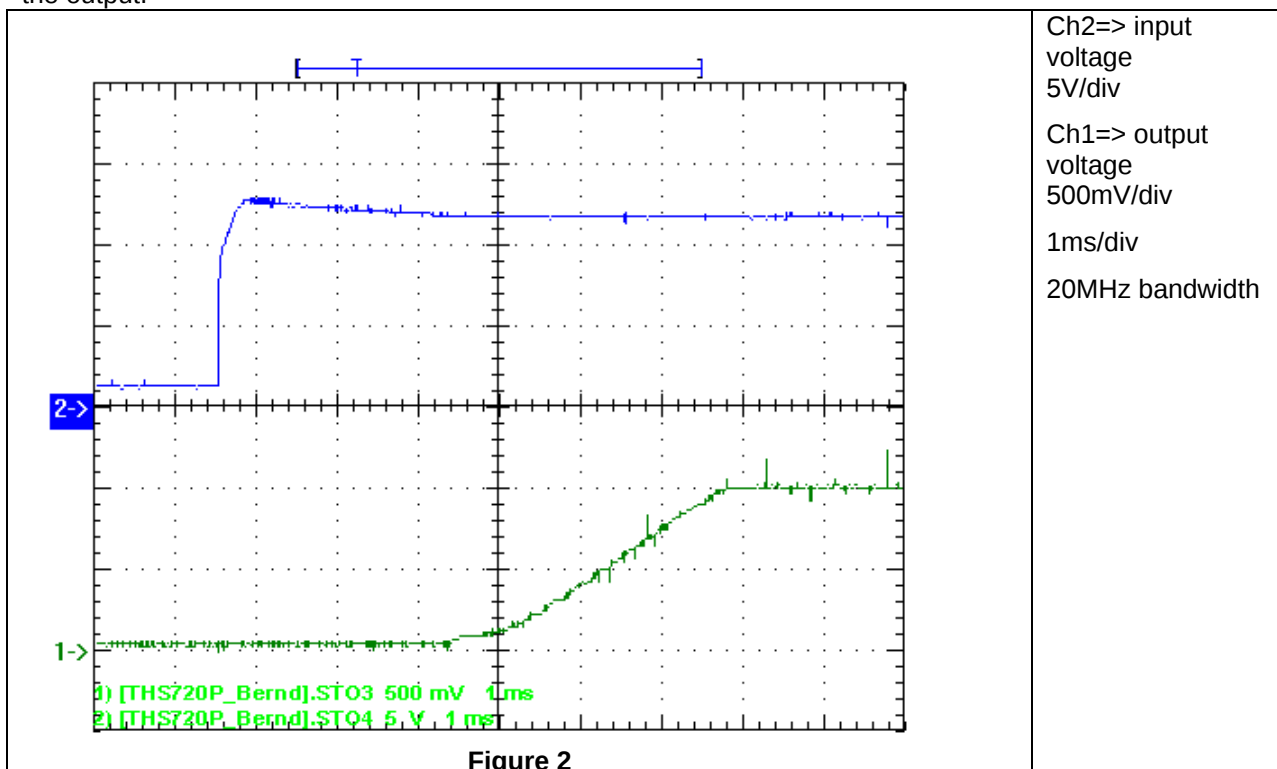
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1 Startup

The startup waveform is shown in the Figure 1. The input voltage was set to 5V, with 3A load at the output.



The startup waveform is shown in the Figure 2. The input voltage was set to 12V, with 3A load at the output.



2 Shutdown

The shutdown waveform is shown in the Figure 3 to 5V input voltage. With 3A load applied at the output.

