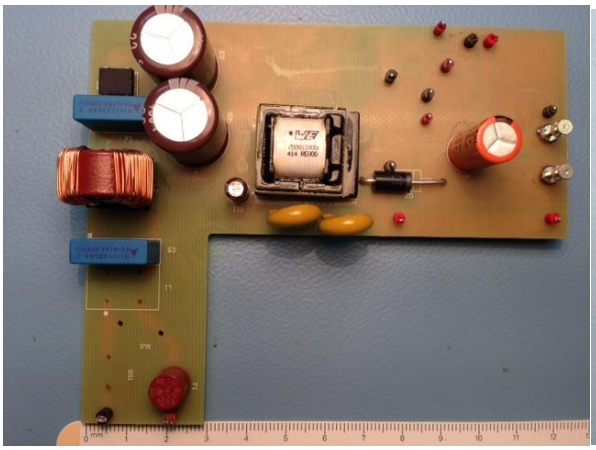
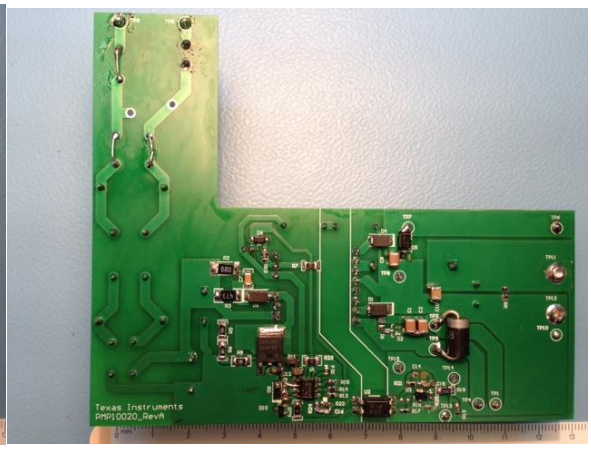
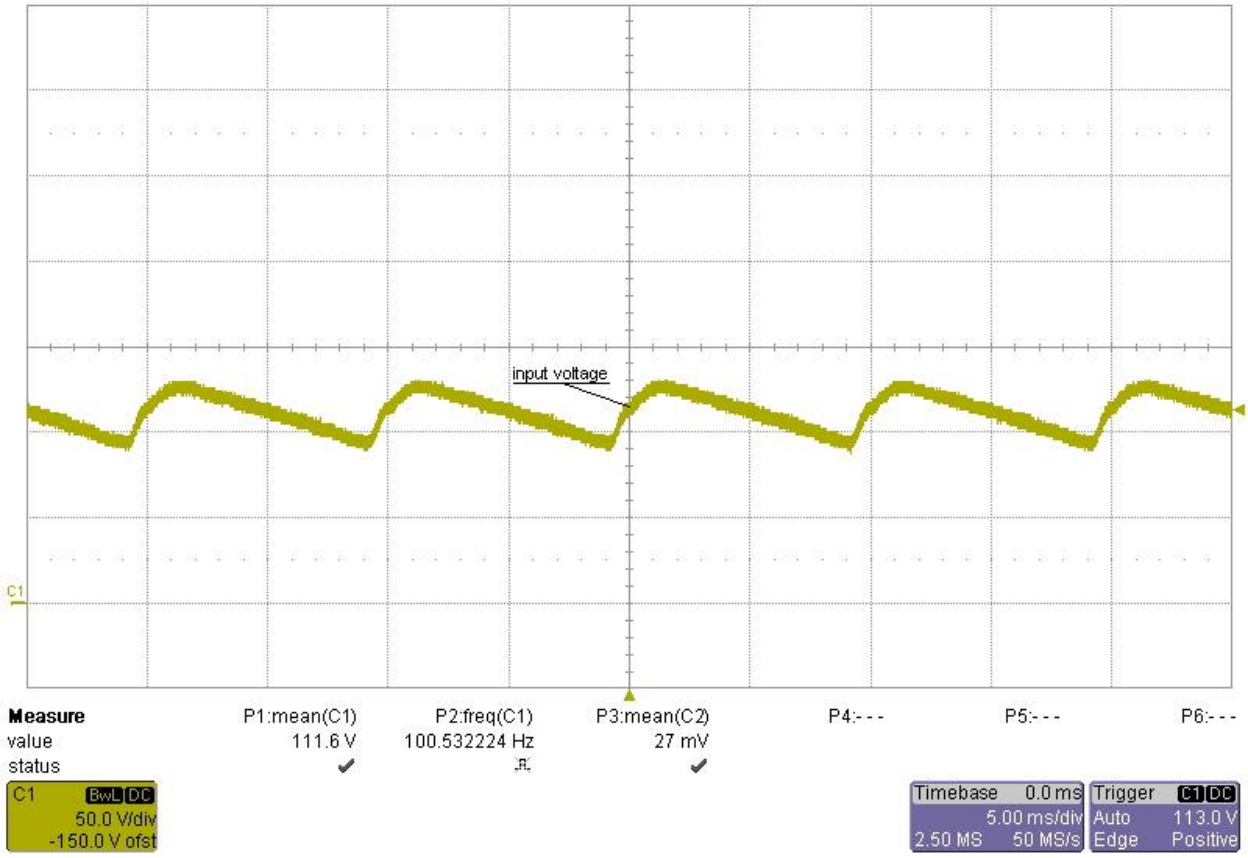


