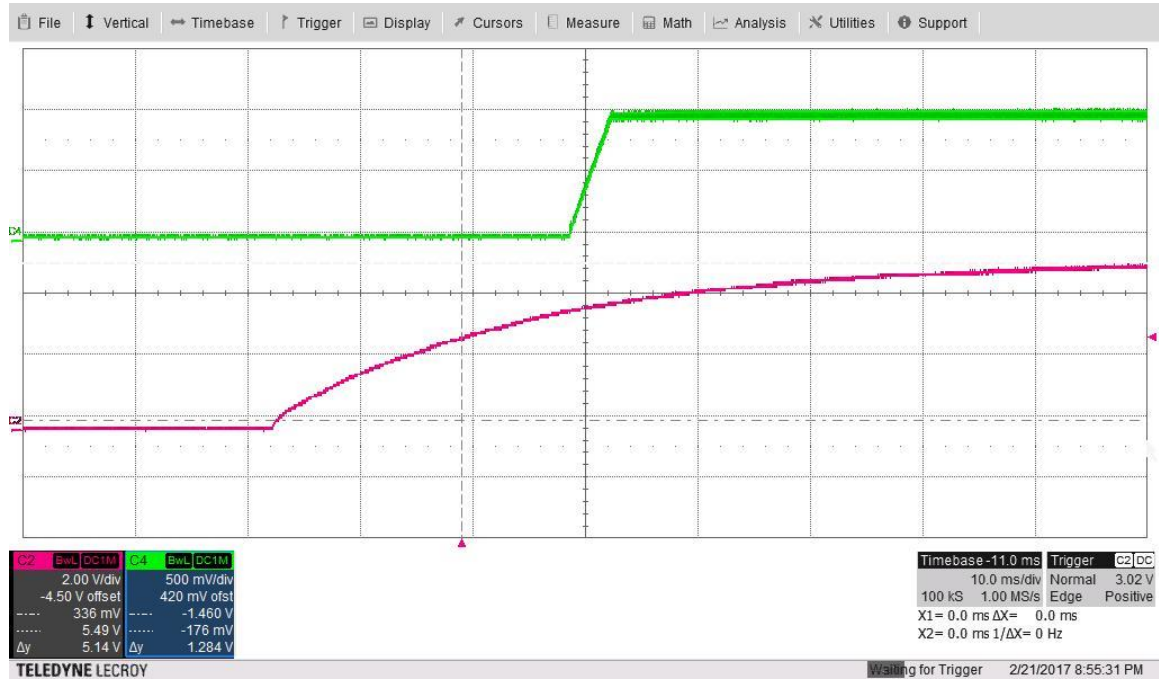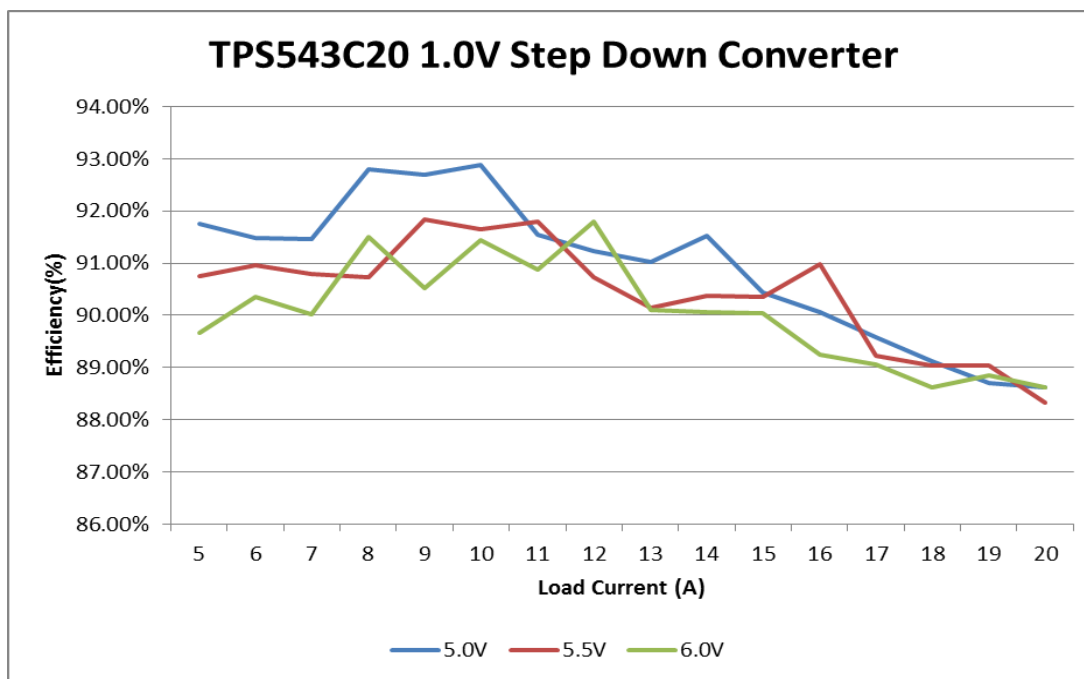# PMP20050 Test Results

