

1 Startup

The startup waveform with input voltage=12V is shown in Figure 1. A resistive Load of 278 Ohm was used

Channel C2: **input voltage**
10V/div, 5ms/div

Channel C1: **output voltage**
10V/div, 5ms/div

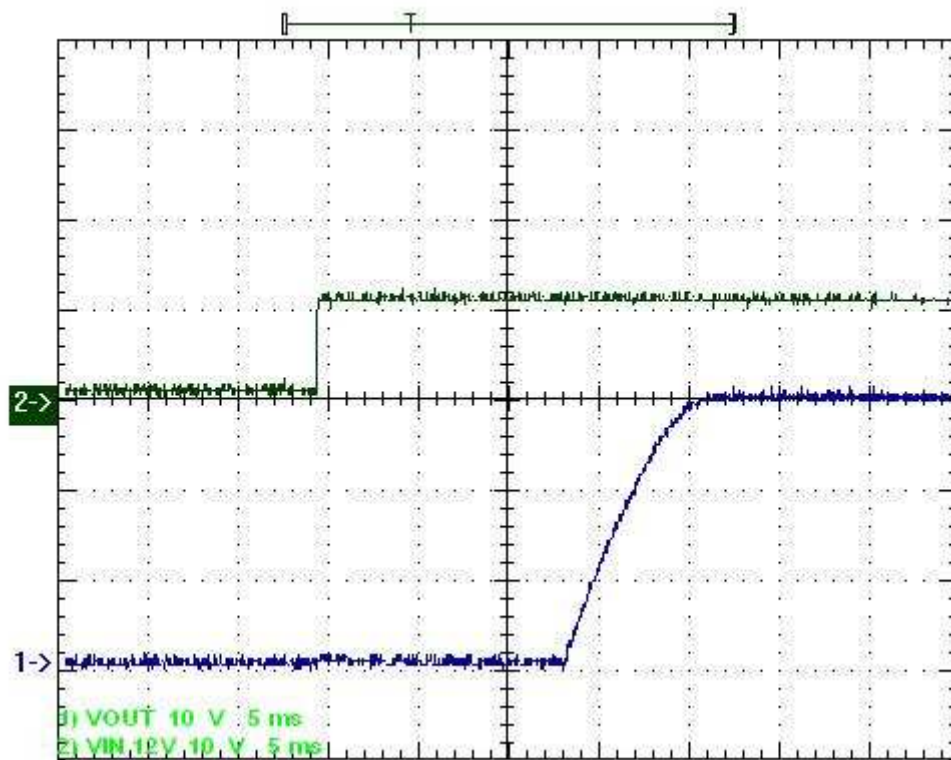


Figure 1

The startup waveform with input voltage=24V is shown in Figure 2. A resistive Load of 278 Ohm was used.

