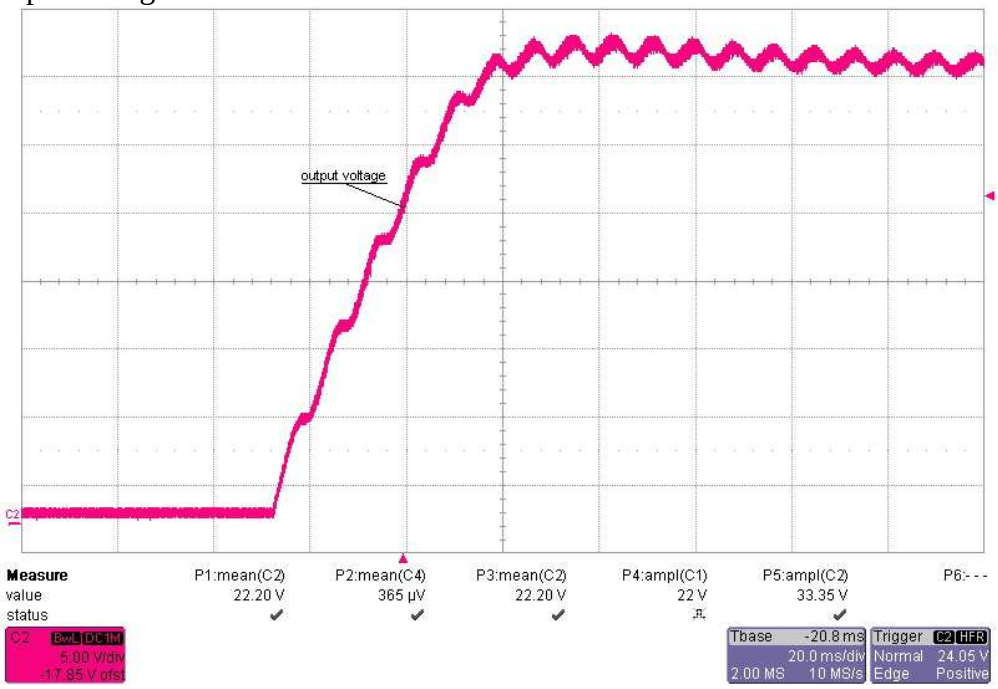
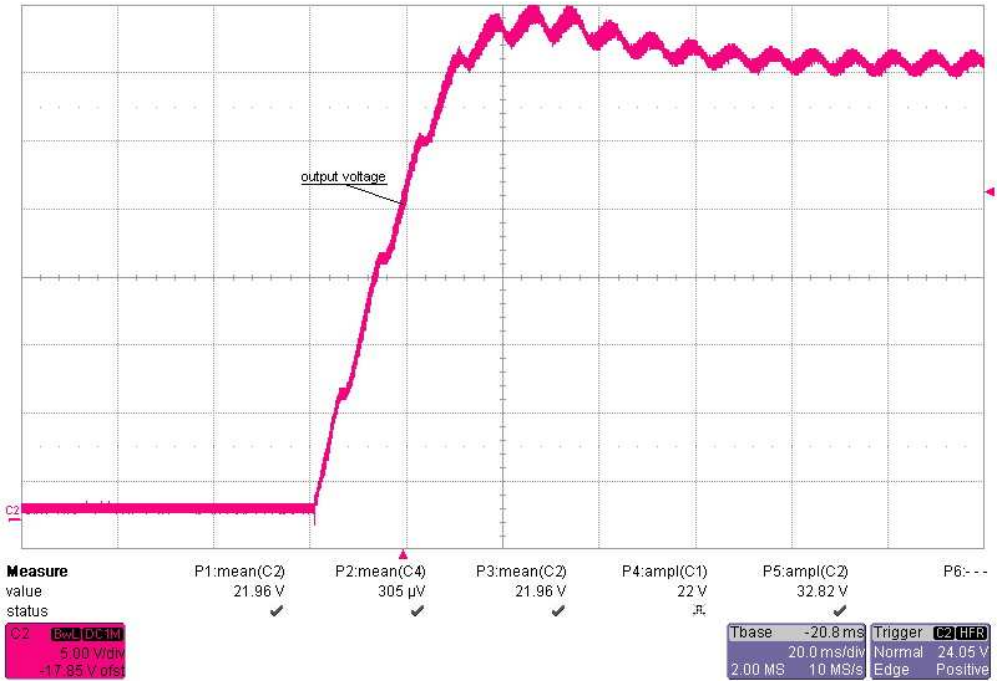
1 Startup

The output voltage at startup is shown in the image below.

