TEXAS INSTRUMENTS

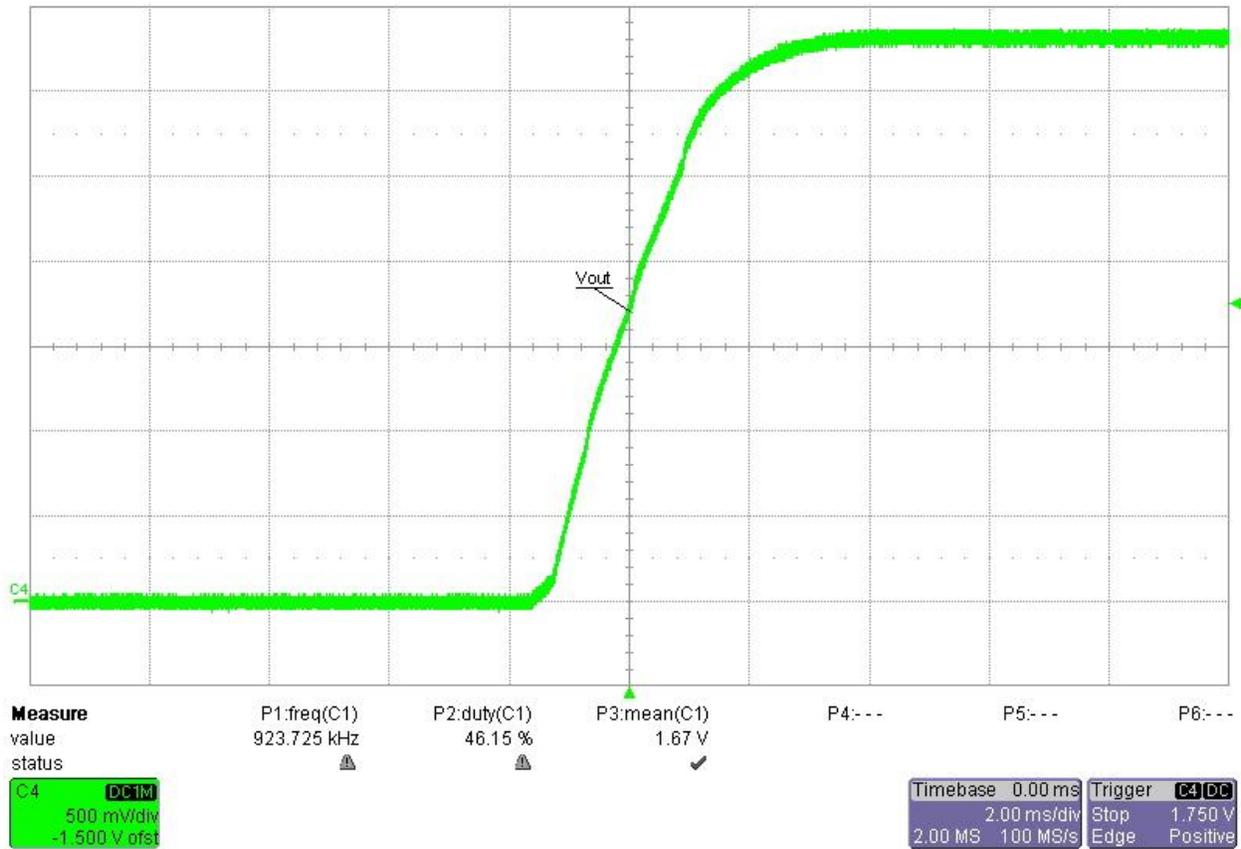# 1   Startup

Input voltage   = 8.0VDC
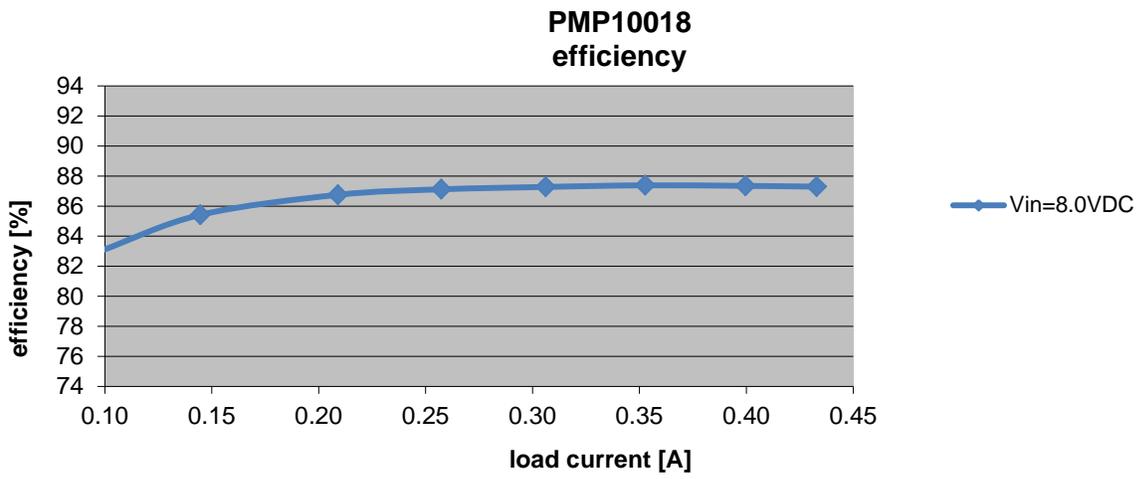Load current   = full load (0.42A)

Measure	P1:freq(C1)	P2:duty(C1)	P3:mean(C1)	P4:---	P5:---	P6:---
value	923.725 kHz	46.15 %	1.67 V			