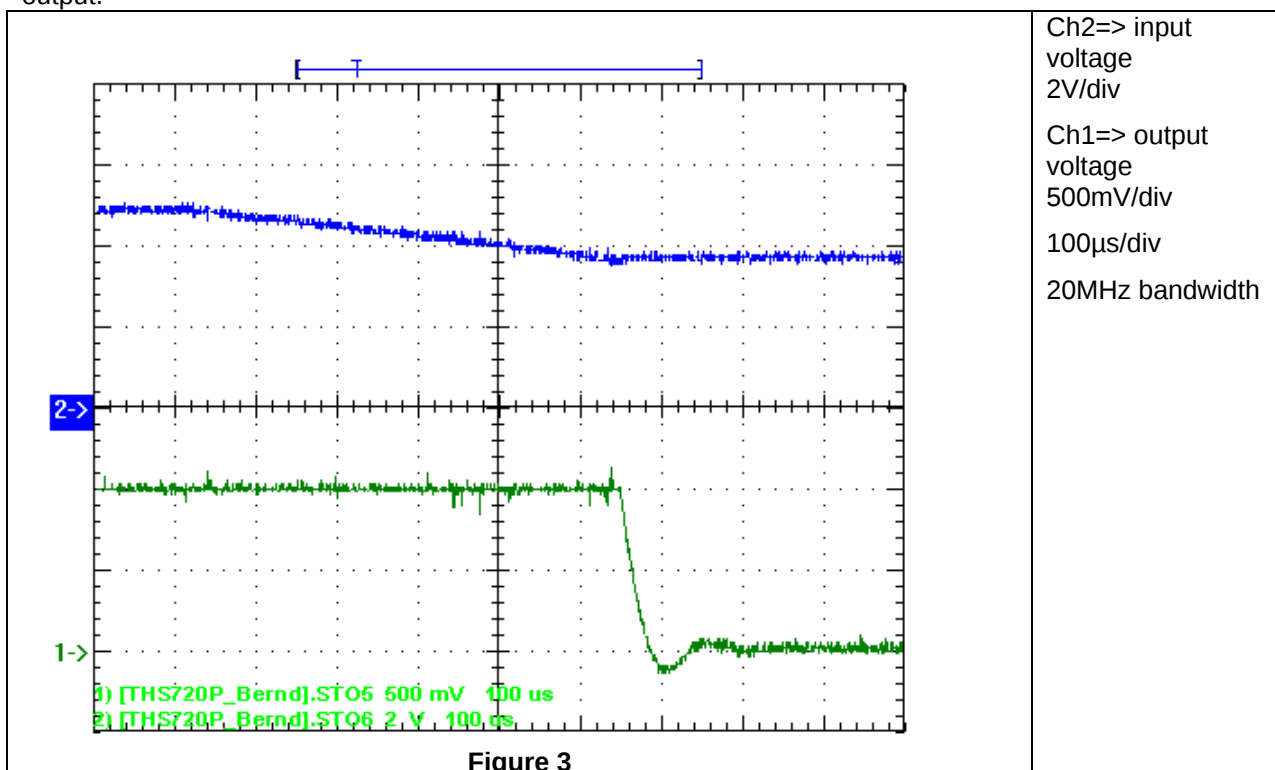


Figure 3

The shutdown waveform is shown in the Figure 3 to 12V input voltage. With 3A load applied at the output.

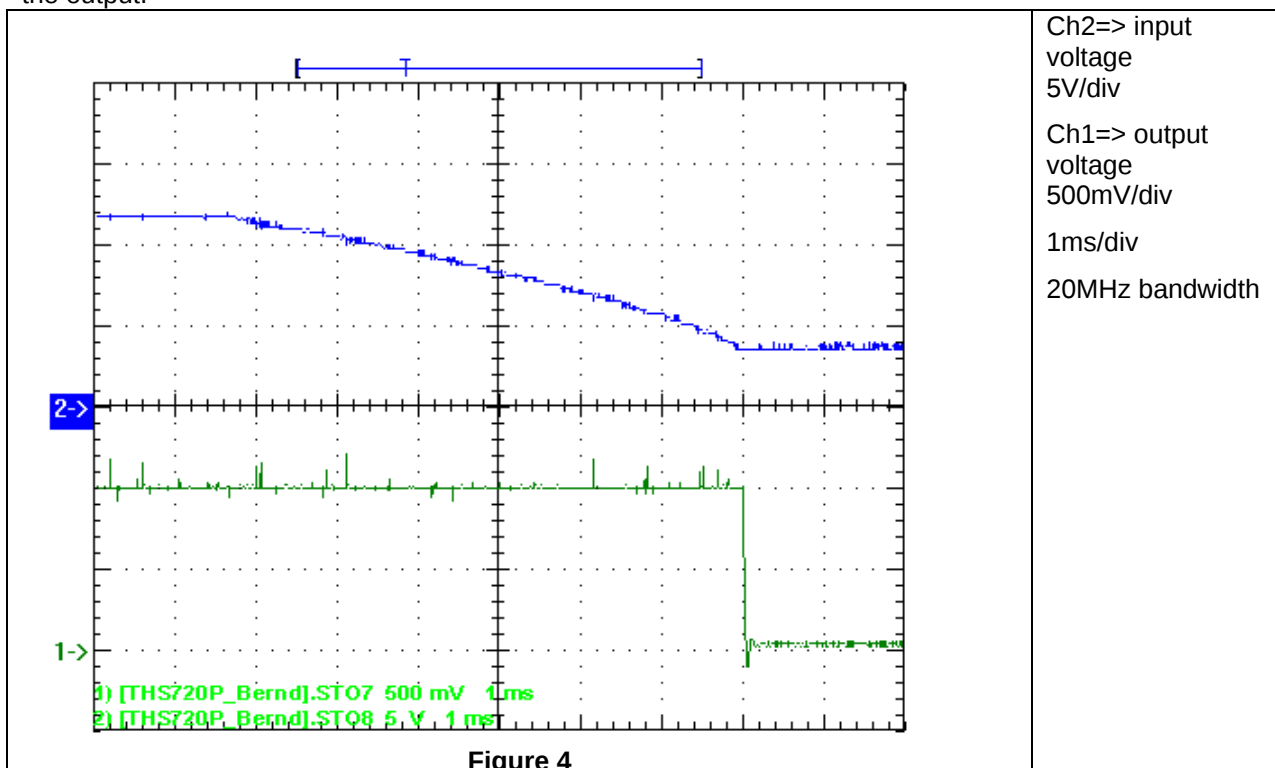


Figure 4

3 Efficiency

The efficiency is shown in the Figure 5 below.