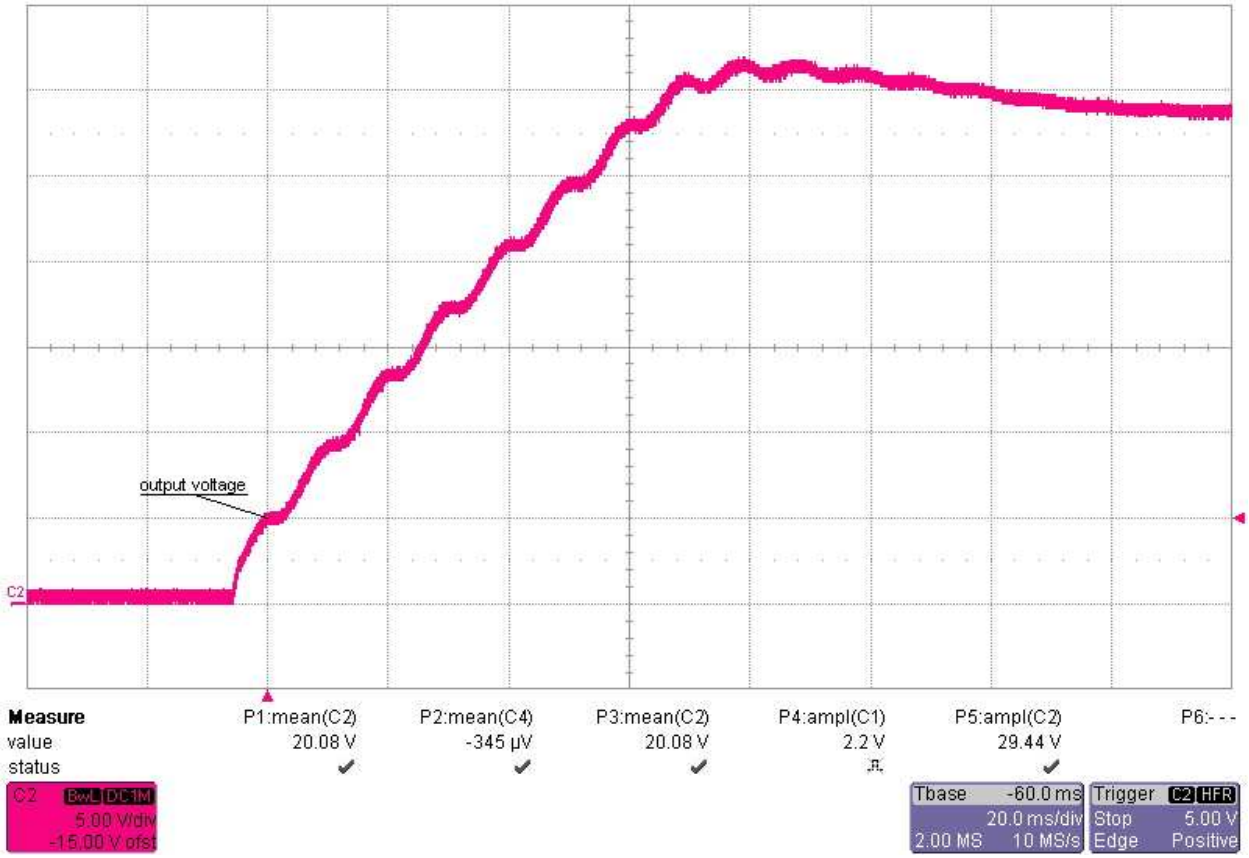
Load = LEDs (Vout=33V, Iout=1.5A)
Input voltage = 140VAC