status	⚠	⚠	✓			

C4 DC1M
500 mV/div
-1.500 V ofst

Timebase 0.00 ms   Trigger C4 DC
2.00 ms/div Stop   1.750 V
2.00 MS   100 MS/s Edge   Positive

Power Management Solutions

2 Shutdown

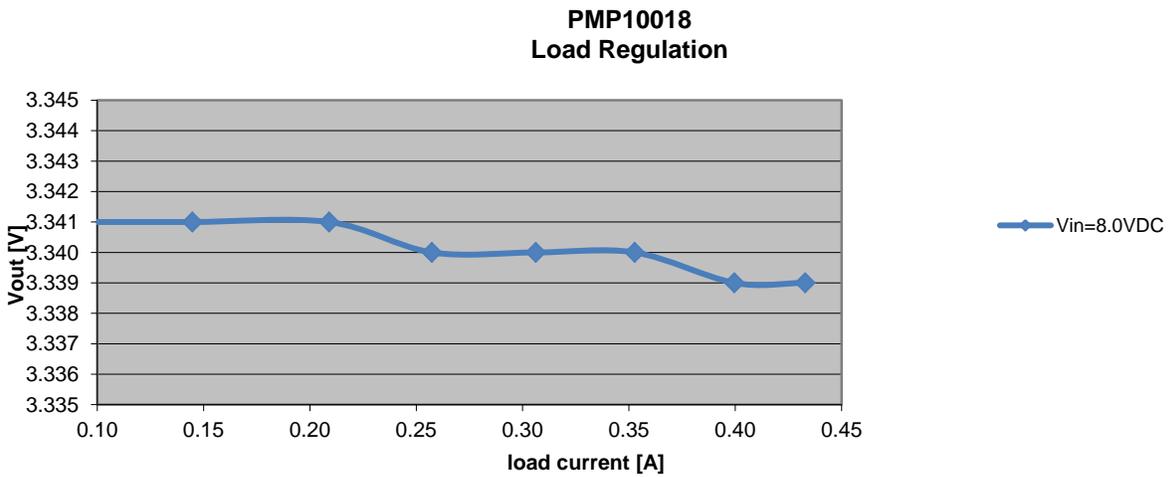Input voltage = 8.0VDC
Load current   = full load (0.42A)

