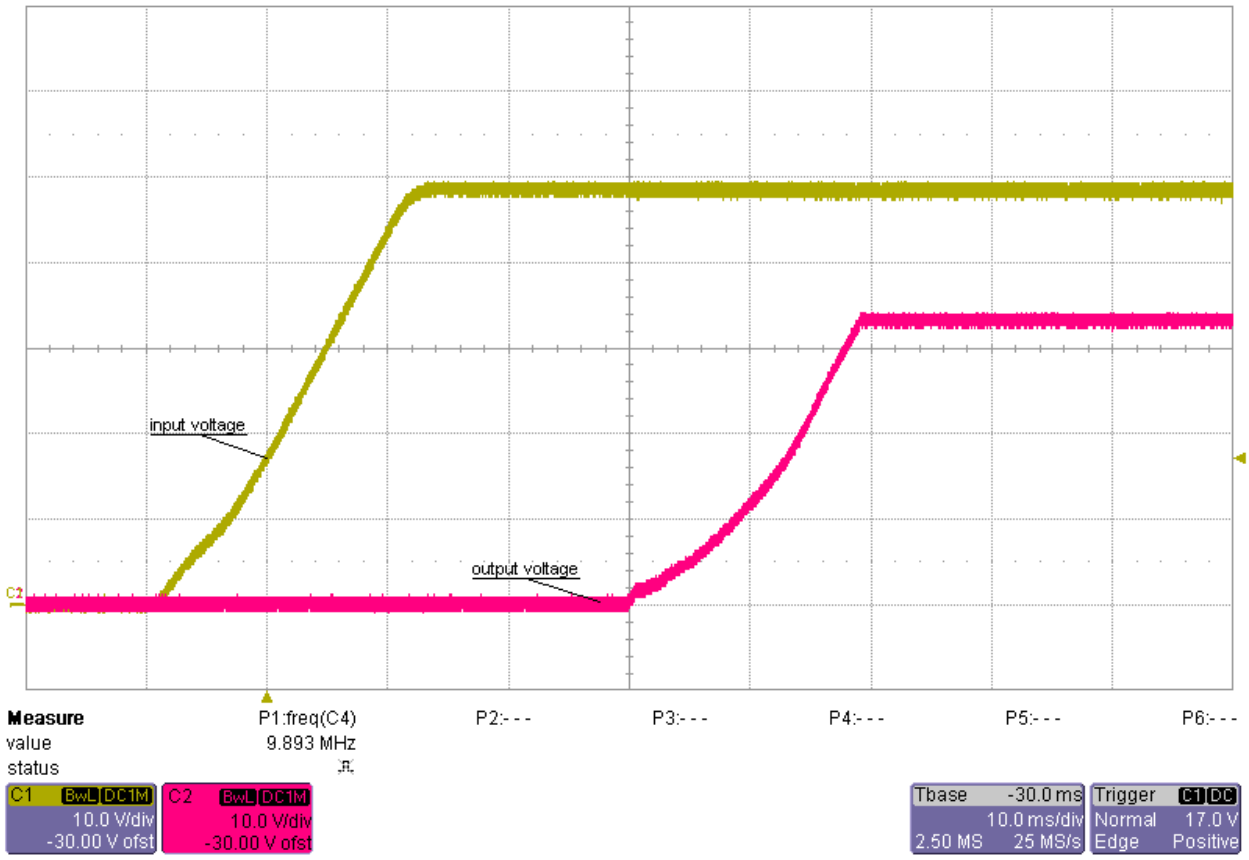
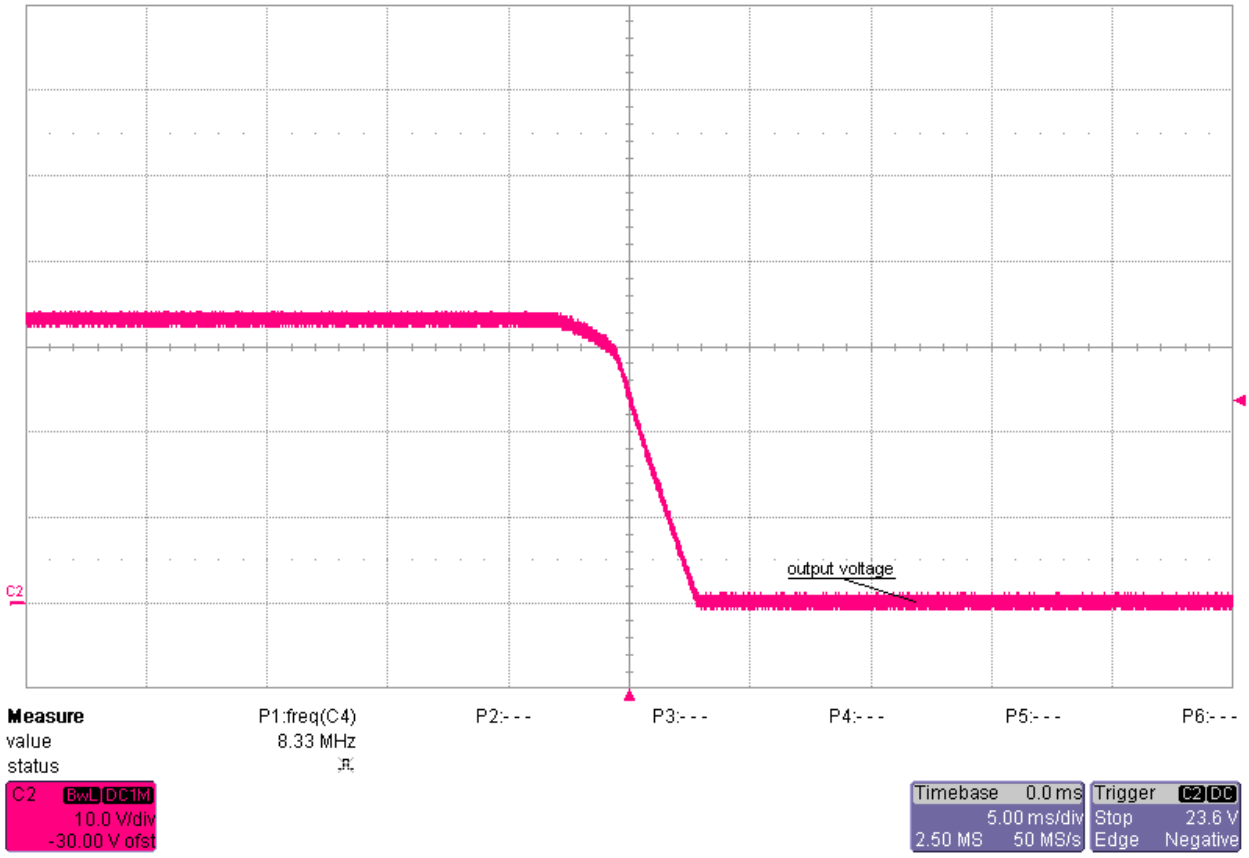
1 Startup