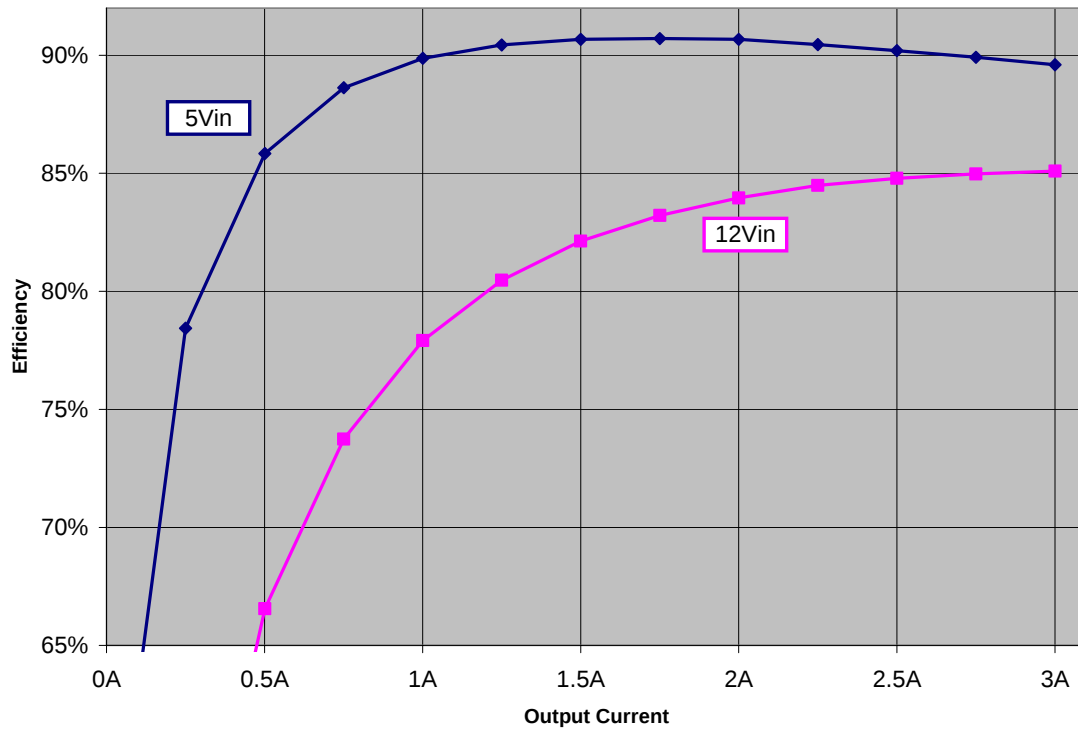


Figure 5

4 Load regulation

The load regulation is shown in Figure 6.

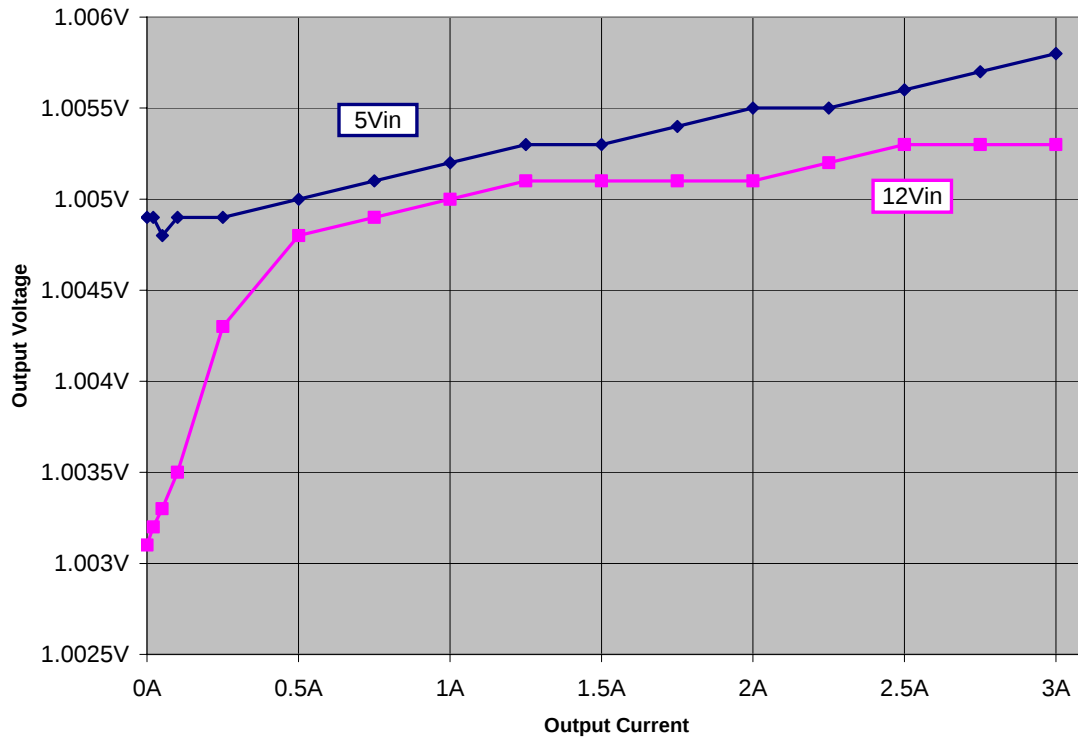


Figure 6

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5 Line Regulation

The line regulation at 3A output current is shown in Figure 7

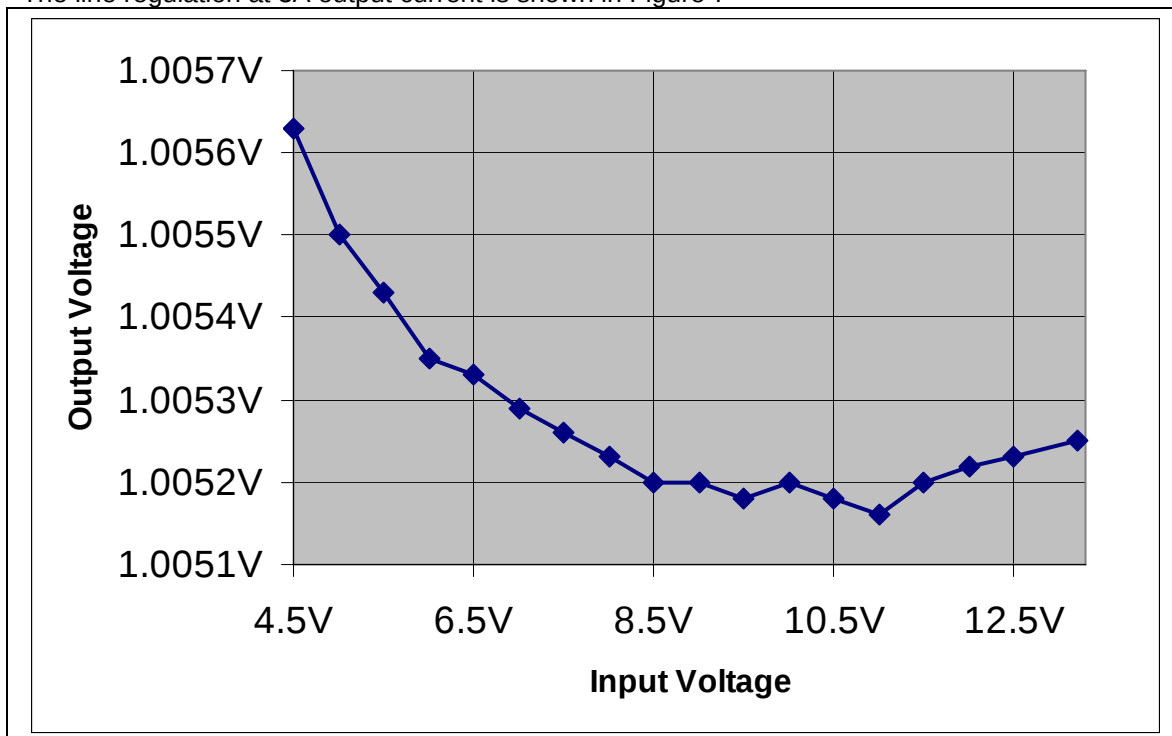


Figure 7

With the same measurement setup the efficiencies are shown in Figure 8.

