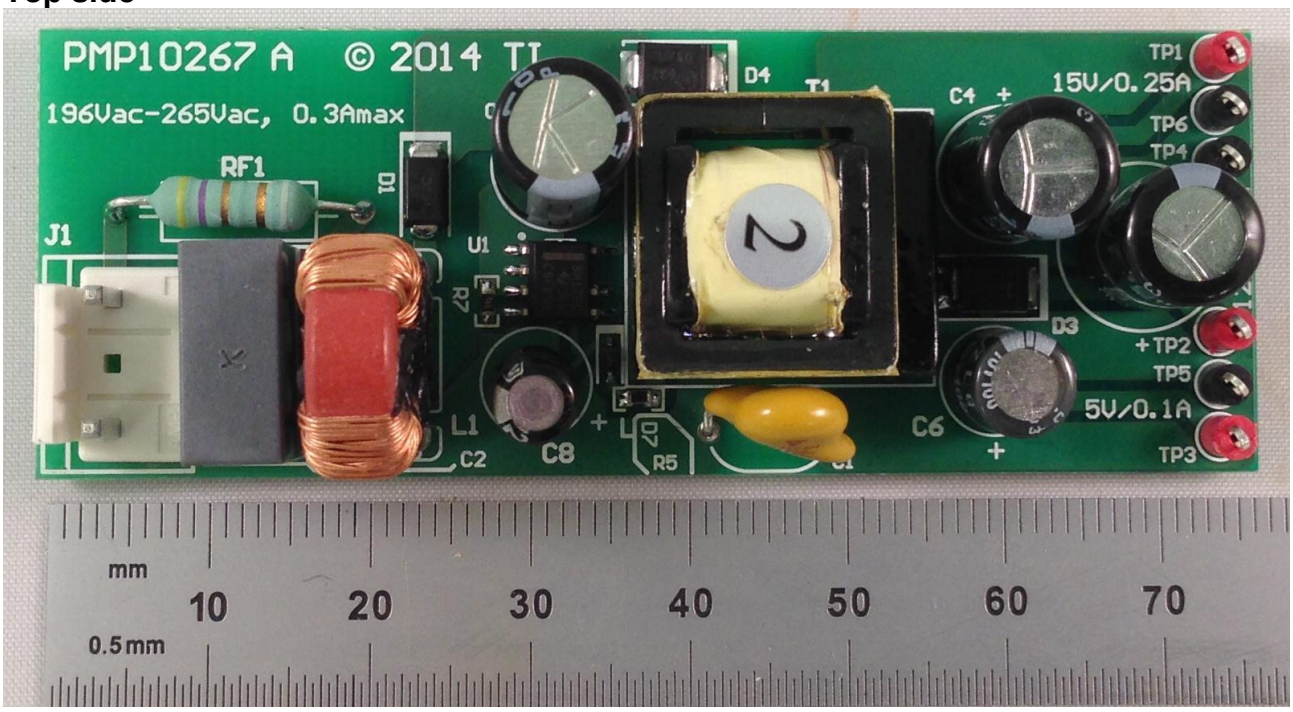
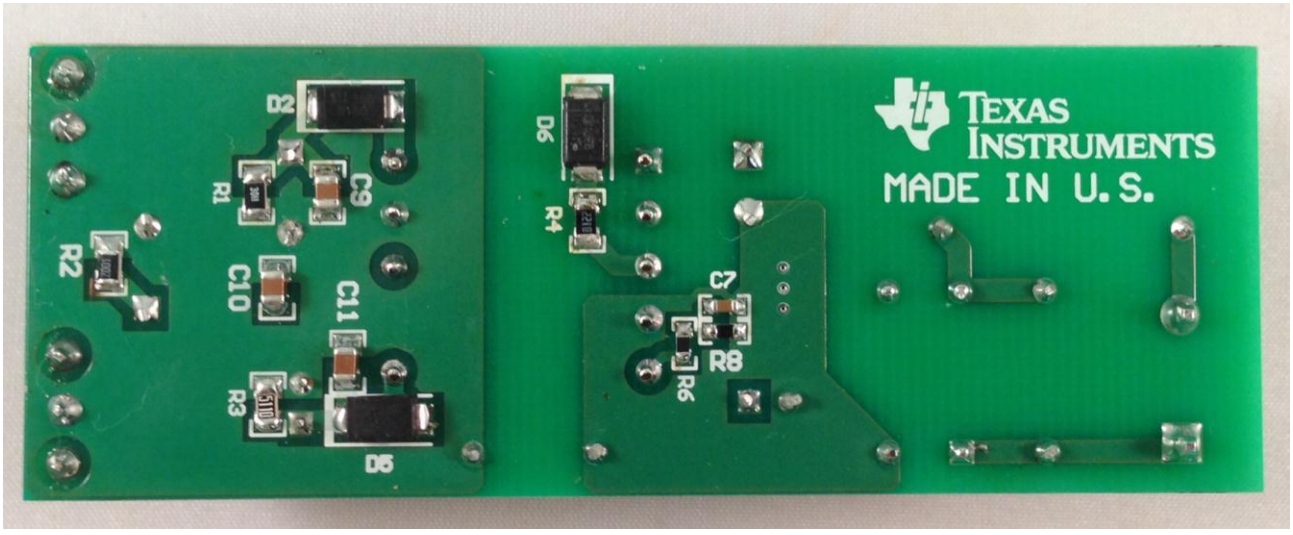
1 Photo

