PMP10774 TPS54623 Test Report

12/3/2014

The following test report is for the PMP10668 LMZ21701:

VIN = 4.5V - 17V
VOUT = 3.3V @ 5A

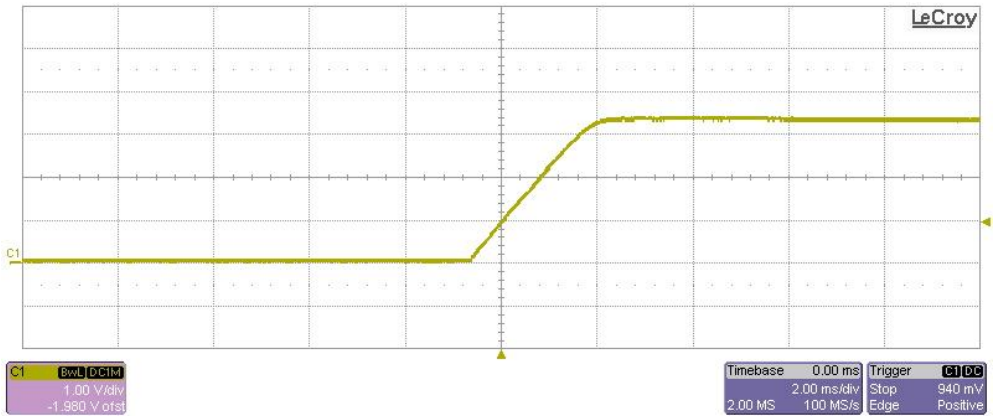
The tests performed were as follows:

1. Startup (No load)
2. Output Voltage Ripple
3. Load Transient
4. Load Regulation
5. Efficiency
6. Switching Waveform
7. Thermal Profile
8. EVM Photo

1 Startup

The picture below shows the startup waveform. The input voltage is 12V, the output is not loaded.

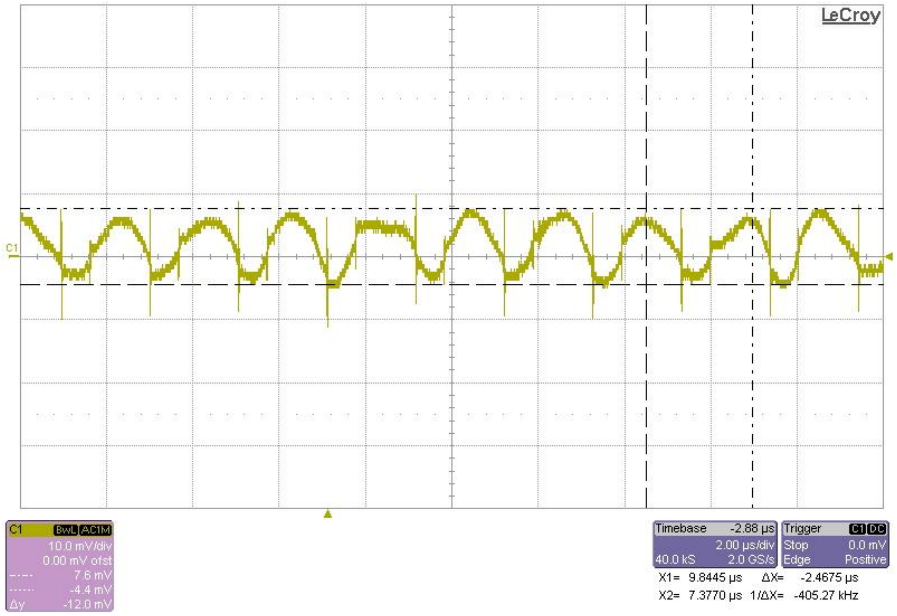
Channel 1 (yellow): VOUT (1V/div)



2 Output Voltage Ripple

The output voltage ripple for VOUT is shown in the figure below. The input is 12V. The output is fully loaded to 5A.

