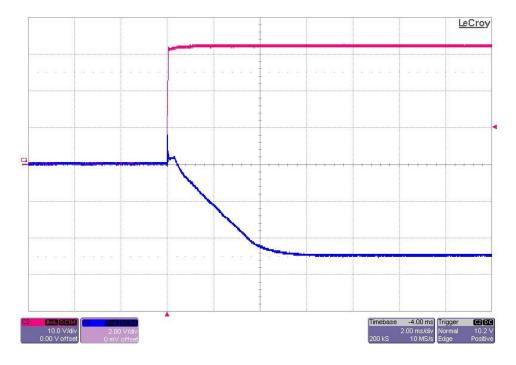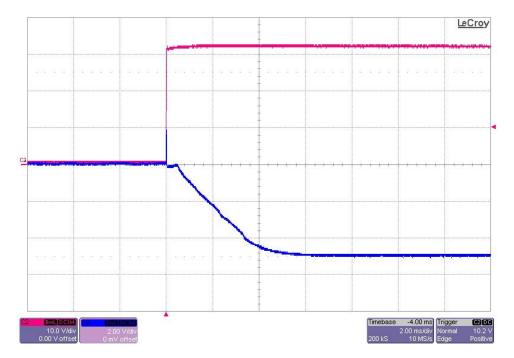# PMP9097 Rev B Test Results

TEXAS INSTRUMENTS

1 Startup

The photo below shows the -5V output voltage startup waveforms after the application of 32Vdc in. The output was loaded with a 0A load.   (Vin is 10V/DIV, Vout is 2V, 2mS/DIV)
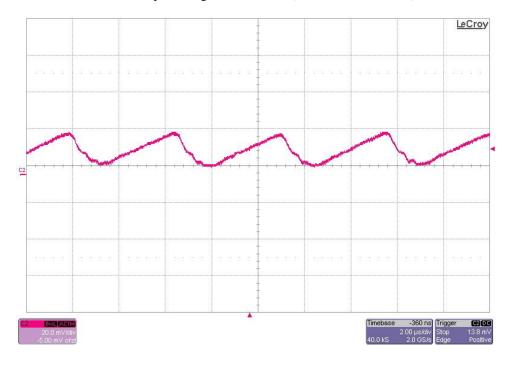

The photo below shows the -5V output voltage startup waveforms after the application of 32Vdc in. The output was loaded with a 100mA load.   (Vin is 10V/DIV, Vout is 2V, 2mS/DIV)

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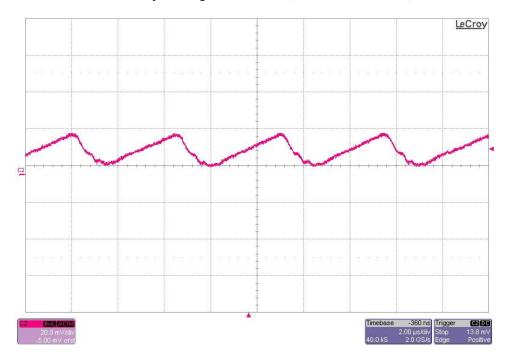
PMP9097 Rev B Test Results
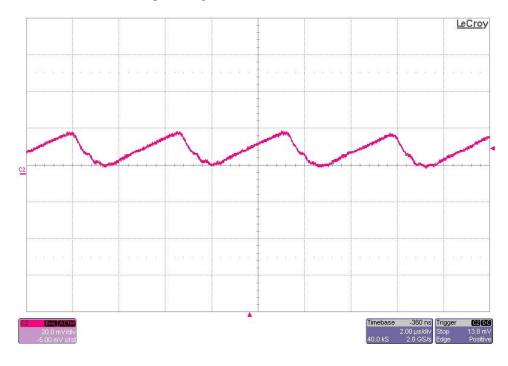
2 Output Ripple Voltage

The -5V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 100mA and the input voltage set to 34Vdc. (20mV/DIV, 2uS/DIV)