Channel C2: **input voltage**
10V/div, 5ms/div

Channel C1: **output voltage**
10V/div, 5ms/div

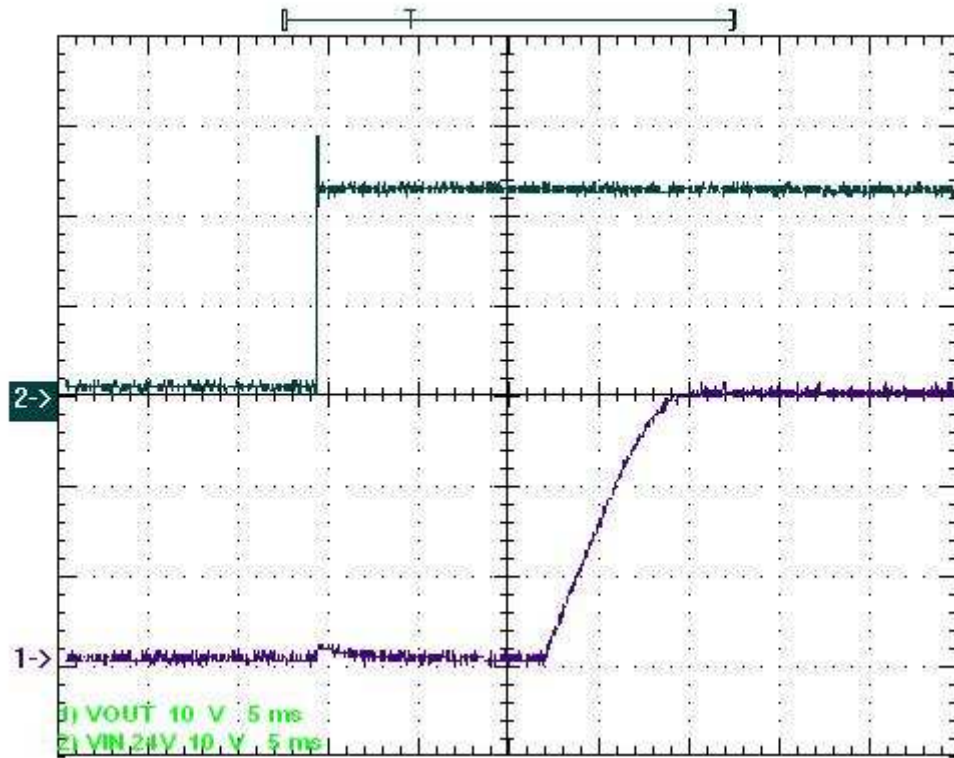


Figure 2

The startup waveform with input voltage=35V is shown in Figure 3. The load was set to 700mA

Channel C2: **input voltage**
10V/div, 5ms/div

Channel C1: **output voltage**
10V/div, 5ms/div

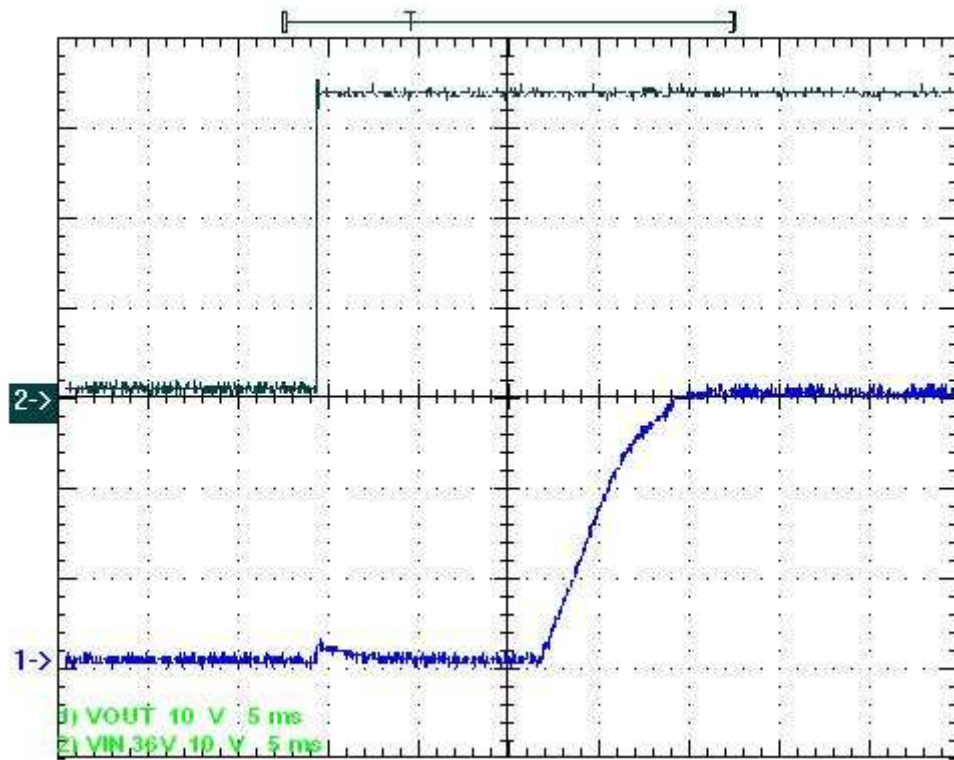


Figure 3

2 Efficiency

The efficiency with different input voltages is shown in Figure 4.