Load = LEDs (Vout=33V, Iout=1.5A)
Input voltage = 272VAC

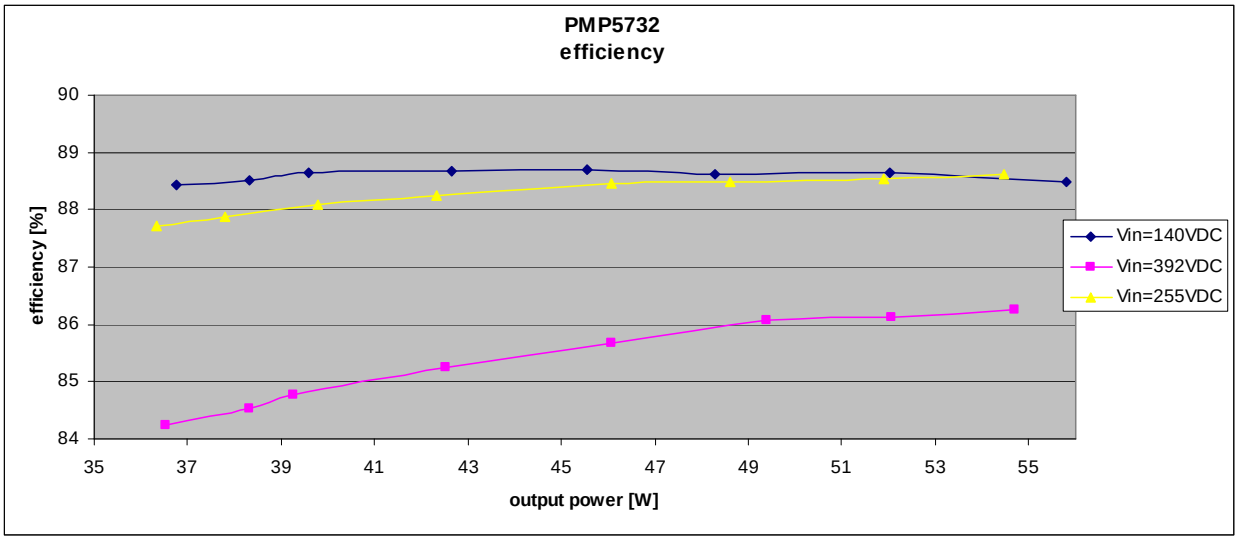


Load = LEDs (Vout=29V, Iout=0.15A)
Input voltage = 140VAC



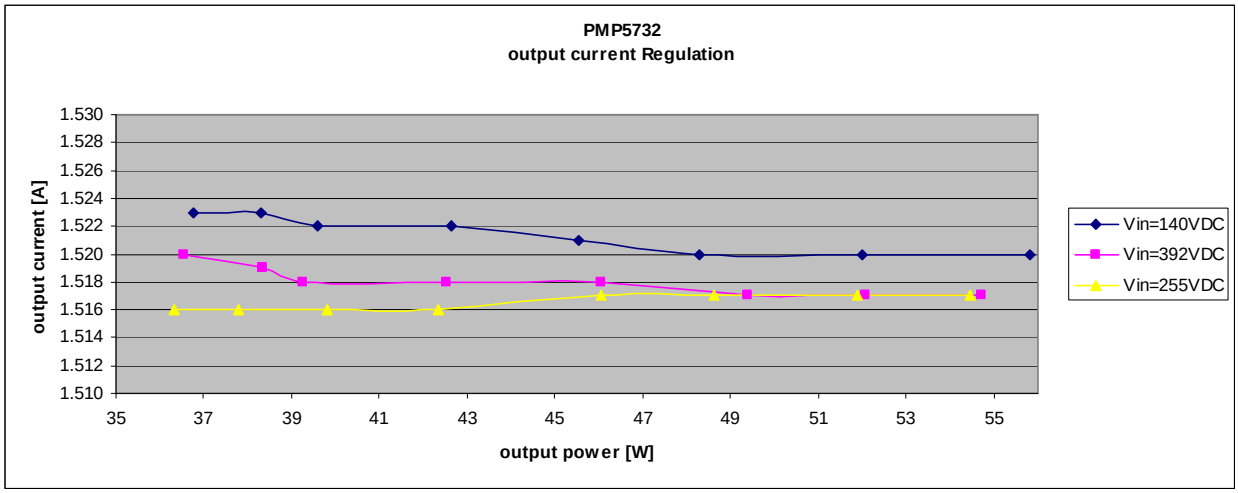
2 Efficiency

The efficiency is shown in the graph below. For simplicity and accuracy of measurements, the data was measured using a DC input with a resistive load.



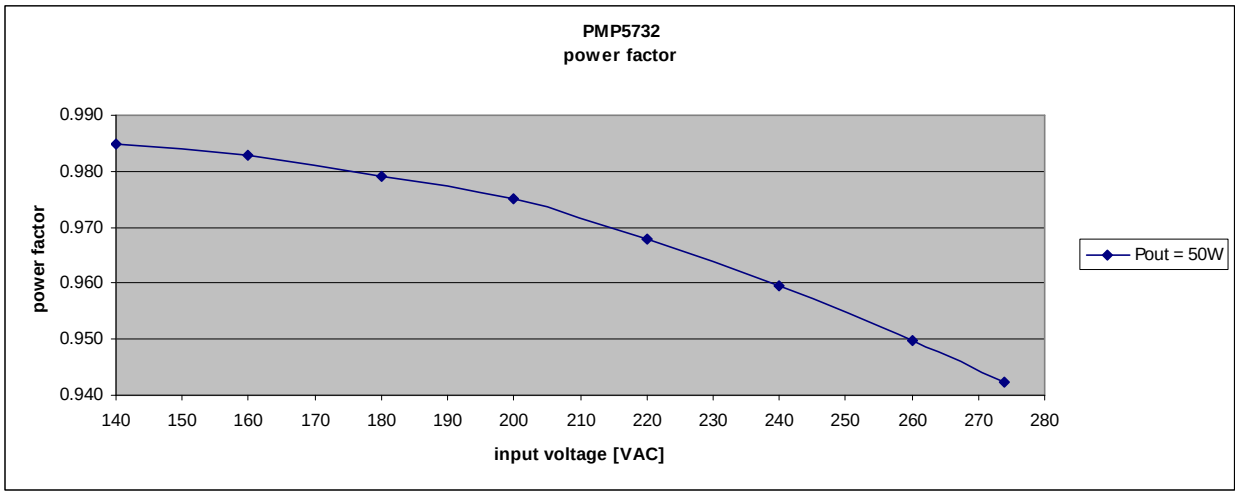
3 Output Current Regulation

The output current versus output power graph is plotted below.