Input voltage = 48V
Output voltage = 32.8V
Load current = 1A

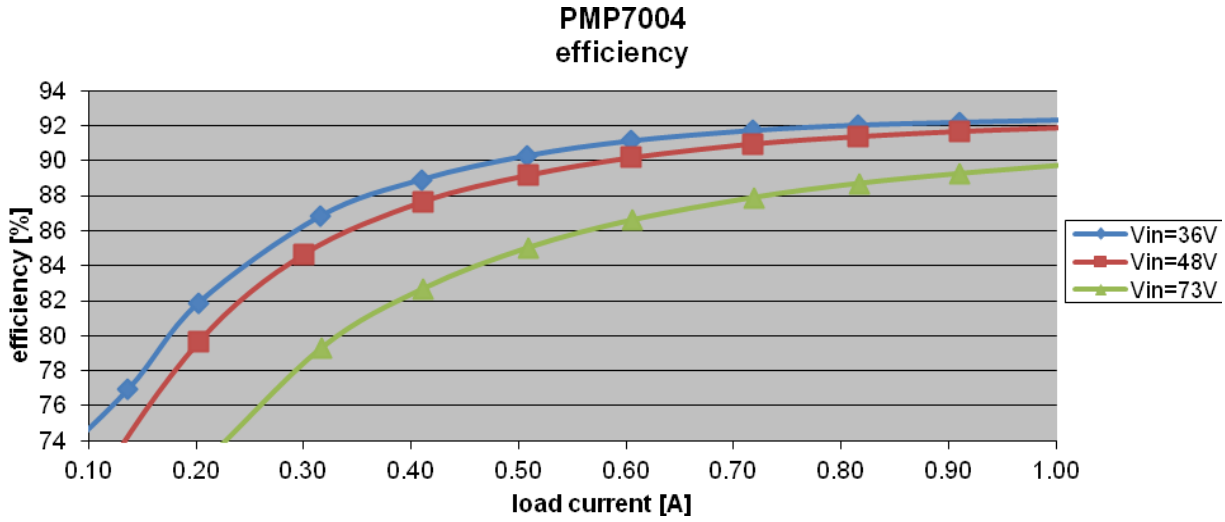


2 Shutdown

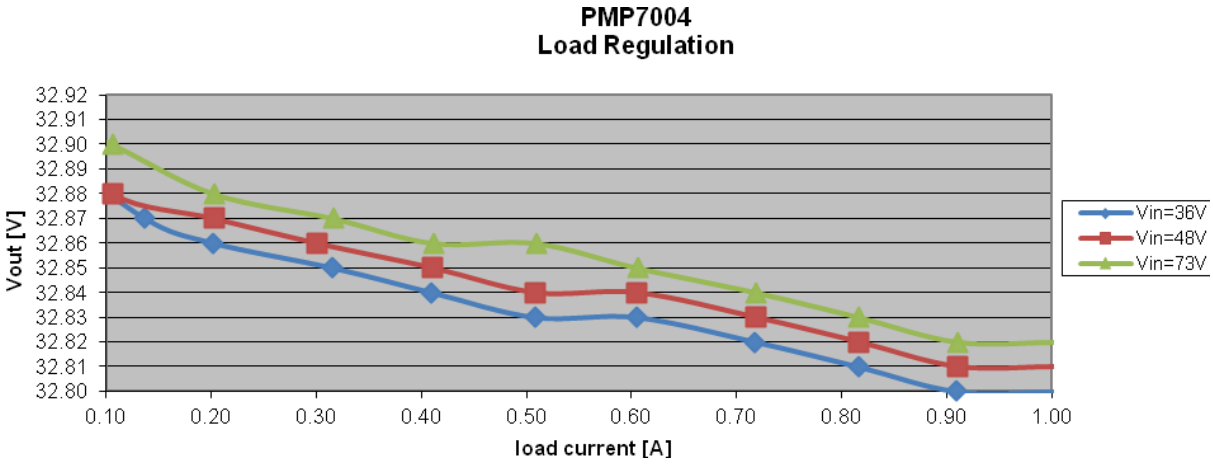
Input voltage = 48V
Output voltage = 32.8V
Load current = 1A