TEXAS INSTRUMENTS

1 Startup

The photo below shows the output voltage startup waveform after the application of 5.5V in with the output loaded to 1V at 0A.

2 Efficiency

The converter's efficiency is shown in the figures below for 5V, 5.5V and 6V inputs. Efficiency data taken when board was at full temperature.


3 Load Regulation

The converter's load regulation is shown in the figures below for a 5.5V input. Load Regulation data taken when board was at full temperature.

Power Management Solutions

PMP20050 Test Results
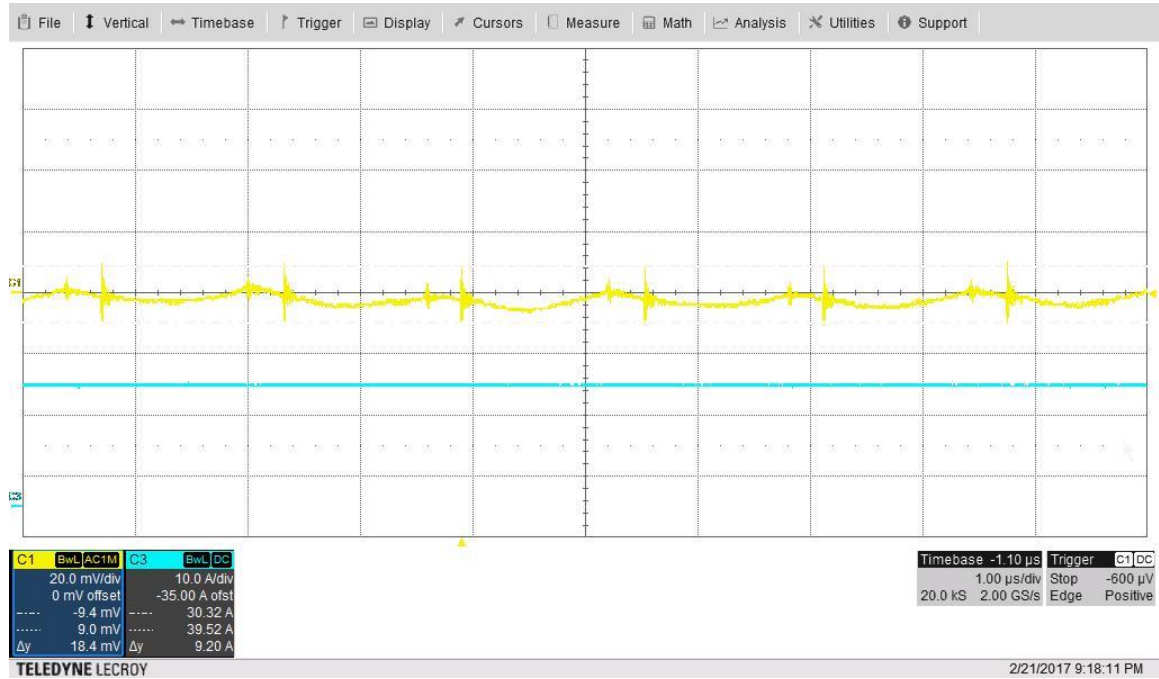
TEXAS INSTRUMENTS
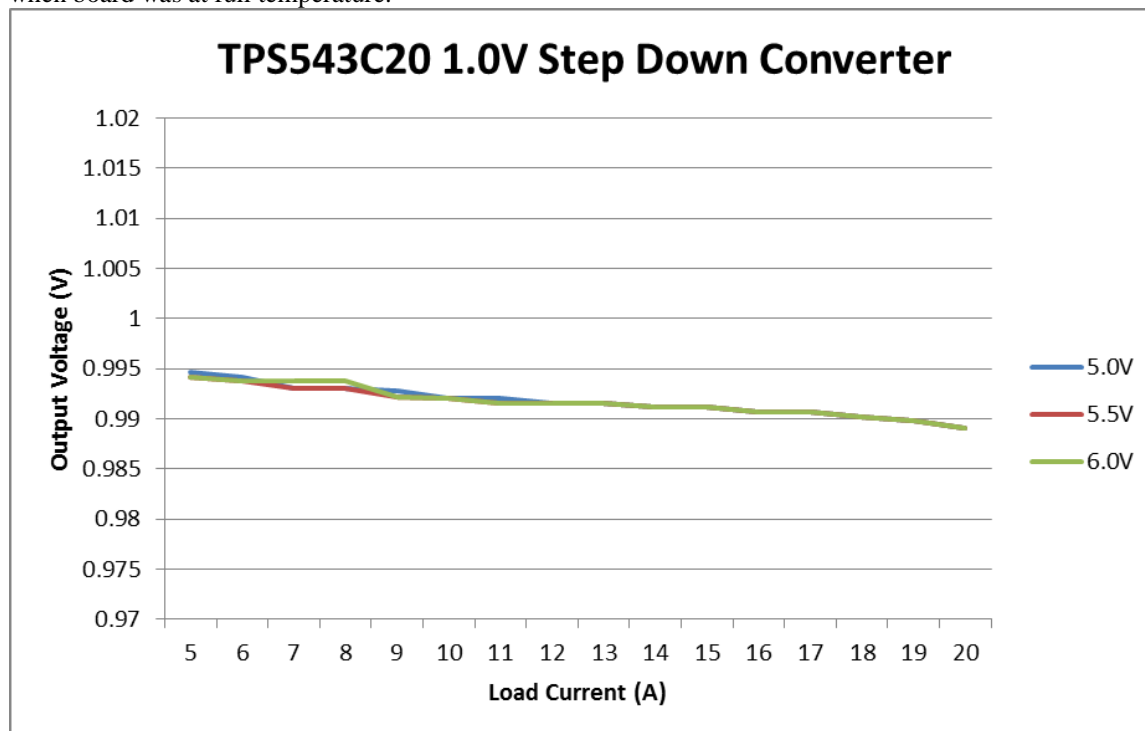
4 Output Ripple Voltage