4 Power Factor

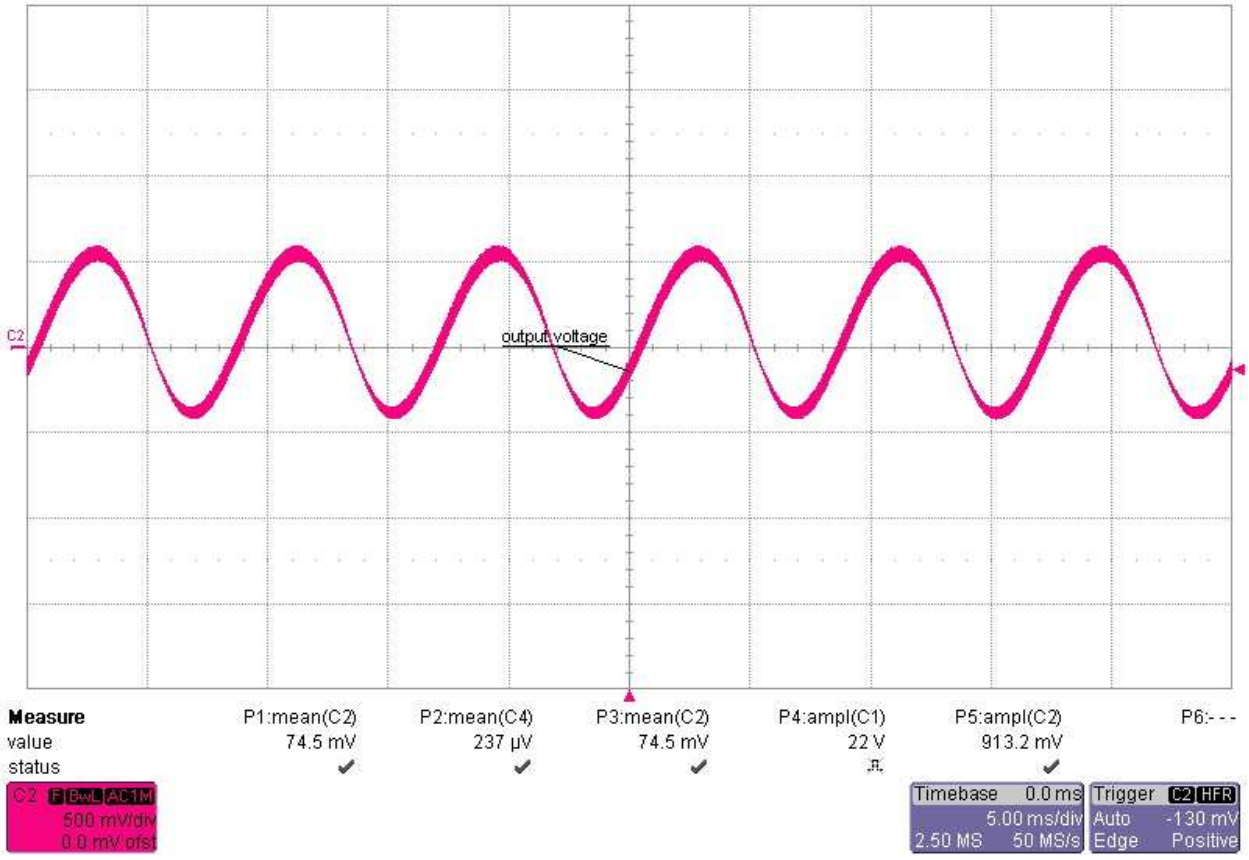
Load = LEDs (Vout=33V, Iout=1.5A)



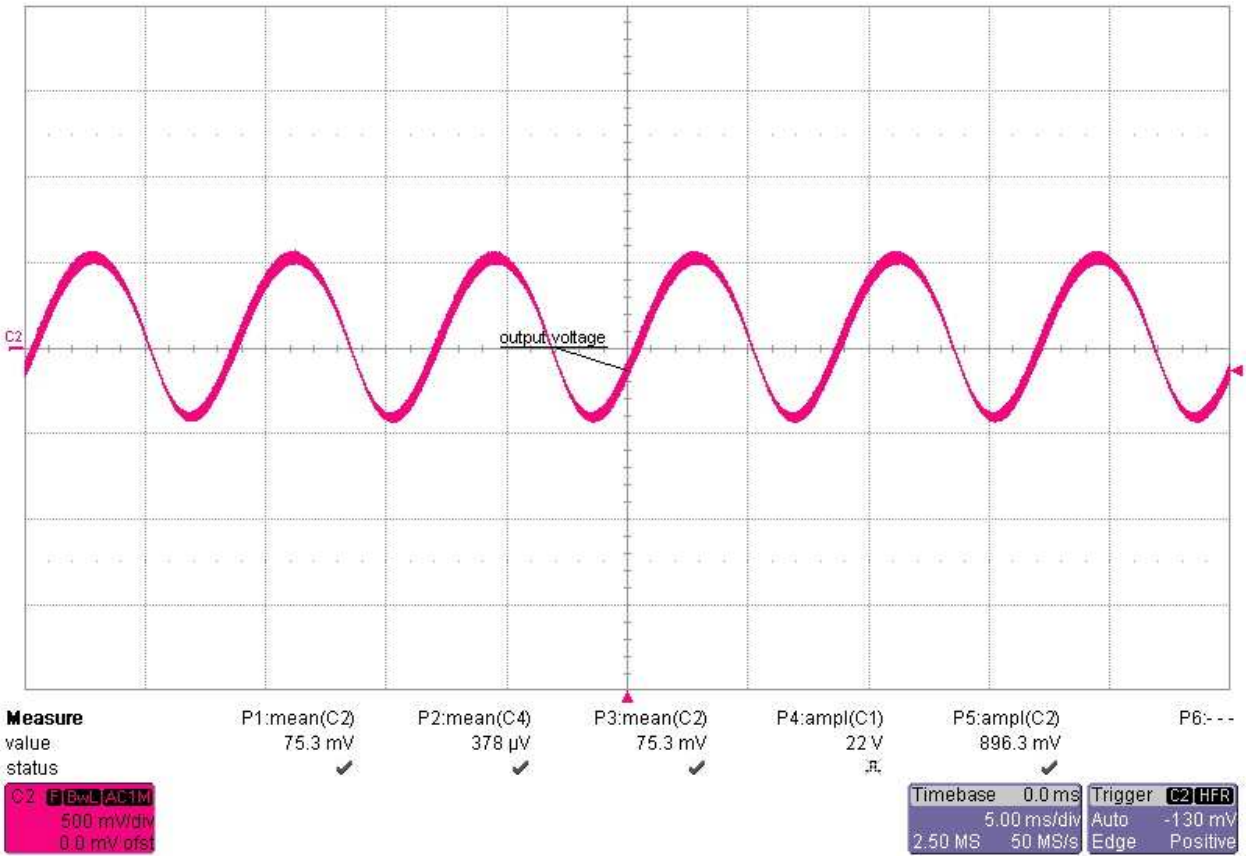
5 Output Ripple Voltage

The output ripple voltage is shown in the plot below.