Power Management Solutions

3 Efficiency
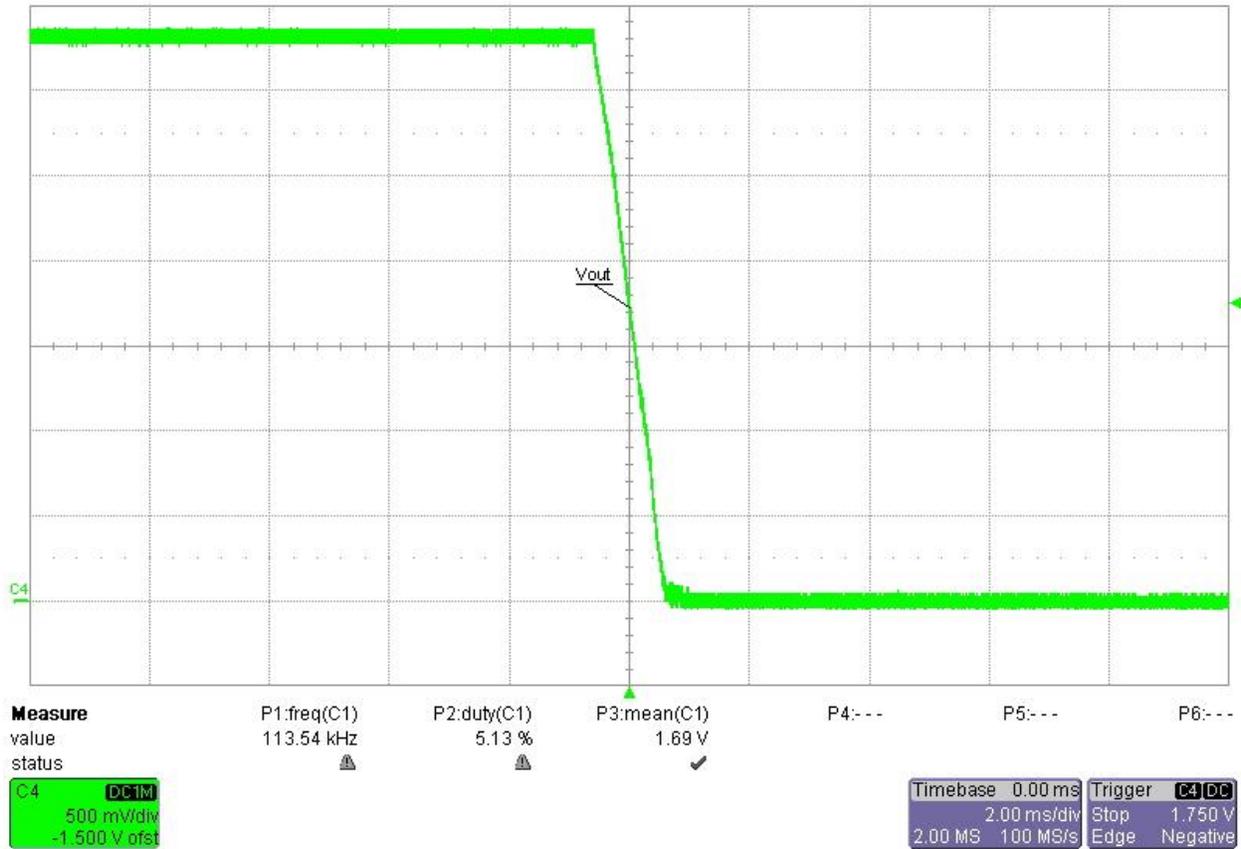
**PMP10018
efficiency**

4 Load regulation

**PMP10018
Load Regulation**

Power Management Solutions

5 Control Loop Frequency Response

1 Slide Bar:	
23.8 k	Frequency (Hz)
