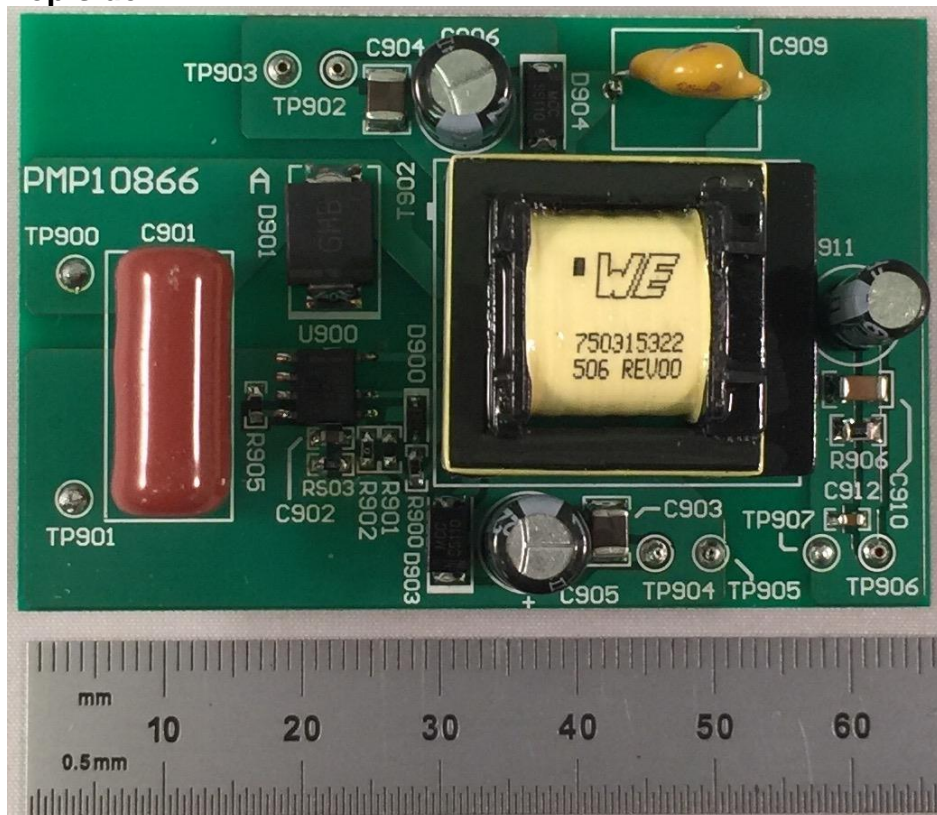


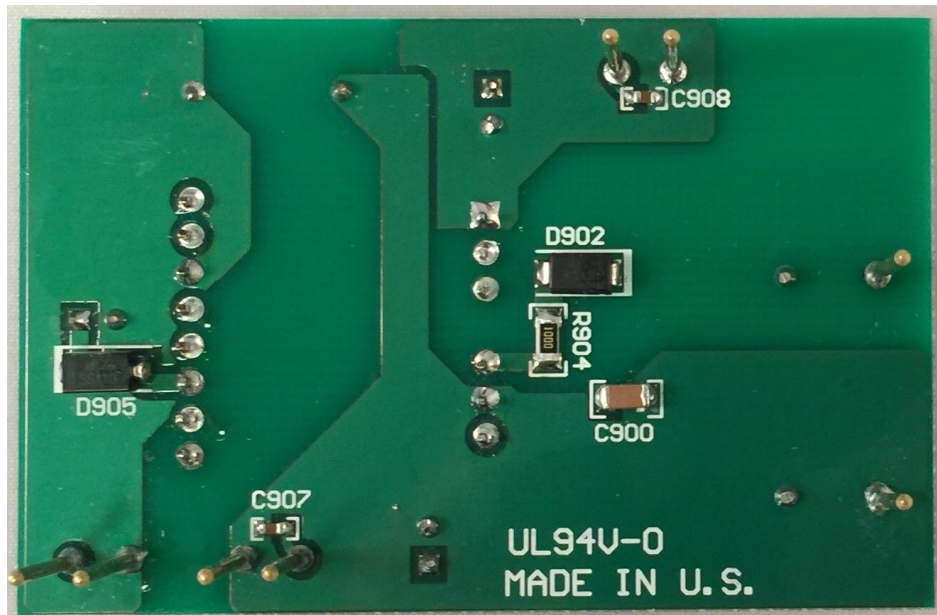
1 Photo

The photographs below show the PMP10866 Rev A assembly. This circuit was built on a PMP10866 Rev A PCB.