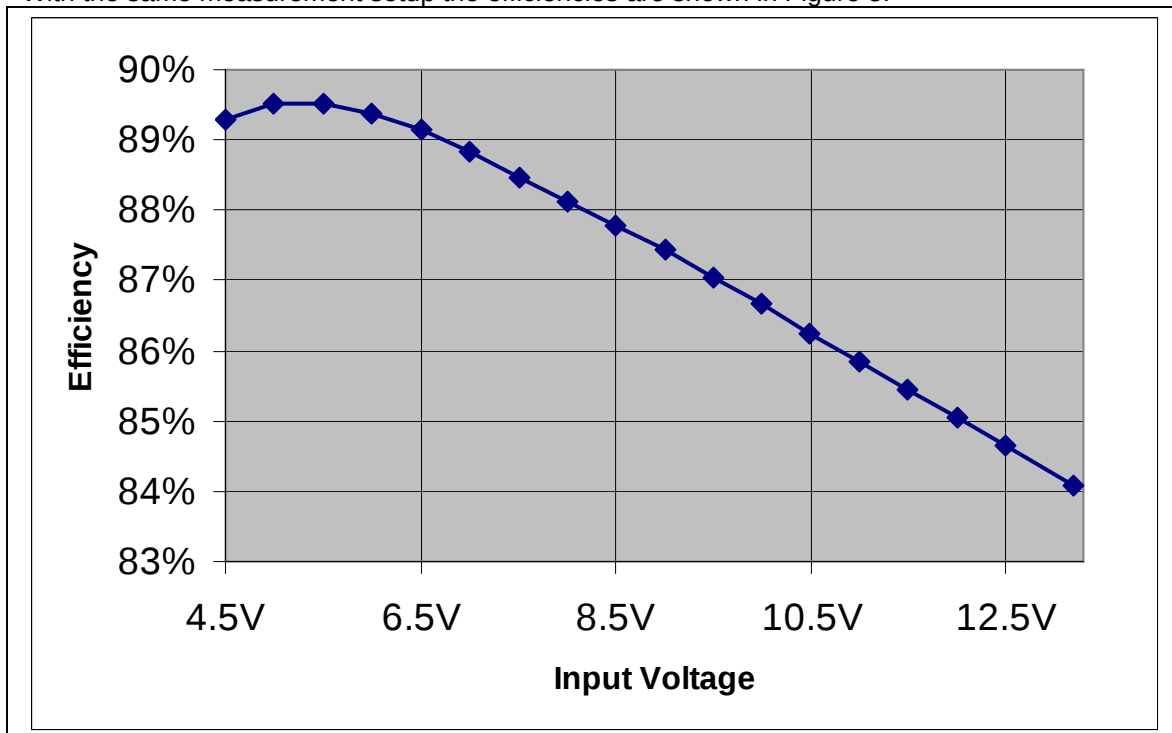


Figure 8

6 Switch Node Waveform

With 3A load results in the waveforms shown in Figure 9. 5V were applied to the input.

