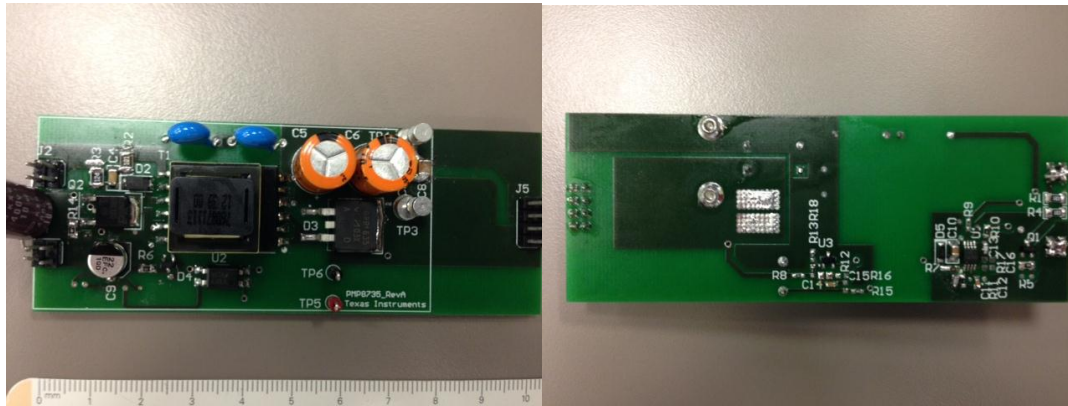
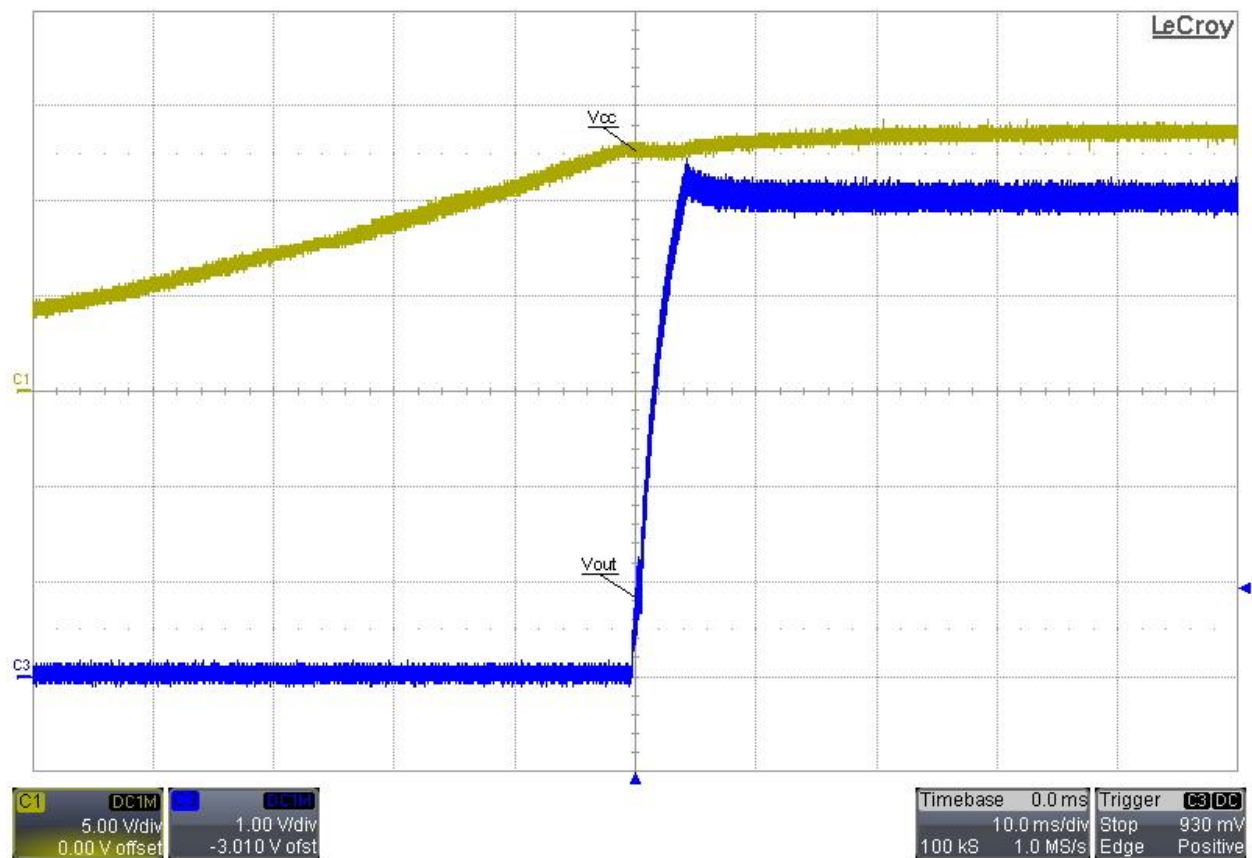




