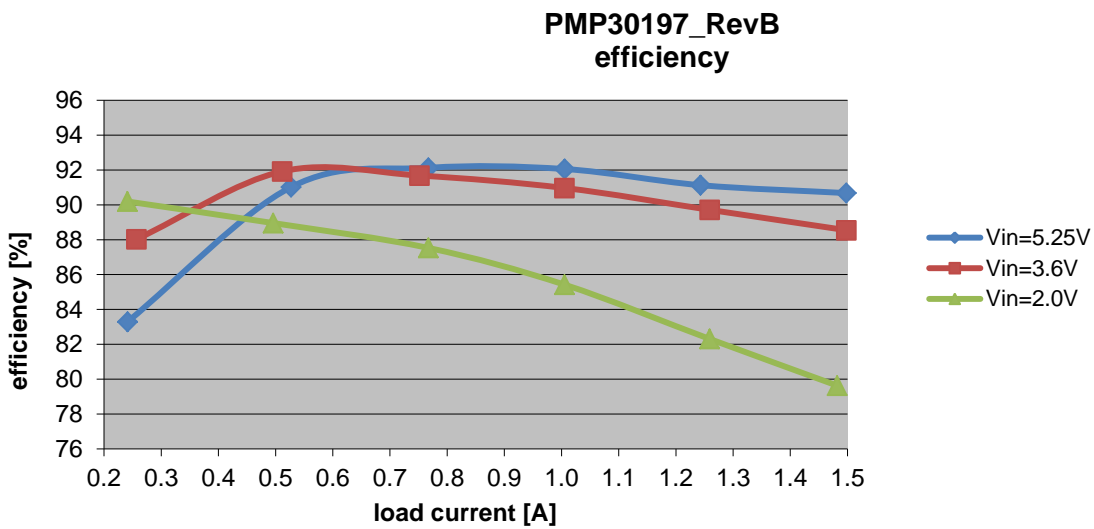
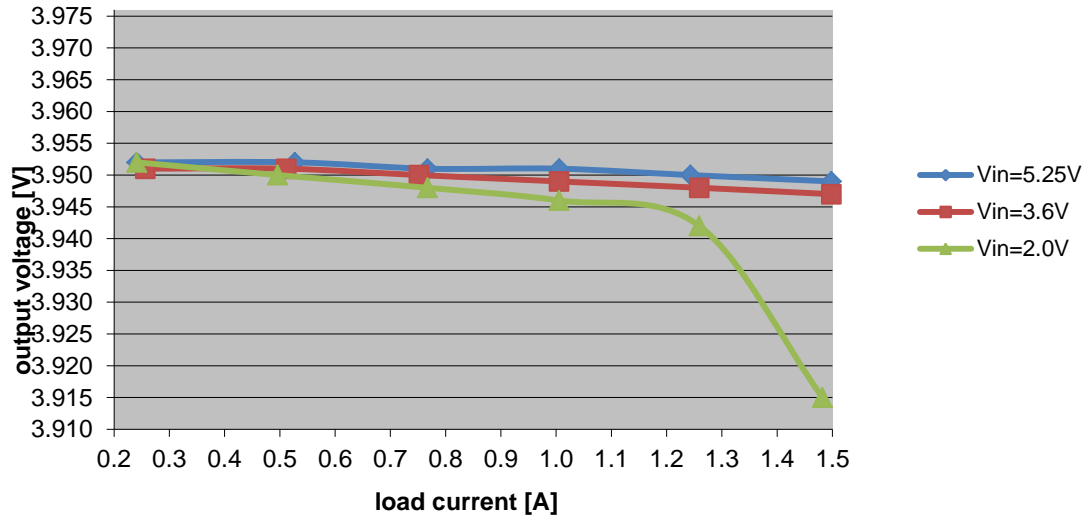


## 1 Efficiency and Load regulation



**PMP30197\_RevB  
load regulation**



**1.1 Short circuit test**

- Primary Side -3.2Vout short circuit test:

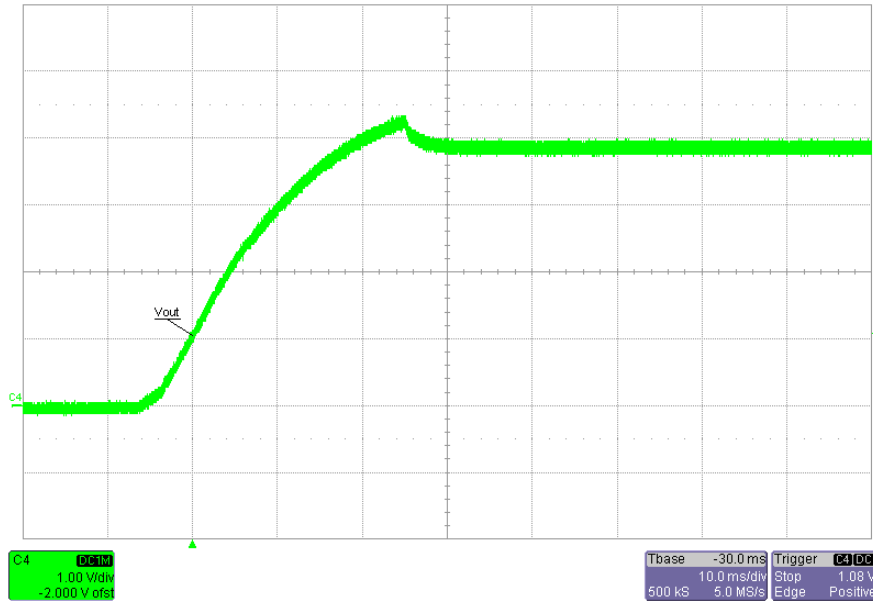
Input voltage [V]	Input current [A]		
5.25	0.65		-3.2Vout shorted
3.60	0.80		-3.2Vout shorted
2.00	0.95		-3.2Vout shorted