The photographs below show the PMP10267 Rev A assembly. This circuit was built on a PMP10269 Rev A PCB.

Top side

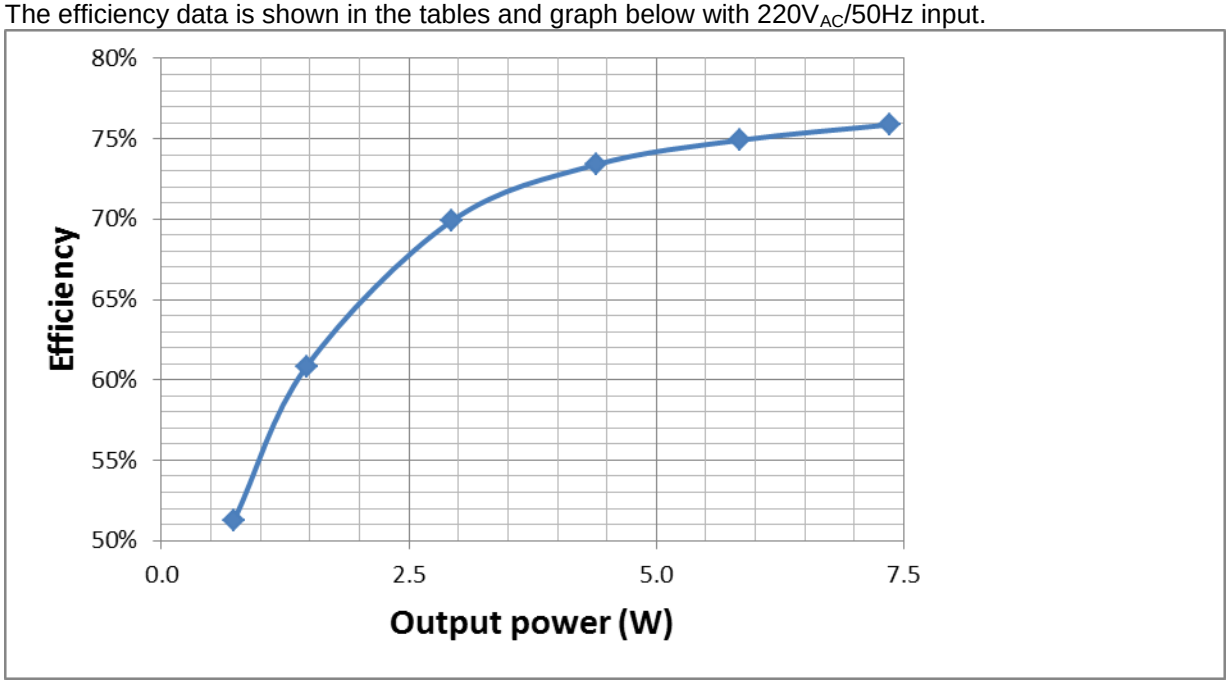


Bottom side



2 Converter Efficiency

The efficiency data is shown in the tables and graph below with 220V_{AC}/50Hz input.