The -5V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 100mA and the input voltage set to 32Vdc. (20mV/DIV, 2uS/DIV)
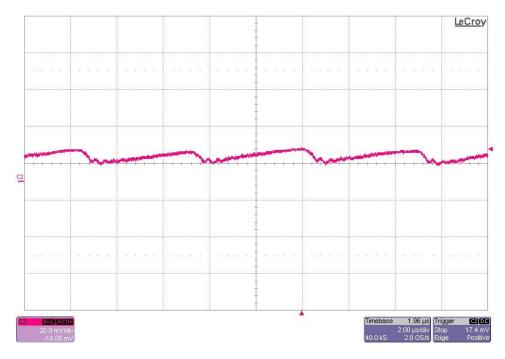
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The -5V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 100mA and the input voltage set to 28Vdc. (20mV/DIV, 2uS/DIV)
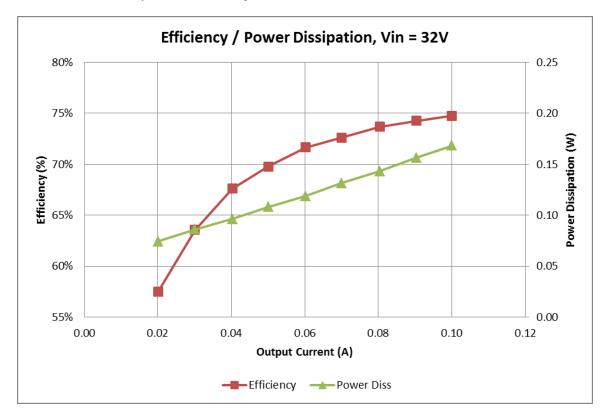

The -5V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 25mA and the input voltage set to 28Vdc. (20mV/DIV, 2uS/DIV)

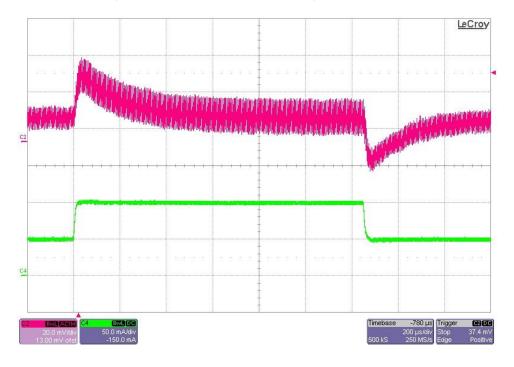# PMP9097 Rev B Test Results

3 Efficiency

The converter efficiency is shown in the figure below.

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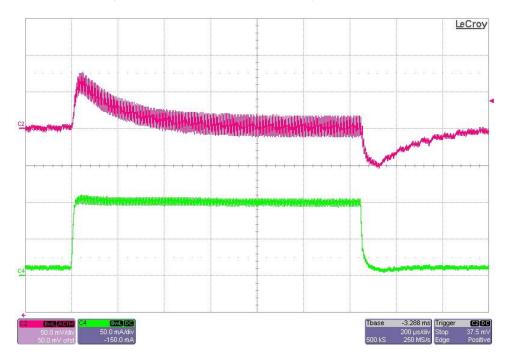# PMP9097 Rev B Test Results

4 Load Transients

The photo below shows the -5V output voltage (AC coupled) when the load current is stepped from 50mA to 100mA. Vin = 32Vdc   (20mV/DIV, 50mA/DIV, 200uS/DIV)
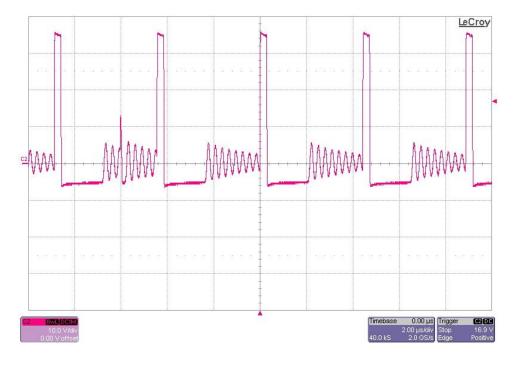

The photo below shows the -5V output voltage (AC coupled) when the load current is stepped from 10mA to 100mA. Vin = 32Vdc   (50mV/DIV, 50mA/DIV, 200uS/DIV)
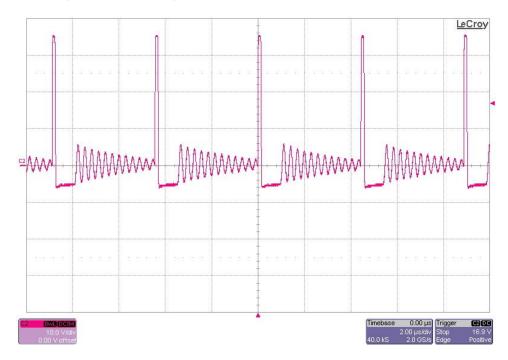