Channel 1 (yellow): VOUT (10mV/div)

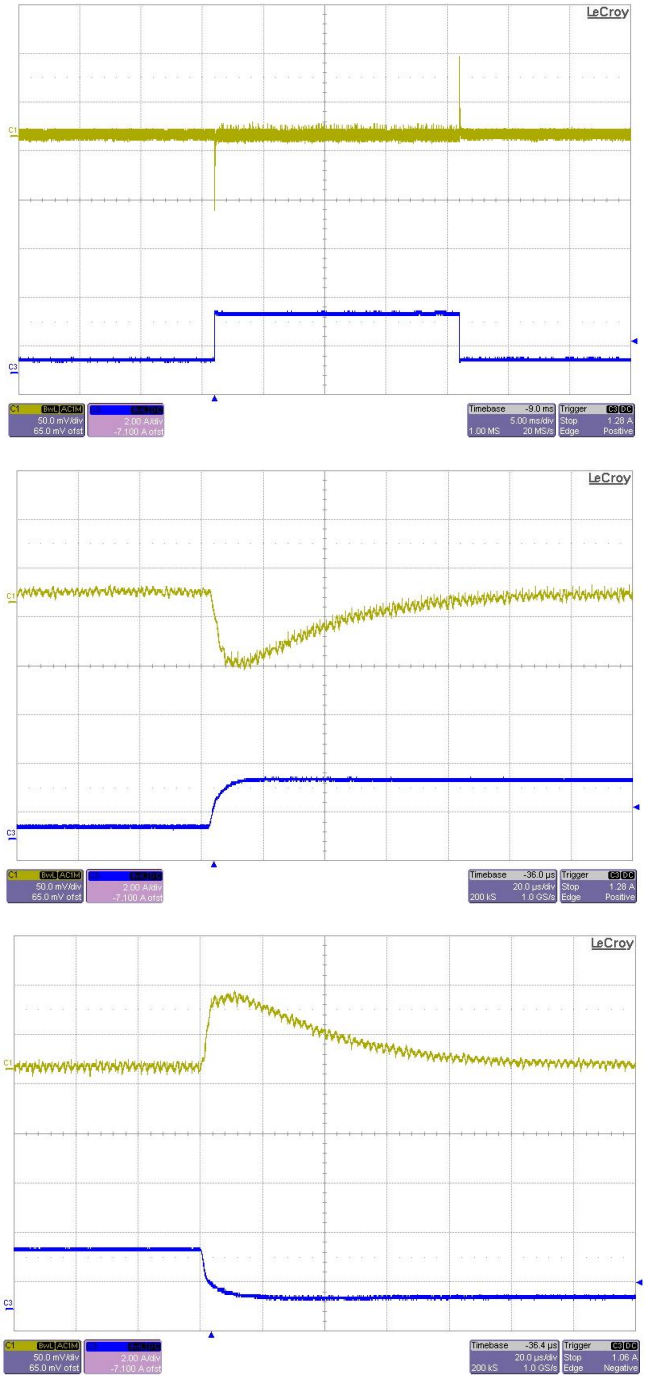


Output voltage ripple = 12.0mV

3 Load Transient

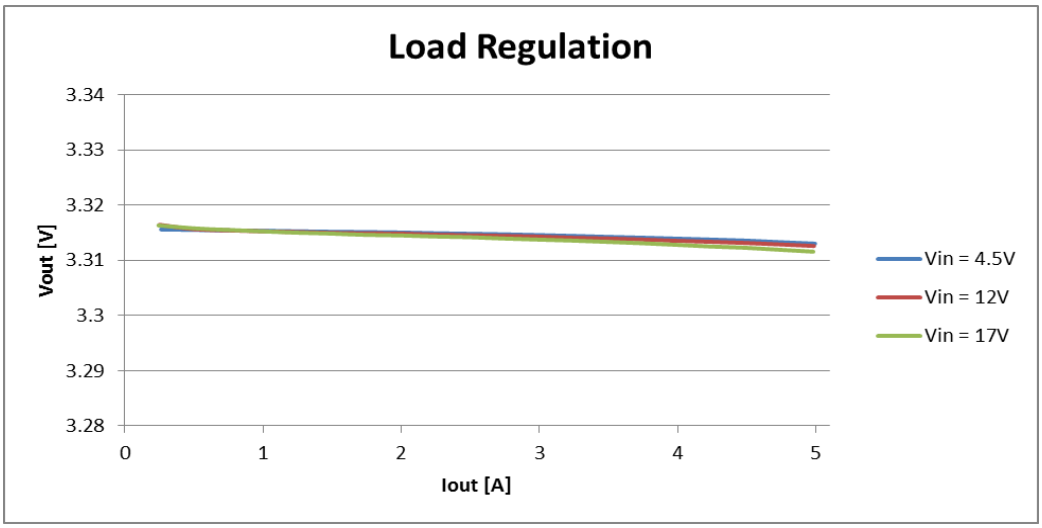
The transient response is shown in the figure below. The input voltage is 12V. The current is pulsed from 500mA to 2.5A.

Channel 1 (yellow): VOUT output (50mV/div)
Channel 4 (green): Output Current (2A/div)