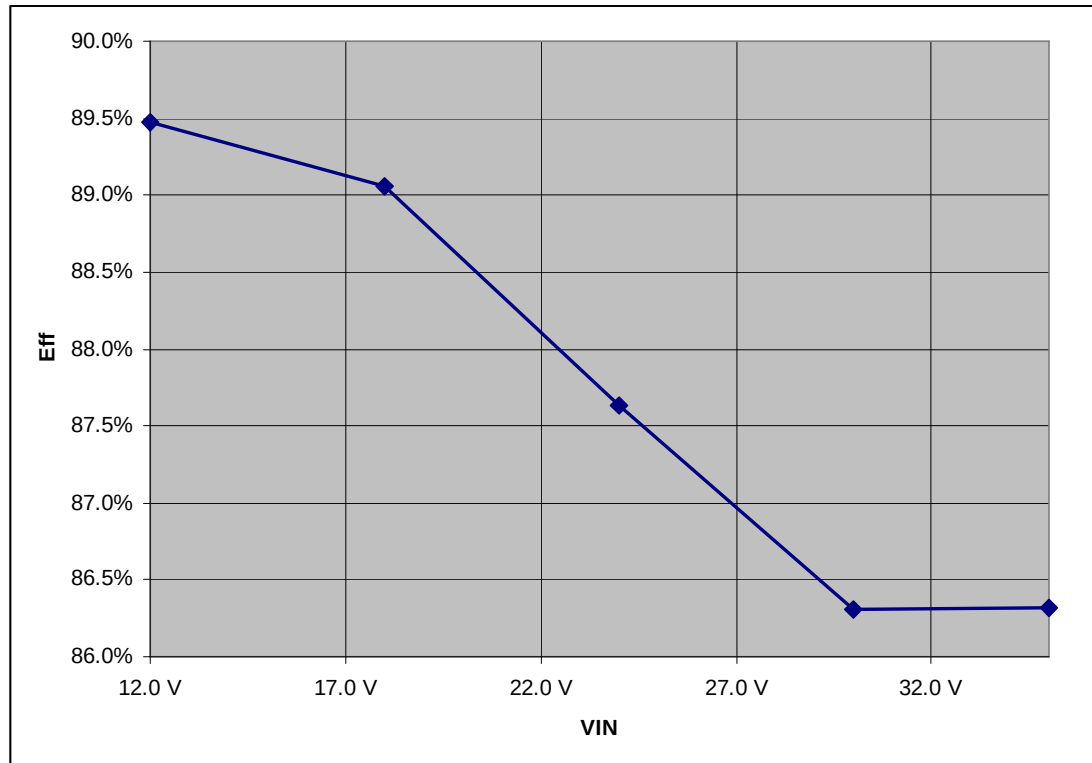


Figure 4

3 Regulation

The output power with different input voltages is shown in Figure 5

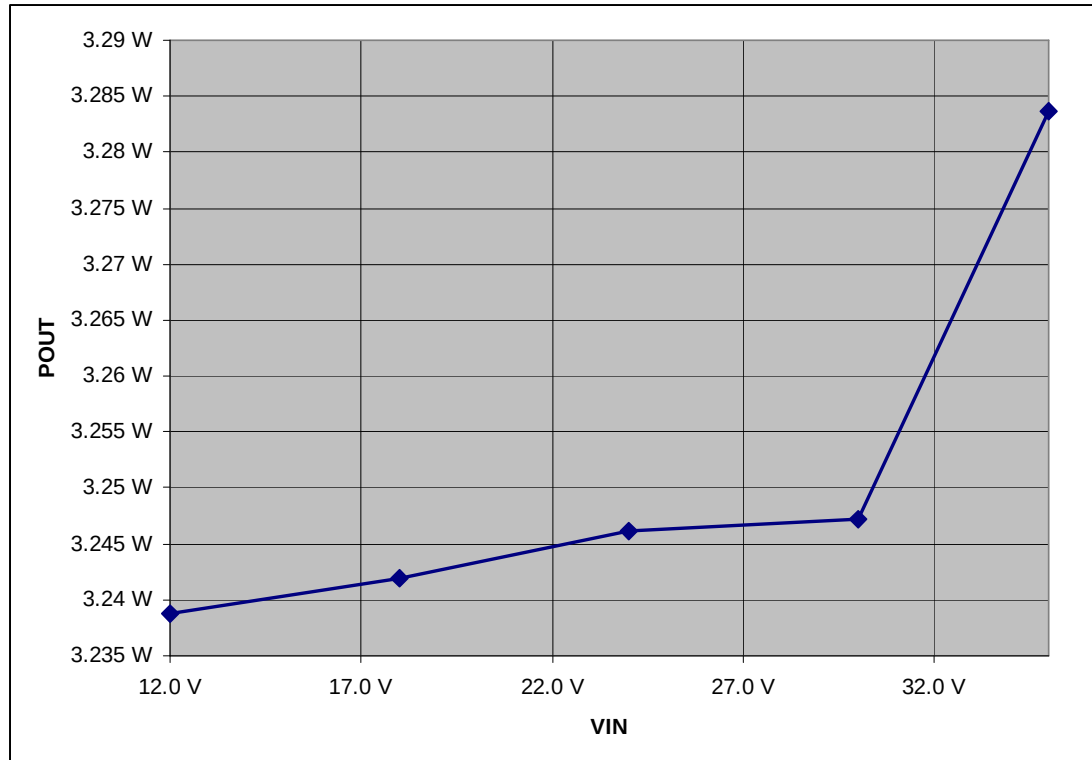


Figure 5

4 Output ripple voltage

The output ripple voltage with resistive load (107mA) and 15V, 30V and 45V input voltage is shown in Figure 6.