1 Startup

Input voltage = 230VDC

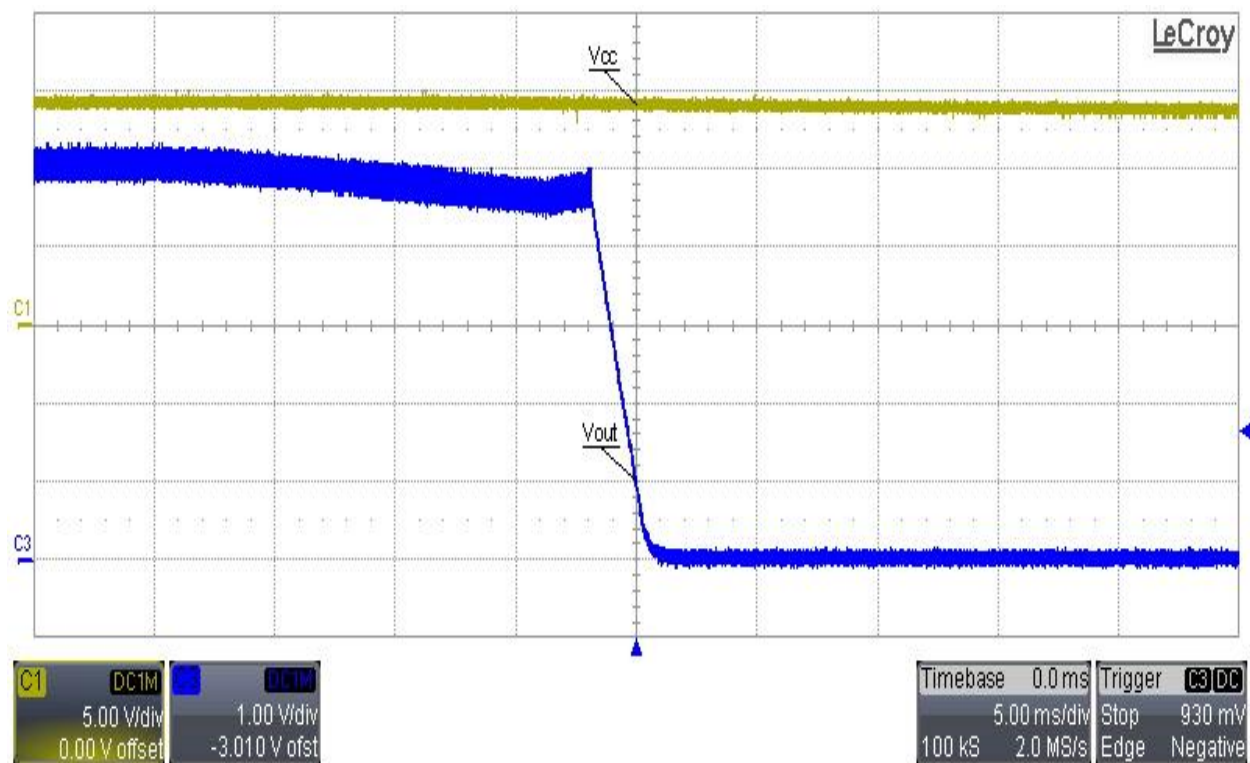
Load current = full load (2.1A)