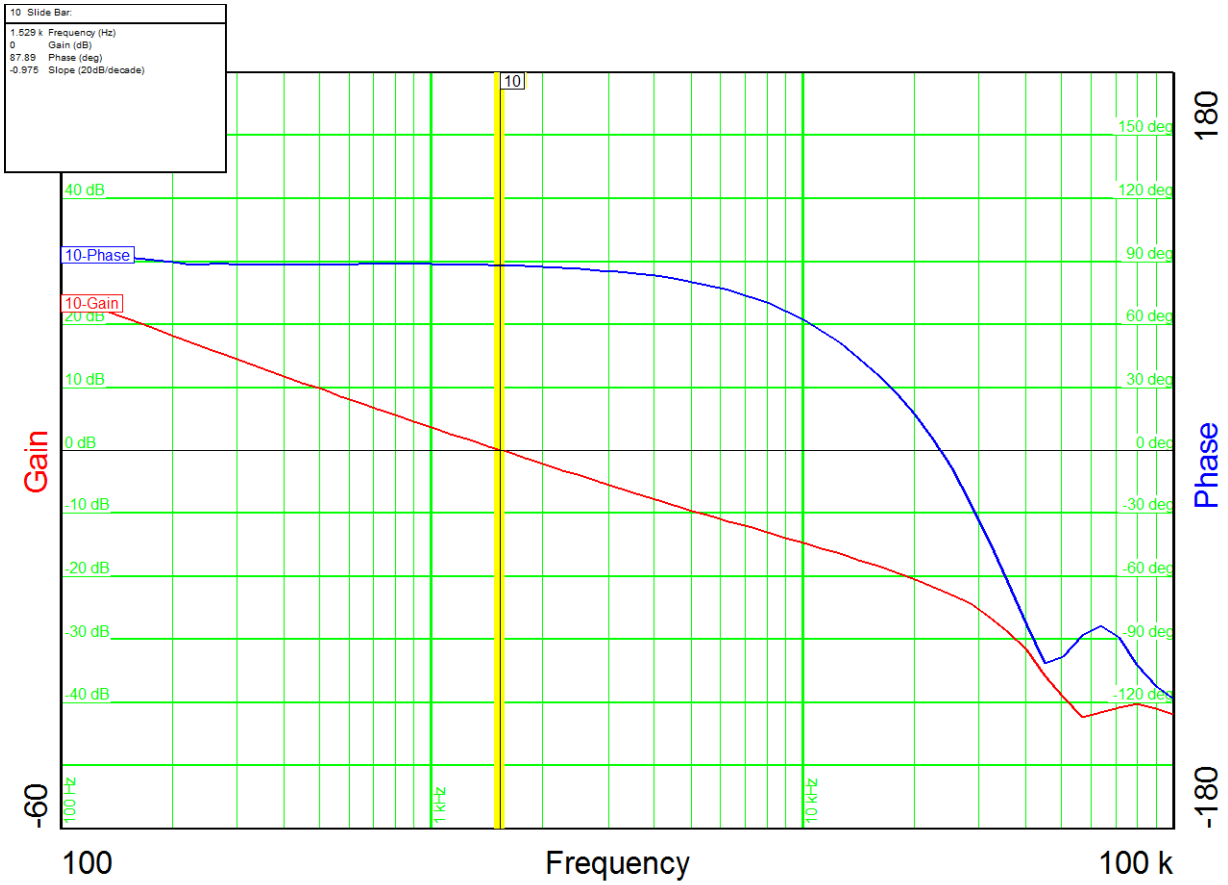
3 Efficiency



4 Load regulation



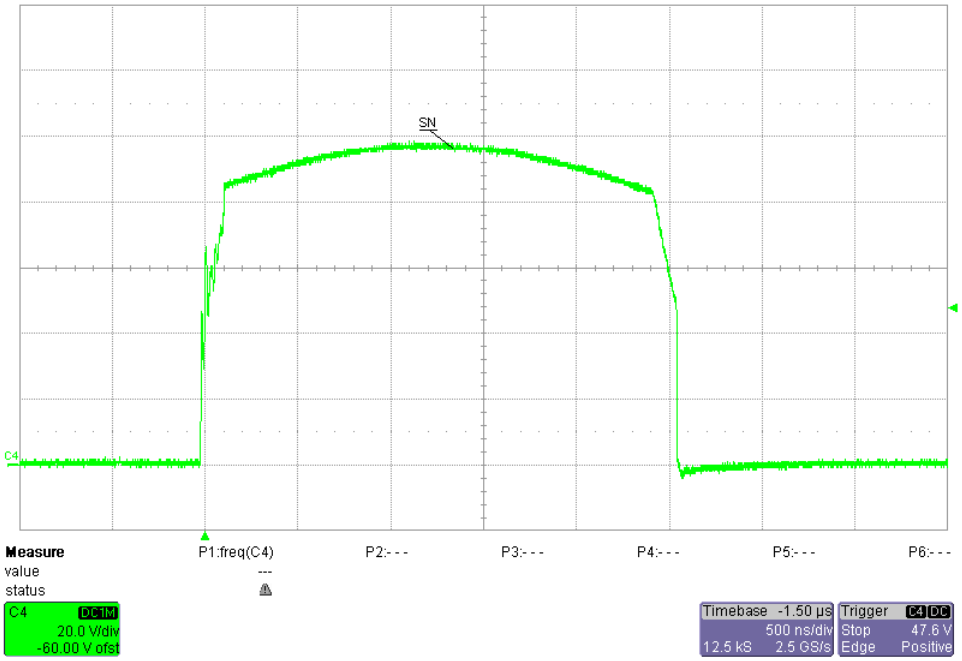
5 Control Loop Frequency Response



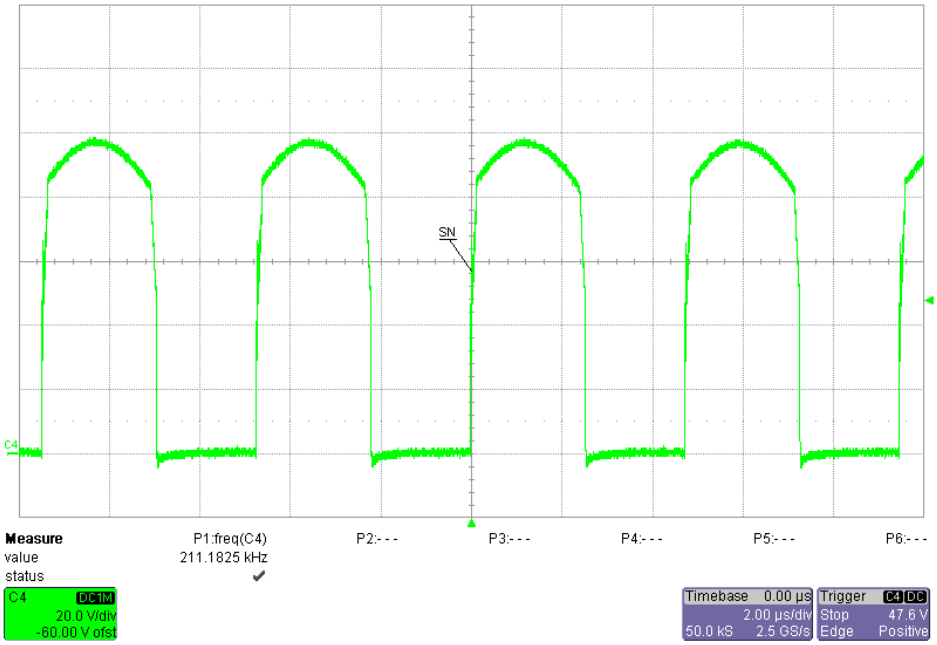