Top side



Bottom side



2 Cross Regulation

Load regulation under different load conditions is shown in the table below. The input voltage during this test was 350V_{DC}.

I _{out}			V _{out}		
14V@TP902	14V@TP904	14V@TP906	14V@TP902	14V@TP904	14V@TP906
0	0	0	14.28	14.308	13.977
0	0	0.1	16.35	16.464	13.938
0	0.2	0	15.43	13.794	15.32
0.2	0	0	13.81	16.114	15.352
0	0.2	0.1	15.47	13.833	13.883
0.2	0	0.1	13.84	16.38	13.92
0.2	0.2	0	13.84	13.889	15.945
0.2	0.2	0.1	13.86	13.9	13.945

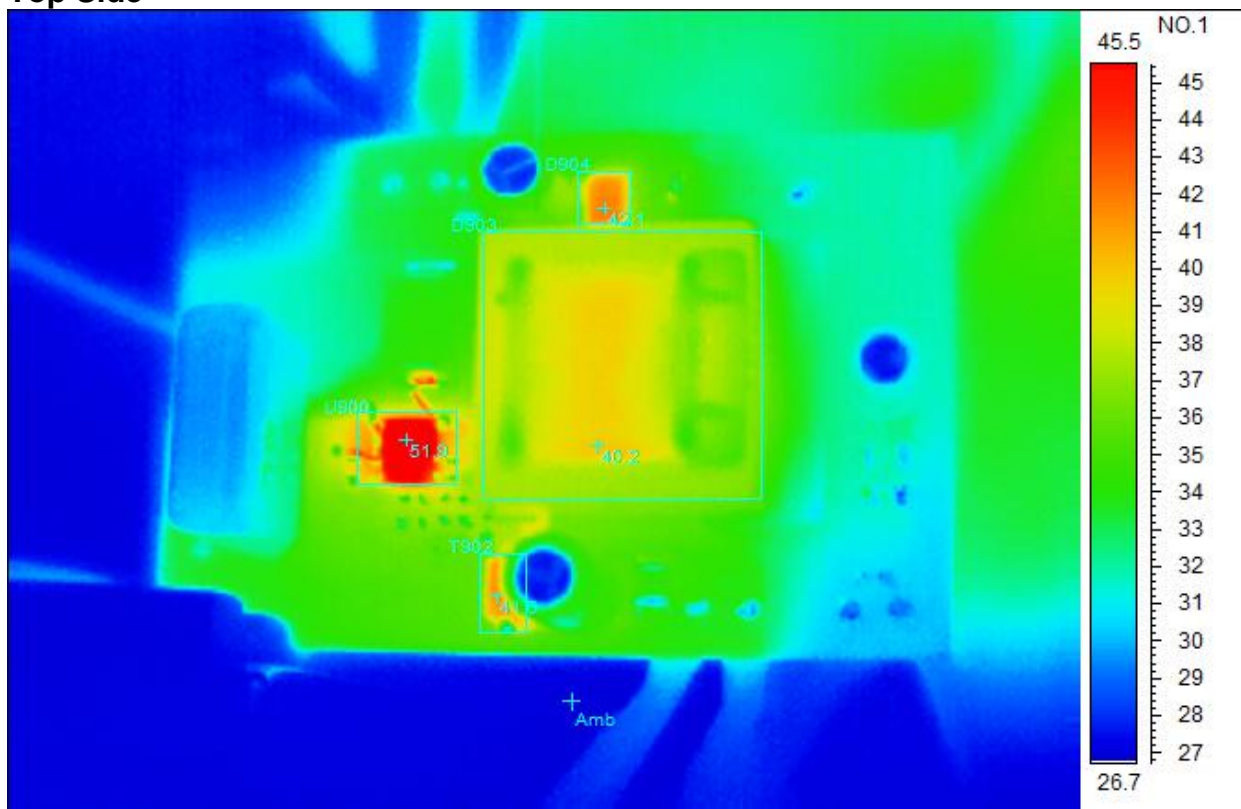
3 Thermal Images

The thermal images below show a top view and bottom view of the board. The ambient temperature was 20°C with no forced air flow. The outputs were at 14V/0.2A, 14V/0.2A and 14V/0.1A loads.

