PMP11099

The tests performed were as follows:

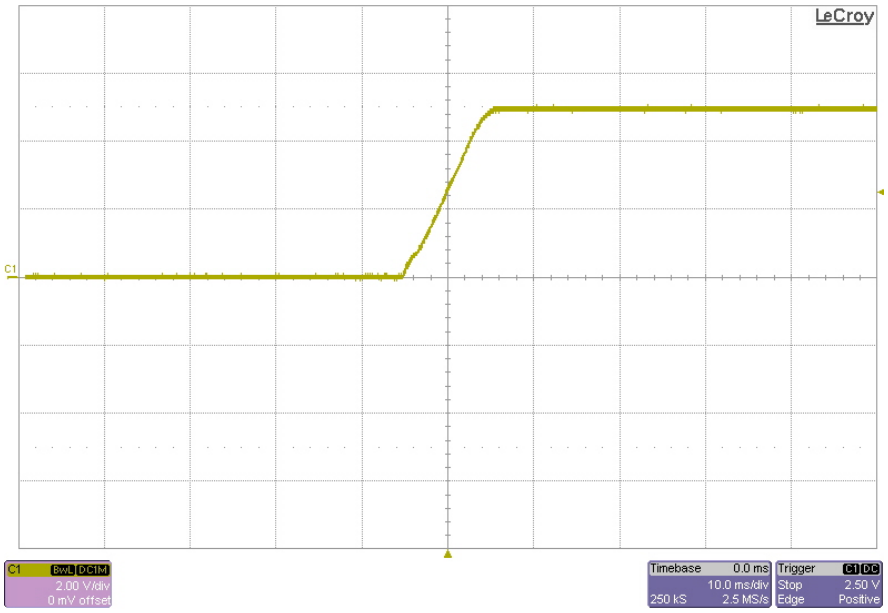
1. Turn-On (No Load)
2. Turn-Off (100mA Load)
3. Switch Node
    i. No Load (with BWL)
    ii. Full Load 10A (with BWL)
4. Output Voltage Ripple
    i. No Load
    ii. Full Load 10A
5. Transient Response (5A to 10A Load Step)
6. Efficiency
7. Load Regulation
8. Bode and Phase
9. Board Photo
10. Thermal Images

PMP11099 Test Results Rev. B

1 Turn On – (No Load)

The photo below shows the startup waveform. The input voltage is 48V, the output is not loaded. The time-base is set to 10ms/Division.

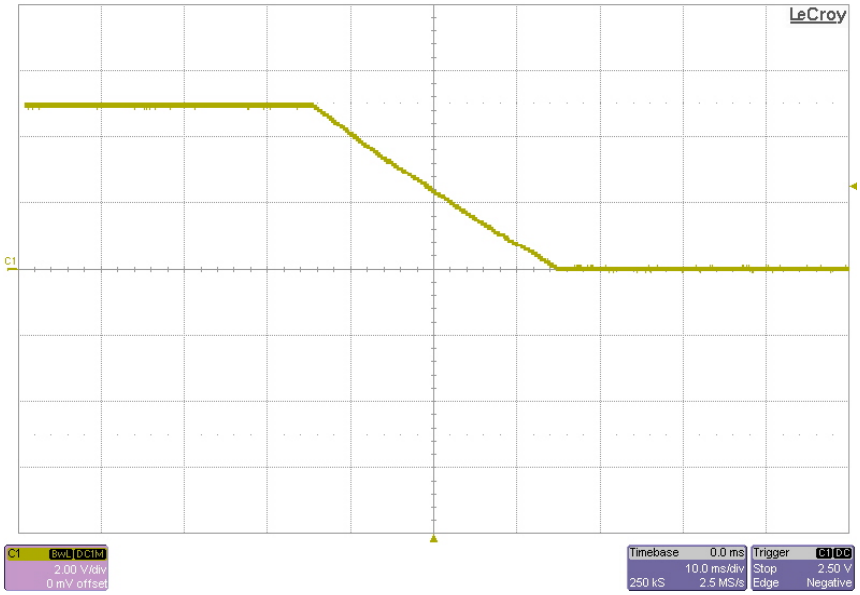
Channel 1 – Yellow: Output Voltage – (2V/Division)



2 Turn Off – (100mA Load)

The photo below shows the turn off waveform. The input voltage is 48V; the output is loaded with 100mA. The time-base is set to 10ms/Division.

