

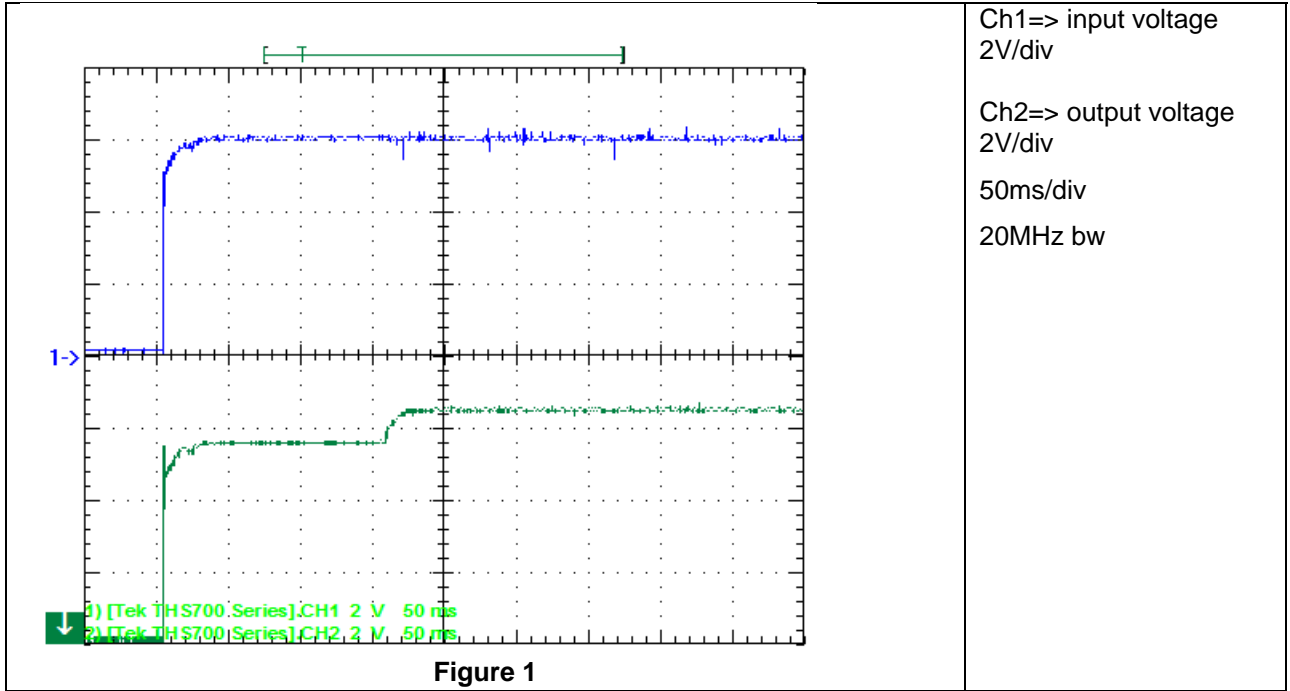
PMP10026RevB Test Results

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Topology: Boost
Device: TPS40210

1 Startup

The startup waveform is shown in the Figure 1. The input voltage was set at 6V, with 2A load at the output.



2 Efficiency

The efficiency is shown in the Figure 2 below. The input voltage was set to 6V and 3V.