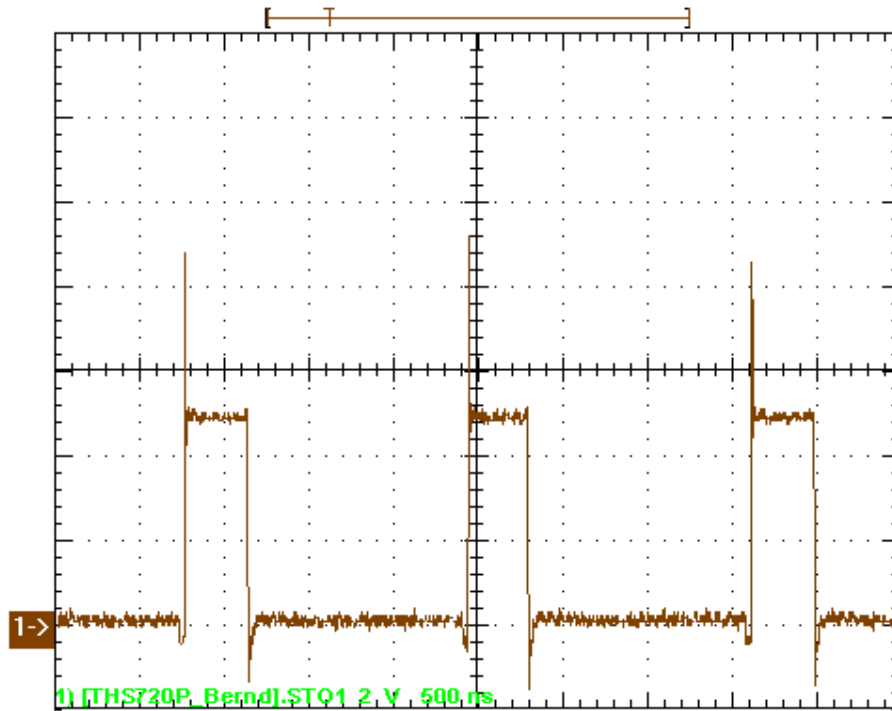


Figure 9

Ch1 =>
switchnode
2V/div
500ns/div
full
bandwidth

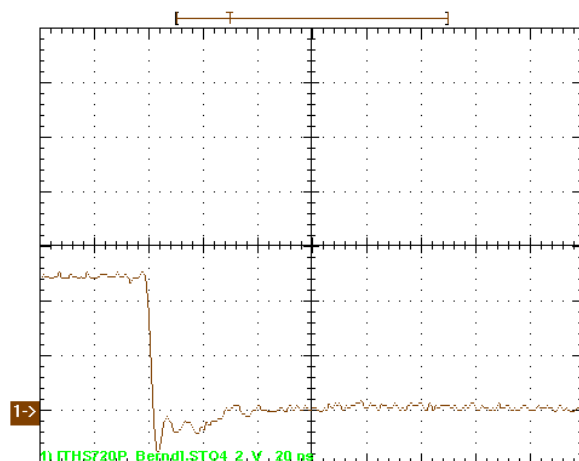
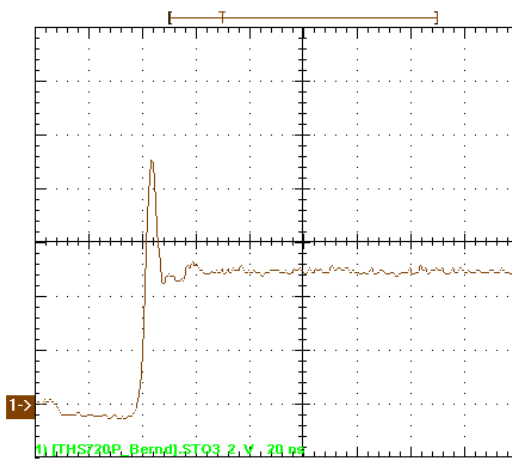


Figure 10

Ch1 =>
switchnode
2V/div
20ns/div
full
bandwidth

With 3A load results in the waveforms shown in Figure 9. 12V were applied to the input.

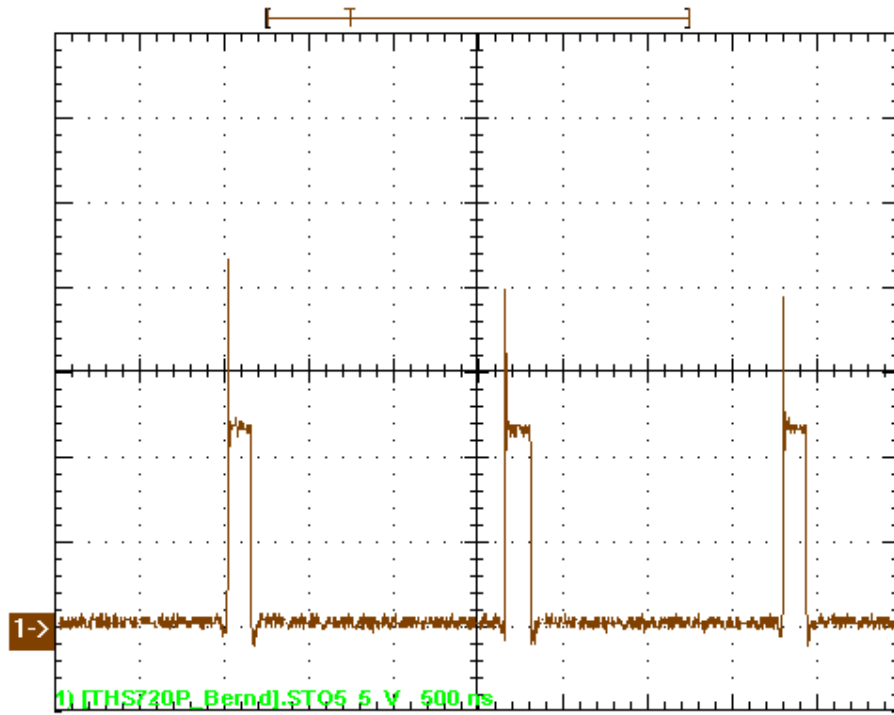


Figure 11

Ch1 =>
switchnode
5V/div
500ns/div
full
bandwidth

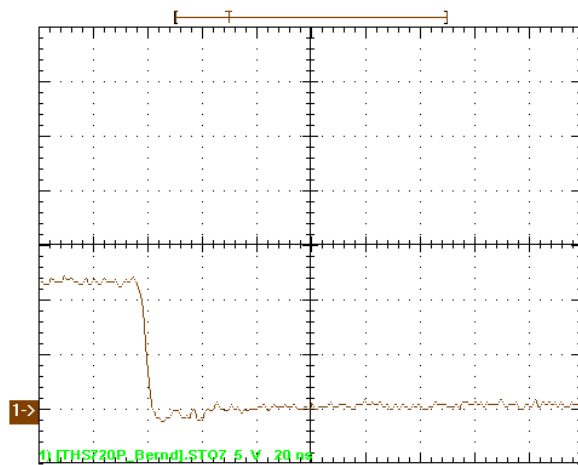
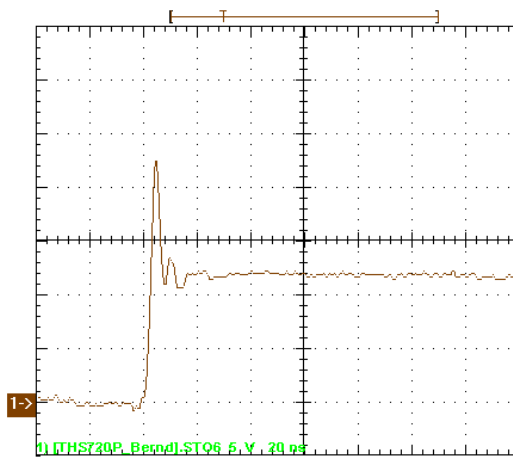


Figure 12

Ch1 =>
switchnode
5V/div
20ns/div
full
bandwidth

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7 Ripple Voltages

The output ripple voltage is displayed in Figure 13. The input voltage was set to 5V and 12V with output current 3A.