Input voltage = 48VDC:
Phase margin = 87.9°
Bandwidth = 1.5kHz

6 Switch node Waveform

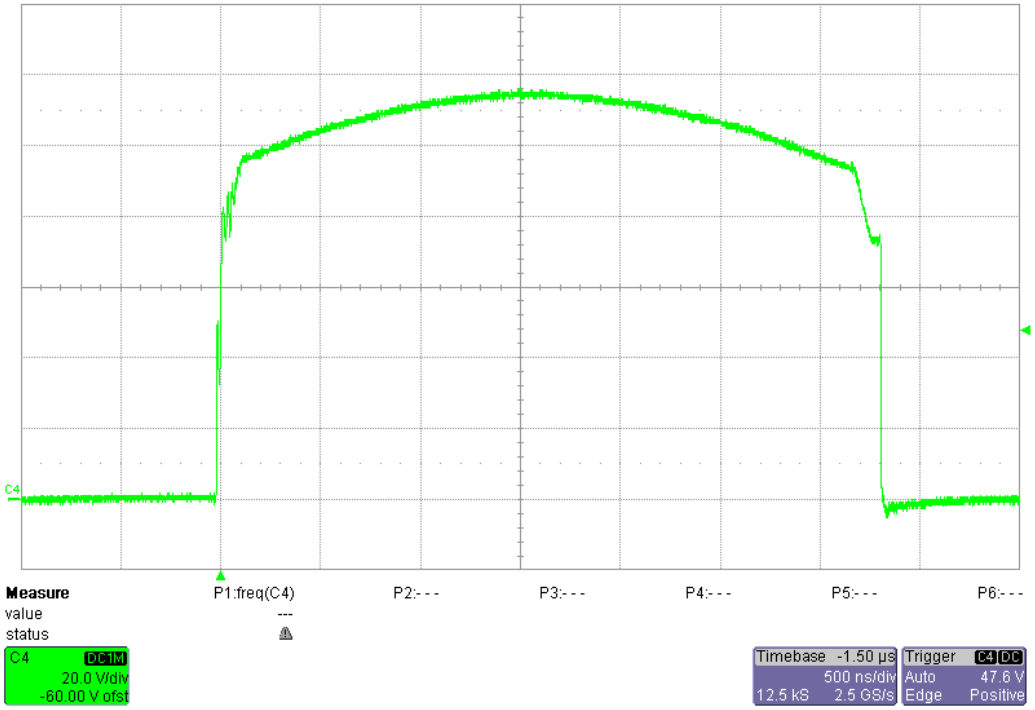
Input voltage = 48V
Output voltage = 32.8V
Load current = 1A