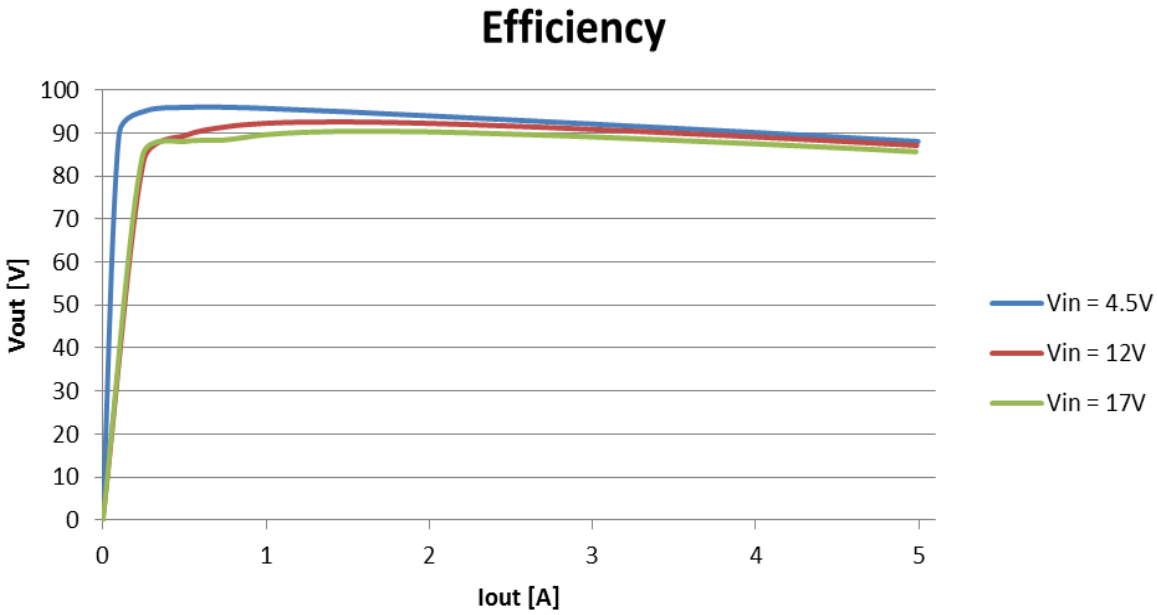
4 Load Regulation

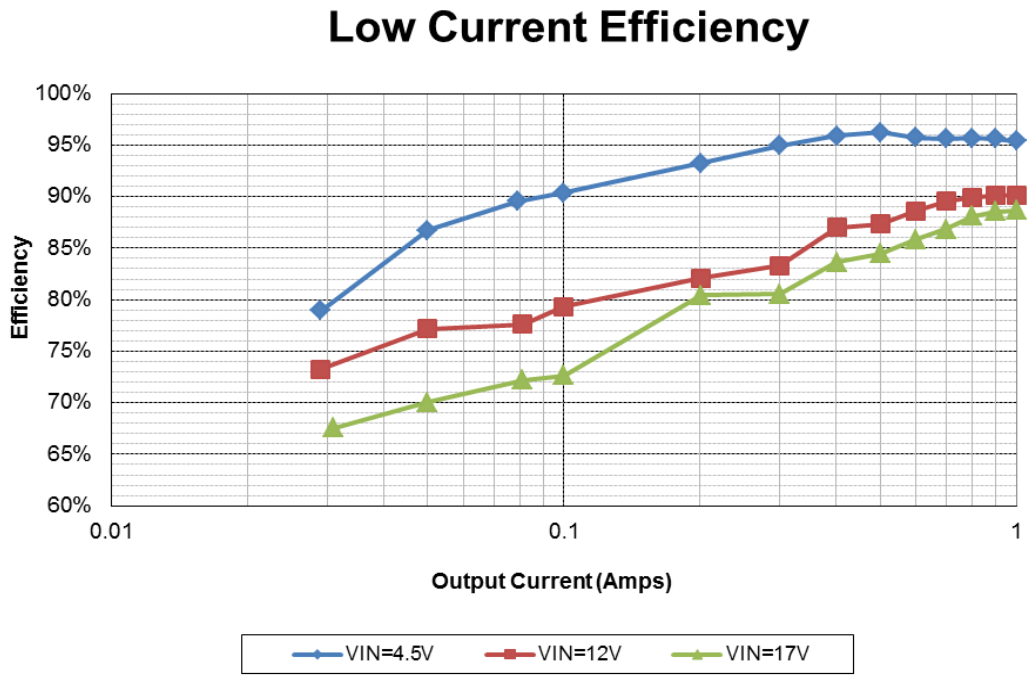
A plot of the load regulation at VOUT is shown in the figure below. The load regulation is plotted vs load current for VIN=4.5, 12, & 17V.