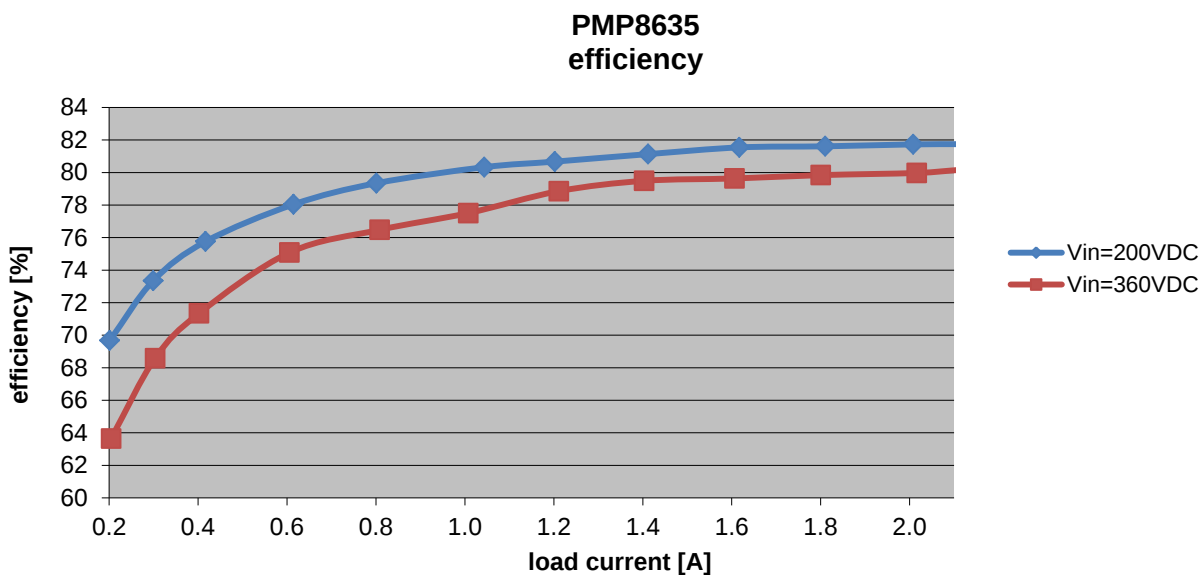
2 Shutdown

Input voltage = 230VDC

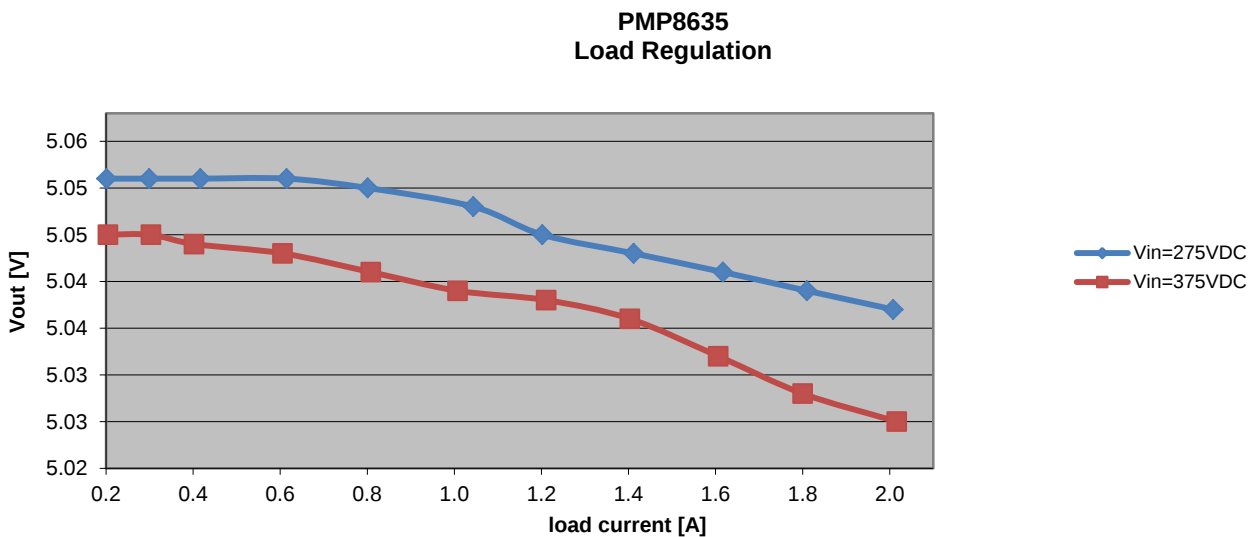
Load current = full load (2.1A)