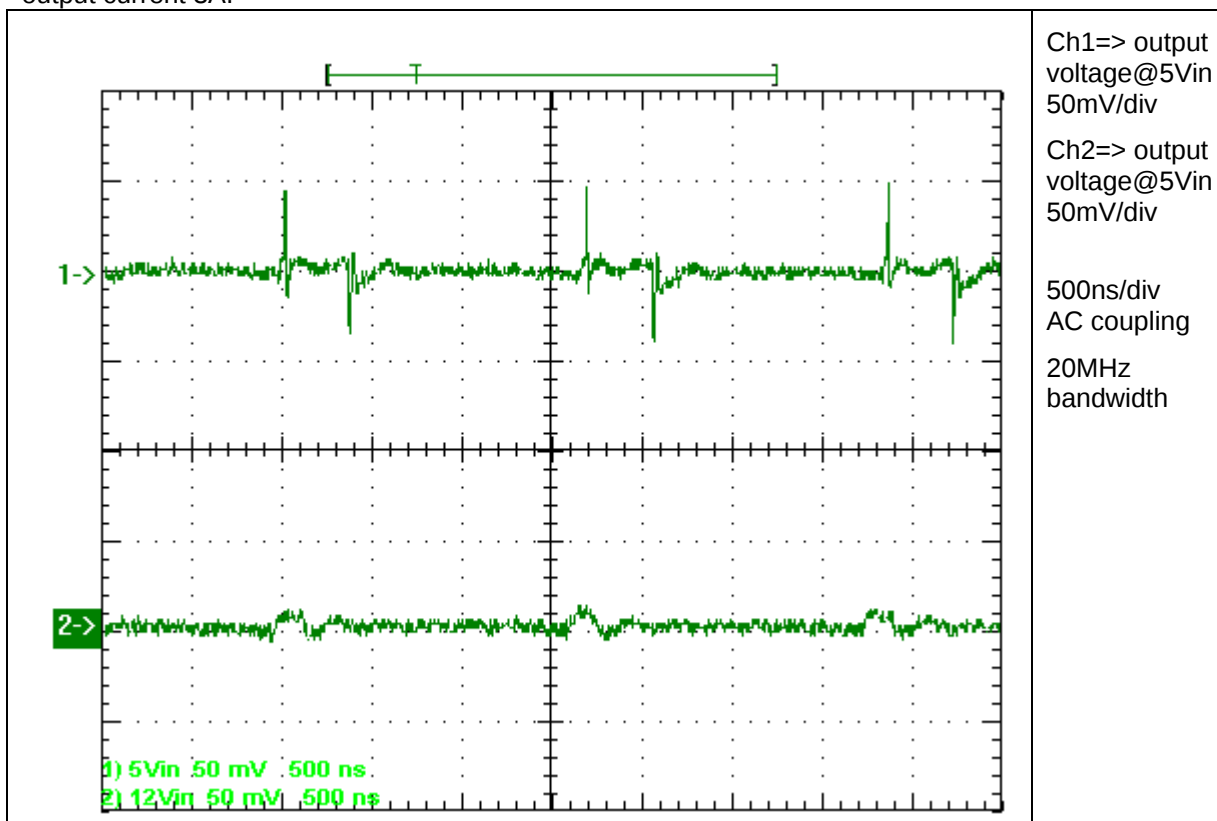


Figure 13

The input ripple voltage is displayed in Figure 14. The input voltage was set to 5V with output current 3A.