Load = LEDs (Vout=33V, Iout=1.5A)
Input voltage = 140VAC



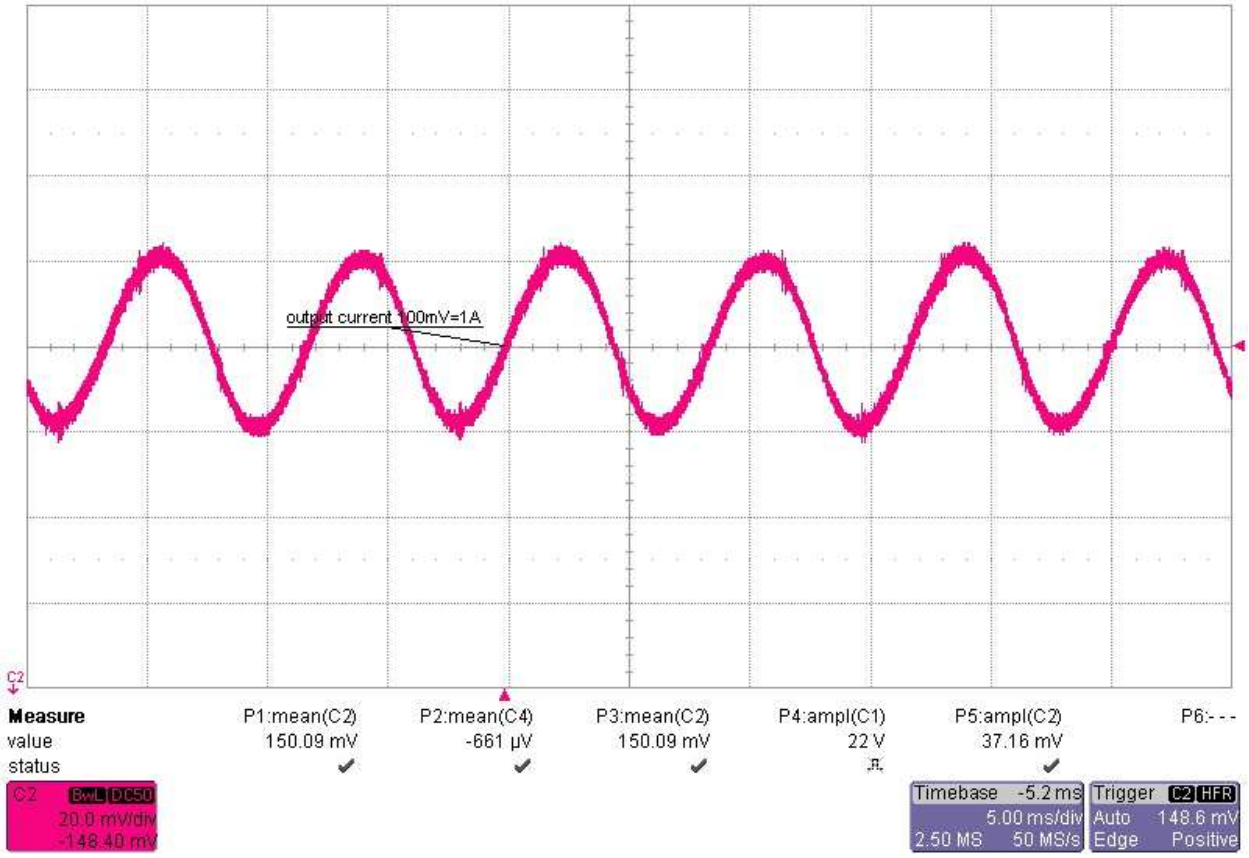
Load = LEDs (Vout=33V, Iout=1.5A)
Input voltage = 273VAC