Waveform 2: **output voltage**, at 12V at the input. AC coupled

Waveform 3: **output voltage**, at 24V at the input. AC coupled

Waveform 4: **output voltage**, at 35V at the input. AC coupled

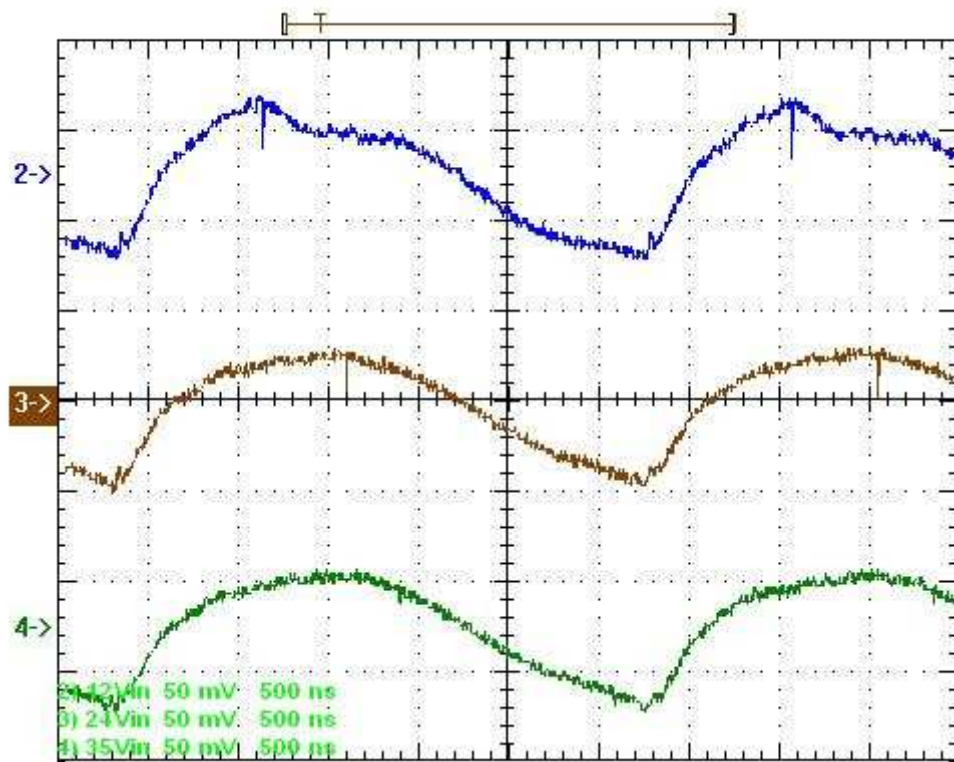


Figure 6

5 Frequency response

Figure 7 shows the loop response of with input voltage 12, 34, 35V and a LED load (VOUT=17.68V).