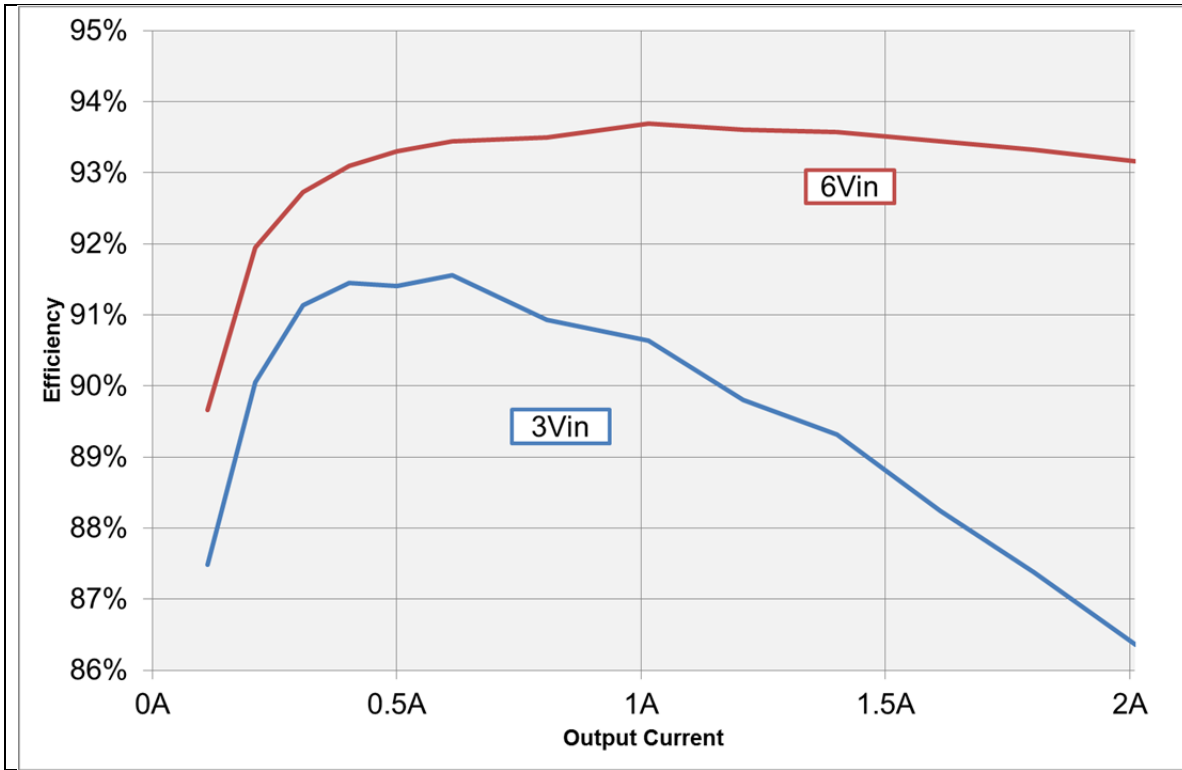


Figure 2

3 Load Regulation

The load regulation of the output is shown in the Figure 3 below. The input voltage was set to 6V and 3V.



Figure 3

4 Line Regulation

The line regulation at 2A output current is displayed in Figure 4.