The output ripple voltage is shown in the figures below. These images were taken with the 1V output voltage (ac coupled) loaded to 0A and then 20A with the input voltage set to 5.5V.
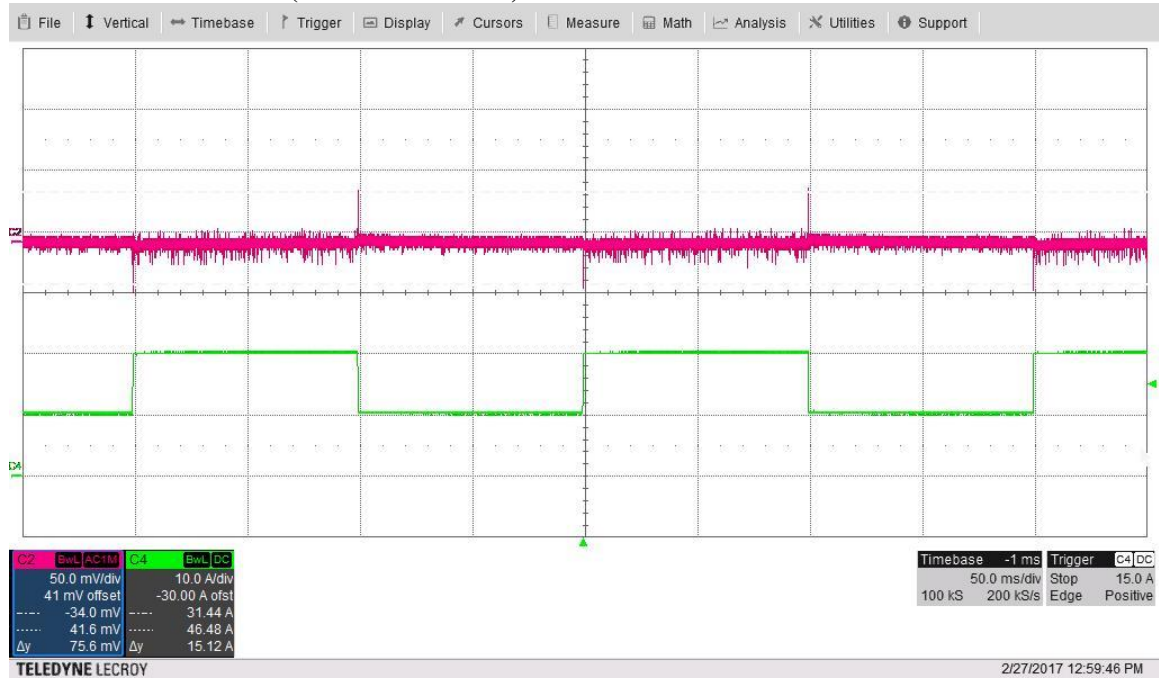
No Load -