5 Efficiency

The efficiency of the converter is shown in the pictures below at VIN=4.5, 12, & 17V.



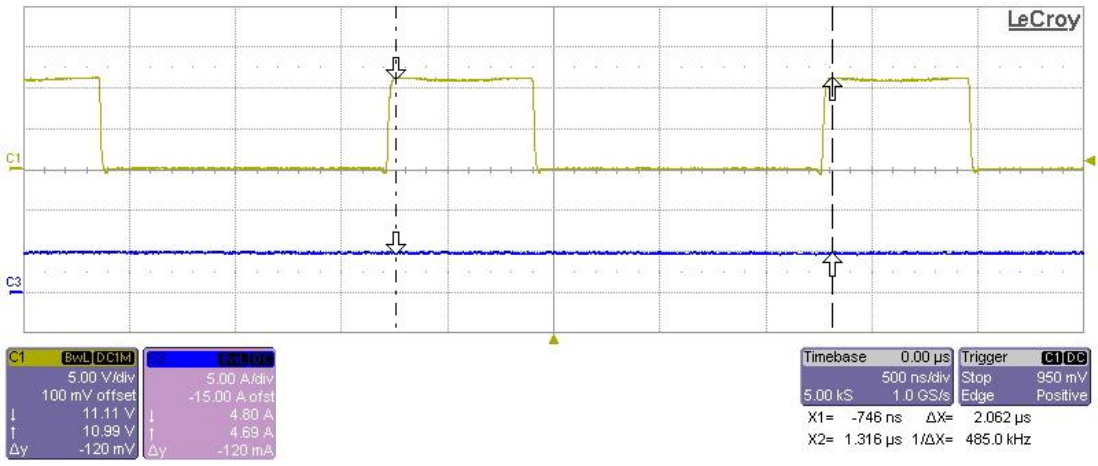


6 Switching Waveform

The waveform below shows the switch node. The input is 12V.