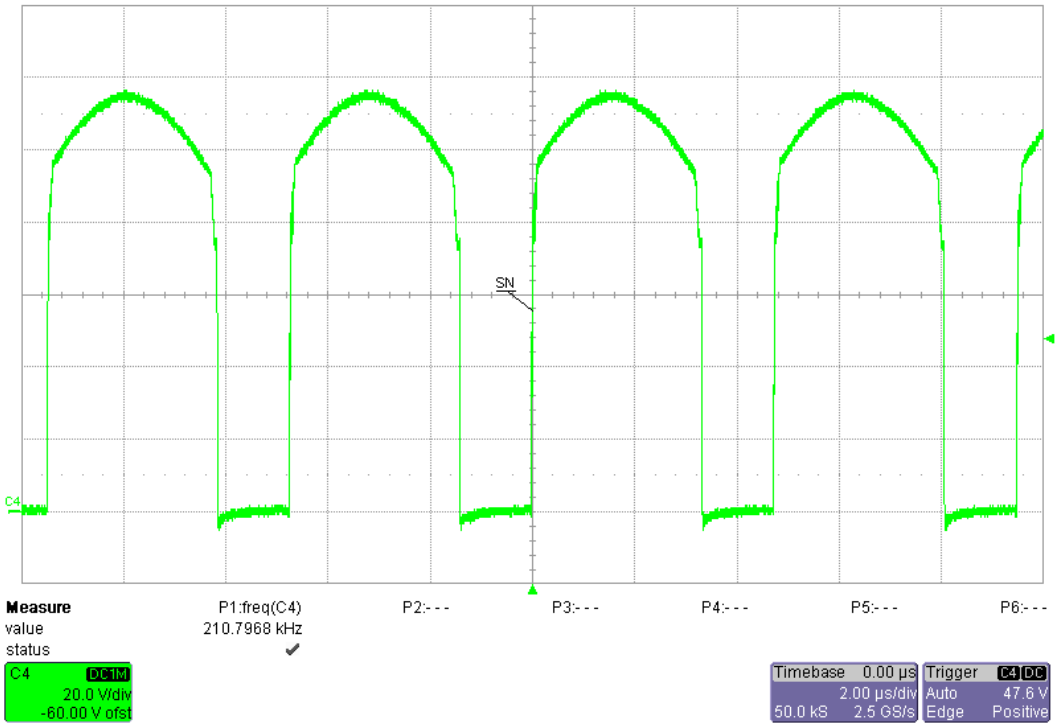
Input voltage = 48V
Output voltage = 32.8V
Load current = 1A


SN
C4
Measure
value
status
P1:freq(C4)
211.1825 kHz
P2:- - -
P3:- - -
P4:- - -
P5:- - -
P6:- - -
C4 DC1M
20.0 V/div
-60.00 V ofst
Timebase 0.00 µs
2.00 µs/div
50.0 kS 2.5 GS/s
Trigger C4 DC
Stop 47.6 V
Edge Positive