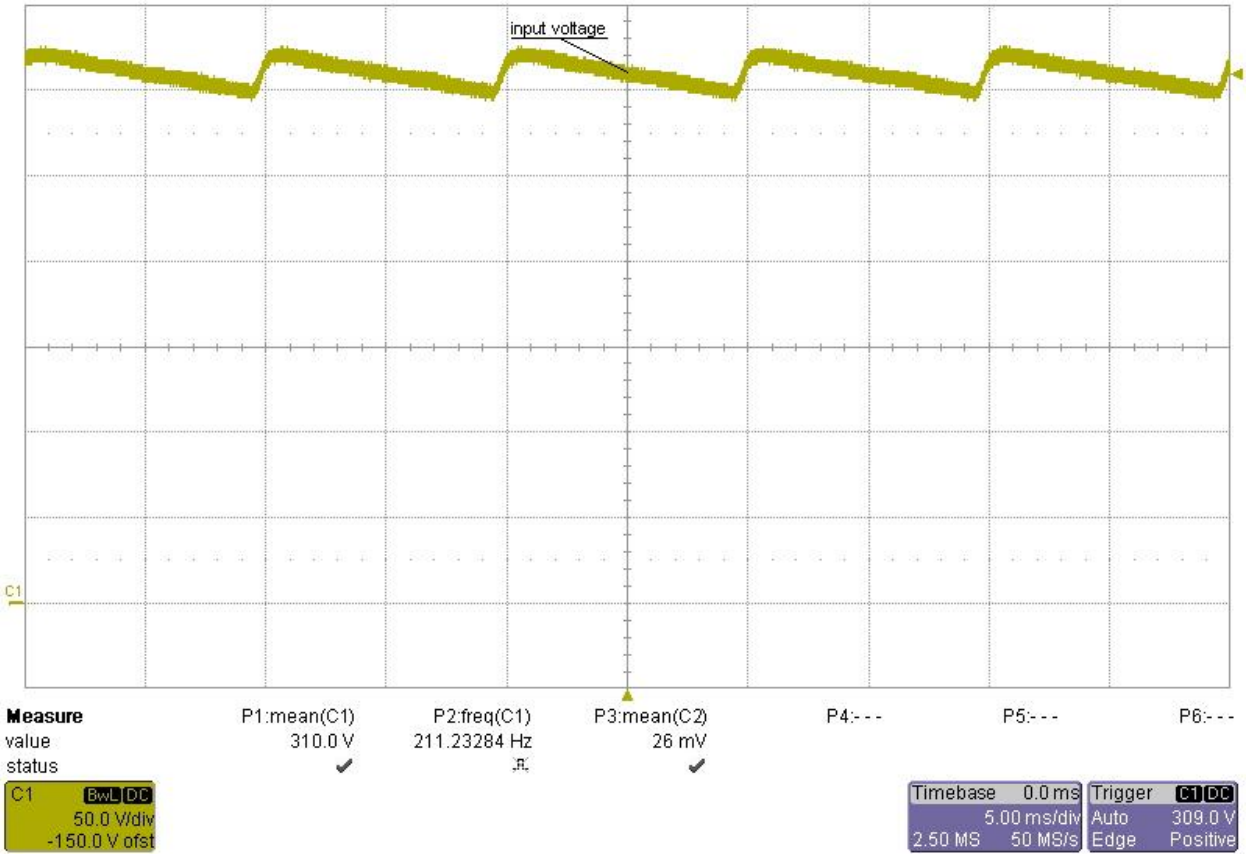


1 Input voltage ripple

Input voltage = 90VAC
Output power = 20W



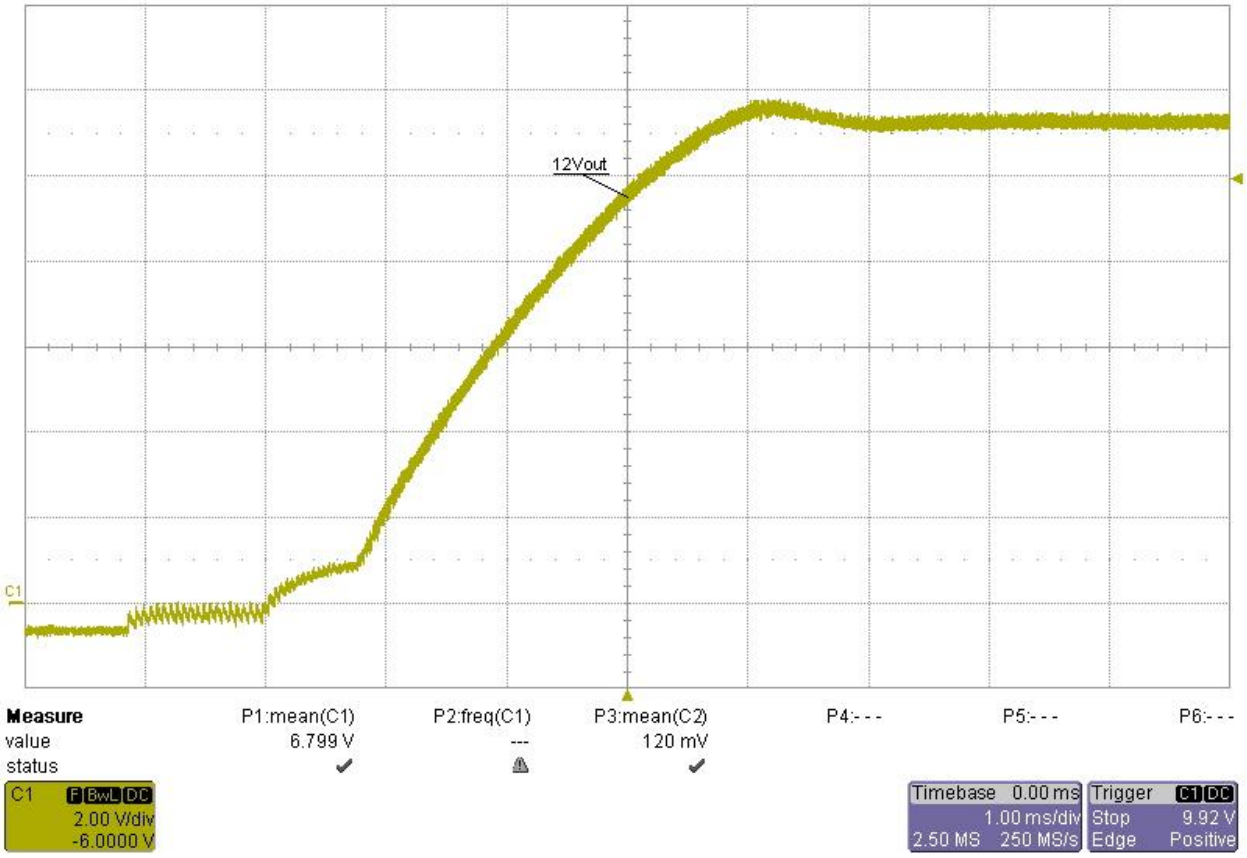