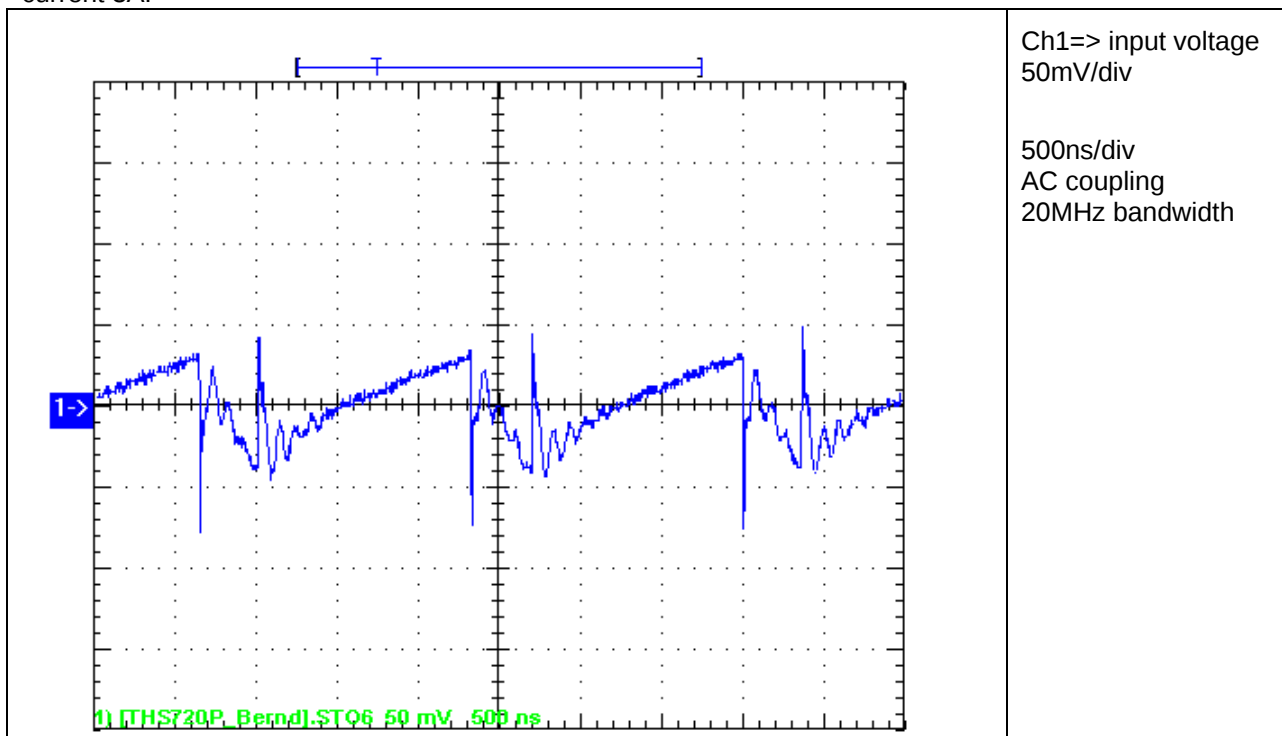


Figure 14

The input ripple voltage is displayed in Figure 15. The input voltage was set to 12V with output current 3A.

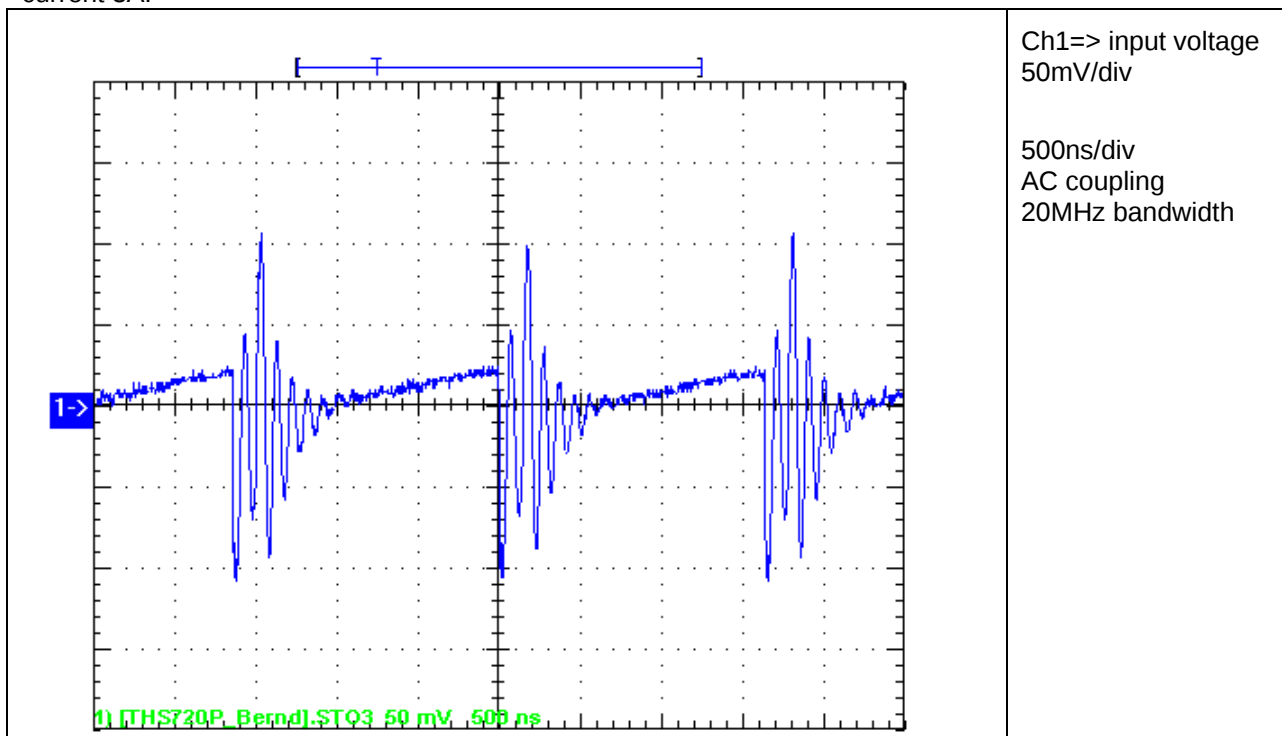


Figure 15

8 Control Loop Frequency Response

The control loop frequency response at 3A output current @ 5V and 12V input voltage is shown in Figure 16. Table 1 summarizes the results.