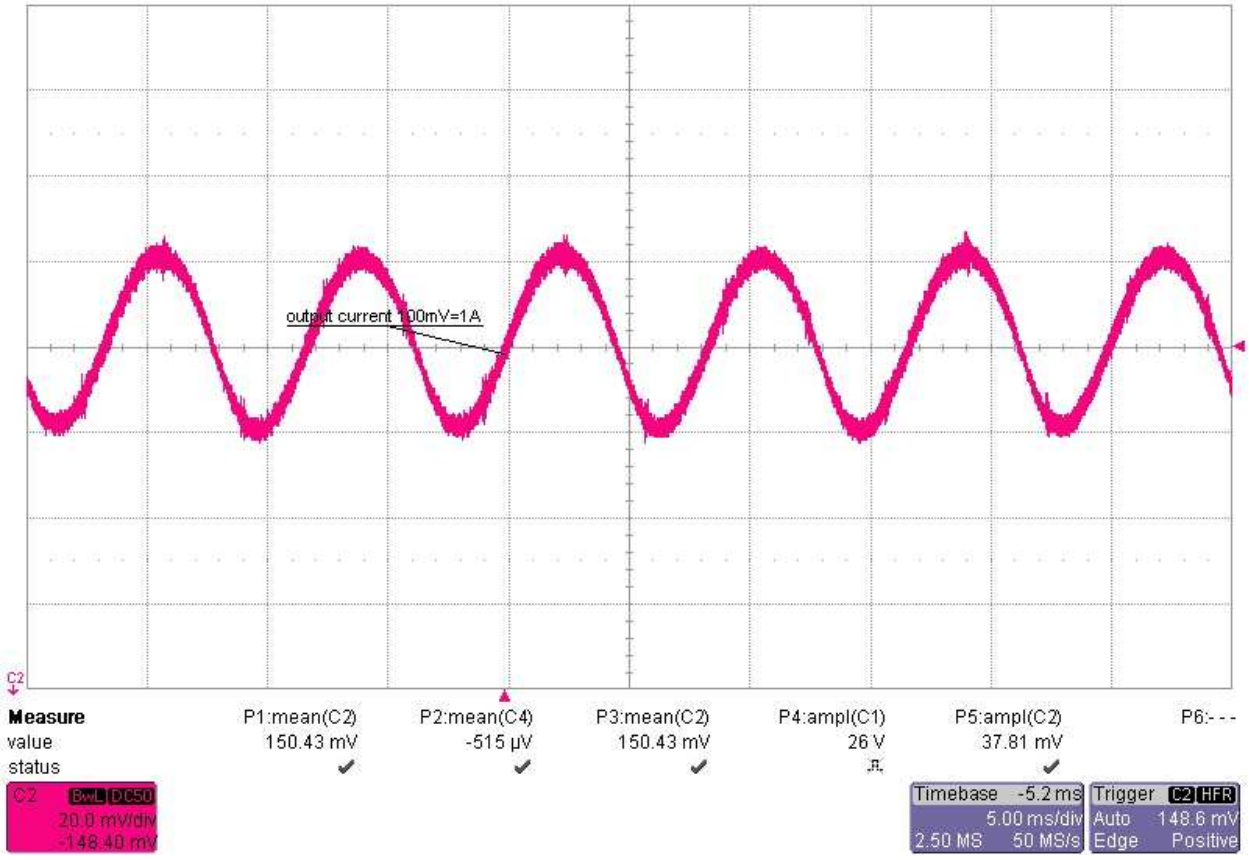
6 Output Ripple Current

The output ripple current is shown in the plot below.

Load = LEDs (Vout=33V, Iout=1.5A)
Input voltage = 140VAC



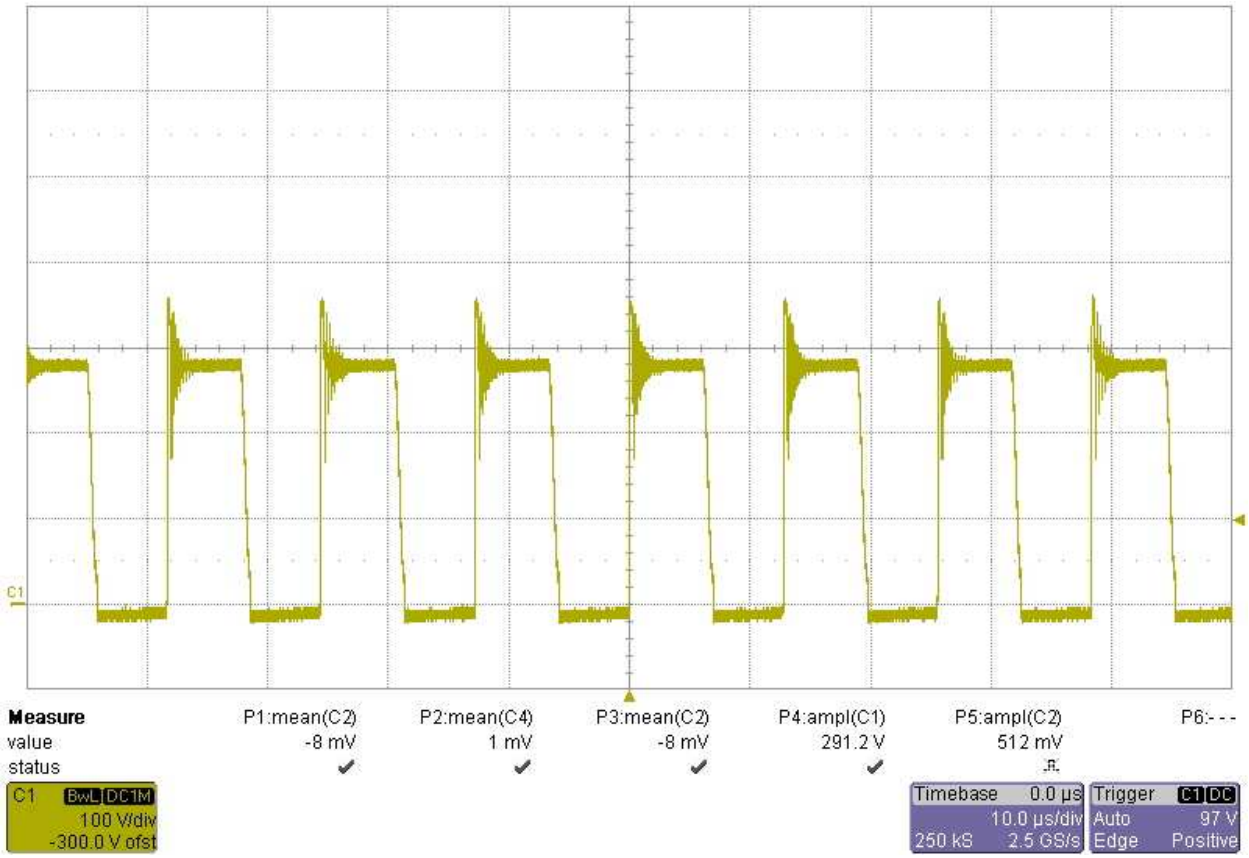
Load = LEDs (Vout=33V, Iout=1.5A)
Input voltage = 273VAC