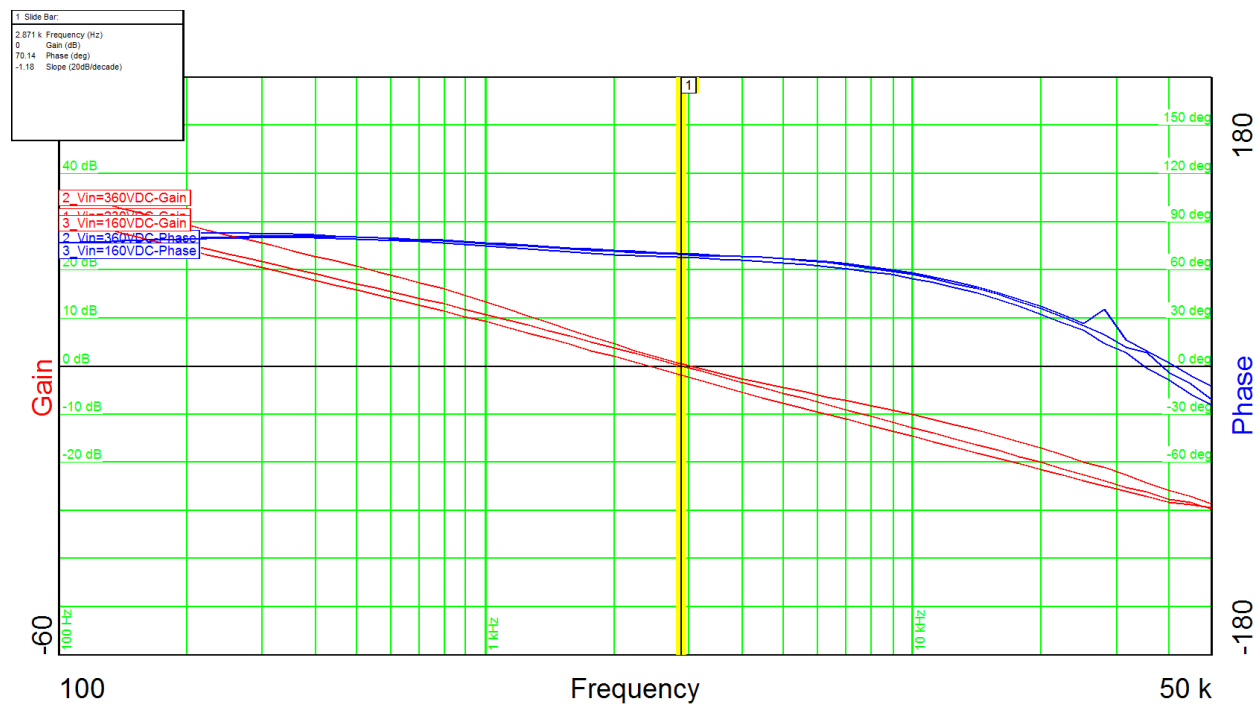
3 Efficiency



4 Load regulation



5 Control Loop Frequency Response

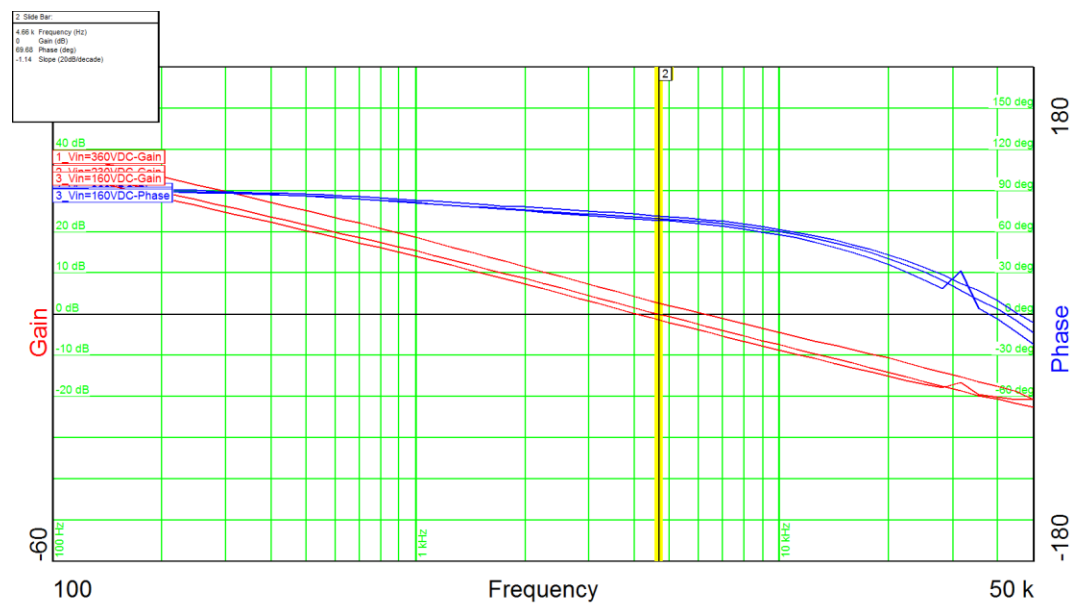


Output power = 5V@2.1A
 Input voltage = 160VDC
 Phase margin = 68°
 Bandwidth = 2.4kHz

Output power = 5V@2.1A
 Input voltage = 230VDC
 Phase margin = 70°
 Bandwidth = 2.9kHz

Output power = 5V@2.1A
 Input voltage = 360VDC
 Phase margin = 69°
 Bandwidth = 3.0kHz

Following picture shows the measurement of the control loop without capacitors C6 and C8. The output was full loaded (5V@2.1A) and the input voltage was set to 160V, 230V and 360V.