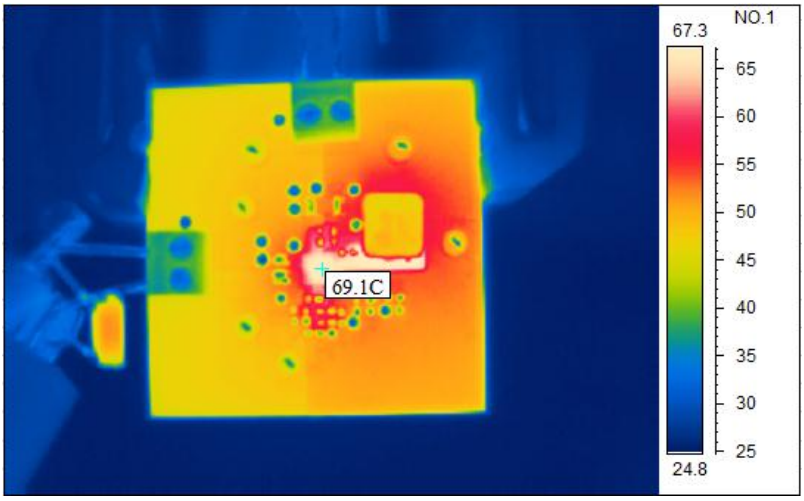
Channel 1 (yellow): SW pin output (5V/div)
Channel 1 (blue): current output (5A/div)

Switching Frequency = ~485kHz

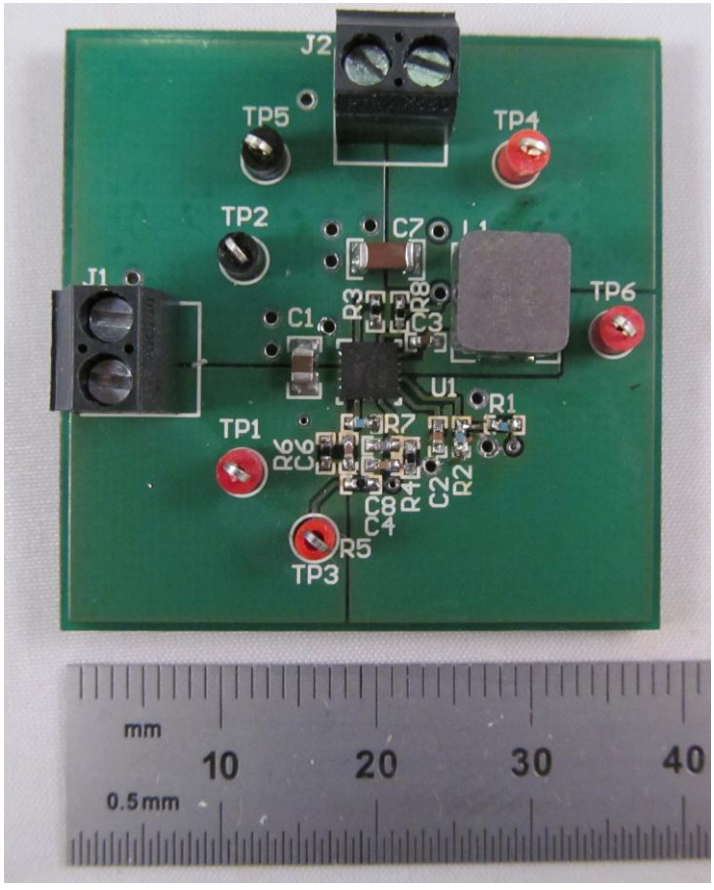


7 Thermal Profile

The figure below shows the thermal profile of the board at full load and Vin = 12V.



8 EVM Photo



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