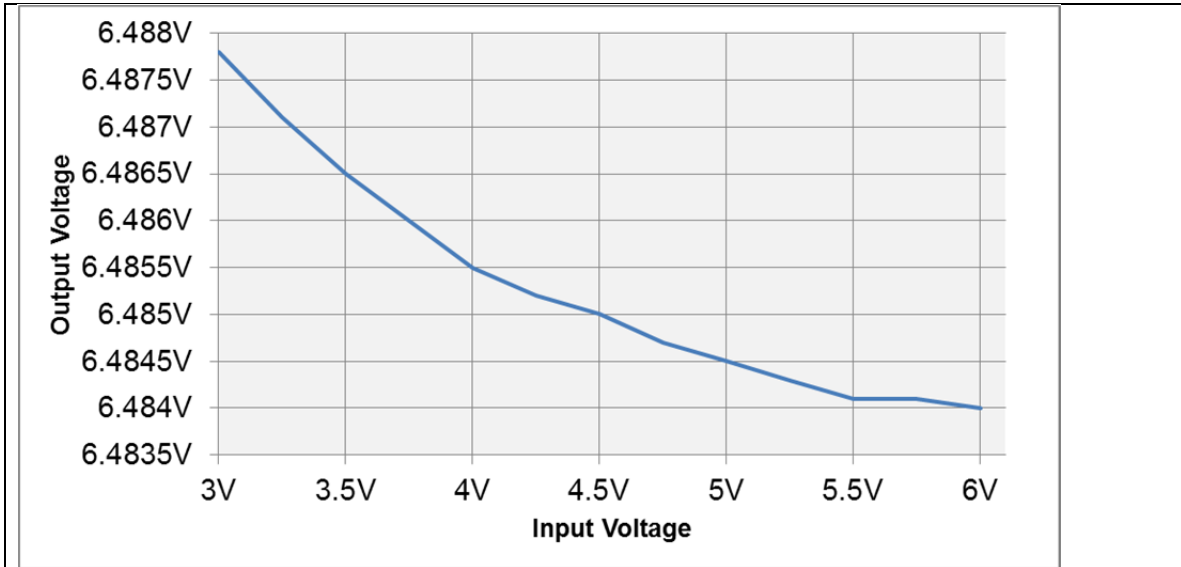


Figure 4

The calculated efficiencies are displayed in Figure 5

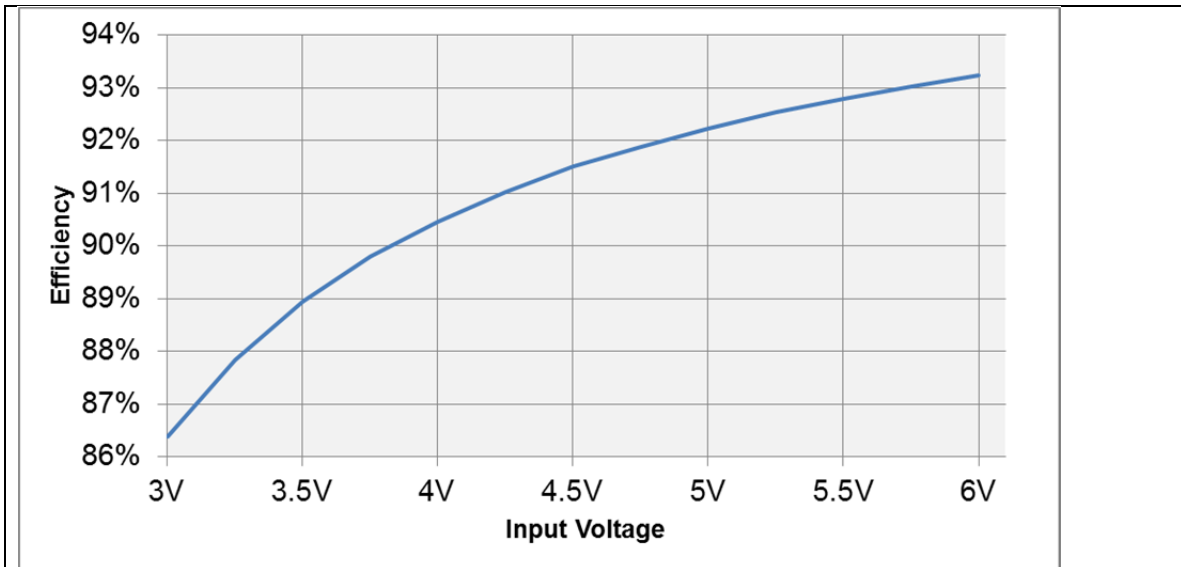
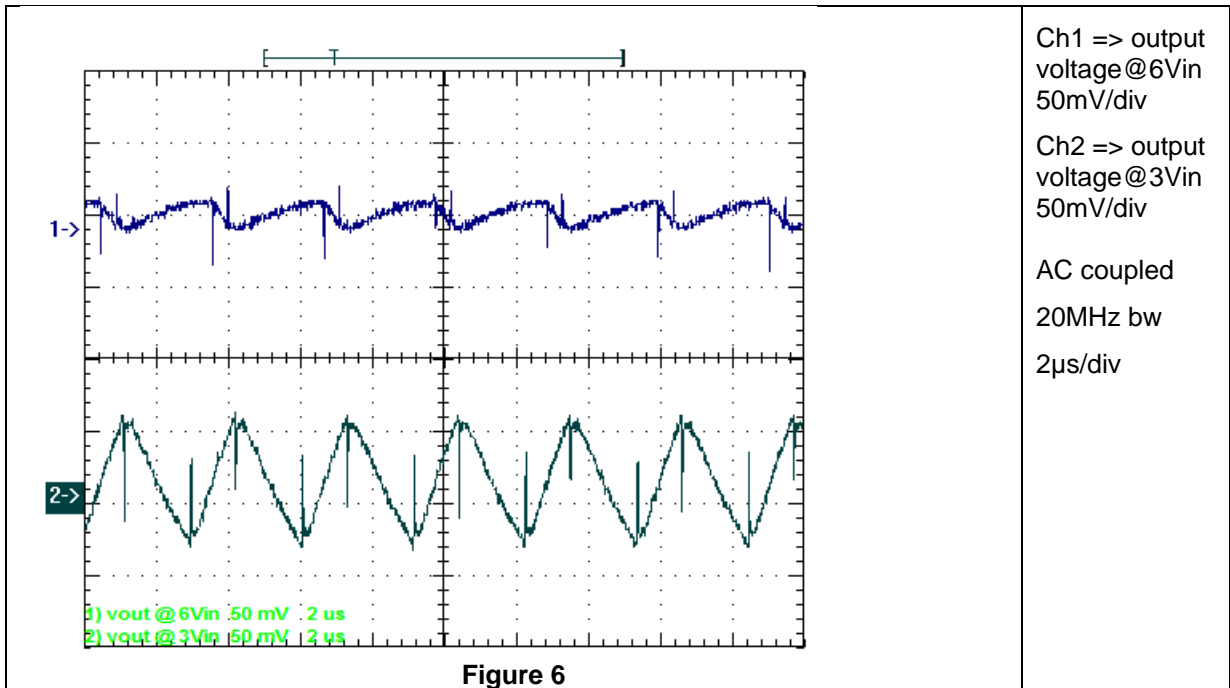


Figure 5

5 Output Ripple Voltage

The output ripple voltage is shown in Figure 6. The image was taken with 2A load and 6V and 3V input.



6 Load Transients

The Figure 7 shows the response to load transients. The load is switching from 1A to 2A with a frequency of 300Hz. The input voltage was set to 6V