0	Gain (dB)
69.02	Phase (deg)
-1.09	Slope (20dB/decade)
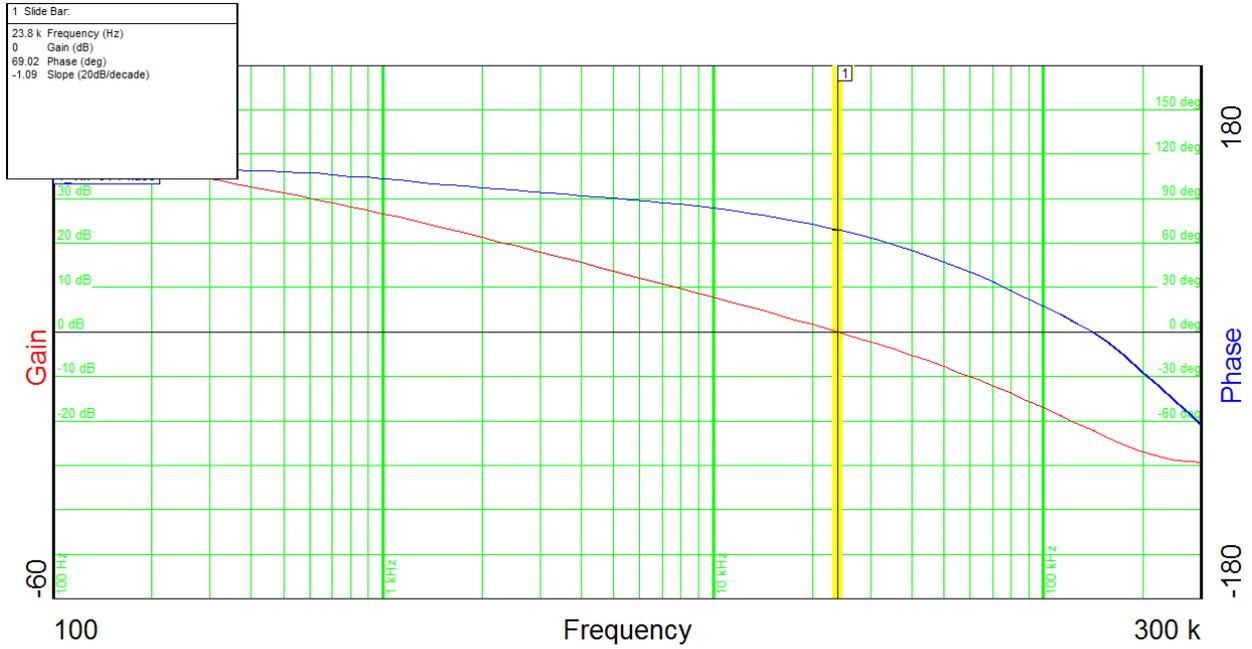
Output power = 3.3V@0.42A
Input voltage = 8.0VDC
Phase margin = 69°
Bandwidth = 23.8kHz

6   Switch Node

Input voltage   = 8.0VDC
Load current   = full load (0.42A)