Full Load -
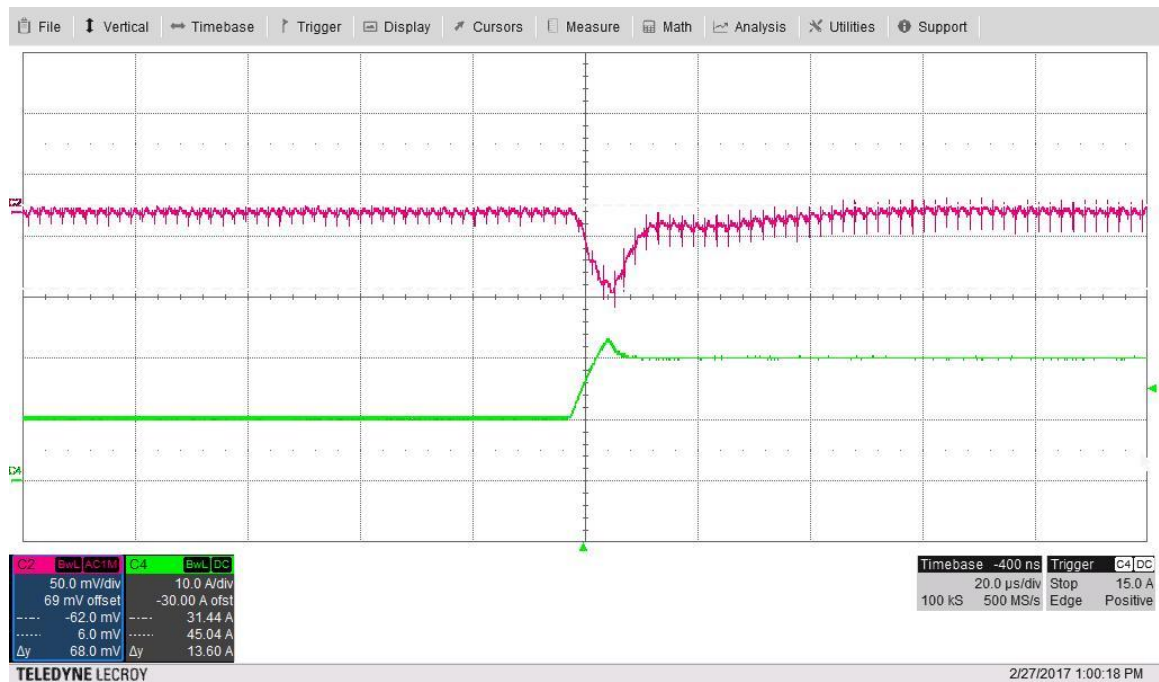
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PMP20050 Test Results
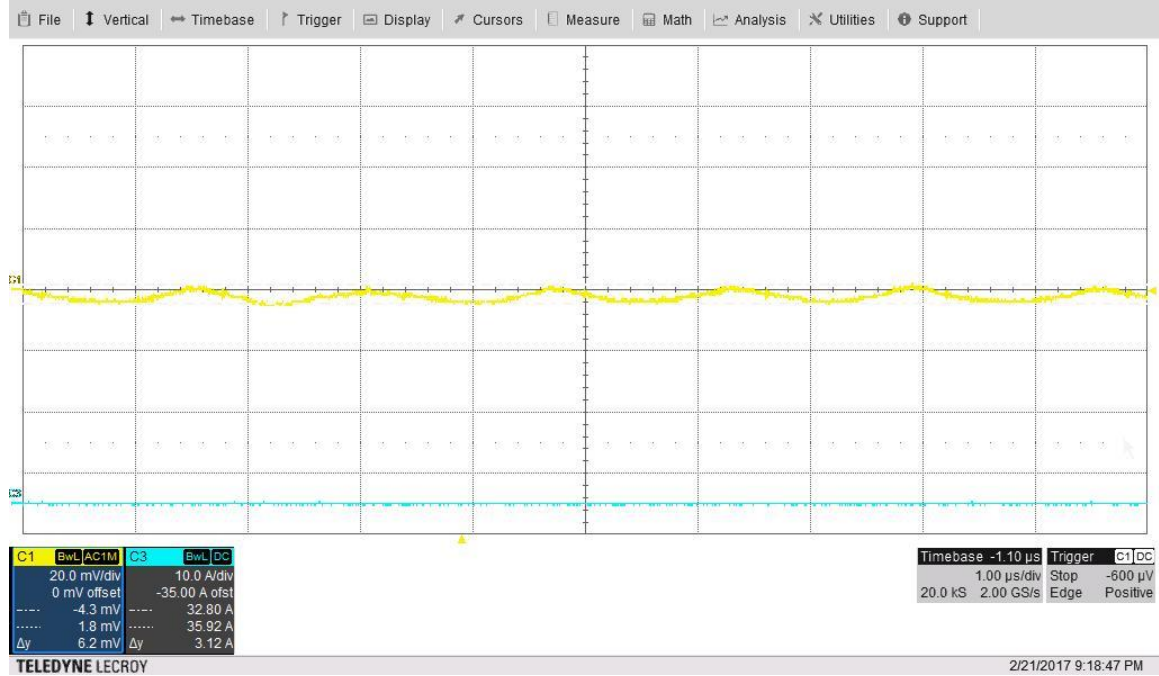
5 Load Transients