C6: not populated
C8: not populated

6 Switch Node

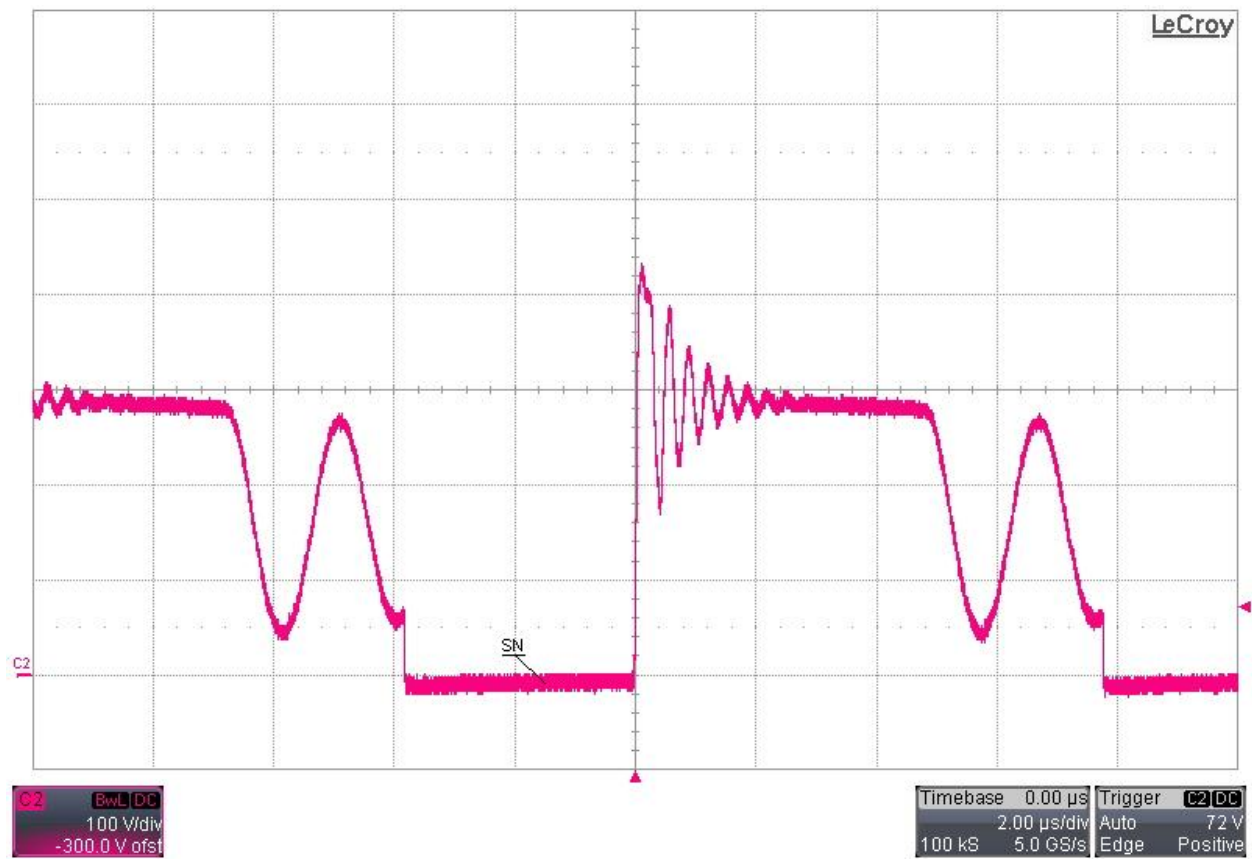
Input voltage = 360VDC