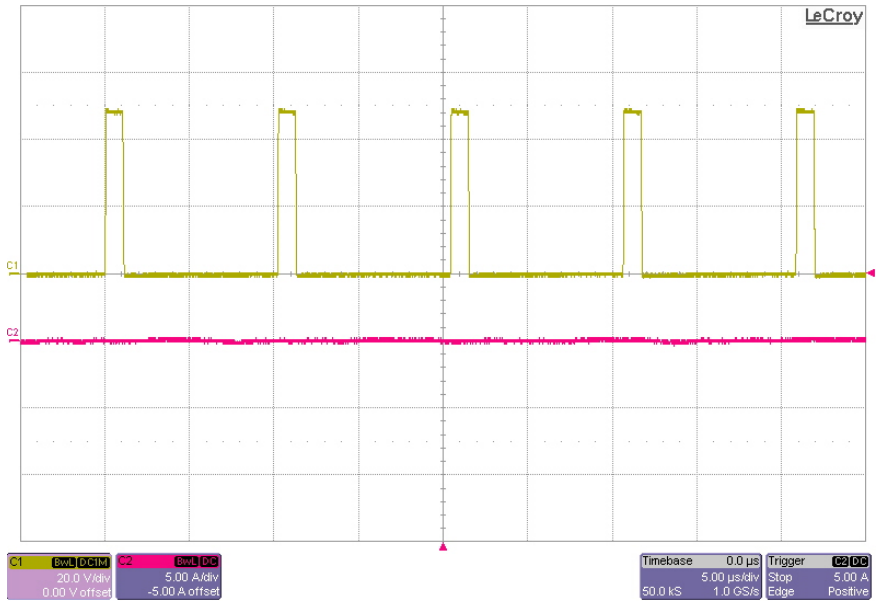
Channel 1 – Yellow: Output Voltage – (2V/Division)



3 Switch Node – (No Load with BWL)

The picture below shows the switching waveform of the converter. The input voltage is 48V.

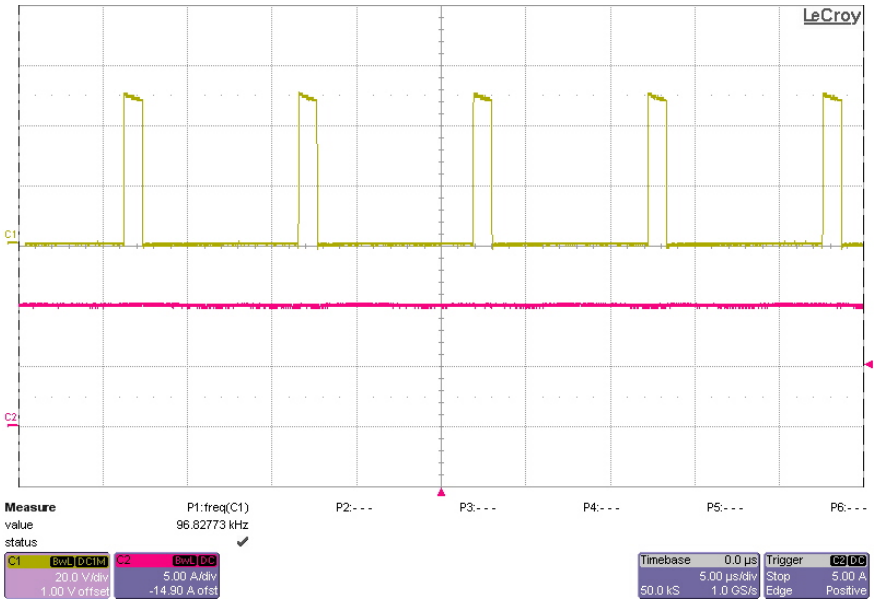
Channel 1 – Yellow: Switch Node – (20V/Division)
Channel 2 – Red: Output Current – (5A/Division)



Switch Node – (Full Load 10A with BWL)

The picture below shows the switching waveform of the converter. The input voltage is 48V and the frequency is shown to be 98.827 kHz.