The photos below show the 1V output voltage (ac coupled) when the load current is stepped between 10A and 20A (50% load step). Vin = 5.5V.

50% to 100% Transient (1.00 A/us slew rate) -

Rising Edge (5.00 A/us slew rate) -

PMP20050 Test Results

Falling Edge (5.00 A/us slew rate) –
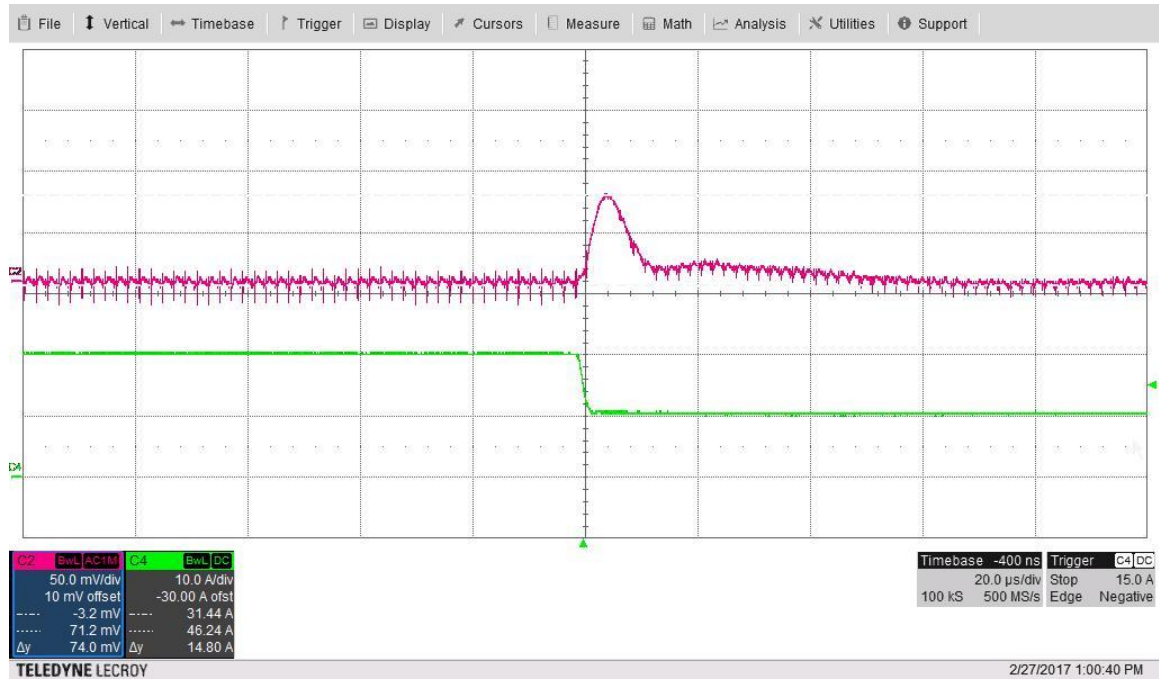
6   Switch Node Waveforms

The photos below show the switch node voltage. The input voltage is 5.5V and the 1V output is loaded to 0A and 20A.