Input voltage = 230VAC
Output power = 30W



2 Startup (regulated 12V output)

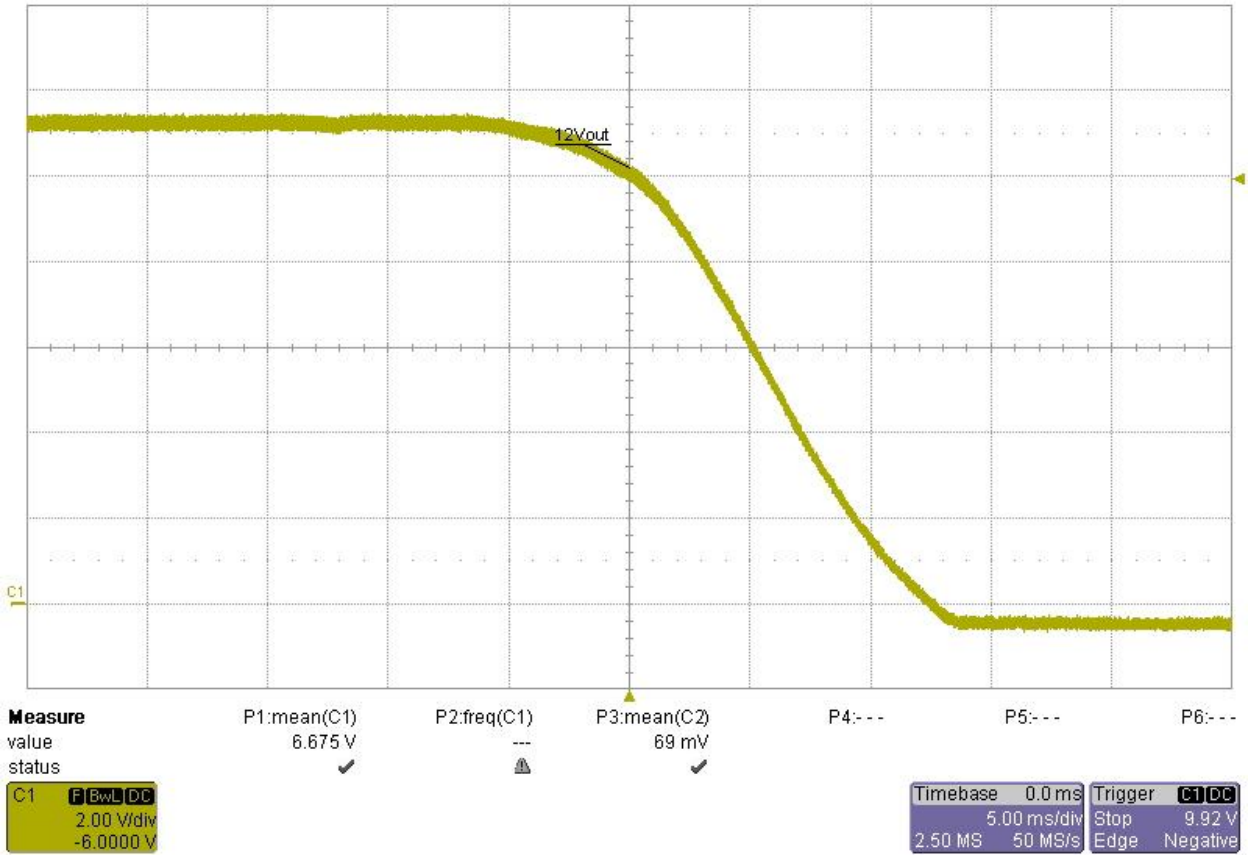
Input voltage = 230VAC
Output power = 33W