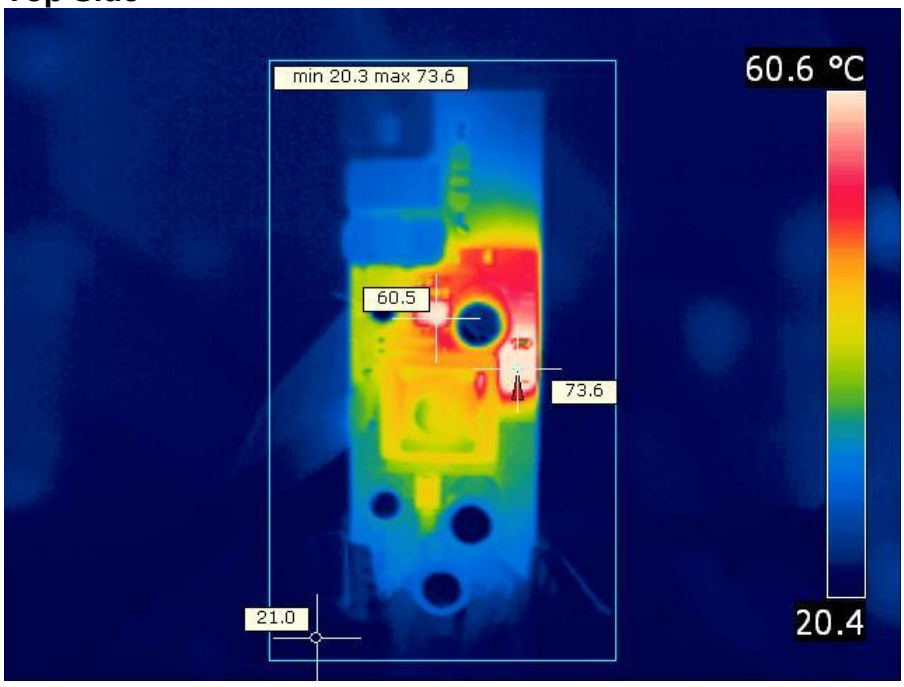


Vin(ac)	Iin(A)	Pin(W)	Vo1(V)	Io1(A)	Vo2(V)	Io2(A)	Vo3(V)	Io3(A)	Pout(W)	Eff. (%)
220.1	0.11482	9.696	14.92	0.251	12.31	0.253	4.92	0.102	7.357	75.88%
220.1	0.09577	7.800	14.90	0.201	12.30	0.200	4.91	0.081	5.844	74.92%
220.1	0.07716	5.981	14.88	0.151	12.30	0.151	4.91	0.061	4.390	73.39%
220.1	0.05799	4.191	14.84	0.101	12.30	0.101	4.91	0.041	2.929	69.89%
220.2	0.03784	2.407	14.80	0.051	12.30	0.050	4.90	0.020	1.464	60.82%
220.1	0.02515	1.427	14.83	0.025	12.33	0.025	4.90	0.010	0.731	51.22%
220.2	0.00104	0.407	15.15	0.000	12.55	0.000	4.89	0.000	0.000	0.00%