- Secondary Side 3.9Vout not short circuit protected

## 2 Startup

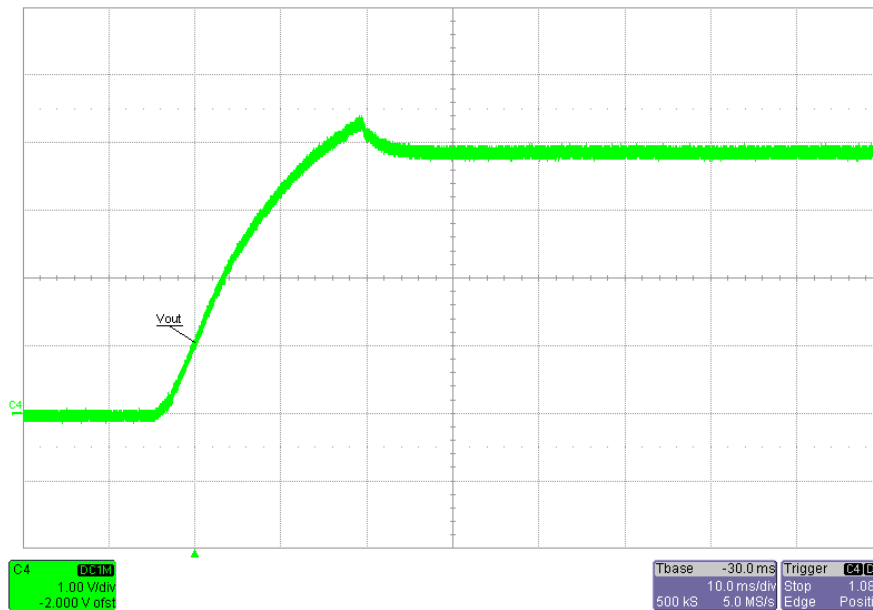
Input voltage = 3.5V

Load current = 1.5A

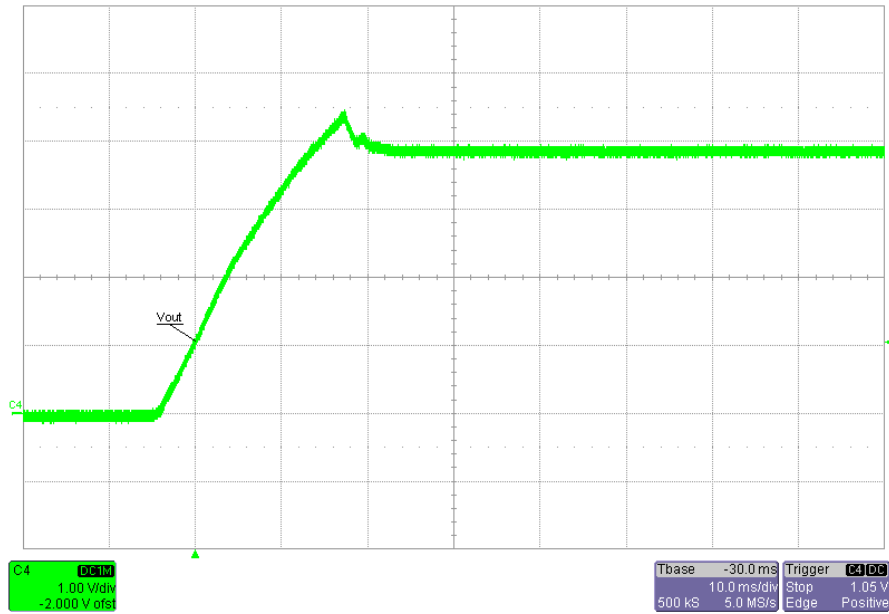


Input voltage = 5.25V

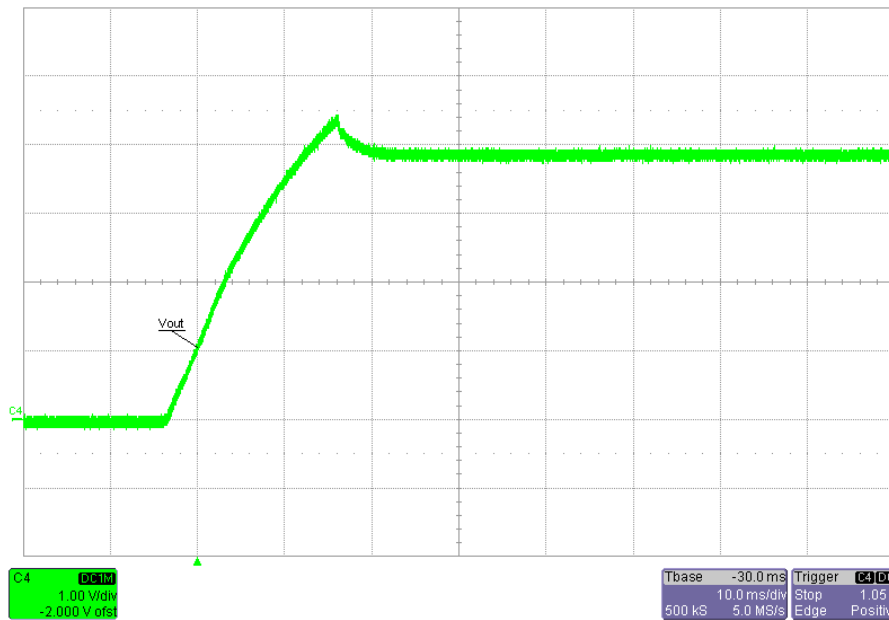
Load current = 1.5A



Input voltage = 3.5V  
Load current = 0A



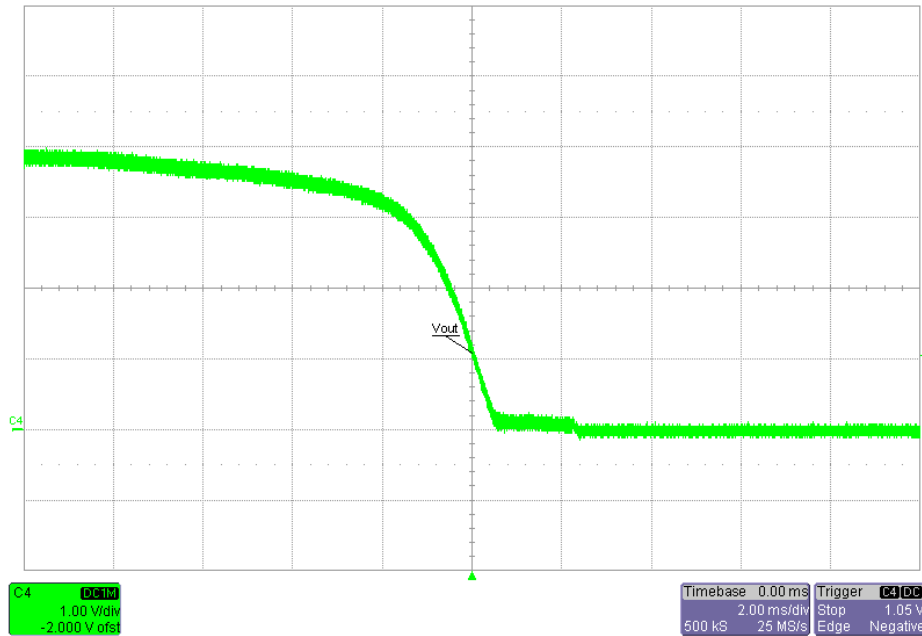
Input voltage = 5.25V  
Load current = 0A