7 Output ripple voltage

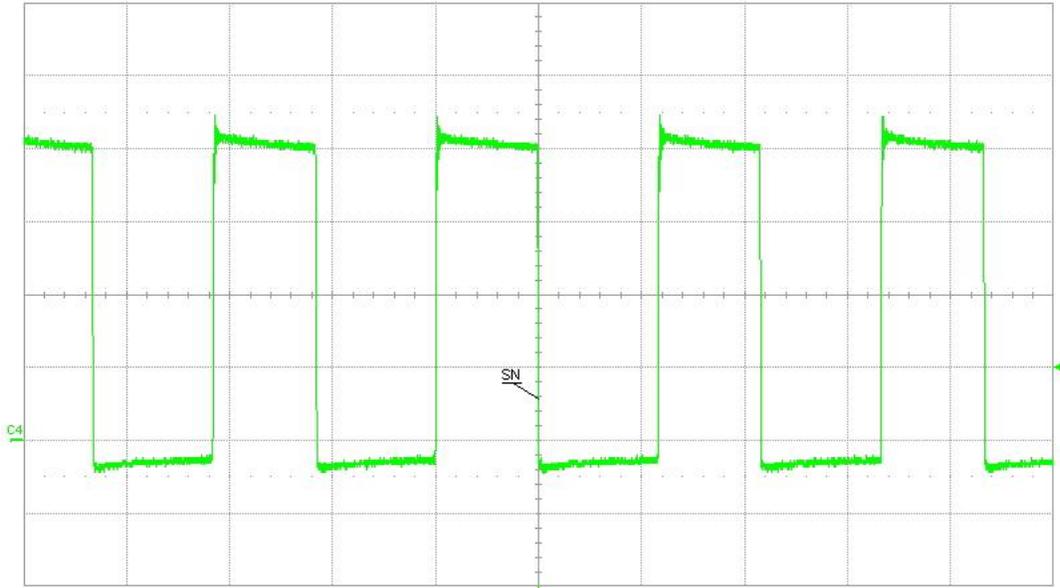Input voltage   = 8.0VDC
Load current   = full load (0.42A)
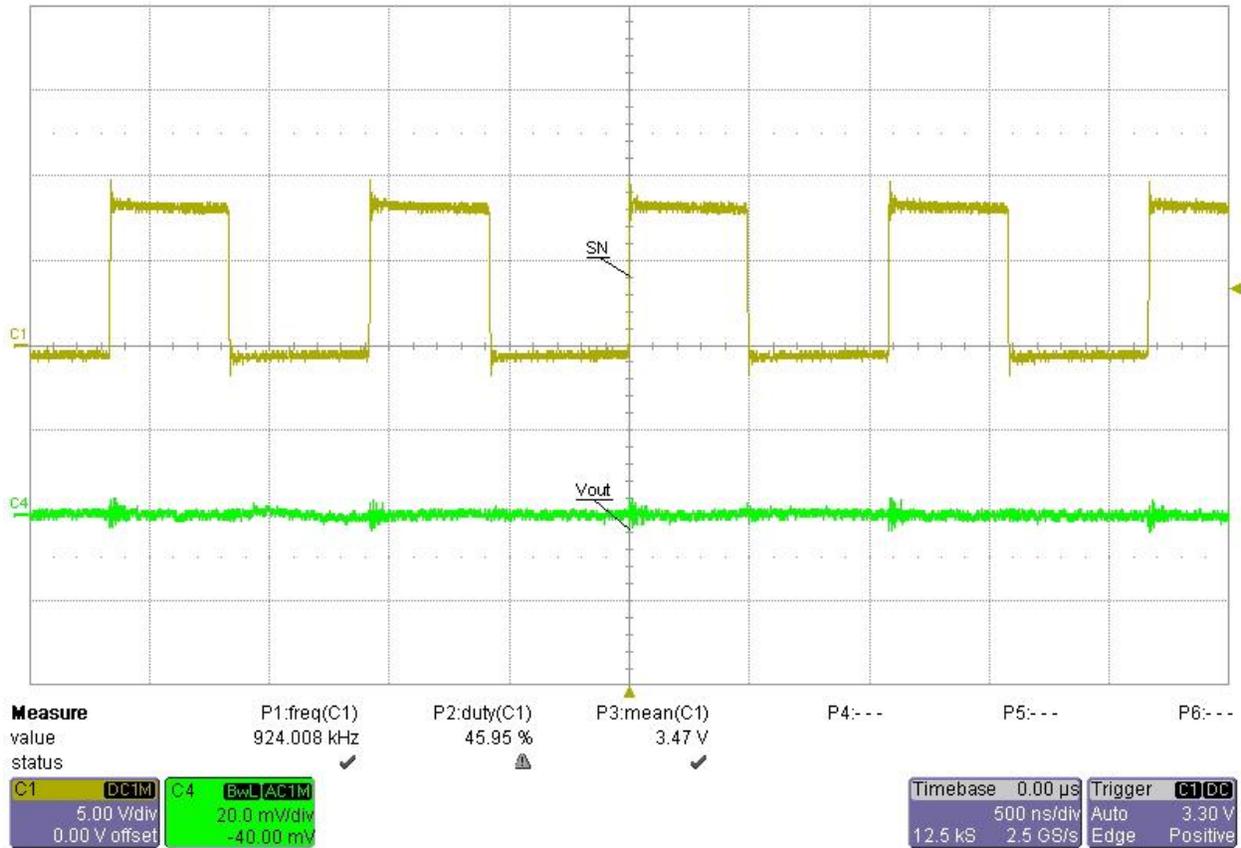
8   Load Transients

Input voltage   = 8.0VDC
Load current   = full load (0.42A)

Measure	P1:freq(C1)	P2:duty(C1)	P3:mean(C1)	P4:- - -	P5:- - -	P6:- - -
value	925.78 kHz	42.49 %	3.370 V			
status	✓	✓	✓			

C3 F BwL DC50	C4 BwL AC1M		Timebase 0.00 ms	Trigger C3 DC
20.0 mV/div	50.0 mV/div		2.00 ms/div	Stop 34.0 mV
0.00 mV ofst	-100.0 mV		2.00 MS 100 MS/s	Edge Negative