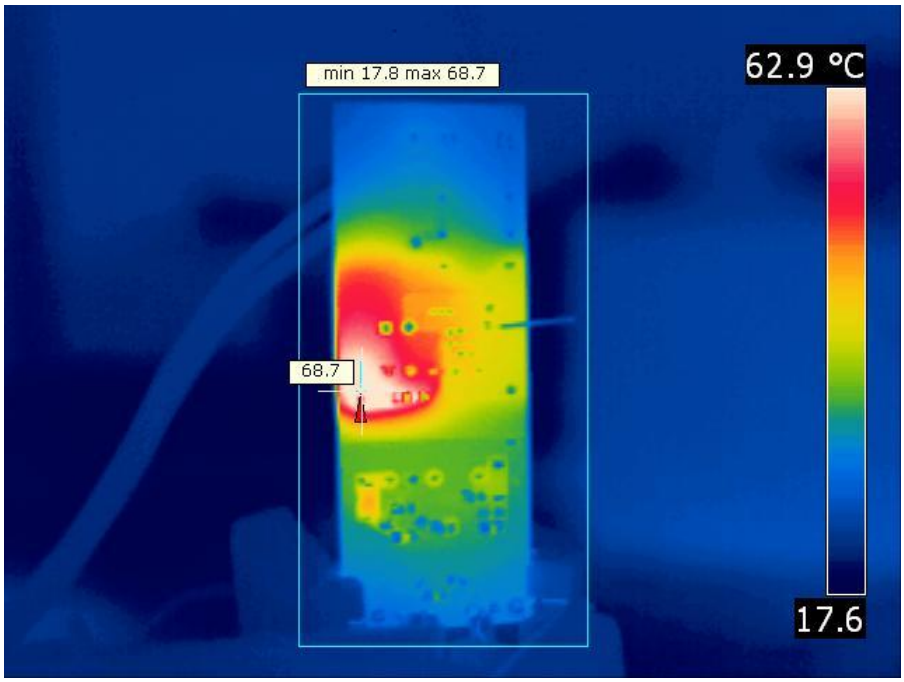
3 Thermal Images

The thermal images below show a top view and bottom view of the board at $220V_{AC}$/50Hz input. The ambient temperature was 20ºC with no forced air flow. The outputs were loaded with 15V/0.25A, 12V/0.25A and 5V/0.1A.