### 3 Shutdown

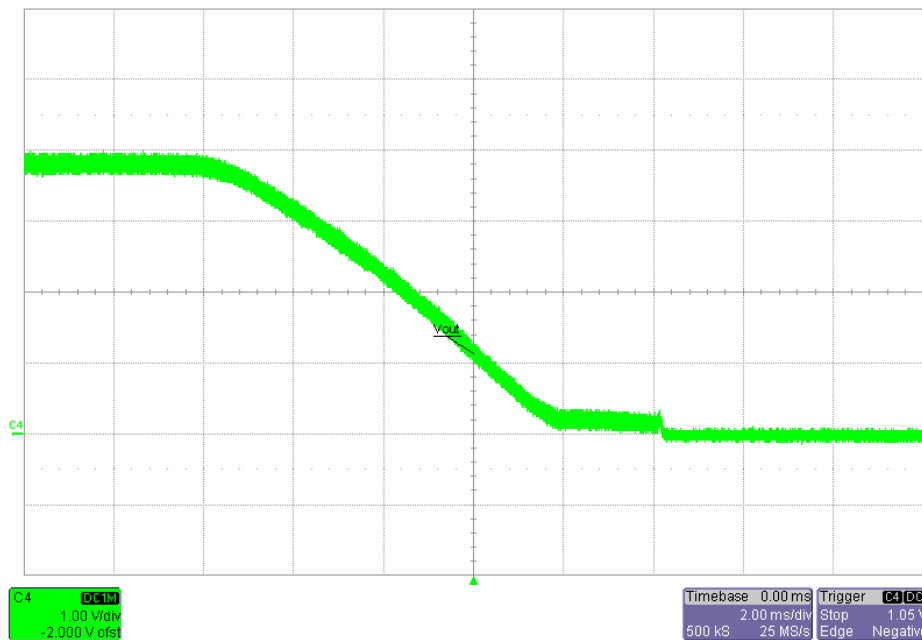
Input voltage = 5.25V

Load current = 1.5A



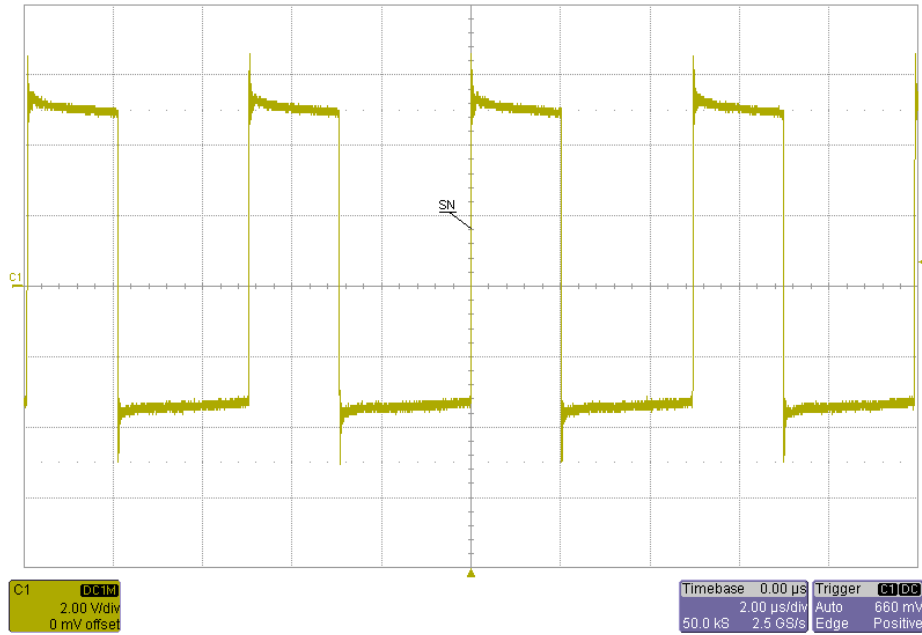
Input voltage = 2.0V

Load current = 1.5A

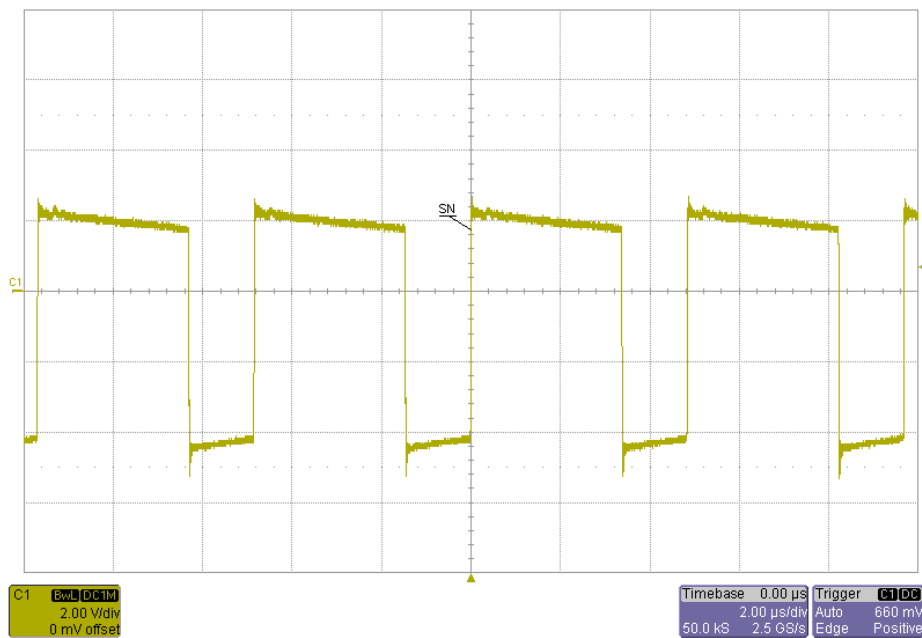


### 4 Switch Node

Input voltage = 5.25V  