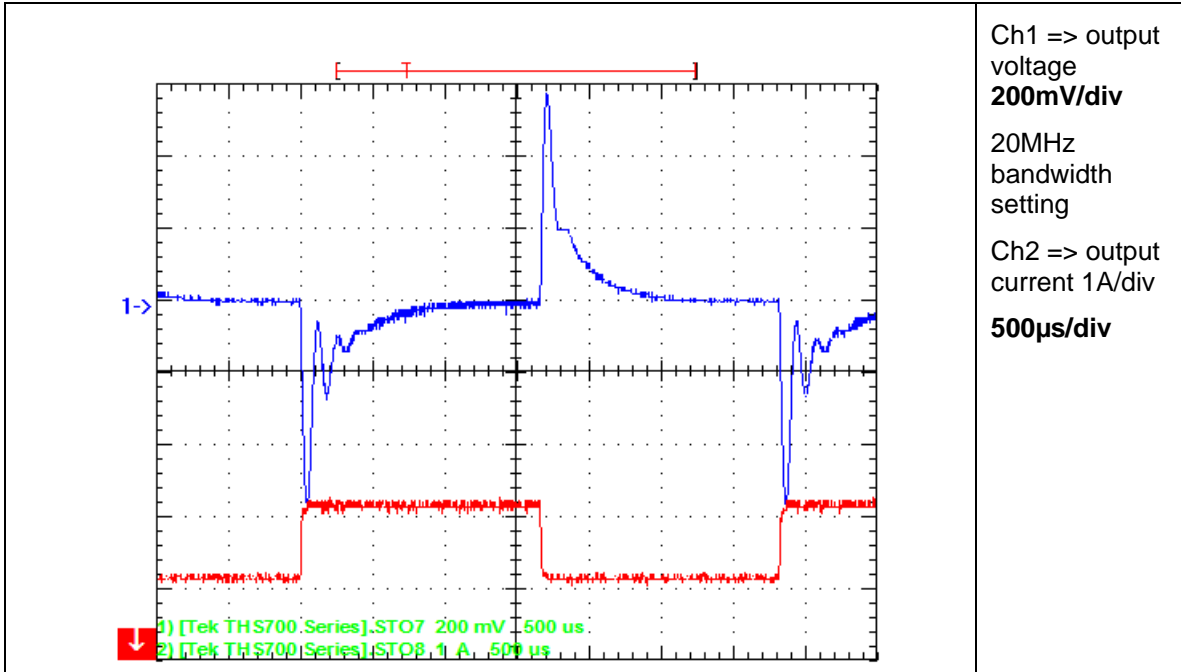


Figure 7

The Figure 8 shows the response to load transients. The load is switching from 1A to 2A with a frequency of 300Hz. The input voltage was set to 3V

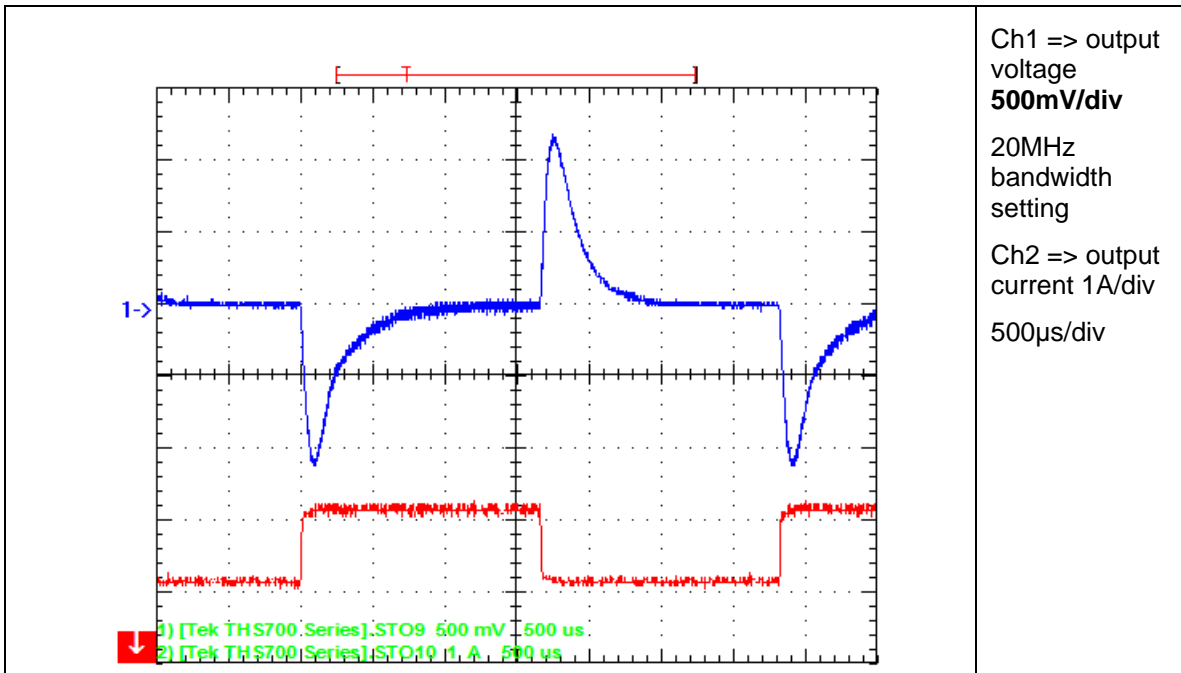


Figure 8

7 Control Loop Frequency Response

Figure 9 shows the loop response. 2A-load applied. The input voltage was set to 3V.