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5 Switching Waveforms

The photo below is the switch-node waveform (TP2). The input voltage is 34V and the output is loaded to 100mA.   (10V/DIV, 2uS/DIV)
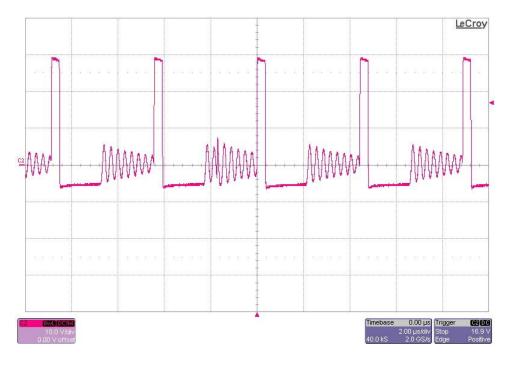

The photo below is the switch-node waveform (TP2). The input voltage is 34V and the output is loaded to 20mA.   (10V/DIV, 2uS/DIV)
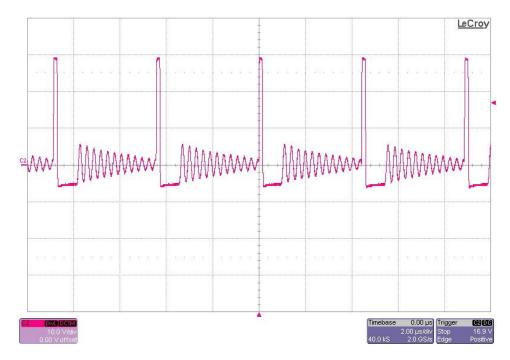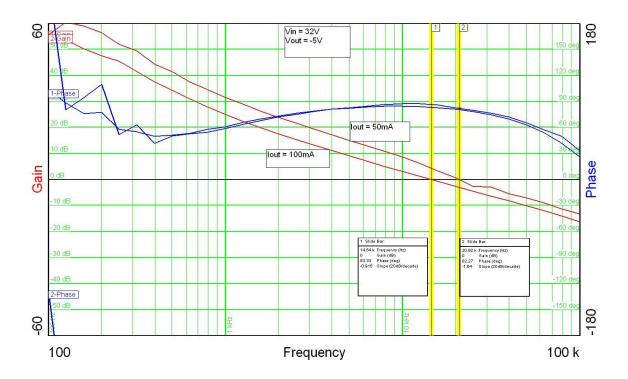

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The photo below is the switch-node waveform (TP2). The input voltage is 28V and the output is loaded to 100mA.   (10V/DIV, 2uS/DIV)

The photo below is the switch-node waveform (TP2). The input voltage is 28V and the output is loaded to 20mA.   (10V/DIV, 2uS/DIV)

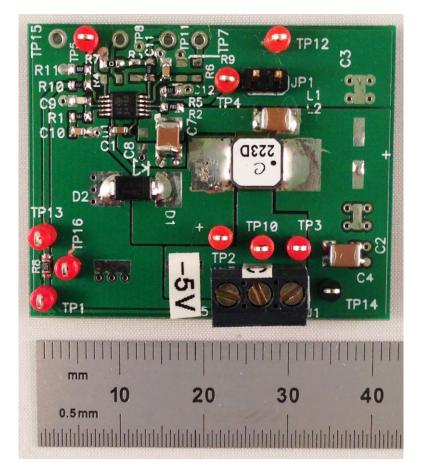# PMP9097 Rev B Test Results

6 Loop Gain

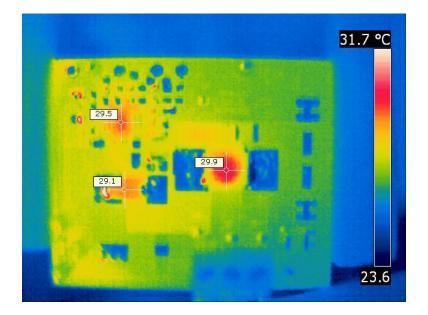The plot below shows the loop gain with the input voltage set to 32V and the output loaded to 50mA and 100mA.

Loop Gain (Iout = 100mA)   BW: 14.6KHz   PM: 83 degrees
Loop Gain (Iout = 50mA)   BW: 20.1KHz   PM: 82 degrees

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7 Photo

The photo below shows the PMP9097 REVB assembly built on the PMP2763 REVA PWB.

8 Thermal Image

A thermal image is shown below when operating at 32Vin and 100mA output, no air flow.

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