Top Side



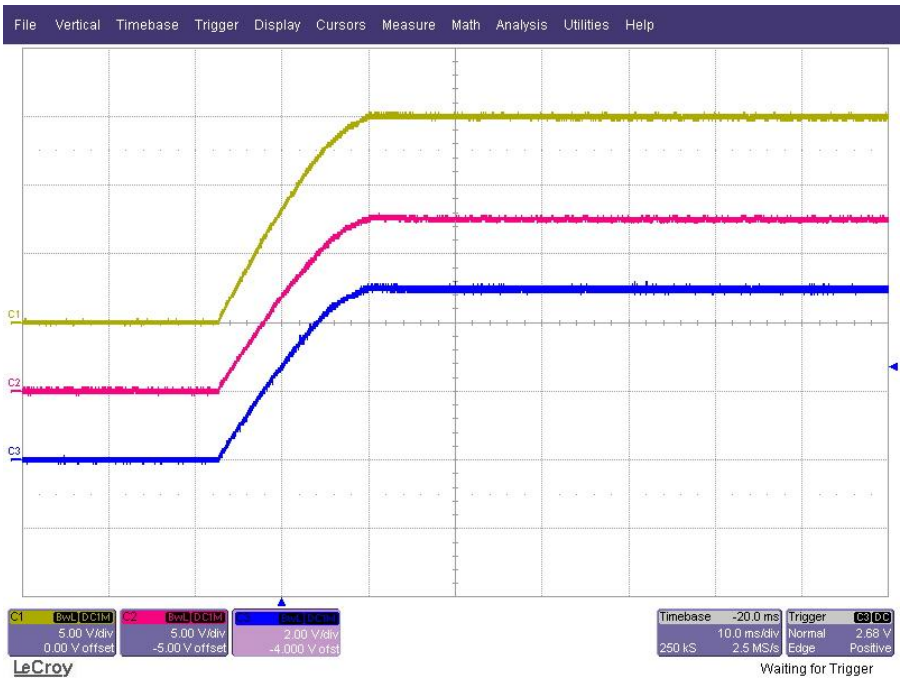
Bottom Side



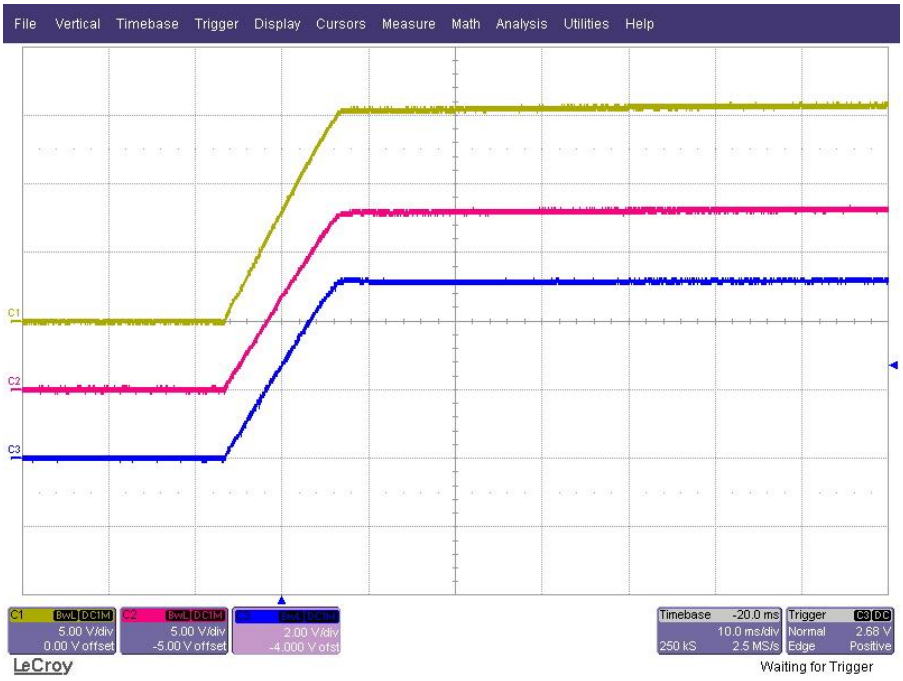
4 Startup

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

4.1 Start Up @ 220V_{AC}: 15V/0.25A, 12V/0.25A, 5V/0.1A.



4.2 Start Up @ 220V_{AC}: no load.



5 Turn off

The output voltages at turn off transient are shown in the image below at full load (15V/0.25A, 12V/0.25A, 5V/0.1A) and 220V_{AC}/50Hz input.

6 Cross regulation

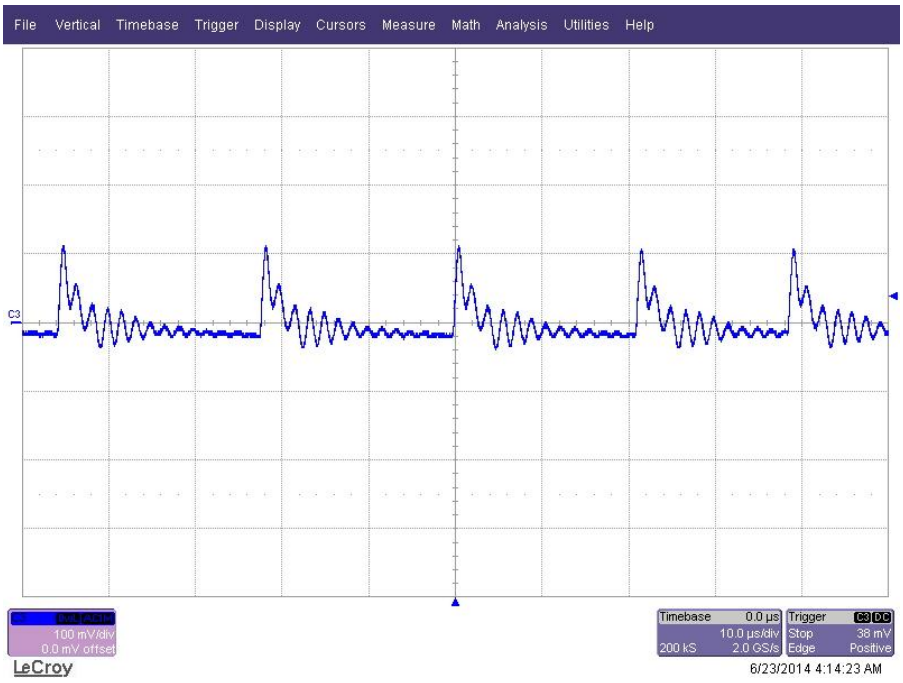
Output voltage cross regulation is tested at $220V_{AC}$/50Hz input.

I_{15V}(A)	I_{12V}(A)	I_{5V}(A)	V_{15V}(V)	V_{12V}(V)	V_{5V}(V)
0.25	0.25	0.1	14.93	12.32	4.92
0.25	0.25	0	14.89	12.29	5.05
0.25	0	0	**14.72**	12.69	5.08
0.25	0	0.1	14.75	12.65	4.85
0	0	0.1	15.38	12.51	**4.14**
0	0.25	0.1	**16.17**	12.33	4.9
0	0.25	0	15.99	12.29	**5.09**