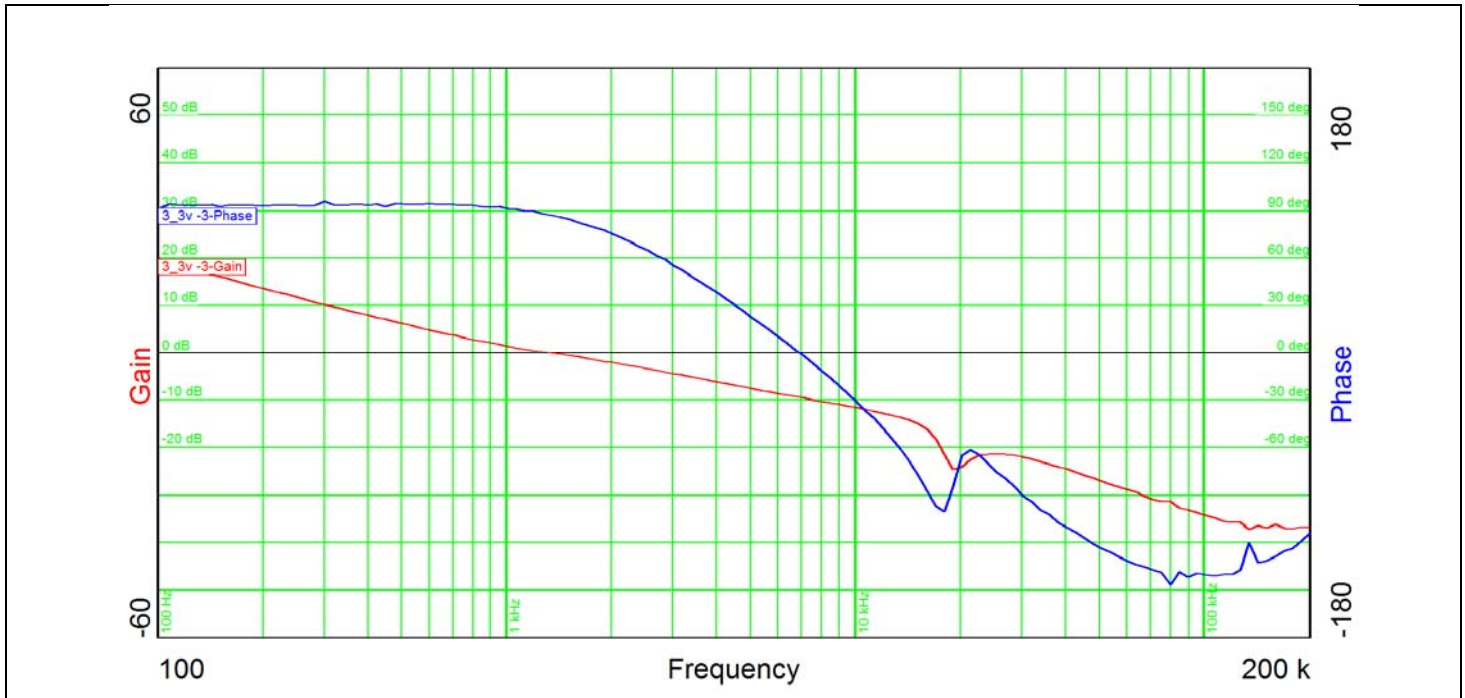


Figure 9

Table 1 summarizes the results Figure 9

Vin	3V
Bandwidth (kHz)	1.325
Phase margin	87.3
slope (20dB/decade)	-0.591
gain margin (dB)	-9.45
slope (20dB/decade)	-0.686
freq (kHz)	6.899

Table 1

8 Miscellaneous Waveforms

The waveform of the voltage on switchnode is shown in Figure 10. Input voltage was set to 6V and output current to 2A.