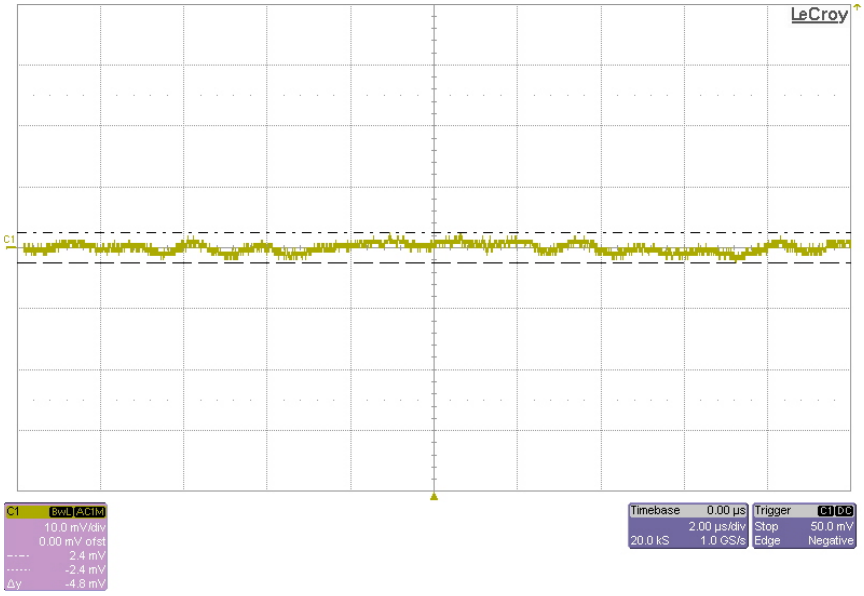
Channel 1 – Yellow: Switch Node – (20V/Division)
Channel 2 – Red: Output Current – (5A/Division)



4 Output Voltage Ripple – (No Load)

The output voltage ripple of the converter is shown in the figures below. The input voltage is 48V.

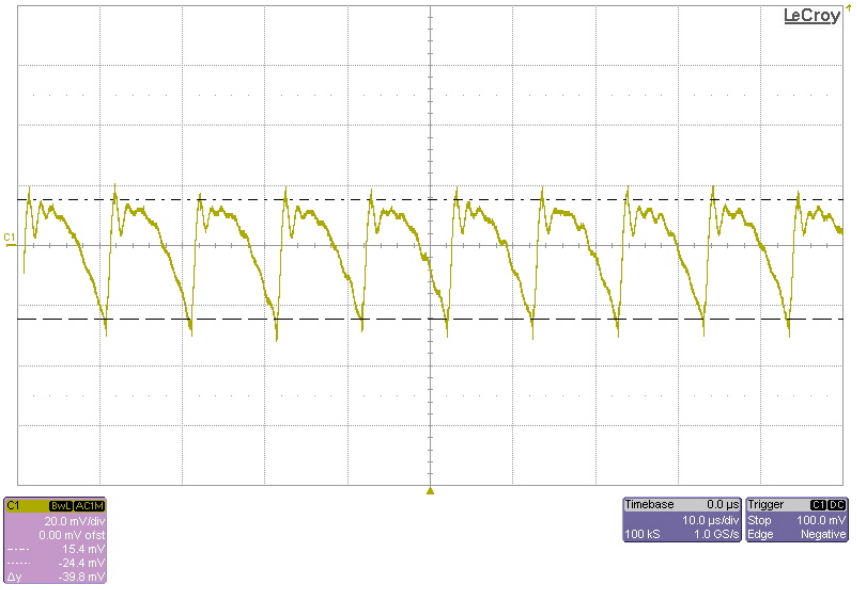
Channel 1 – Yellow: Output Voltage (10mV/Division; AC Coupled)



Output Voltage Ripple – (Full Load 10A)

The output voltage ripple of the converter is shown in the figures below. The input voltage is 48V.