Input voltage = 74V
Output voltage = 32.8V
Load current = 1A

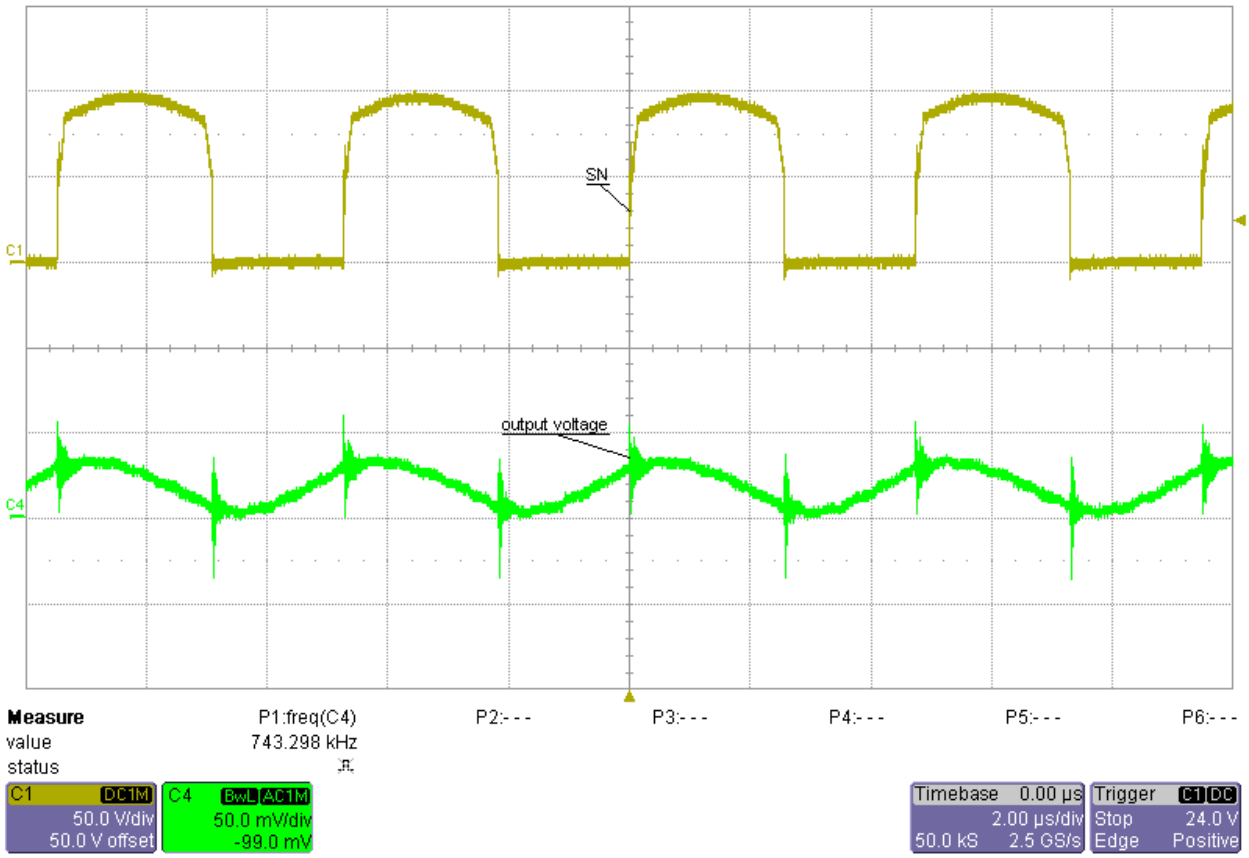


Input voltage = 74V
Output voltage = 32.8V
Load current = 1A



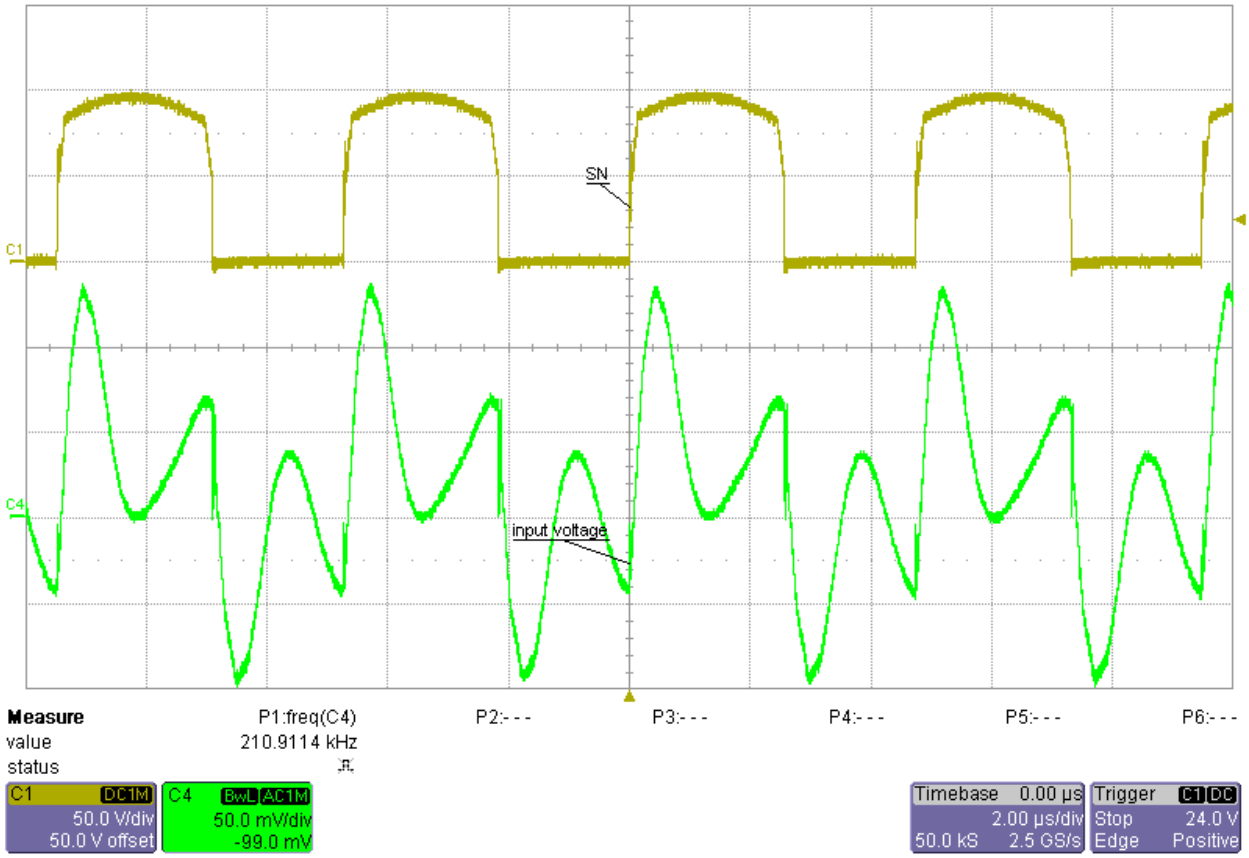
7 Output ripple voltage

Input voltage = 48V
Output voltage = 32.8V
Load current = 1A


SN
C1
output voltage
C4
Measure
value
status
P1:freq(C4)
743.298 kHz
P2:- - -
P3:- - -
P4:- - -
P5:- - -
P6:- - -
C1 DC1M
50.0 V/div
50.0 V offset
C4 BwL AC1M
50.0 mV/div
-99.0 mV
Timebase 0.00 µs
2.00 µs/div
50.0 kS 2.5 GS/s
Trigger C1 DC
Stop 24.0 V
Edge Positive