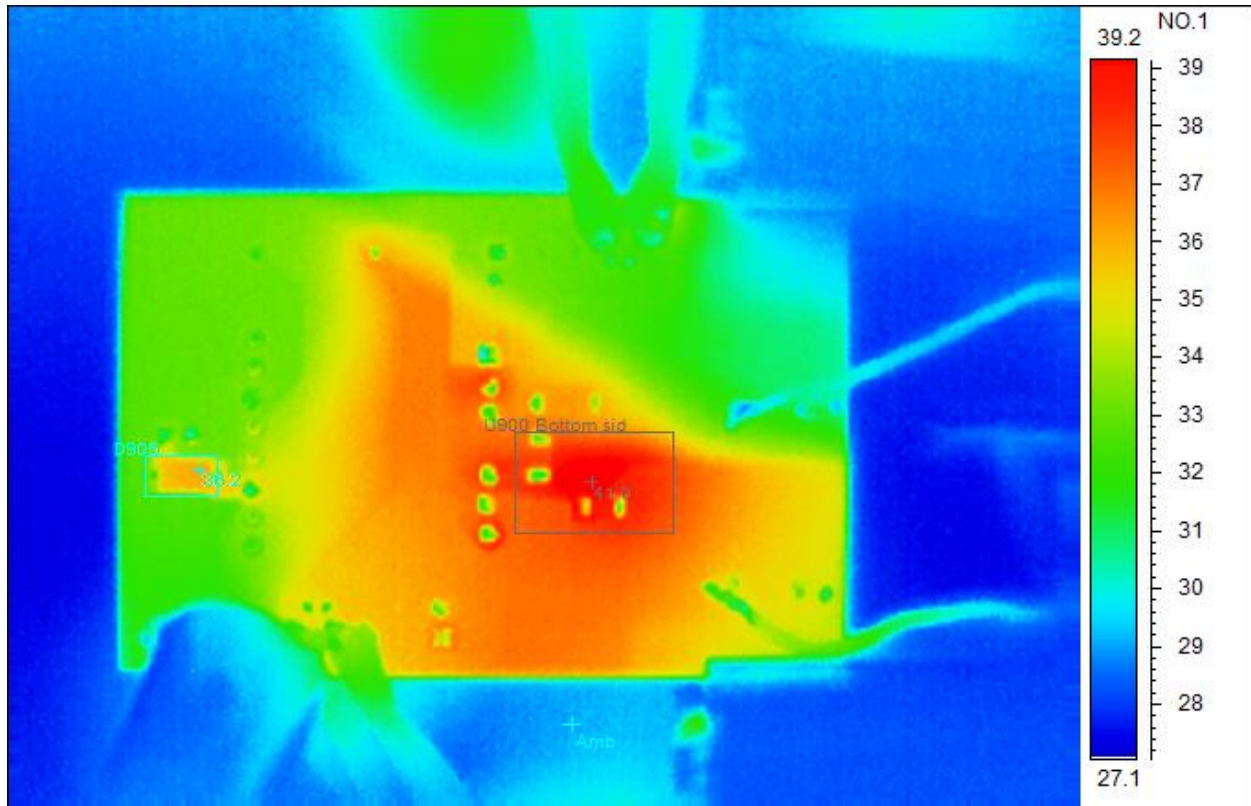
110V_{DC}

- $P_{in}=8.125W$, $14V_{out1}=13.82V/0.1913A$, $14V_{out2}=13.83V/0.2015A$,
 $14V_{out3}=13.89V/0.0954A$, Efficiency: 83.1%