No Load -

PMP20050 Test Results

Full Load –

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PMP20050 Test Results

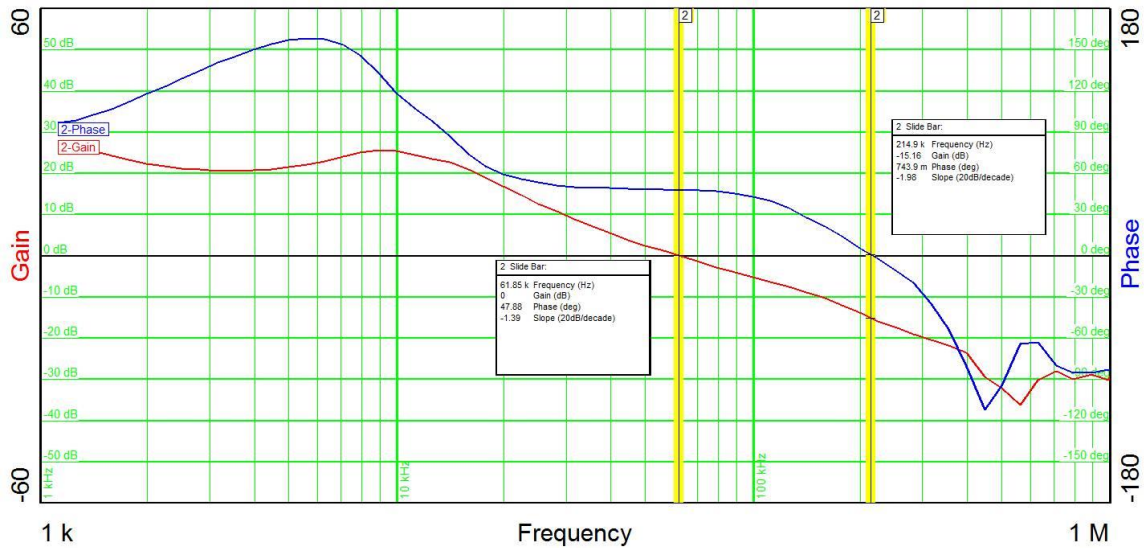## 7 Control Loop Gain / Stability

The plot below shows the 1V output's loop gain and phase margin when loaded to 1V @ 20A.