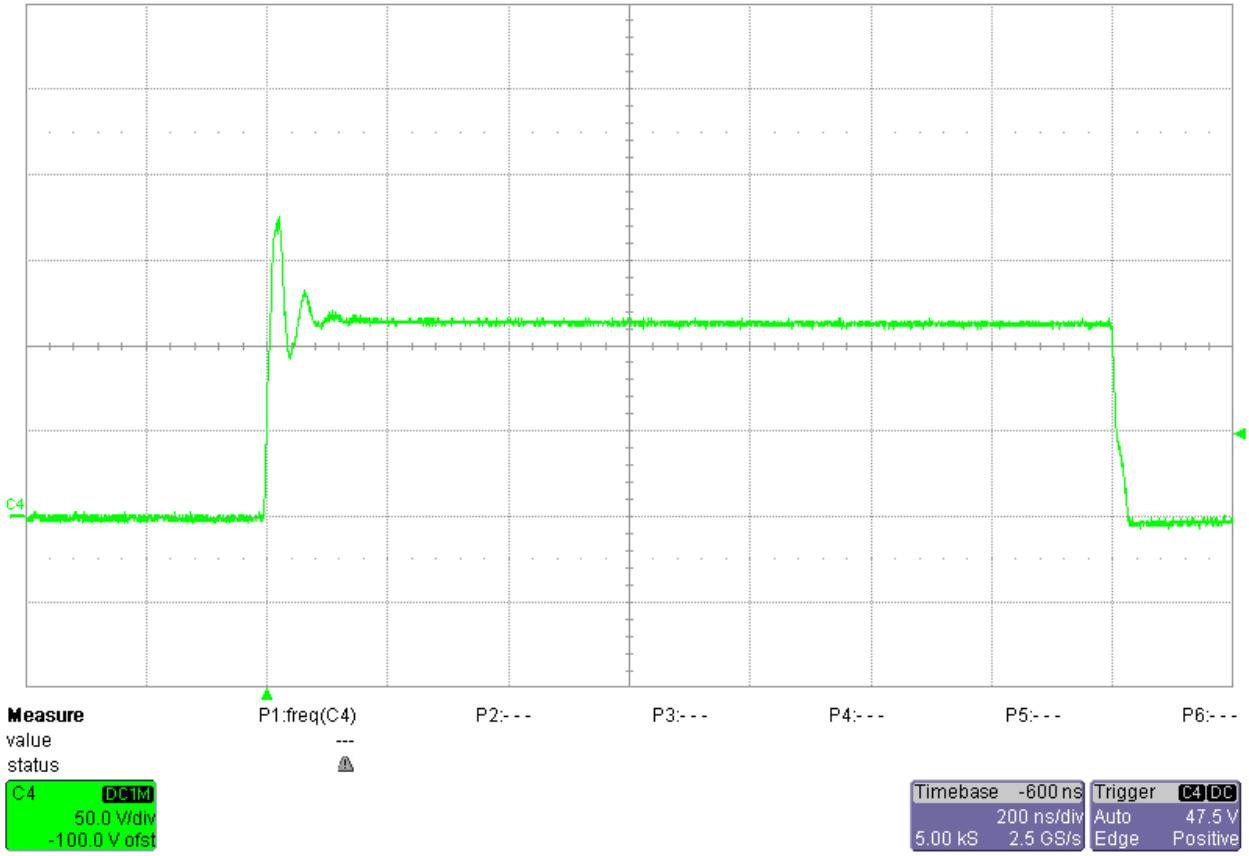
8 Input ripple voltage

With bulk capacitor (470uF):
Input voltage = 48V
Output voltage = 32.8V
Load current = 1A