Top Side



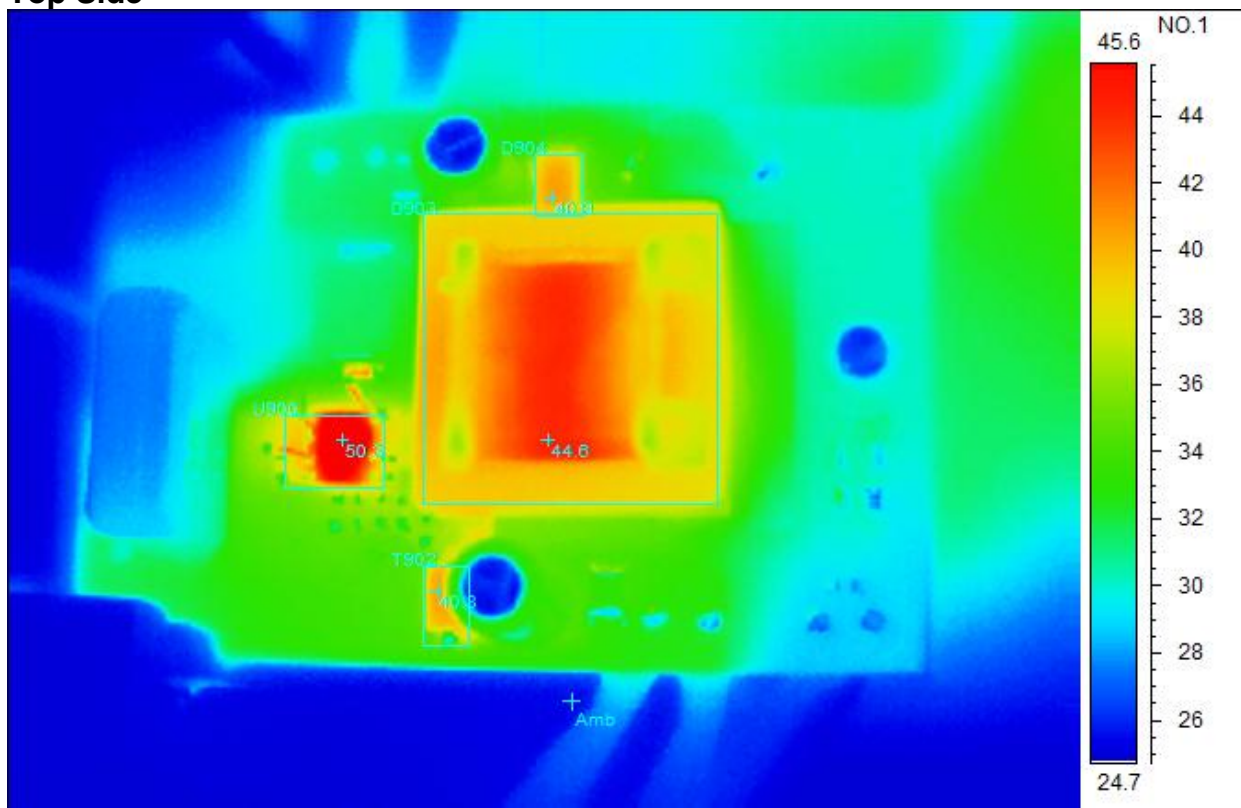
Spot analysis	Value
Amb Temperature	27.1°C
Area analysis	Value
U900Max	51.9°C
D904Max	42.1°C
D903Max	40.2°C
T902 Max	41.6°C