Input voltage = 90VAC
Output power = 20W

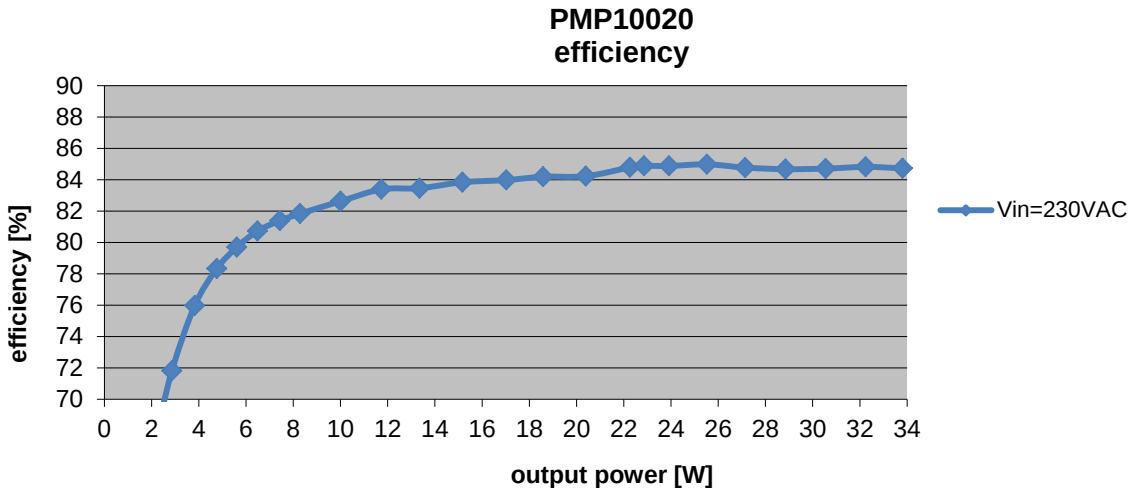


3 Shutdown (regulated 12V output)

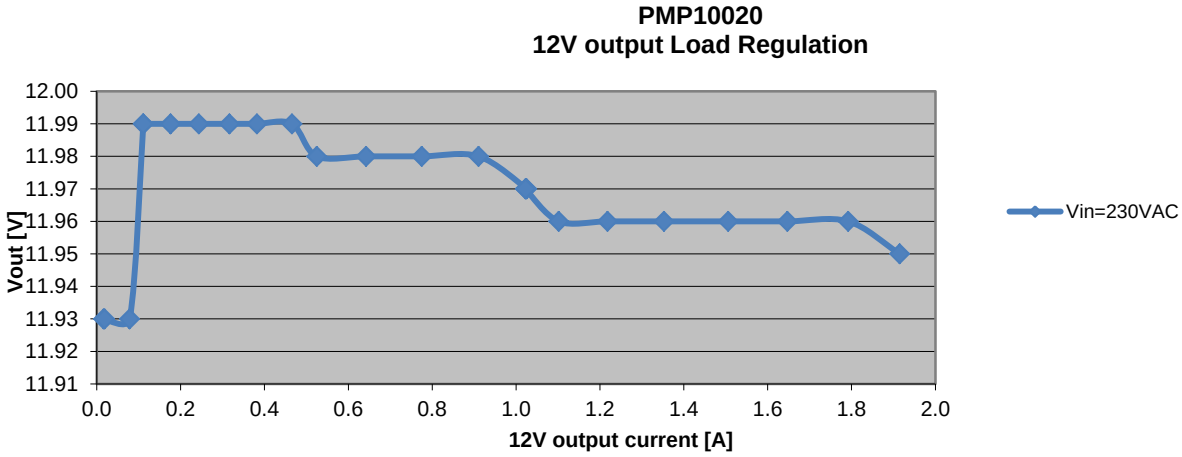
Input voltage = 230VAC
Output power = 33W



