1 Startup

The photo below shows the output voltage startup waveform after the application of 12V in. The 300V output was loaded to 0A. \( V_{\text{control}} = 0V \), (\( V_{\text{in}} \) is 10V/DIV, \( V_{\text{out}} \) is 50V/DIV, 10mS/DIV)

The photo below shows the output voltage startup waveform after the application of 12V in. The 150V output was loaded to 0A. \( V_{\text{control}} = 3V \), (\( V_{\text{in}} \) is 10V/DIV, \( V_{\text{out}} \) is 50V/DIV, 10mS/DIV)
2 Efficiency

The converter efficiency is shown below for \( V_{in} = 12V \) and \( V_{out} = 300V \).

![300V Boost converter, \( V_{in} = 12V \)](image)

The converter efficiency is shown below for \( V_{in} = 12V \) and \( V_{out} = 150V \).

![150V Boost converter, \( V_{in} = 12V \)](image)
3 Output Ripple Voltage

The 300V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 50uA. The input voltage is set to 15V. 

(200mV/DIV, 5uS/DIV)

The 300V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 50uA. The input voltage is set to 9V.

(200mV/DIV, 5uS/DIV)
The 150V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 25uA. The input voltage is set to 15V. (100mV/DIV, 5uS/DIV)

The 150V output ripple voltage (AC coupled) is shown in the figure below. The image was taken with the output loaded to 25uA. The input voltage is set to 9V. (100mV/DIV, 5uS/DIV)
4 Switch Node Waveforms

The photo below shows the FET switching voltage at TP4 (Red) and the voltage at D2-cathode (Yellow) for an output voltage of 300V, an input voltage of 15V and 0A load. (50V/DIV, 5μS/DIV)

The photo below shows the FET switching voltage at TP4 (Red) and the voltage at D2-cathode (Yellow) for an output voltage of 150V, an input voltage of 15V and 0A load. (50V/DIV, 5μS/DIV)
5 Loop Gain

The plot below shows the loop gain with the input voltage set to 15V with the output set to 0A.

Loop Gain (Vout = 300V) BW: 8.29KHz PM: 73 degrees
Loop Gain (Vout = 150V) BW: 5.50KHz PM: 80 degrees
The photo below shows the PMP20212 REVB assy.
7 Thermal Image

A thermal image is shown below operating at 12V input and 300V@30uA output (room temp, no airflow).
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