Bottom Side

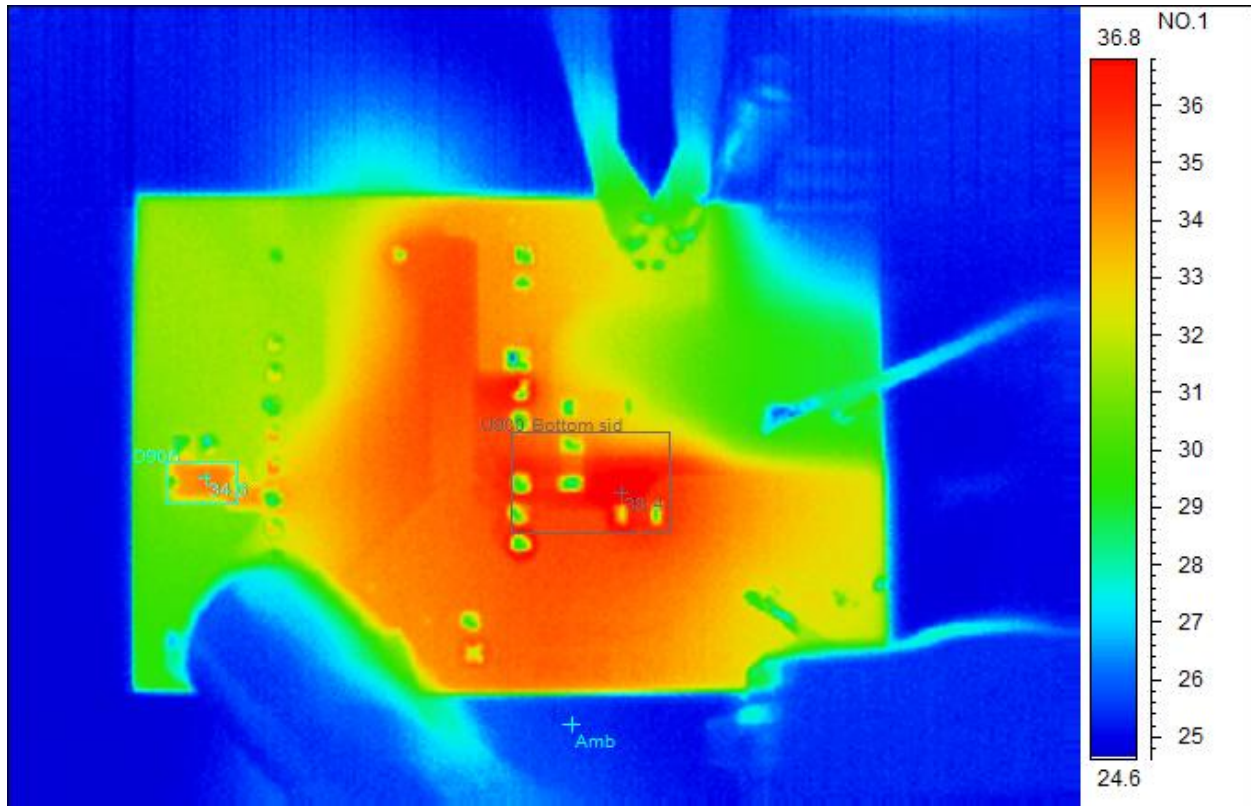
Spot analysis	Value
Amb Temperature	29.2°C
Area analysis	Value
D905Max	36.2°C
U900 Bottom sidMax	41.0°C

380V_{DC}:

- $P_{in}=8.267W$, $14V_{out1}=13.83V/0.1915A$, $14V_{out2}=13.85V/0.2017A$,
 $14V_{out3}=13.89V/0.096A$, Efficiency: 82%

Top Side

Spot analysis	Value
Amb Temperature	25.6°C
Area analysis	Value
U900Max	50.3°C
D904Max	40.9°C
D903Max	44.6°C
T902 Max	40.8°C