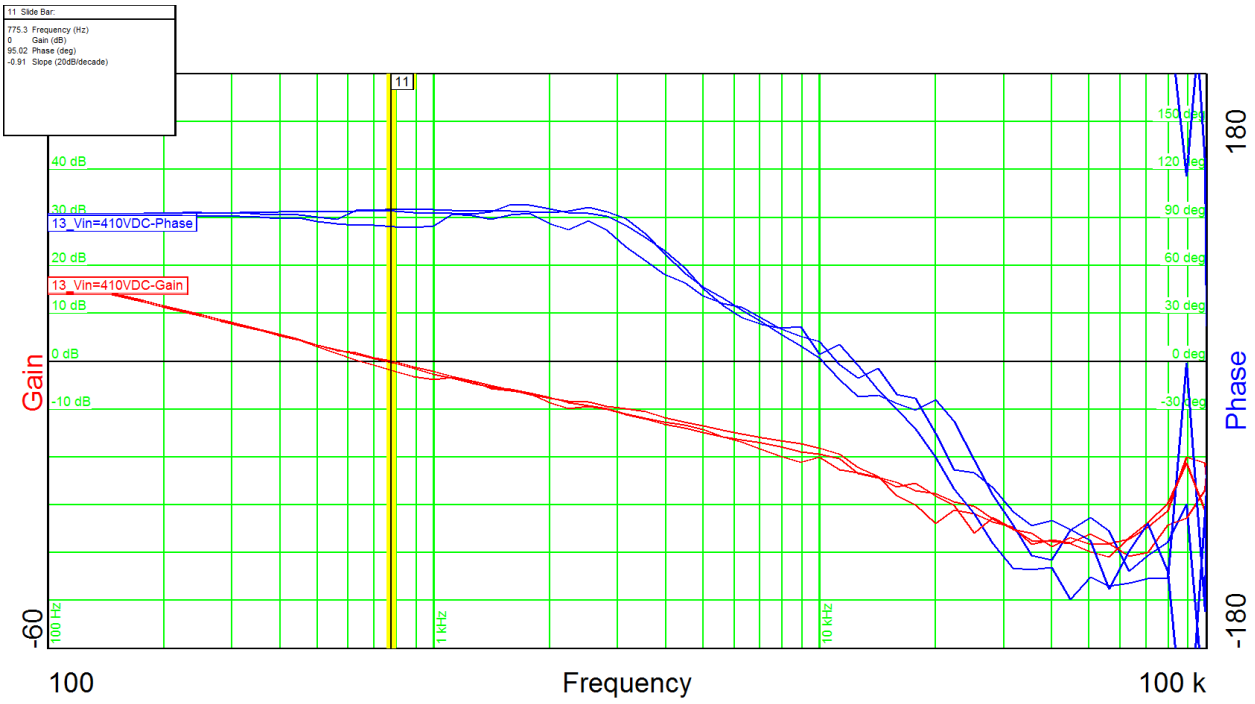
4 Efficiency



5 Load regulation (regulated 12V output)



6 Control Loop Frequency Response



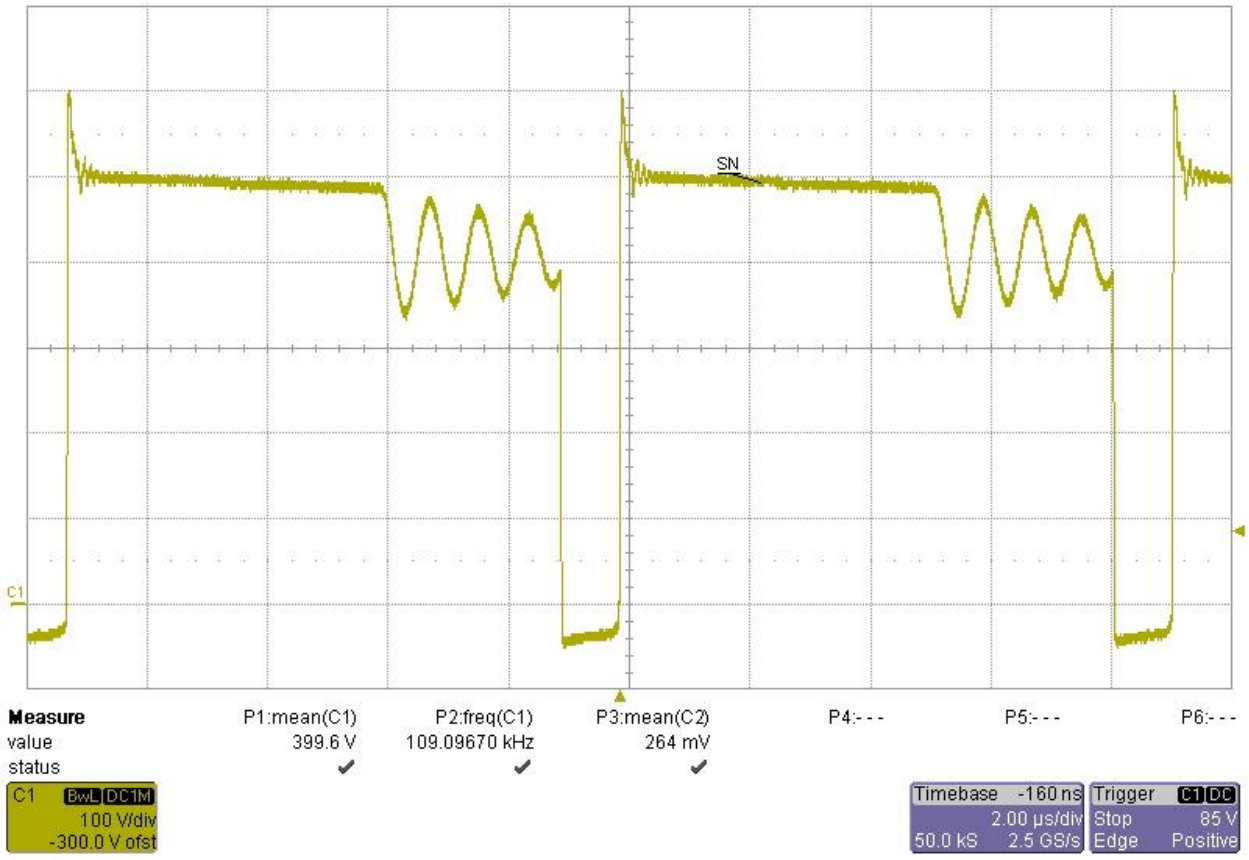
Output power = 24W
Input voltage = 100VDC
Phase margin = 94°
Bandwidth = 0.75kHz