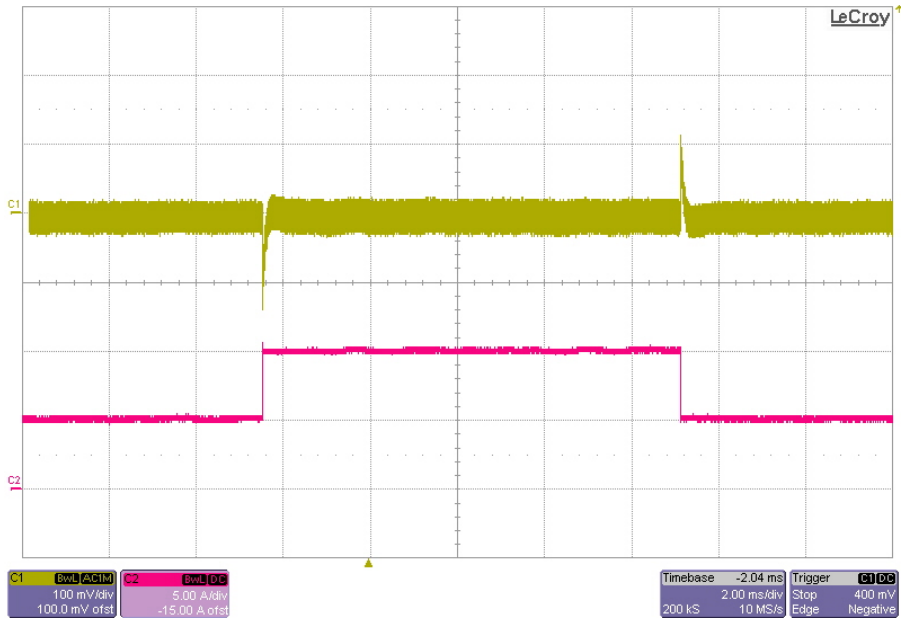
Channel 1 – Yellow: Output Voltage (20mV/Division; AC Coupled)



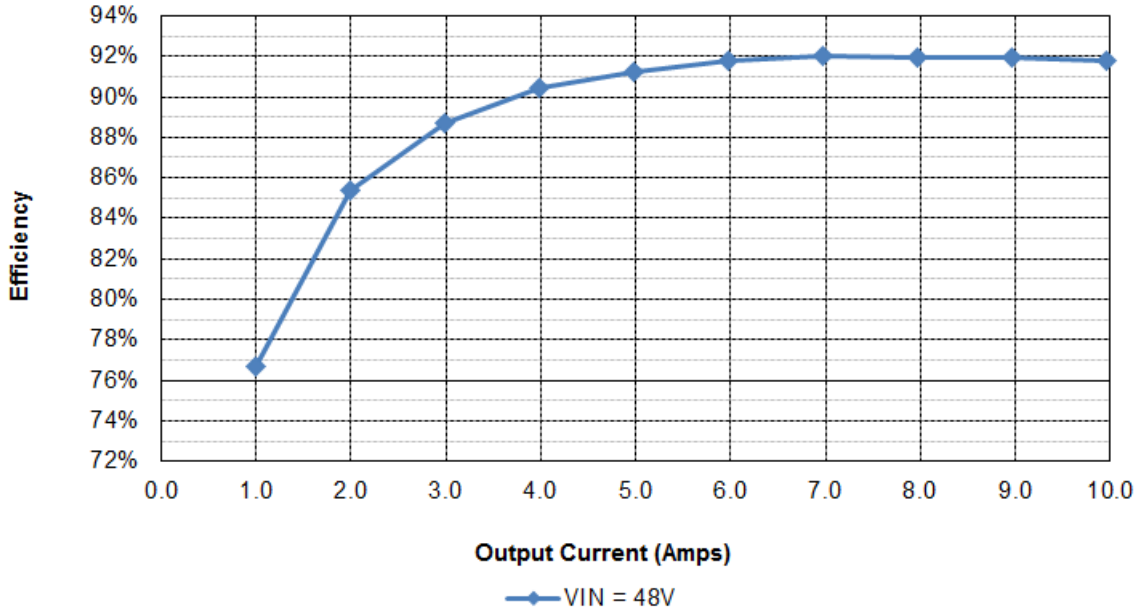
5 Transient Response – (5A - 10A)