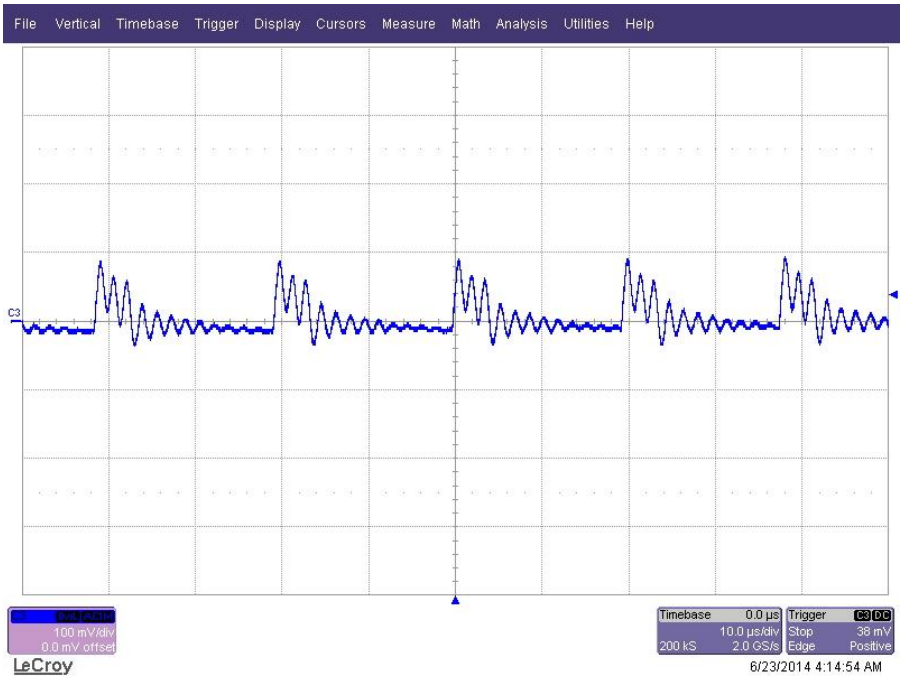
7 Output Ripple Voltages

The output ripple voltages are shown in the plots below at full load (15V/0.25A, 12V/0.25A and 5V/0.1A).