Output power = 24W
Input voltage = 325VDC
Phase margin = 95°
Bandwidth = 0.78kHz

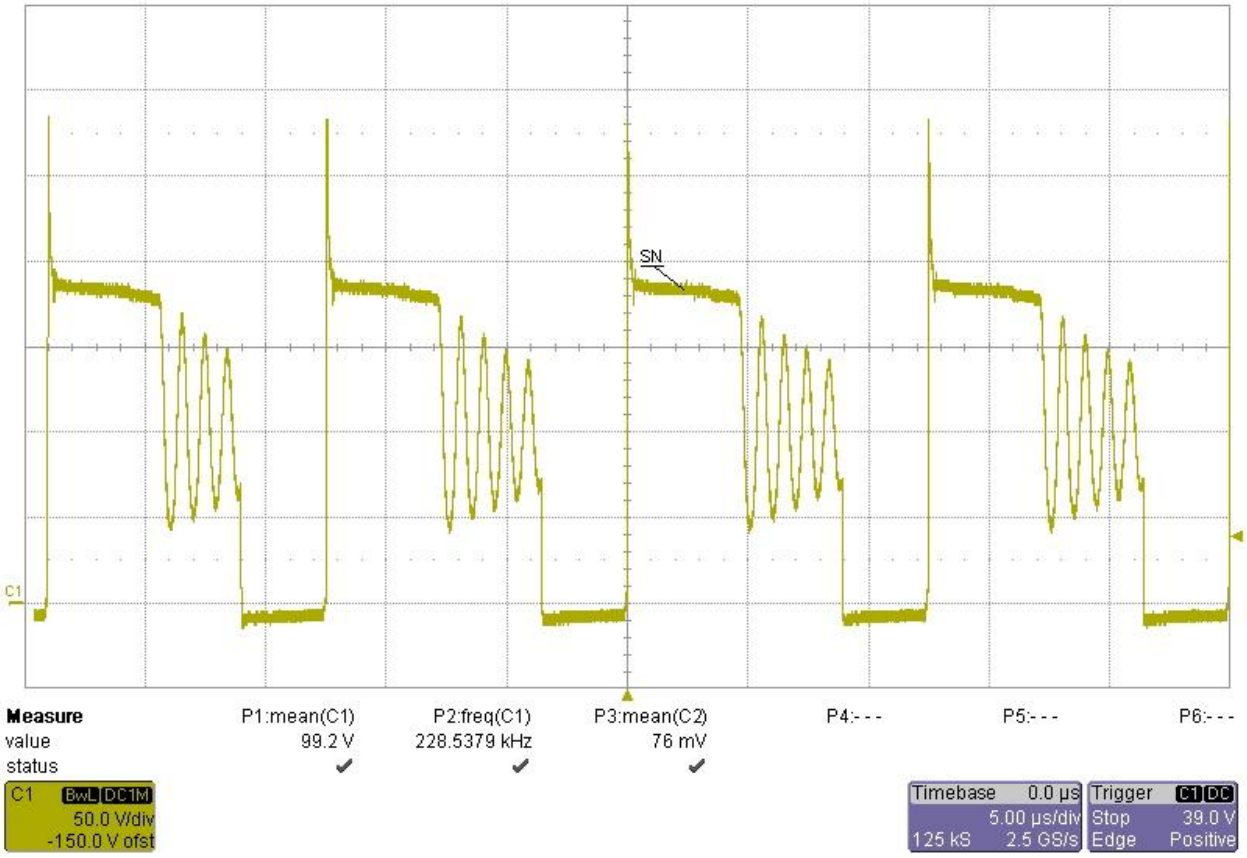
Output power = 24W
Input voltage = 410VDC
Phase margin = 85°
Bandwidth = 0.65kHz