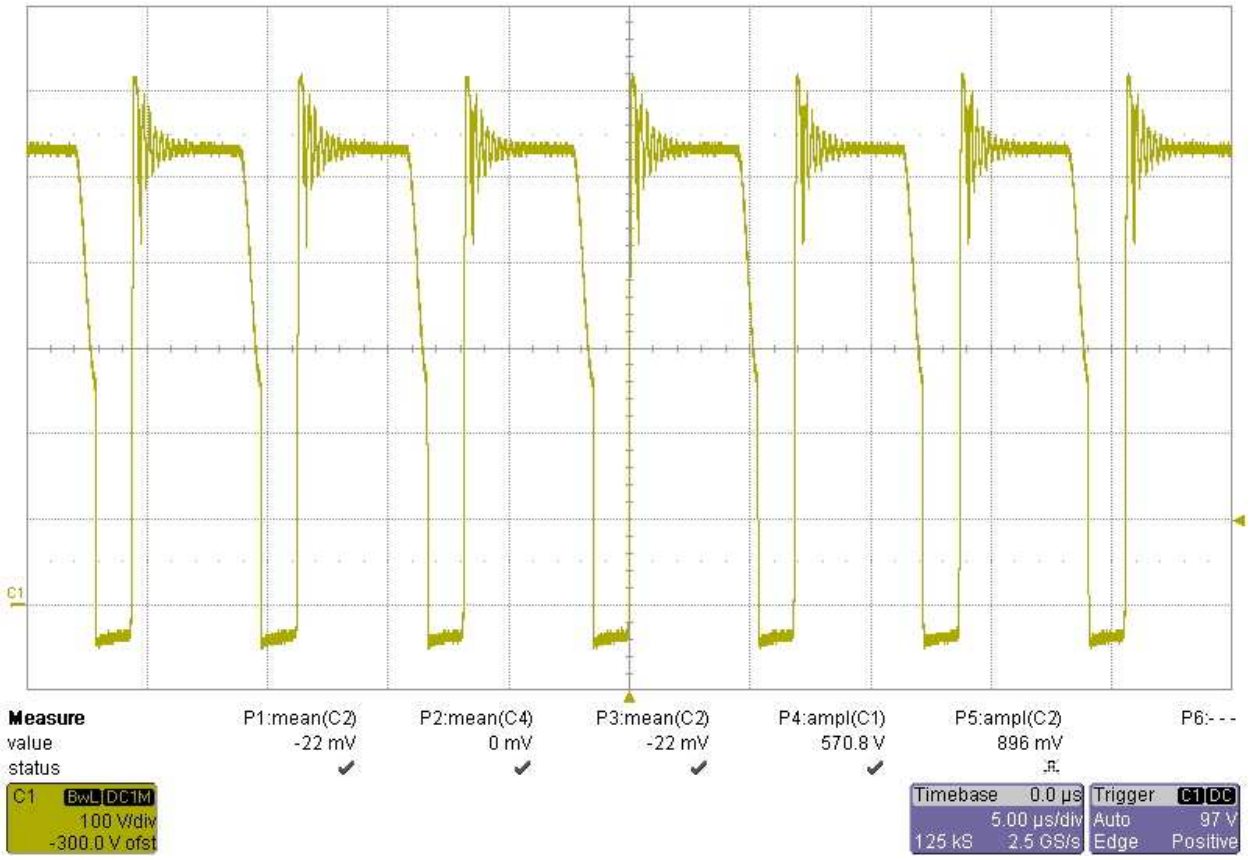
7 Switching Node Waveform

The image below shows the voltage on the drain of the switching node (Q1).