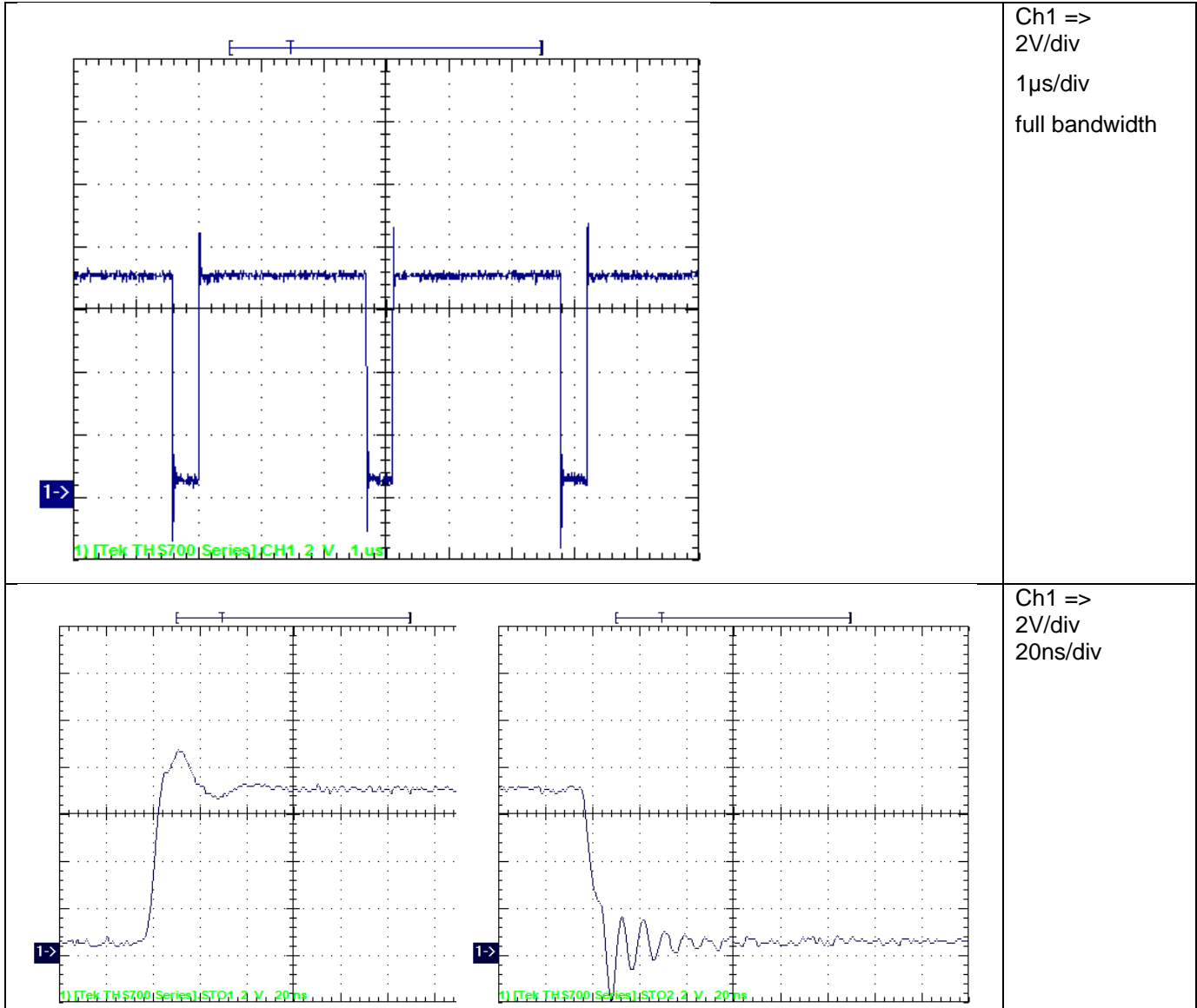


Figure 10

The waveform of the voltage between gate and source of the MOSFET is shown in Figure 11. Input voltage was set to 6V and output current to 2A.

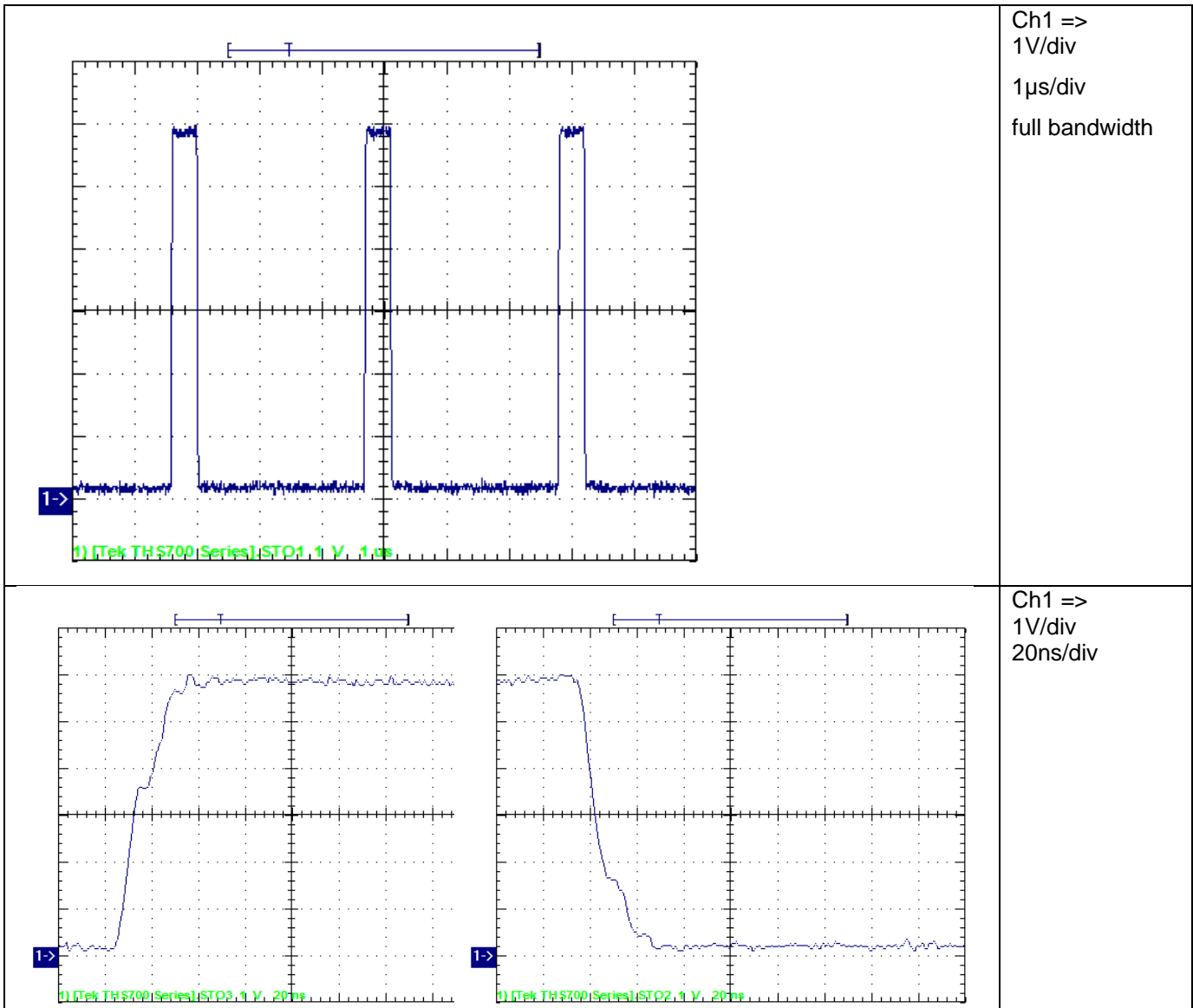


Figure 11

The waveform of the voltage on switchnode is shown in Figure 12. Input voltage was set to 3V and output current to 2A.