 Load current = 1.5A

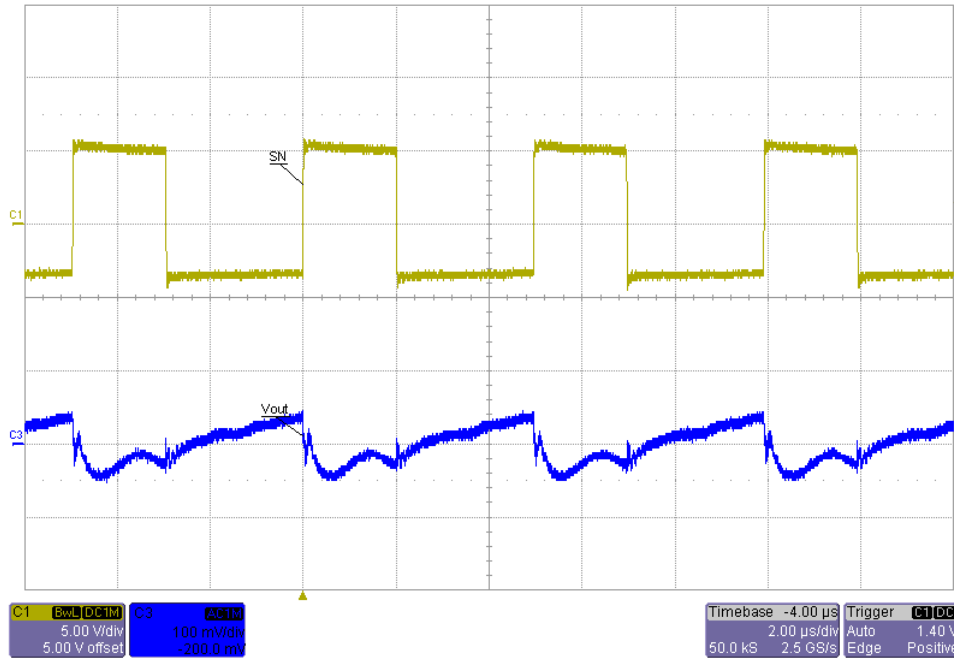


Input voltage = 2.0V  
 Load current = 1.5A

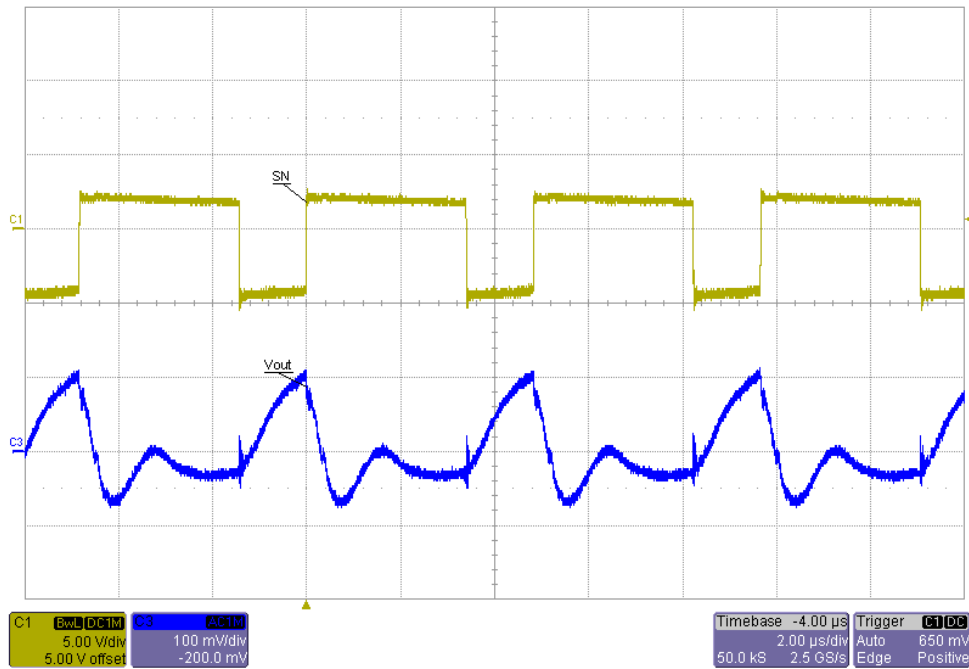


## 5 Output Ripple

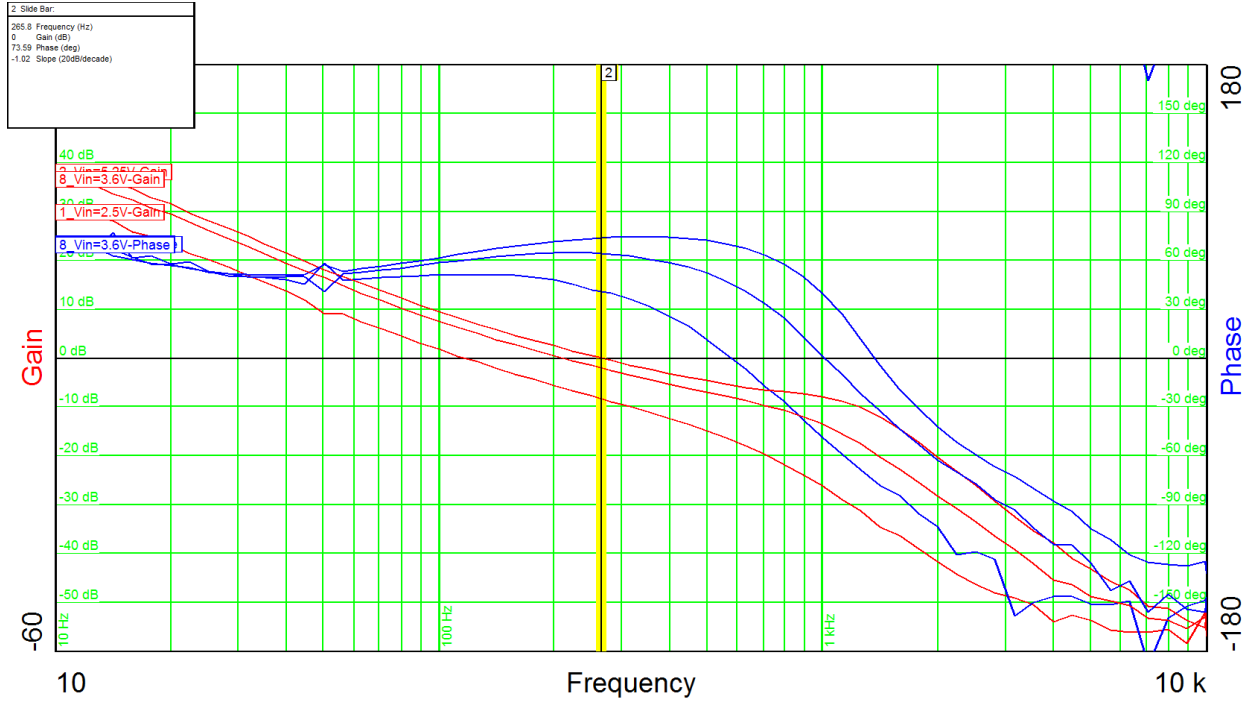
Input voltage = 5.25V  
 Load current = 1.5A



Input voltage = 2.0V  
 Load current = 1.5A



## 6 Control Loop Frequency Response



Output Load = 1.5A  
 Input voltage = 5.25VDC  
 Phase margin = 74°  
 Bandwidth = 0.27kHz

Output Load = 1.5A  
 Input voltage = 3.6VDC  
 Phase margin = 64°  
 Bandwidth = 0.21kHz