The transient response of the converter is shown in the figures below. The input voltage is 48V. The load is stepped from 5A to 10A.

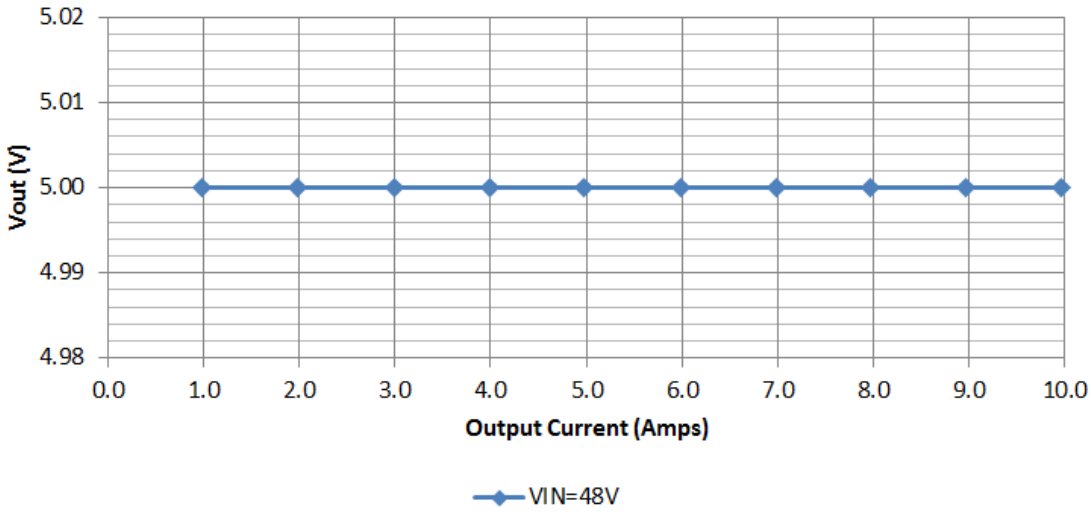
Channel 2 – Yellow: Output Voltage: (100mV/Division; AC Coupled)
Channel 4 – Red: Output Current – (5A/Division)