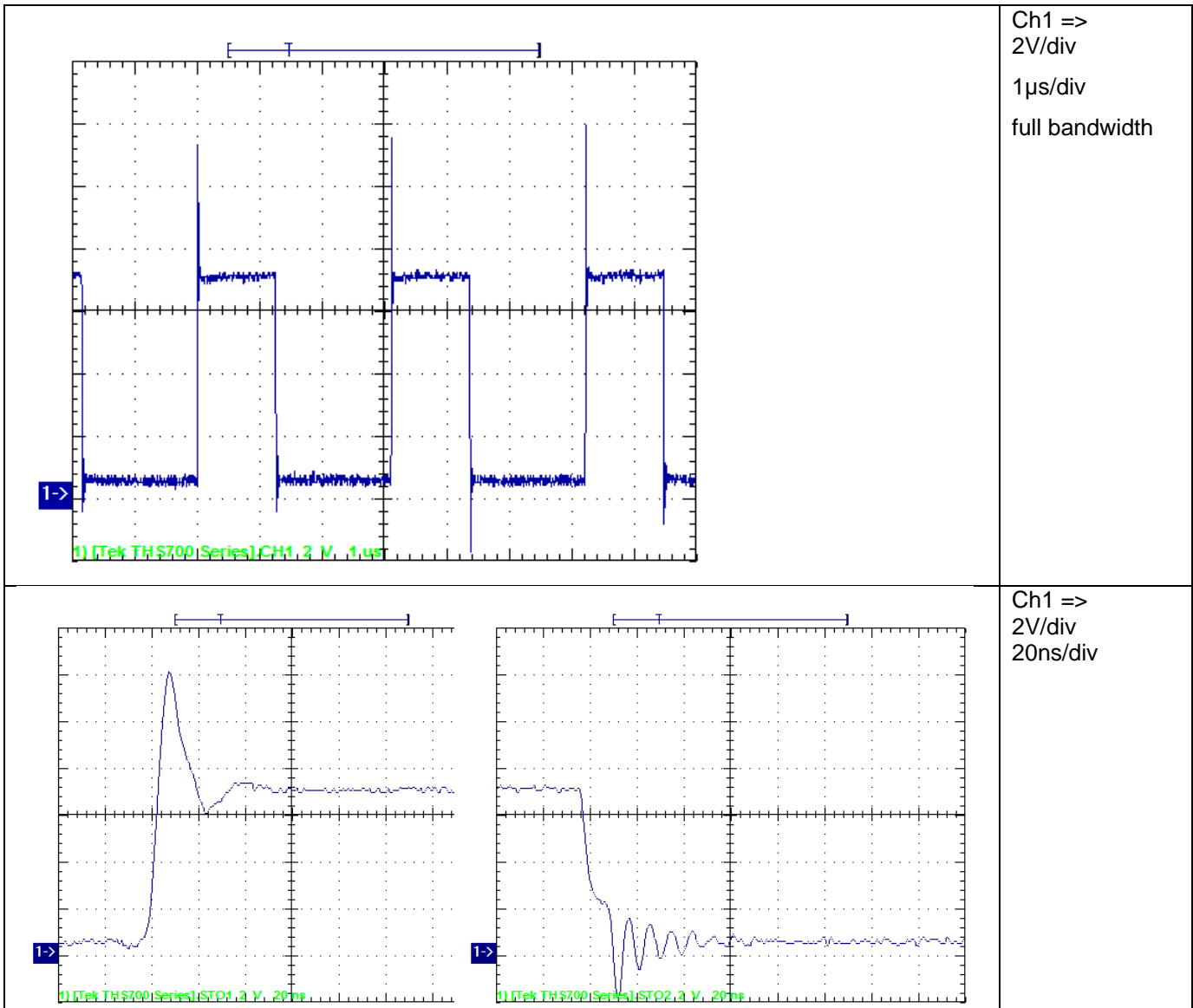


Figure 12

The waveform of the voltage between gate and source of the MOSFET is shown in Figure 13. Input voltage was set to 3V and output current to 2A.