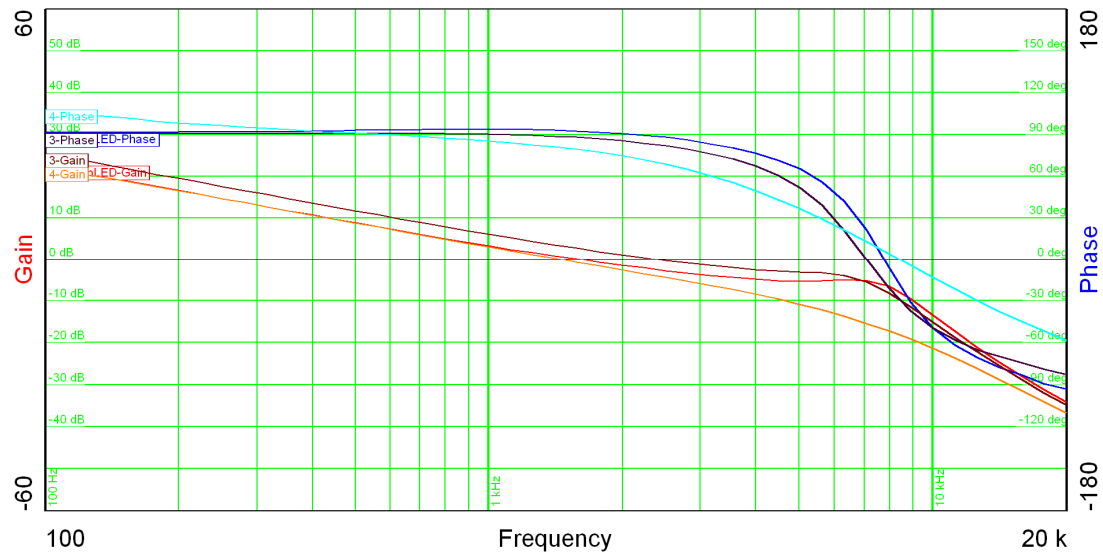
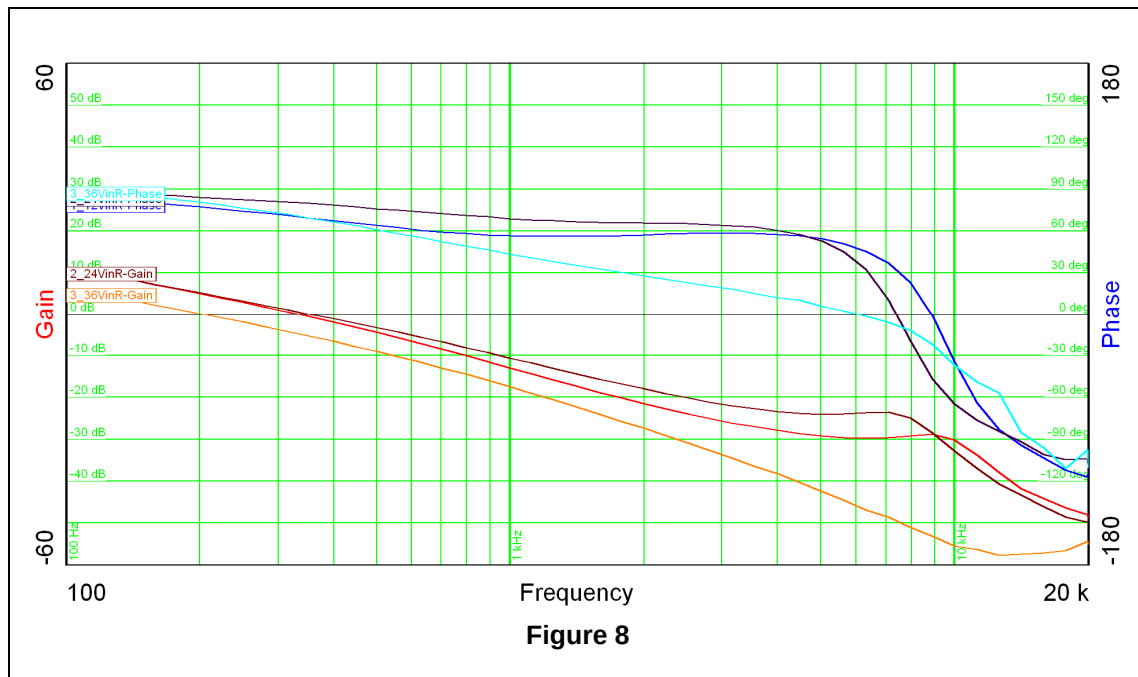