Load current = full load (2.1A)



Input voltage = 160VDC

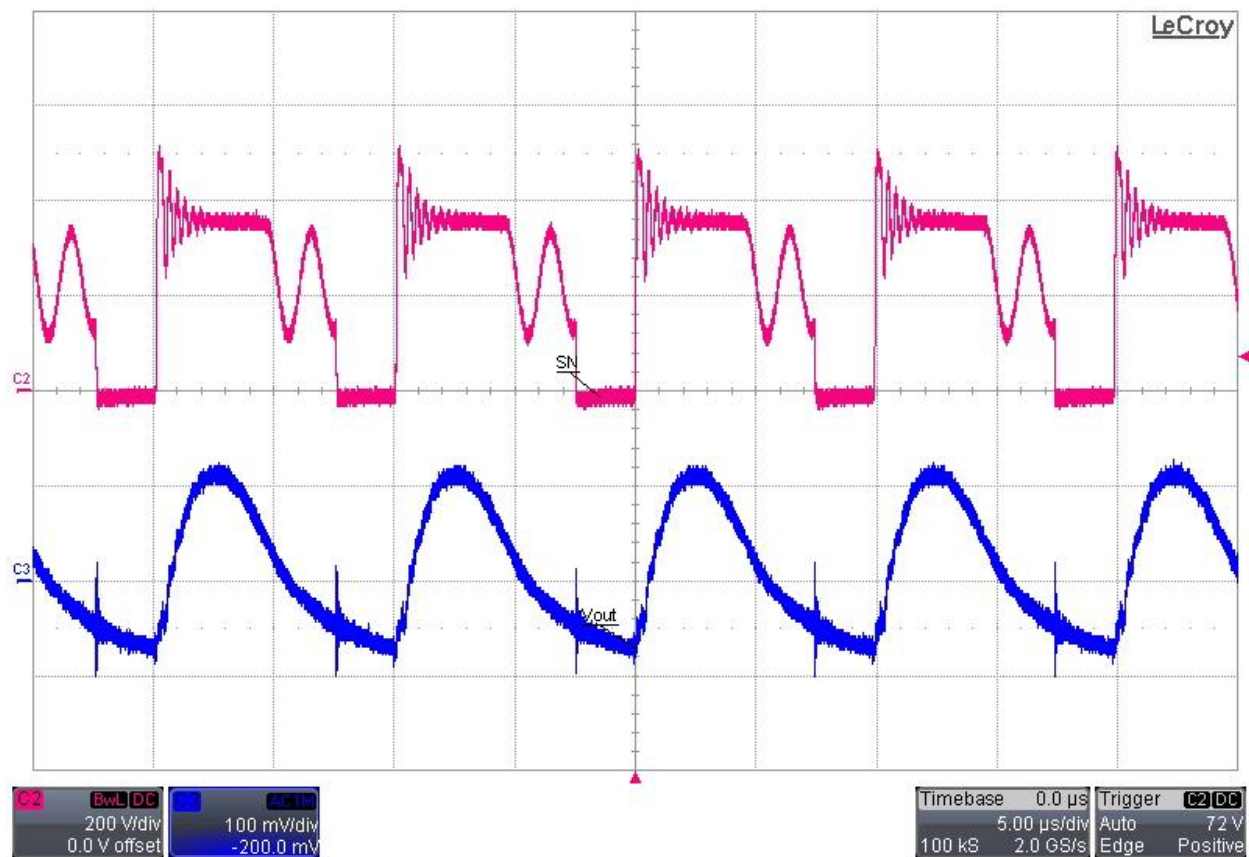
Load current = full load (2.1A)