![Texas Instruments]
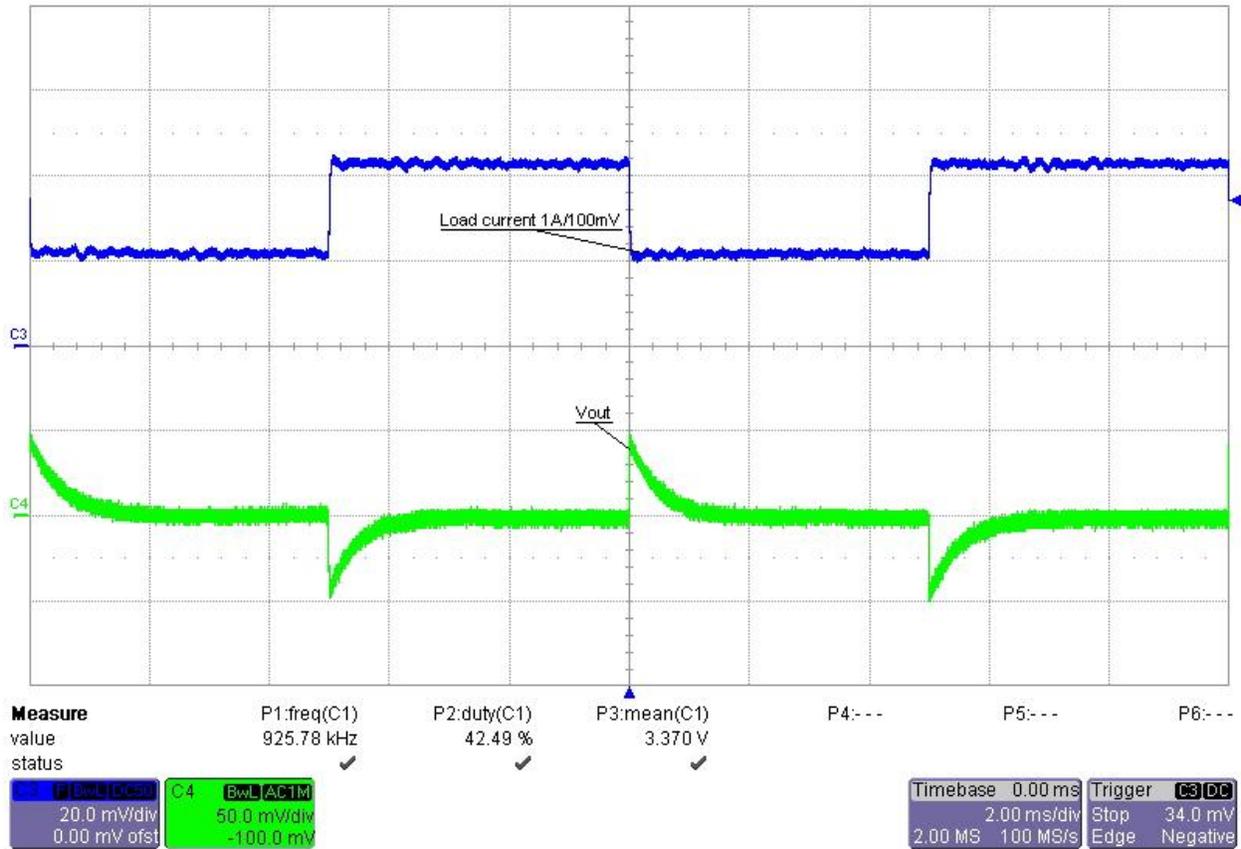
9 Thermal Analysis

The images below show the infrared images taken from the FlexCam after 15min at full load (3.3V@0.42A).
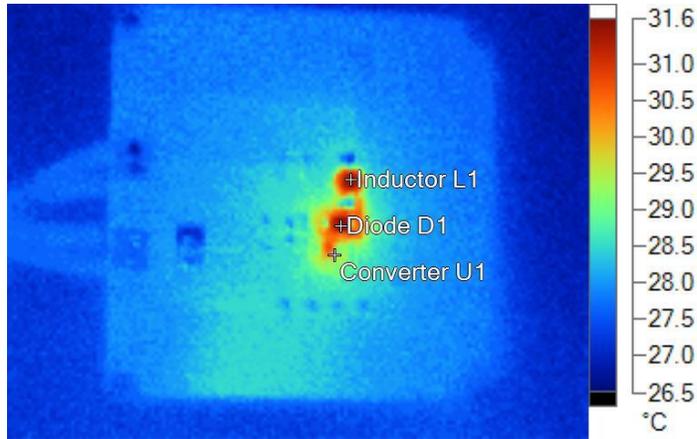
Name	Temperature	
Converter U1	29.8°C	
Diode D1	31.5°C	
Inductor L1	31.5°C	

Input voltage   = 8VDC
Output power   = 1.4W
Ambient temperature = 25°C
No heatsink, no airflow

Power Management Solutions

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