7 Switch Node

Input voltage = 410VDC
Output power = 33W

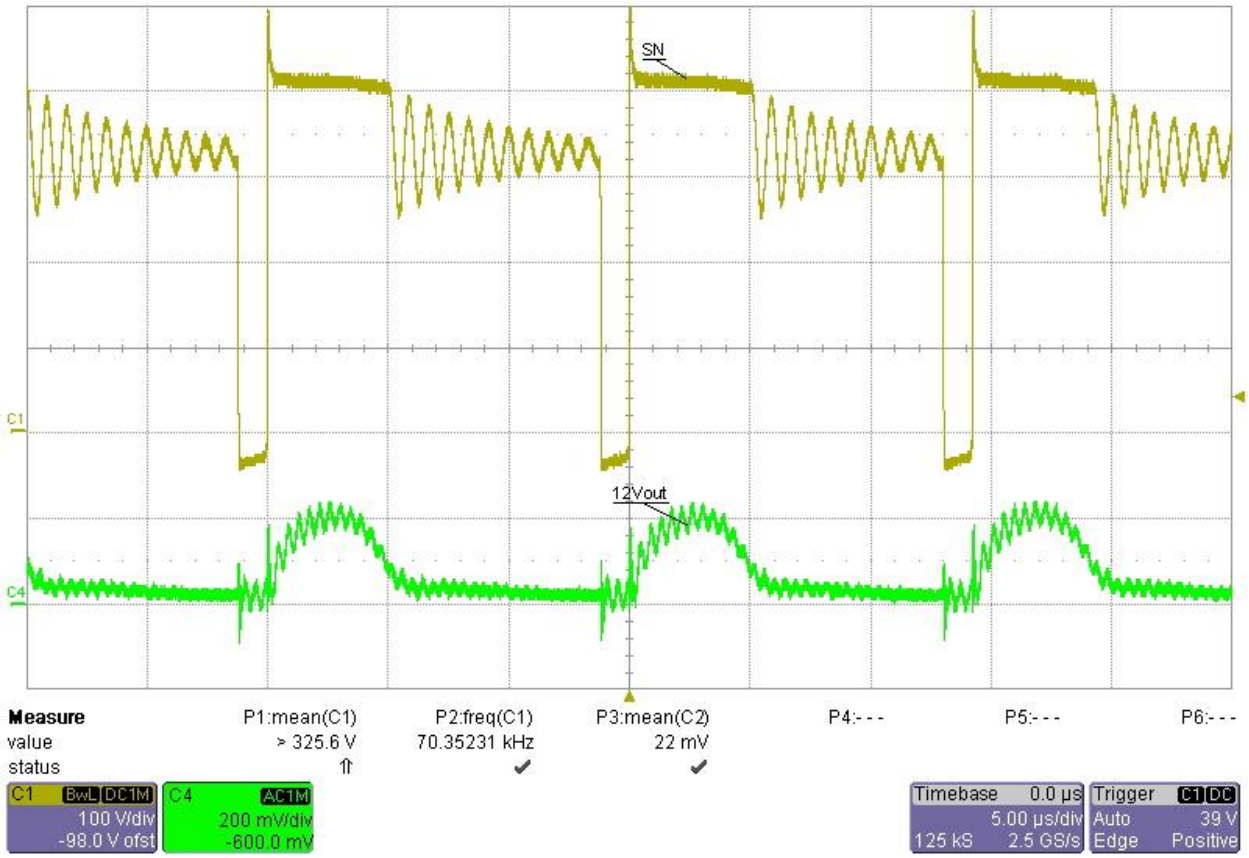


Input voltage = 100VDC
Output power = 20W

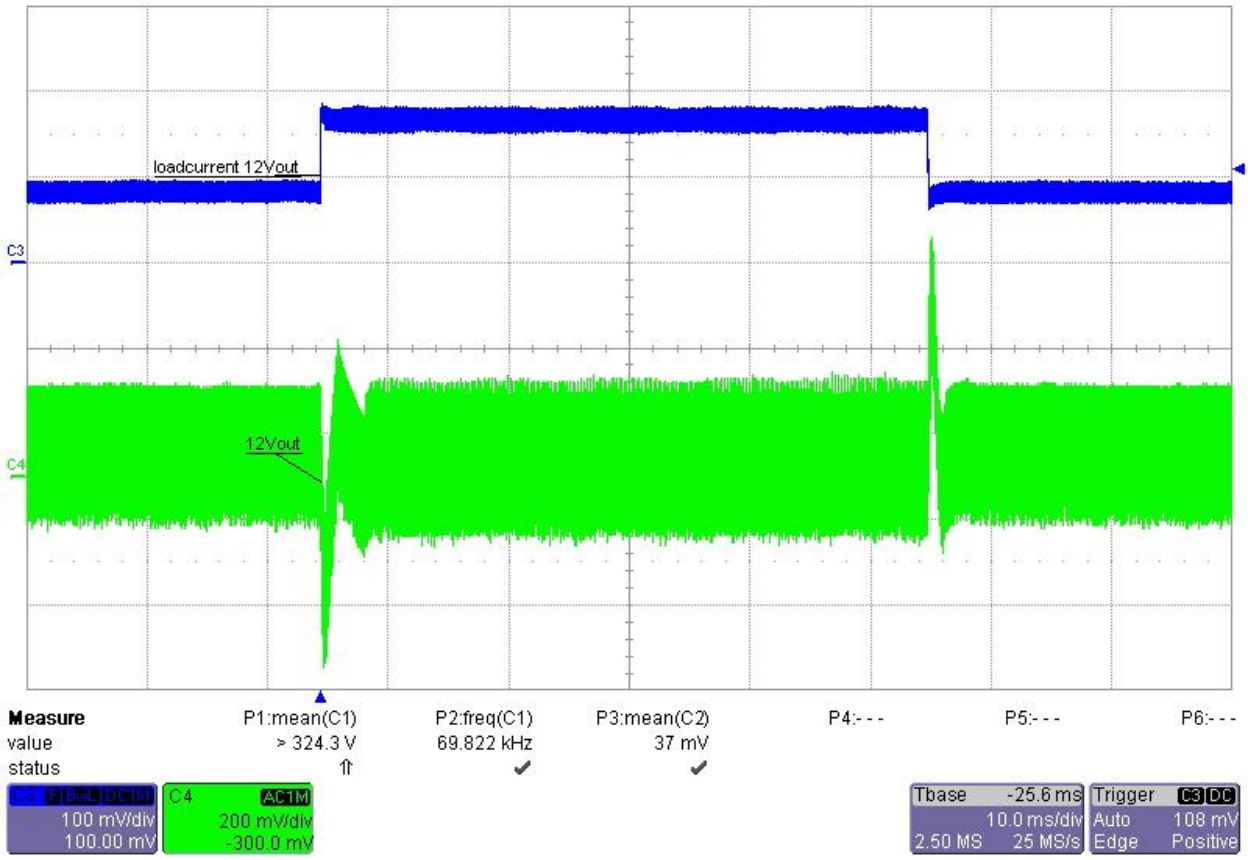


8 Output ripple voltage (regulated 12V output)

Input voltage = 325VDC
Output power = 20W



9 Load Transients (regulated 12V output)



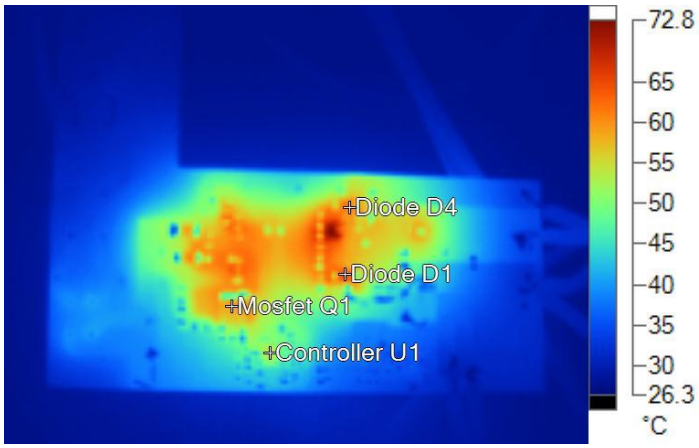
Input voltage = 325VDC
Output power = 33W
Load current (12V output) = 0.9A to 1.9A

10 Thermal Analysis