Load = LEDs (Vout=33V, Iout=1.5A)
Input voltage = 140VDC

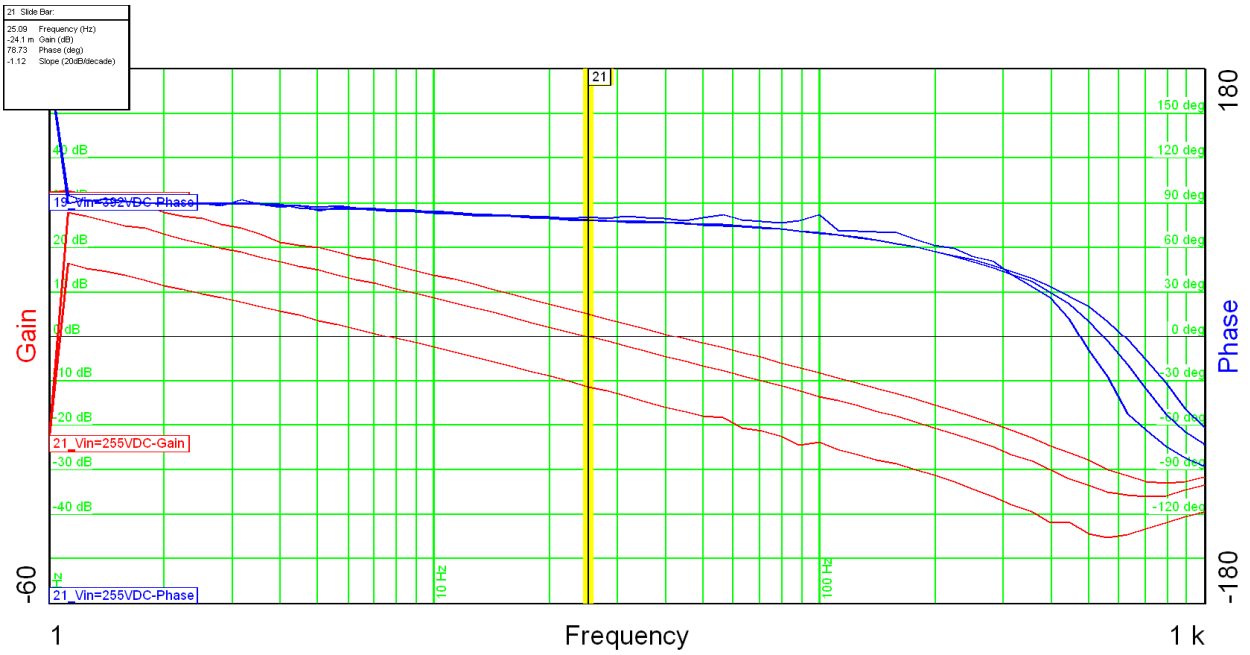


Load = LEDs (Vout=33V, Iout=1.5A)
Input voltage = 392VDC



8 Loop Response

The image below shows the loop response of the converter measured with 140VDC, 255VDC and 392VDC input and full load (LEDs, 33V, 1,5A).

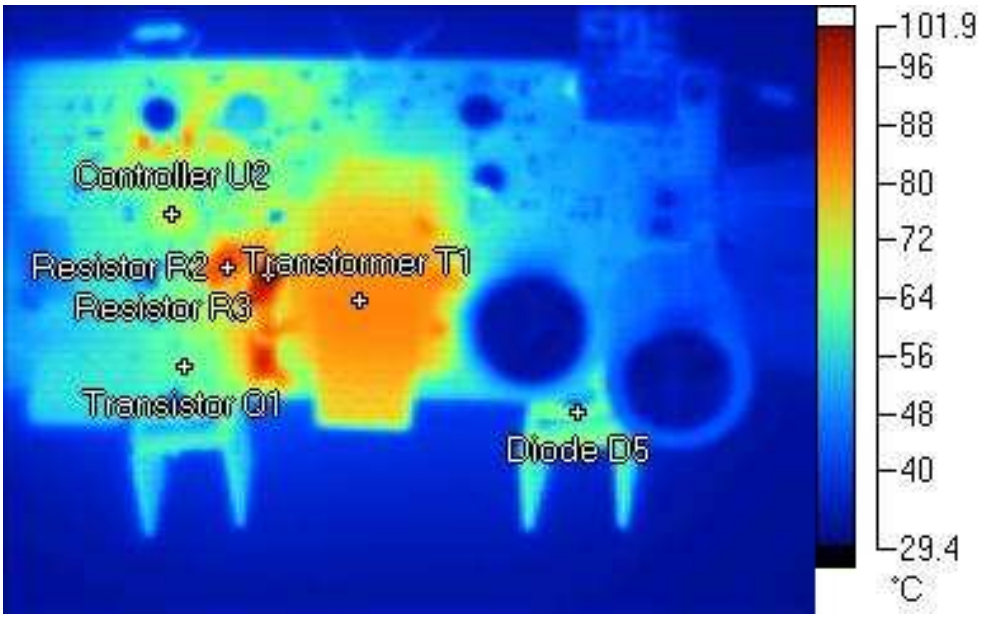


255VDC input:

Crossoverfrequency: 25.1Hz
Phase margin: 78.7°

9 Thermal Image

The image below shows the thermal image in still air taken at full load, 392VDC, 1,52A and 54W, while the ambient temperature was 25C.



Name	Temperature
Controller U2	73.6℃
Resistor R2	93.3℃
Resistor R3	101.4℃
Transformer T1	83.4℃
Transistor Q1	63.4℃
Diode D5	64.0℃

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3. Since the EVM is not a completed product, it may not meet all applicable regulatory and safety compliance standards (such as UL, CSA, VDE, CE, RoHS and WEEE) which may normally be associated with similar items. You assume full responsibility to determine and/or assure compliance with any such standards and related certifications as may be applicable. You will employ reasonable safeguards to ensure that your use of the EVM will not result in any property damage, injury or death, even if the EVM should fail to perform as described or expected.

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