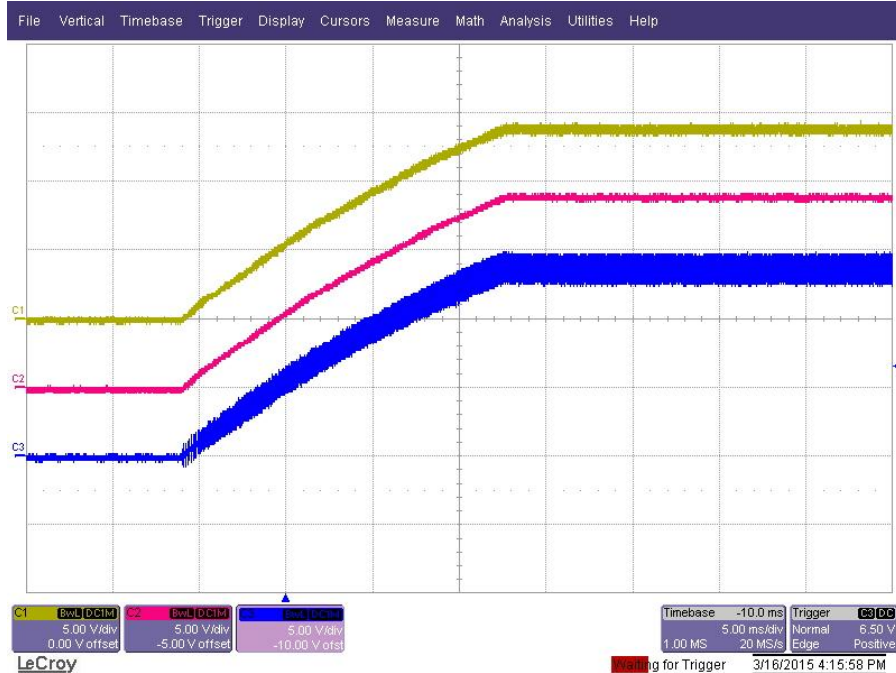
Bottom Side

Spot analysis	Value
Amb Temperature	25.6°C
Area analysis	Value
D905Max	34.6°C
U900 Bottom sidMax	38.4°C

4 Startup

The output voltages at startup are shown in the images below.

4.1 Start Up @ 110V_{DC}: 14V/0.1A, 14V/0.1A, and 14V/0.1A.



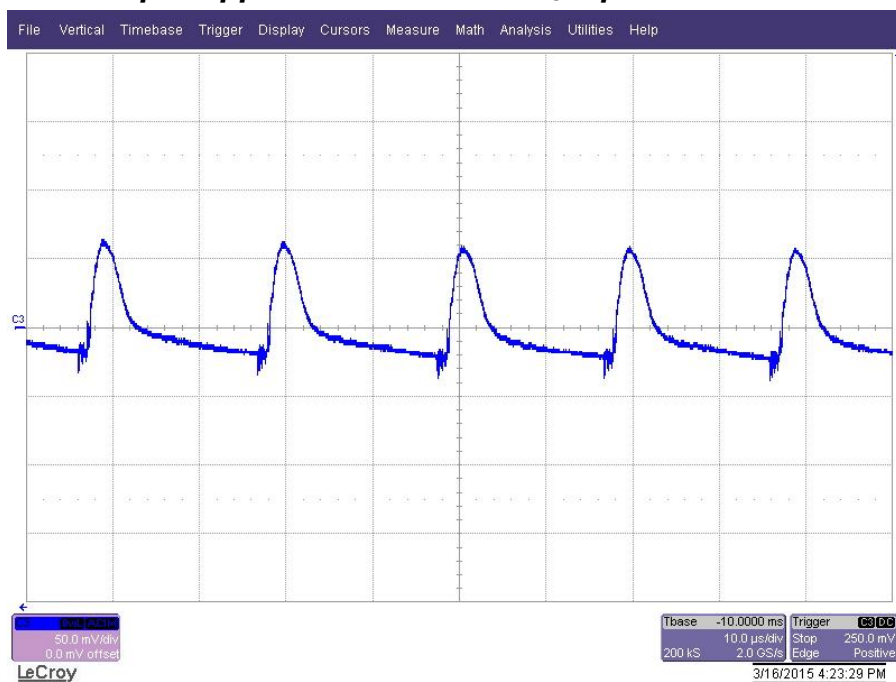
4.2 Start Up @ 380V_{DC}: 14V/0.1A, 14V/0.1A, and 14V/0.1A.