The images below show the infrared images taken from the FlexCam after 15min at 20W output power.

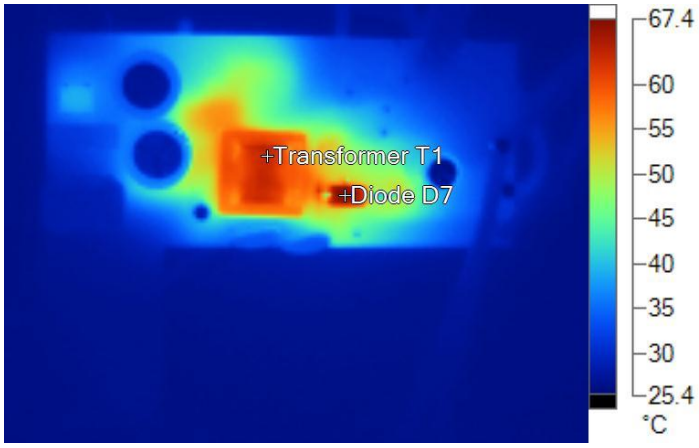
Input voltage = 230VAC
Output power = 20W
Ambient temperature = 25°C
No heatsink, no airflow

Thermal Pic Bottom:



Name	Temperature	
Diode D4	61.4°C	
Diode D1	64.1°C	
Mosfet Q1	59.0°C	
Controller U1	54.3°C	

Thermal Pic Bottom:



Name	Temperature	
Transformer T1	63.8°C	
Diode D7	67.4°C	

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