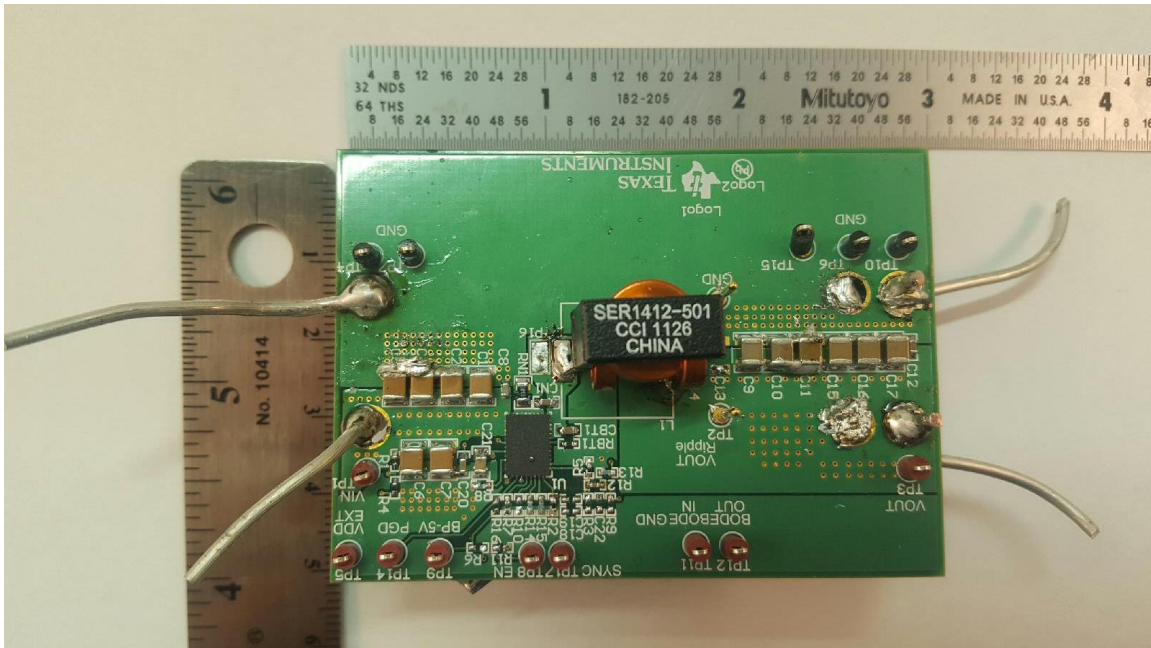Vin = 5.5V   Band Width = 61.85 kHz   Phase Margin = 47.88°
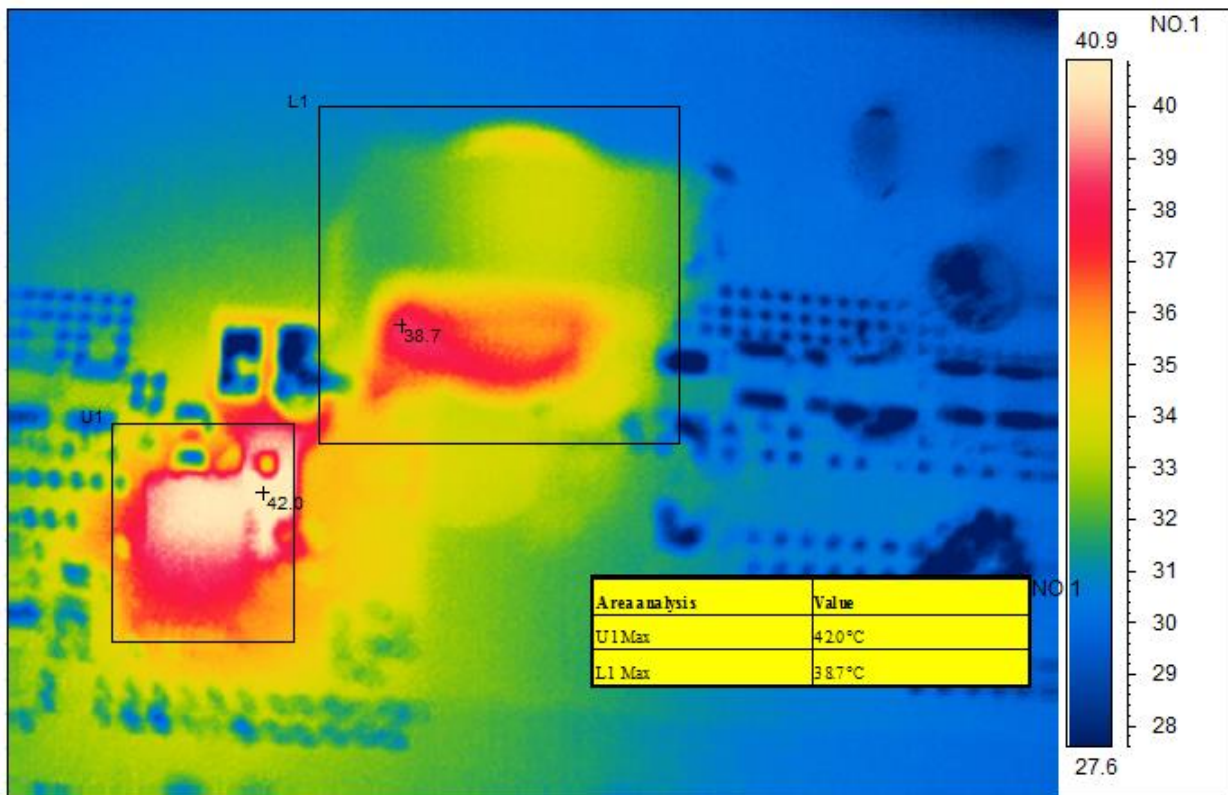

7   Photo

The photo below shows the PMP20050.

8   Thermal Image

The image below shows an infrared image of the board outputting 1V @ 20A with 5.5 Vin.

Area analysis	Value
U1 Max	42.0 °C
L1 Max	38.7 °C

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