6 Efficiency - (Full Load 10A)



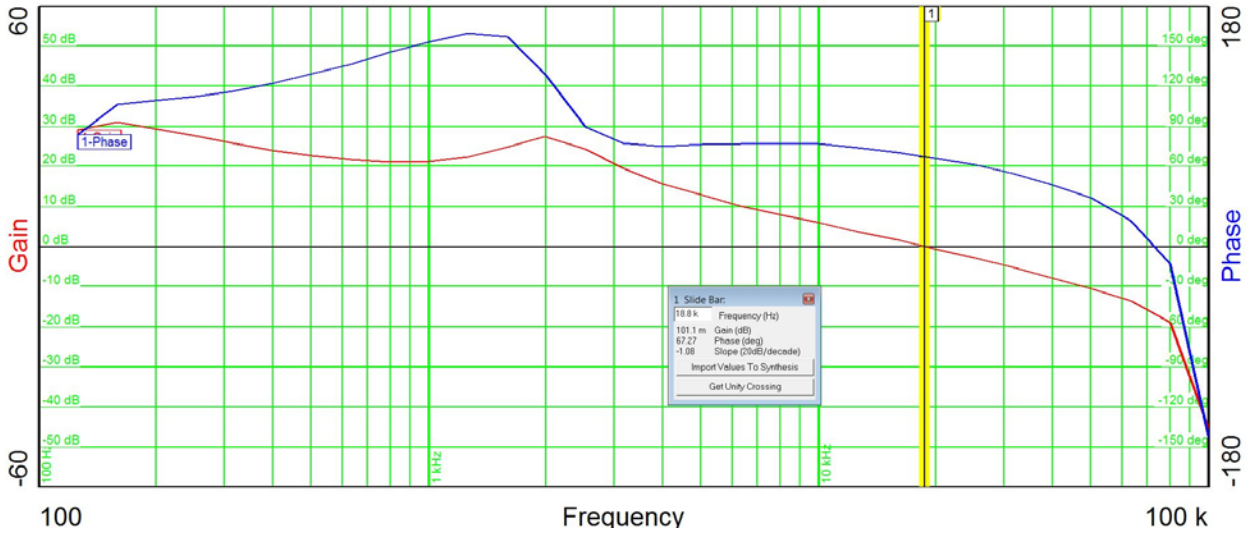
7 Load Regulation – (Full Load 10A)



8 Bode and Phase

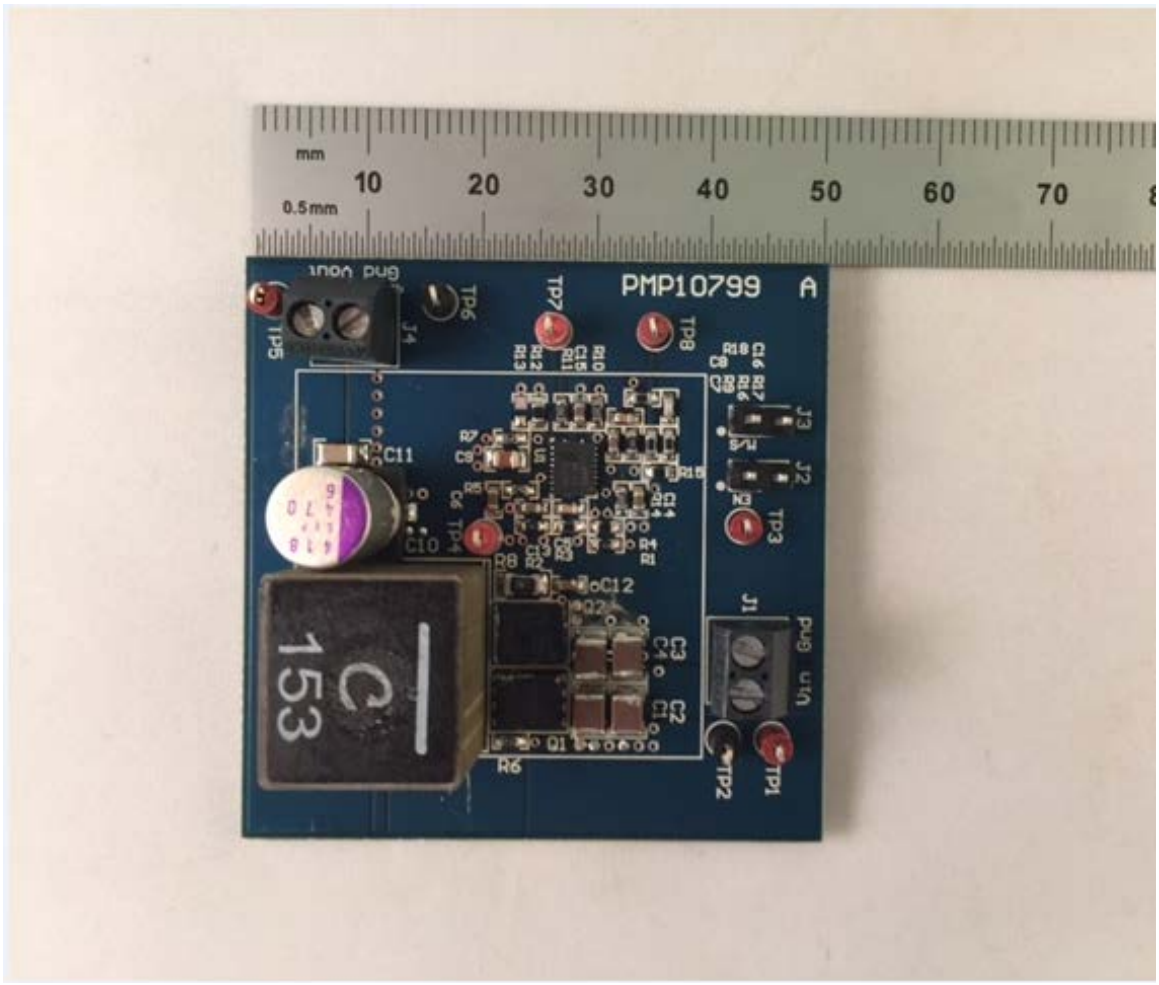
The loop gain of the converter is shown in the figures below. The input voltage is 48V and the output loaded to 10A.