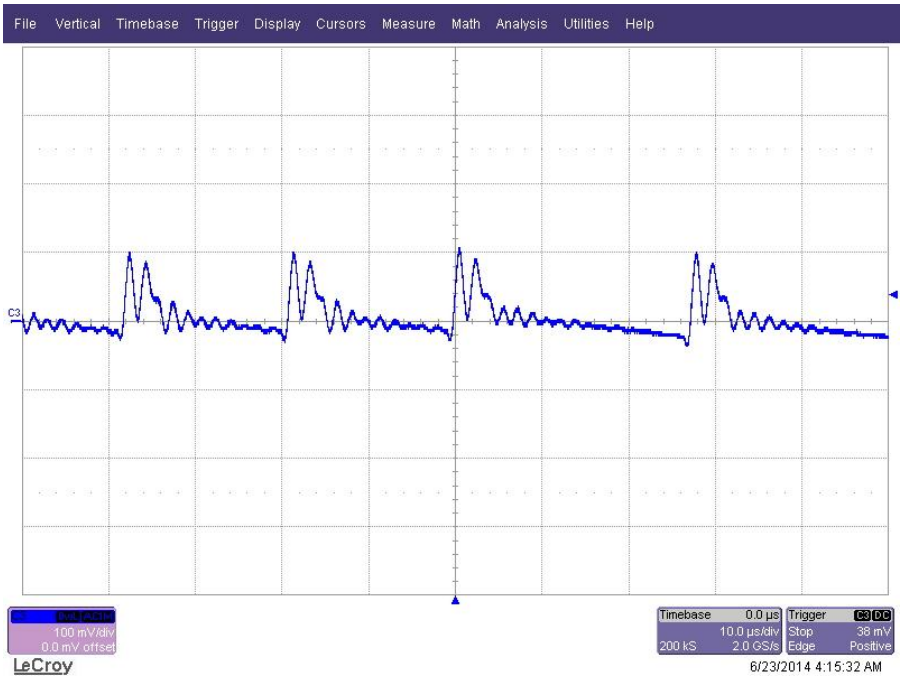
7.1 $15V_{ripple}$



7.2 $12V_{ripple}$



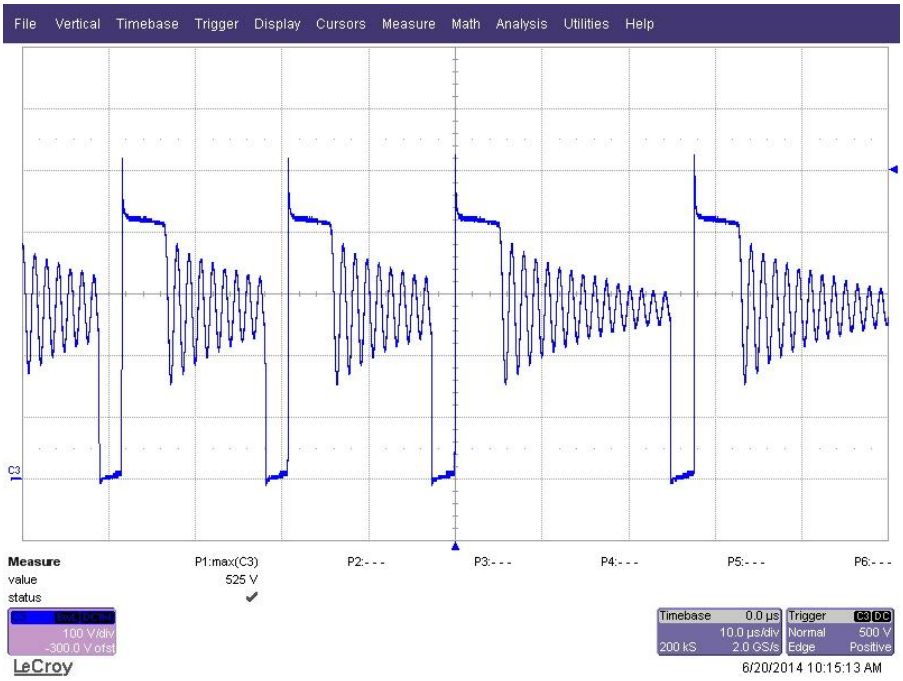
7.3 $5V_{ripple}$


File Vertical Timebase Trigger Display Cursors Measure Math Analysis Utilities Help
C3
100 mV/div
0.0 mV offset
Timebase 0.0 µs
10.0 µs/div
200 kS 2.0 GS/s
Trigger
Stop 38 mV
Edge Positive
LeCroy
6/23/2014 4:15:32 AM

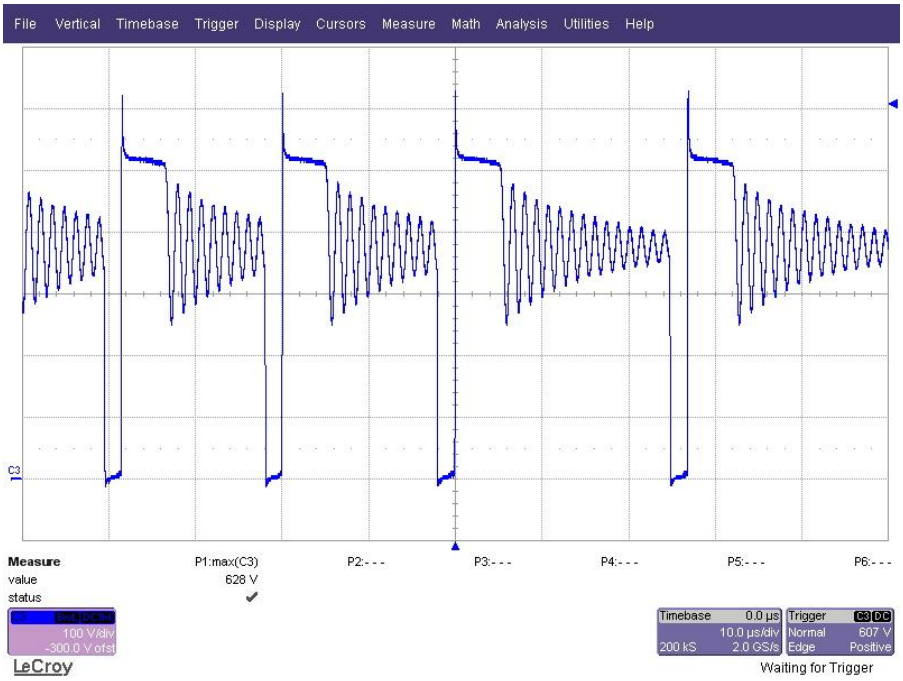
8 Switching Waveforms

The images below show key switching waveforms of PMP10267RevA. The waveforms are measured with 15V/0.25A, 12V/0.25A and 5V/0.1A full load.

8.1 Voltage at U1 pin 8 @ 195V_{ac}/60Hz



8.2 Voltage at U1 pin 8 @ 265V_{ac}/50Hz



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