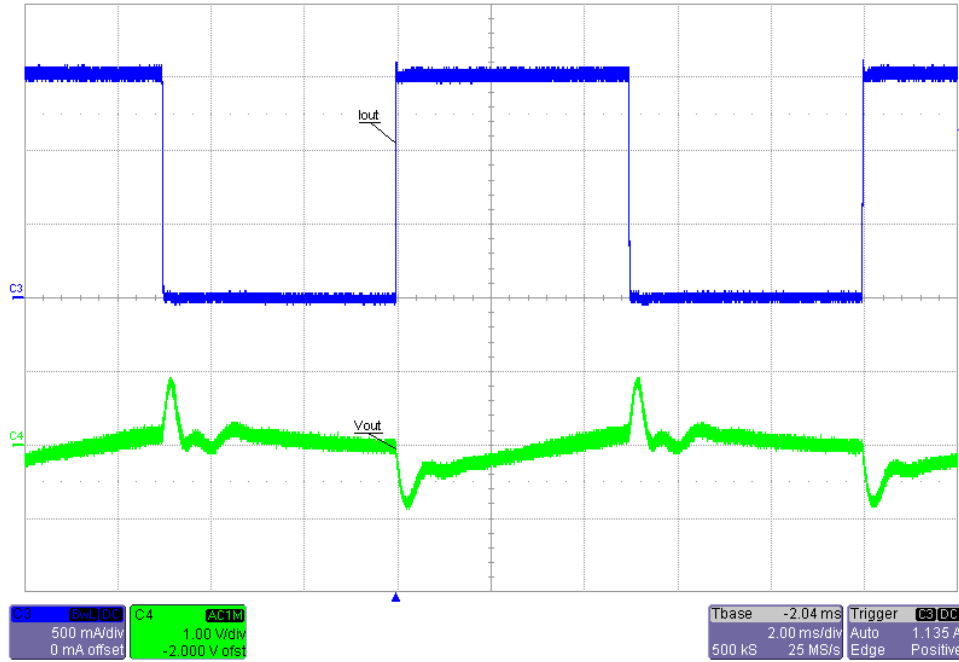
Output Load = 1.5A  
 Input voltage = 2.5VDC  
 Phase margin = 51°  
 Bandwidth = 0.12kHz