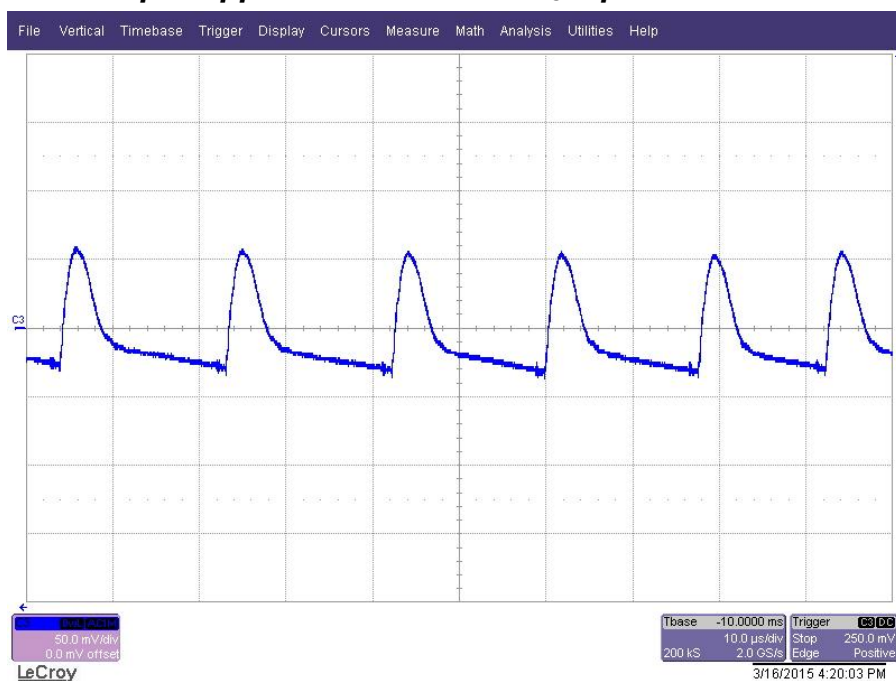
5 Output Ripple Voltages

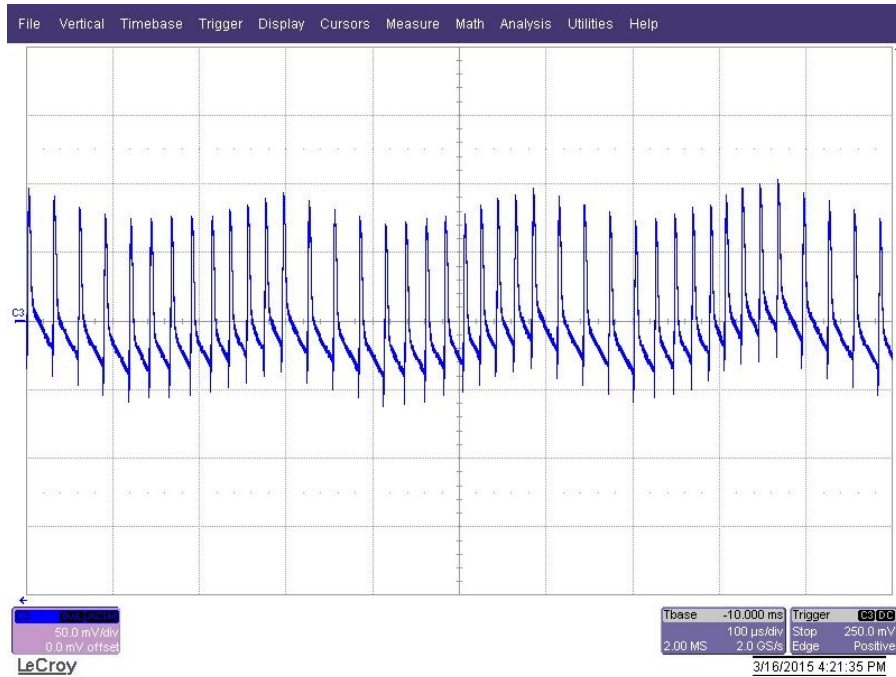
The output ripple voltages are shown in the plots below at full load (14V/0.2A, 14V/0.2A, and 14V/0.1A).