7 Output ripple voltage

Input voltage = 230VDC

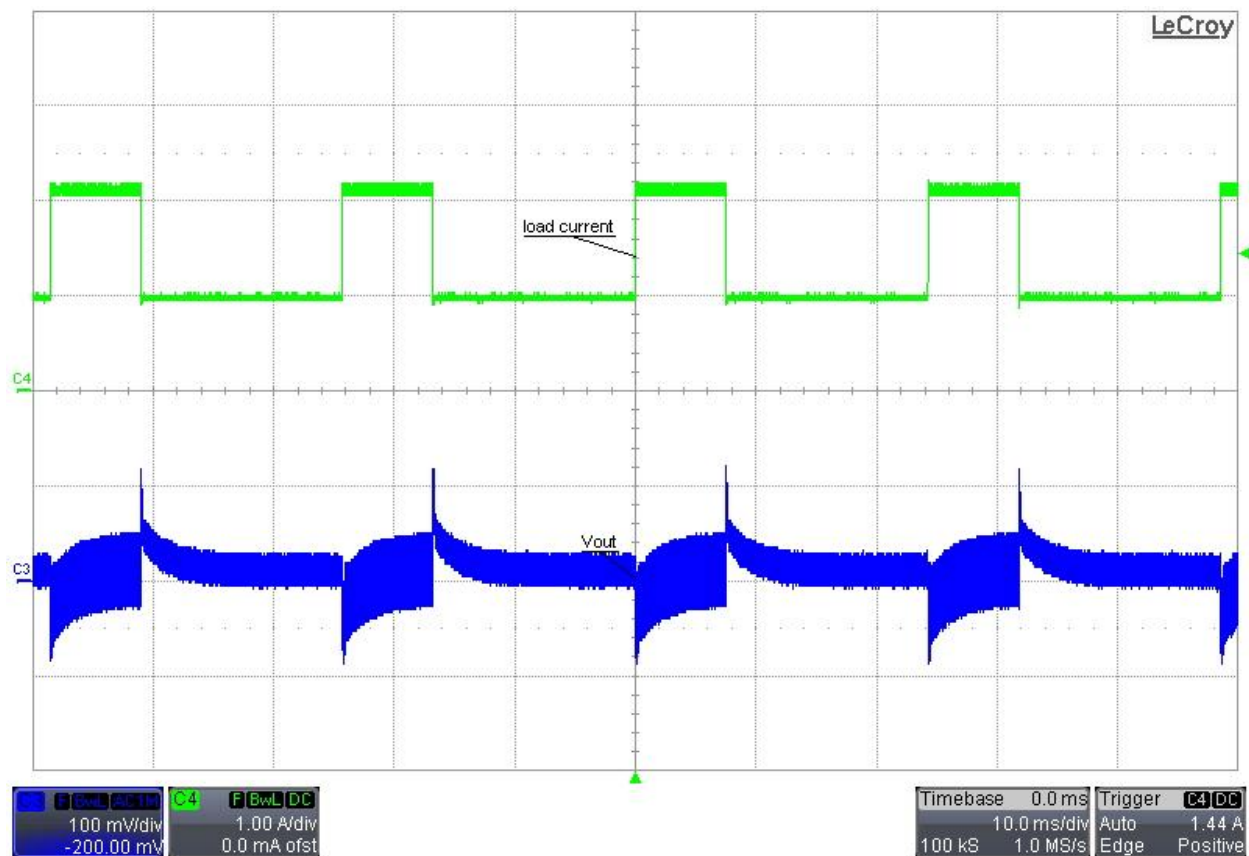
Load current = full load (2.1A)