## 7 Load step

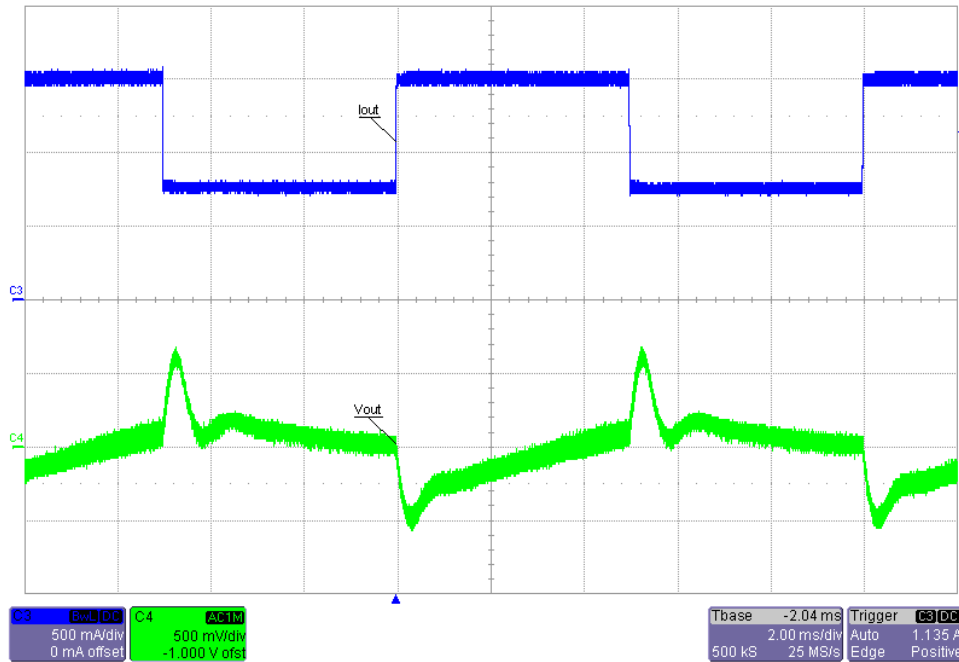
Input voltage = 5.25V

Load current = 0A - 1.5A

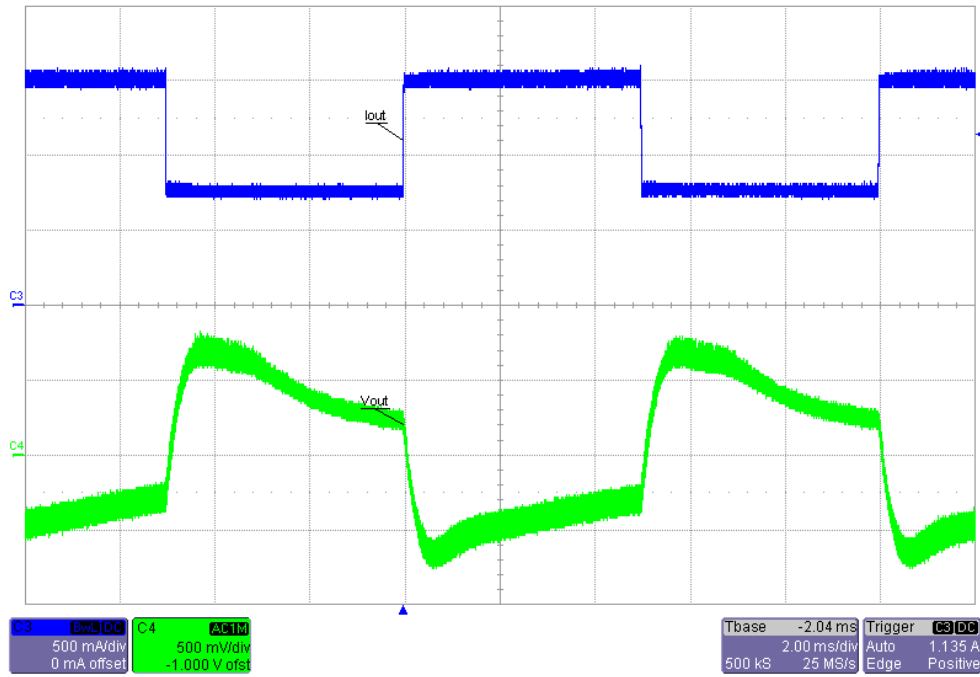


Input voltage = 3.6V

Load current = 0.75A - 1.5A



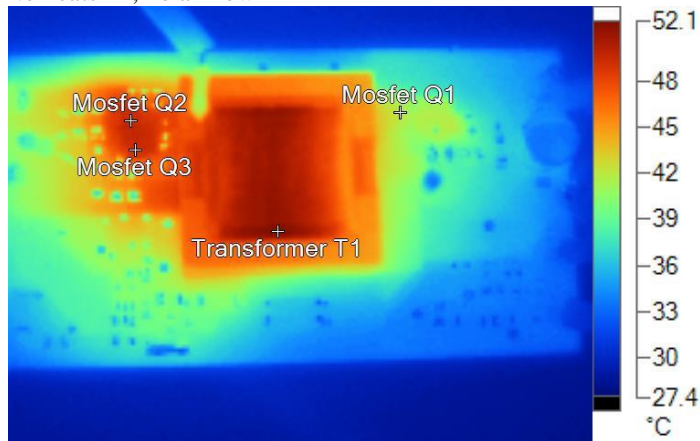
Input voltage = 5.25V  
Load current = 0.75A - 1.5A



## 8 Thermal Analysis

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

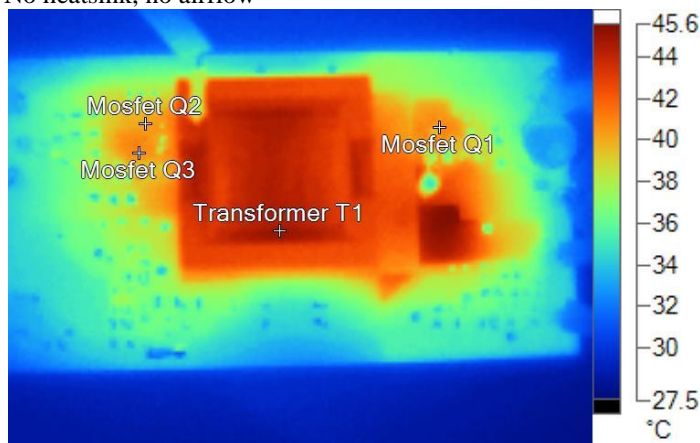
Input voltage = 2.0V  
 Load current = 1.5A  
 Ambient temperature = 25°C  
 No heatsink, no airflow



Name	Temperature
Transformer T1	52.1°C
Mosfet Q2	49.7°C
Mosfet Q3	49.5°C
Mosfet Q1	42.3°C

IR20170307\_1019 Vin=2V 3.83Vout@1.5A.is2

Input voltage = 5.25V  
 Load current = 1.5A  
 Ambient temperature = 25°C  
 No heatsink, no airflow



Name	Temperature
Transformer T1	45.1°C
Mosfet Q2	40.2°C
Mosfet Q3	40.8°C
Mosfet Q1	40.6°C

IR20170307\_1020 Vin=5.25V 3.87Vout@1.5A.is

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