Bandwidth: 18.8KHz Phase Margin: 67 degrees



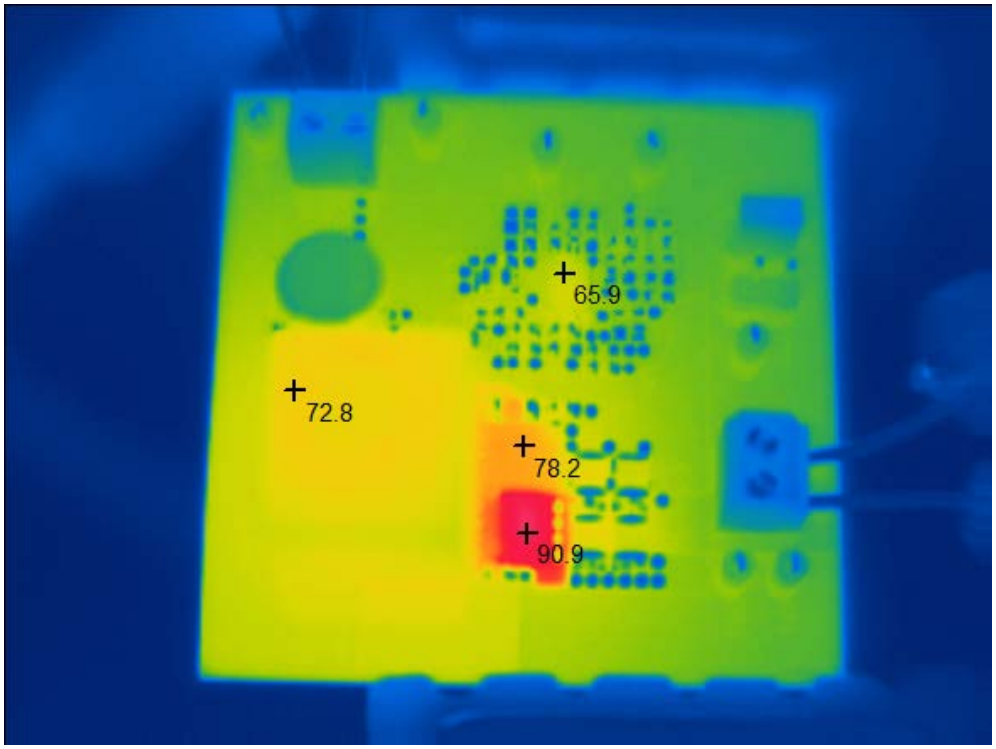
9 Board Photo

The photo below shows the PMP11099 REVB design built on the PMP10799 REVA board.



10 Thermal Images

The images below show the thermal performance of the design. It is important to note that thermal performance is directly proportional to power loss and board size. Different sized and shaped boards will perform differently. The input voltage is 48V, the output current is 10A.



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