Figure 7

VIN	12V	24V	35V
fco	1590 Hz	2378 Hz	1444 Hz
phase margin	92.3°	82.8°	80.6°
gain margin	-	-	-
margin	6.269dB	5.614dB	18.14dB

Figure 7 shows the loop response of with input voltage 12, 34, 35V and as load a resistor adjusted to 278 Ohm (107mA) for 30 V Vout



VIN	12V	24V	35V
fco	332 Hz	354 Hz	202 Hz
phase			
margin	70.1°	79.5°	80.2°
gain			
margin	-28.8 dB	-24.0 dB	-54.5 dB

6 Miscellaneous waveforms

The voltage on the switch node is shown in Figure 9. The image shows the waveforms with different input voltages.

Channel 1: switchnode @ 12 V input (at full bandwidth)

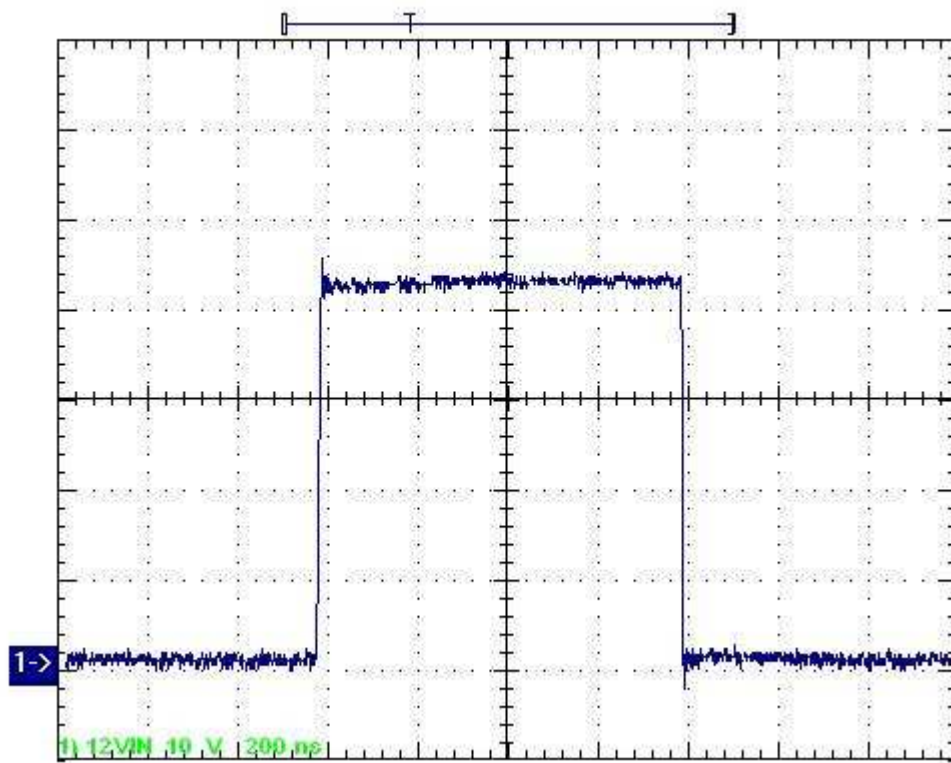


Figure 9

The voltage on the switch node is shown in Figure 10. The image shows the waveforms with different input voltages.