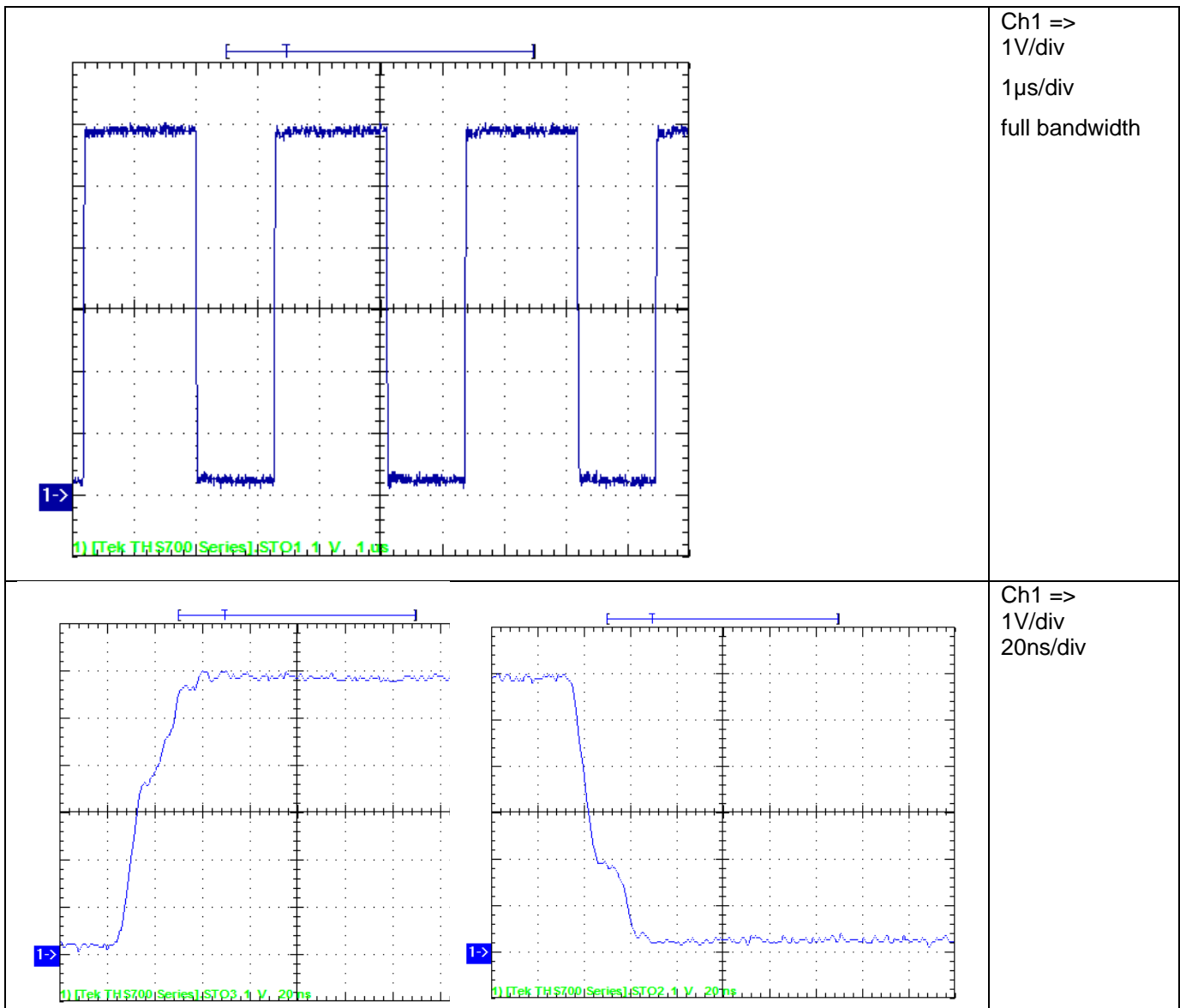


Figure 13

9 IR Image

The IR-Image is shown in Figure 14; min. Vin 3V, max. load 2Amps for 30mins

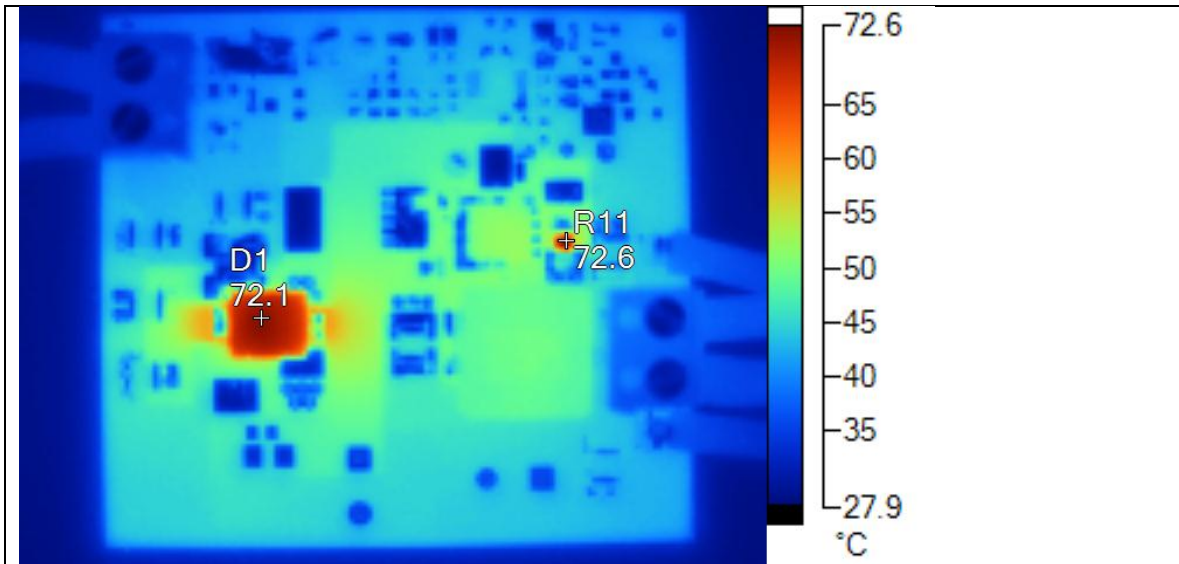


Figure 14

Name	Temperature
R11	72.6°C
D1	72.1°C

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