8 Load Transients

Input voltage = 230VDC

Load current = 1A to 2.1A



9 Thermal Analysis

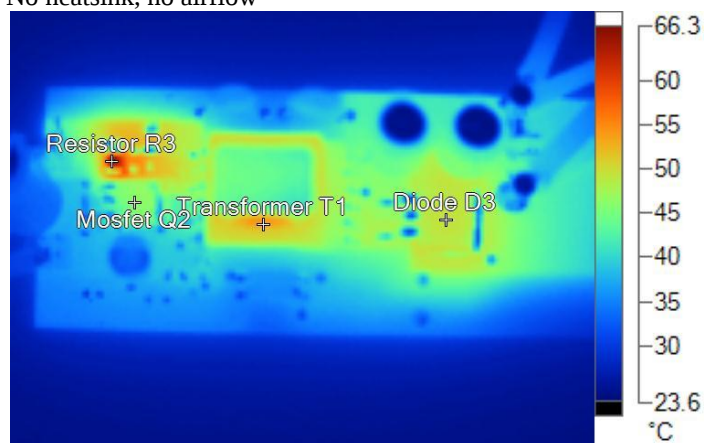
The images below show the infrared images taken from the FlexCam after 15min at full load (5V@2.1A).

Input voltage = 200VDC

Output power = 10.5W

Ambient temperature = 25°C

No heatsink, no airflow



IR20131218_0409 Vin=200VDC I=2.1A.is2

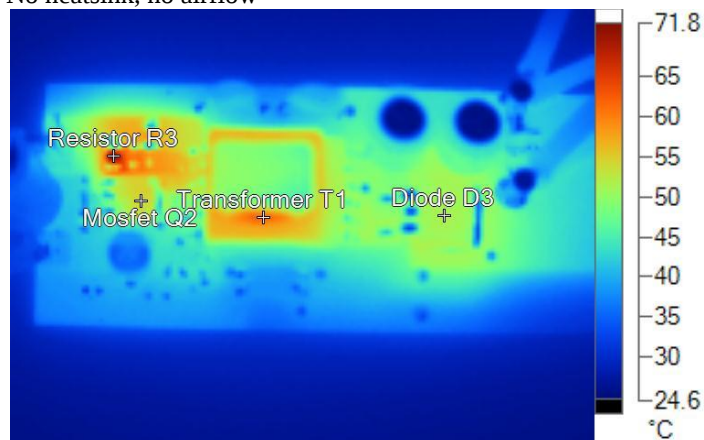
Name	Temperature	
Transformer T1	54.1°C	
Diode D3	49.5°C	
Mosfet Q2	45.9°C	
Resistor R3	66.3°C	

Input voltage = 360VDC

Output power = 10.5W

Ambient temperature = 25°C

No heatsink, no airflow



IR20131218_0410 Vin=360VDC I=2.1A.is2

Name	Temperature	
Diode D3	51.4°C	
Transformer T1	62.0°C	
Mosfet Q2	54.1°C	
Resistor R3	71.8°C	

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