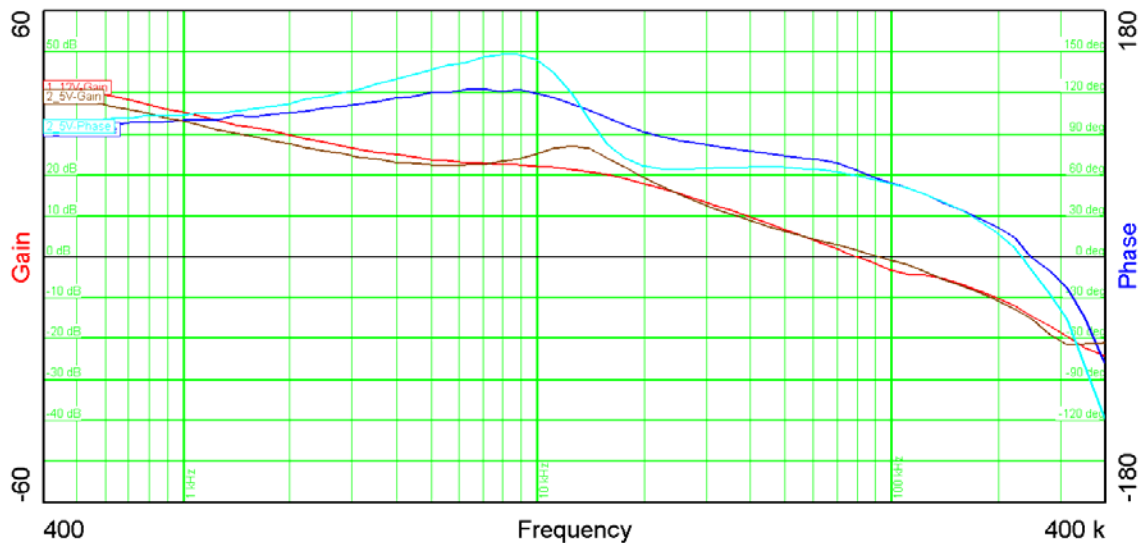


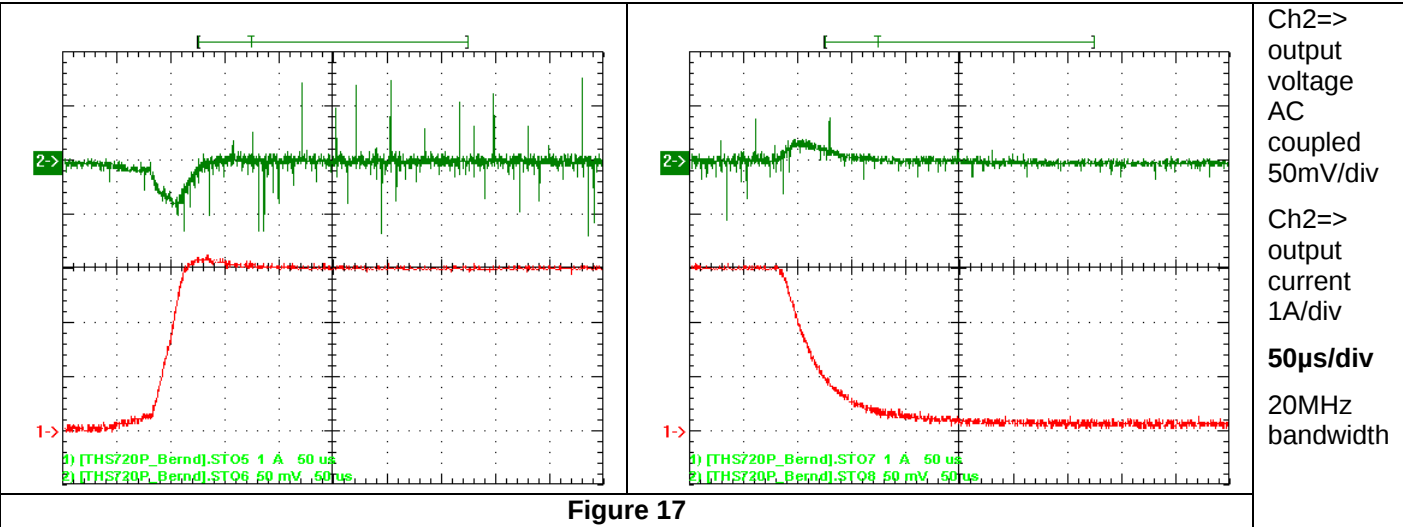
Figure 16

Vin	5V	12V
Bandwidth (kHz)	92.6	80
Phase margin	56°	63°
slope (20dB/decade)	-1.27	-1.86
gain margin (dB)	-13.8	-14.5
slope (20dB/decade)	-2.5	-2.53
freq (kHz)	232	248

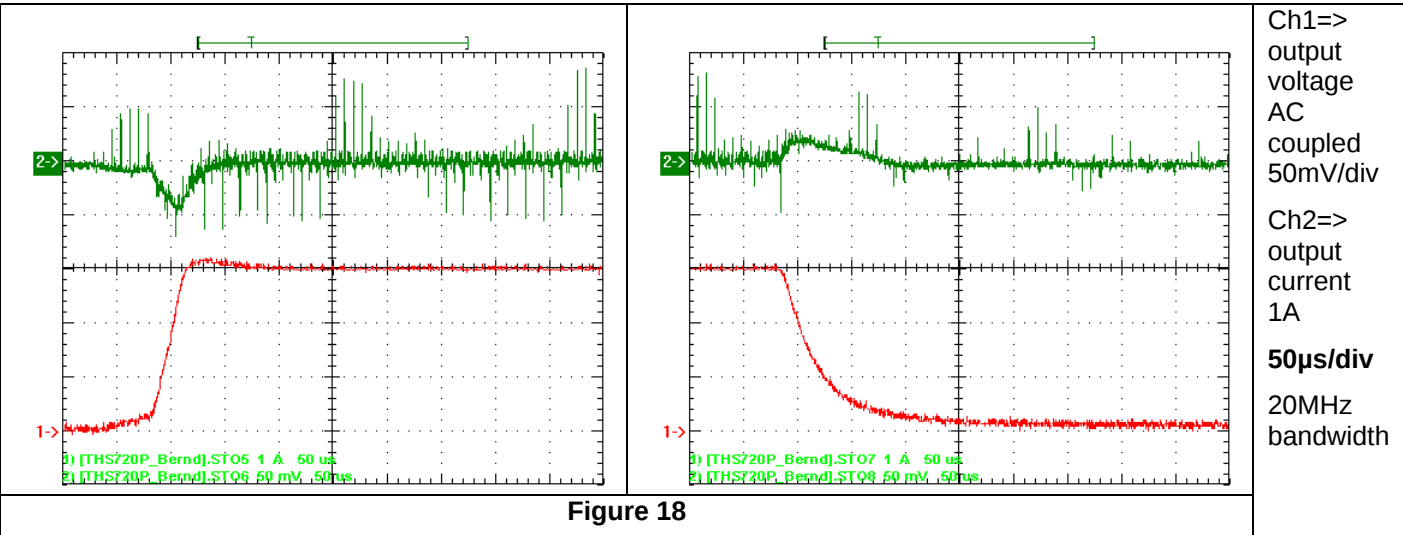
Table 1

9 Load Transients

A output current change from 0A to 3A (100Hz) results in following Figure 17. The input voltage was set to 5V



A output current change from 0A to 3A (100Hz) results in following Figure 18. The input voltage was set to 12V



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