Channel 1: switchnode @ 24 V input (at full bandwidth)

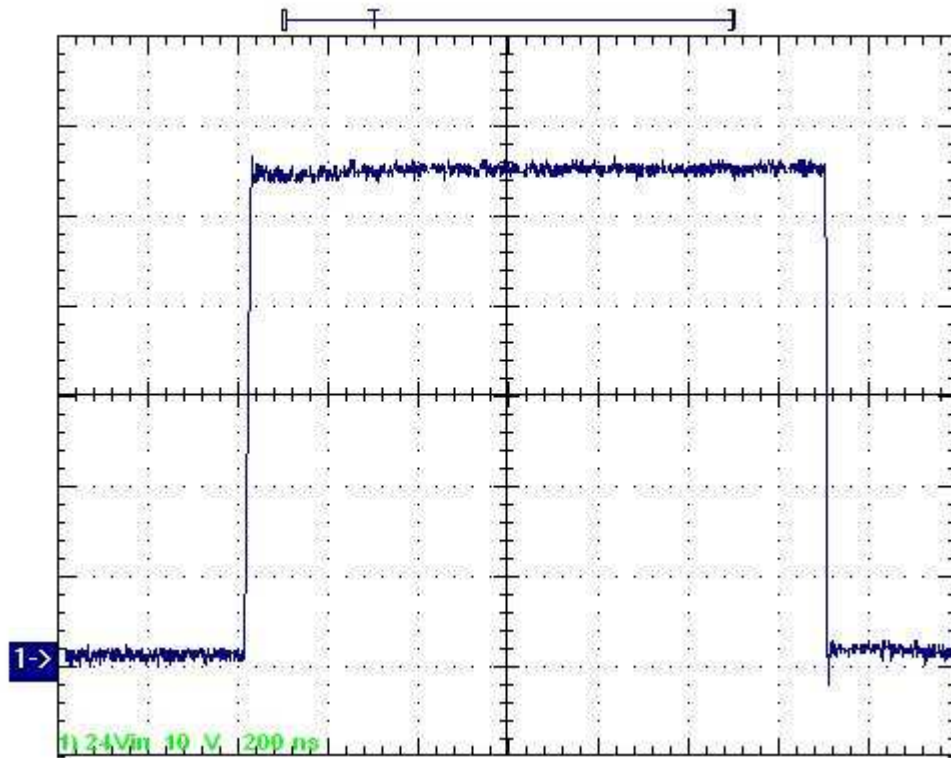


Figure 10

The voltage on the switch node is shown in Figure 11. The image shows the waveforms with different input voltages.

Channel 1: switchnode @ 35 V input (at full bandwidth)