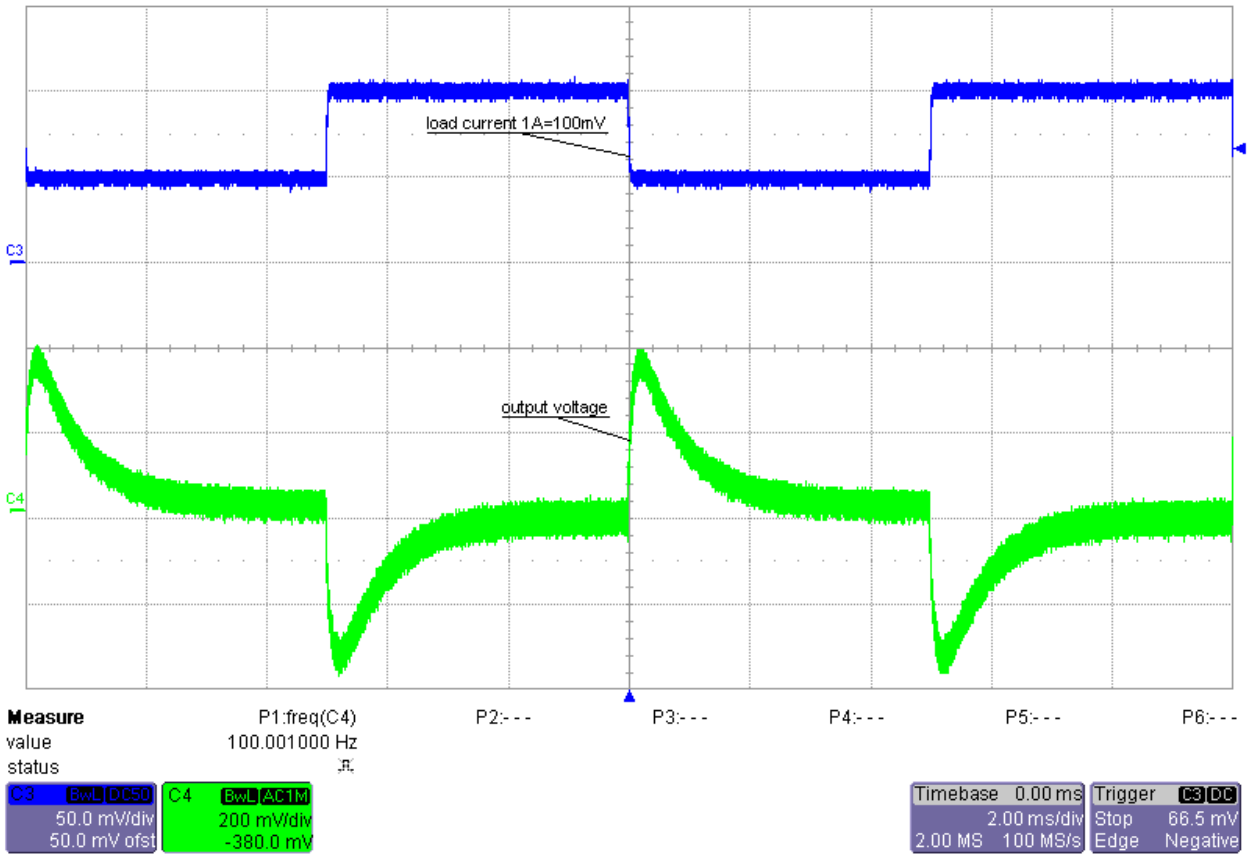
9 Switch Node Secondary Side (Diode D1)

Input voltage = 74V
Output voltage = 32.8V
Load current = 1A



10 Load Transients

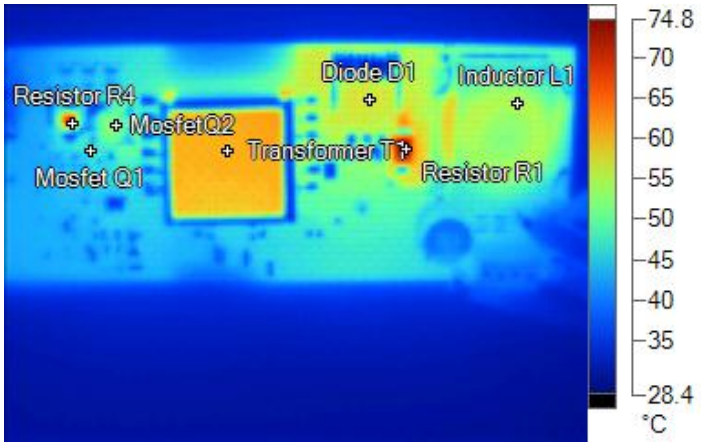
Input voltage = 48V
Output voltage = 32.8V
Load current = 0.5A to 1A



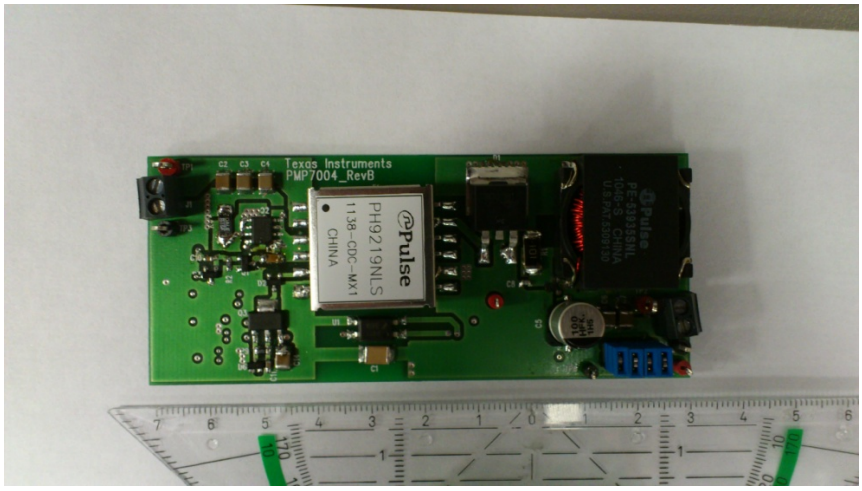
11 Thermal Analysis

The images below show the infrared images taken from the FlexCam after 15min at full load (32.8V@1A).

Input voltage = 48VDC
Ambient temperature = 25°C



Name	Temperature	
Transformer T1	60.0°C	
Mosfet Q2	51.6°C	
Mosfet Q1	46.6°C	
Diode D1	56.7°C	
Inductor L1	54.5°C	
Resistor R1	72.9°C	
Resistor R4	68.8°C	



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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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