5.1 Output ripple at C904 @ 380V_{DC} input.



5.2 Output ripple at C903 @ 380V_{DC} input.

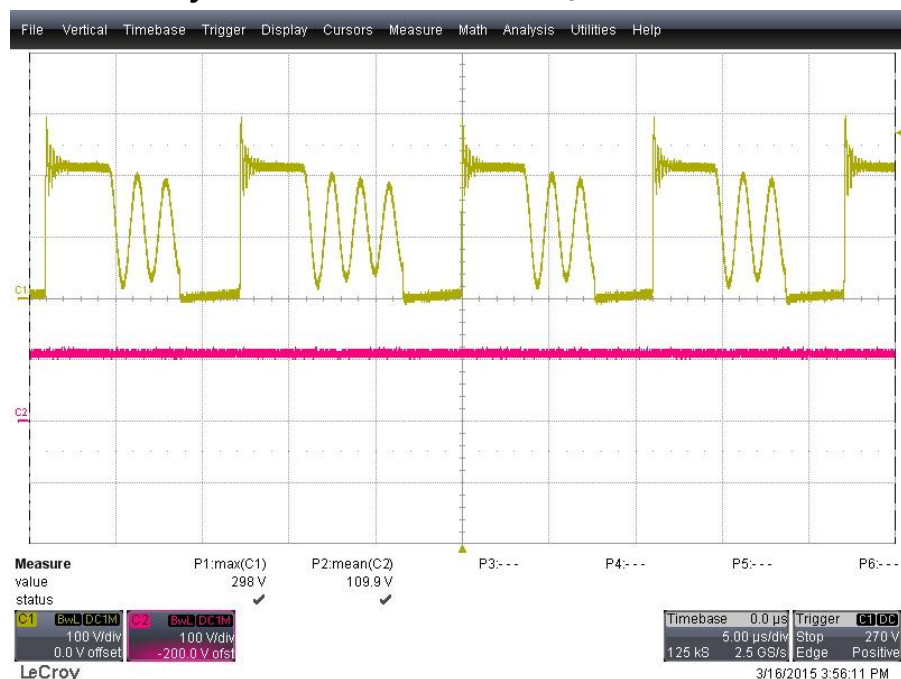


5.3 Output ripple at C910 @ 380V_{DC} input.

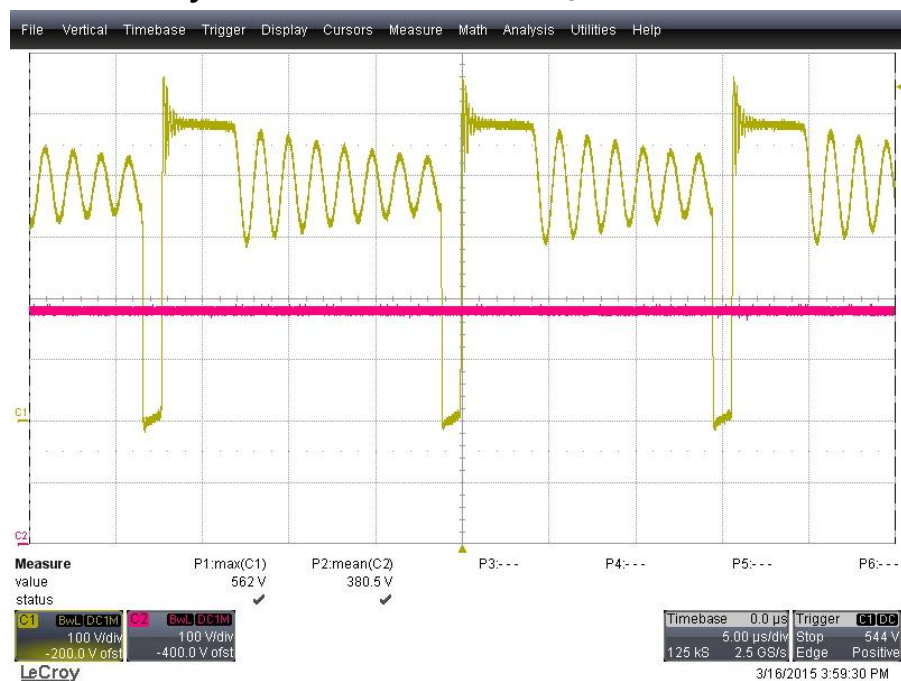
6 Switching Waveforms

The images below show key switching waveforms of PMP10397RevA. The waveforms are measured with 14V/0.2A, 14V/0.2A, and 14V/0.1A full load. CH1: U900 pin 8, CH2: V_{in}

6.1 Primary Transistor Q1 @ 110V_{DC}



6.2 Primary Transistor Q1 @ 380V_{DC}



IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, or other requirements. These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you will fully indemnify TI and its representatives against, any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale (<https://www.ti.com/legal/termsofsale.html>) or other applicable terms available either on [ti.com](https://www.ti.com) or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265
Copyright © 2021, Texas Instruments Incorporated