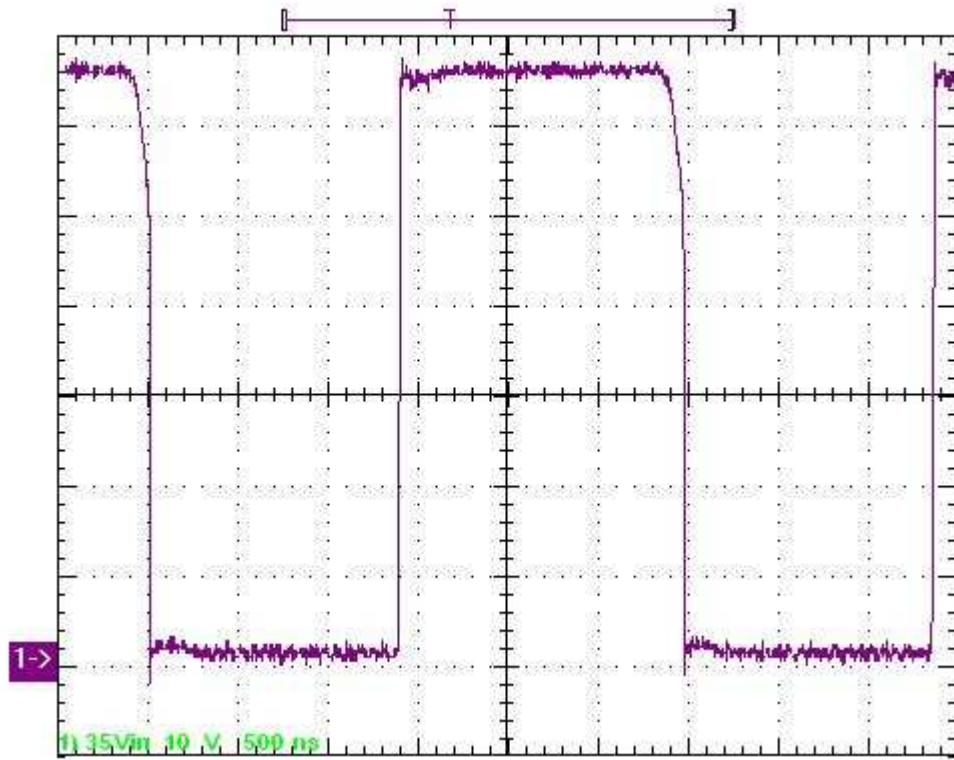
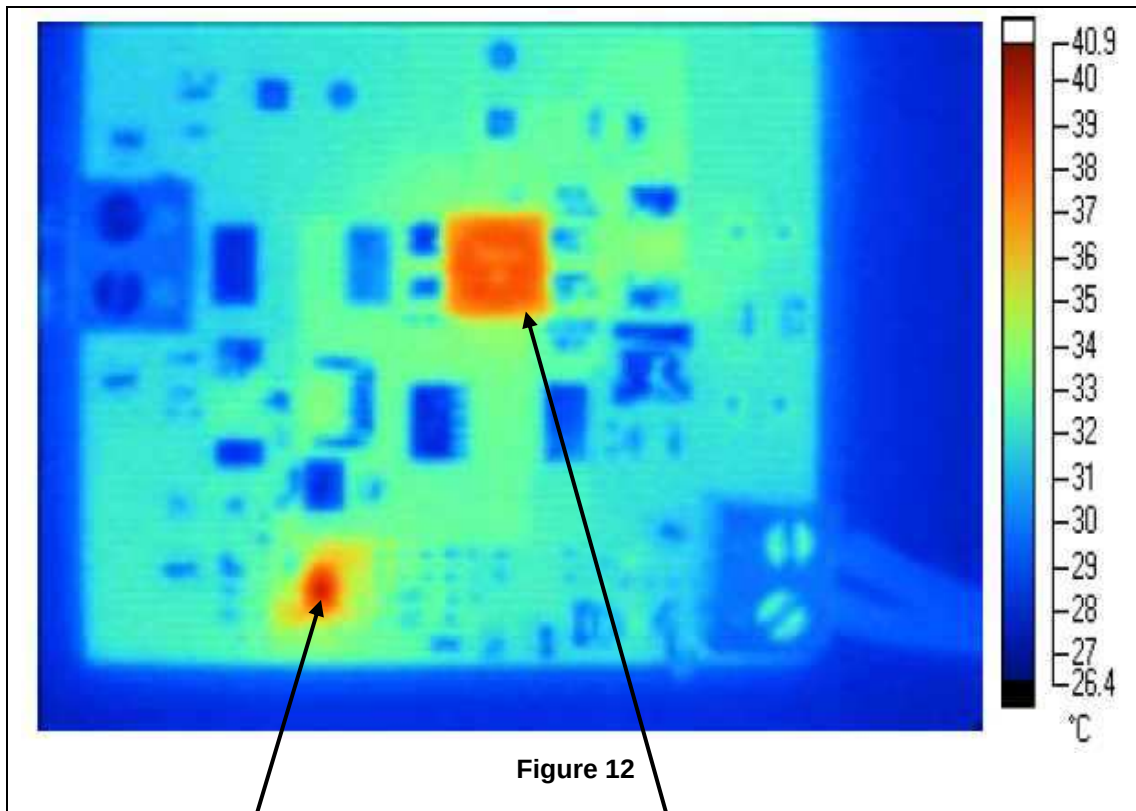


Figure 11

7 IR Image

Image (Figure 12) was taken with 35V input voltage and resistive load (278 Ohm)



U1

L2

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