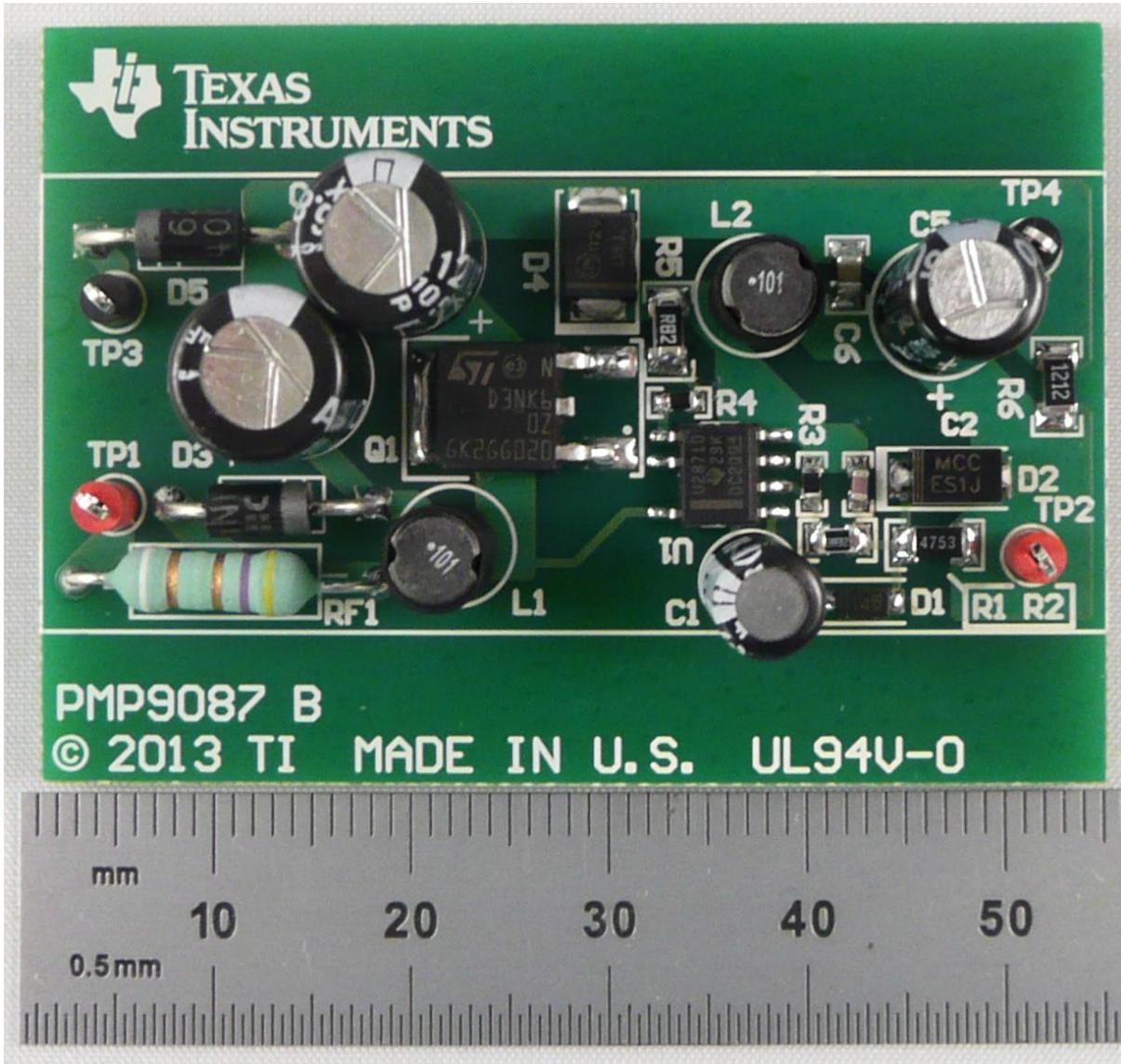


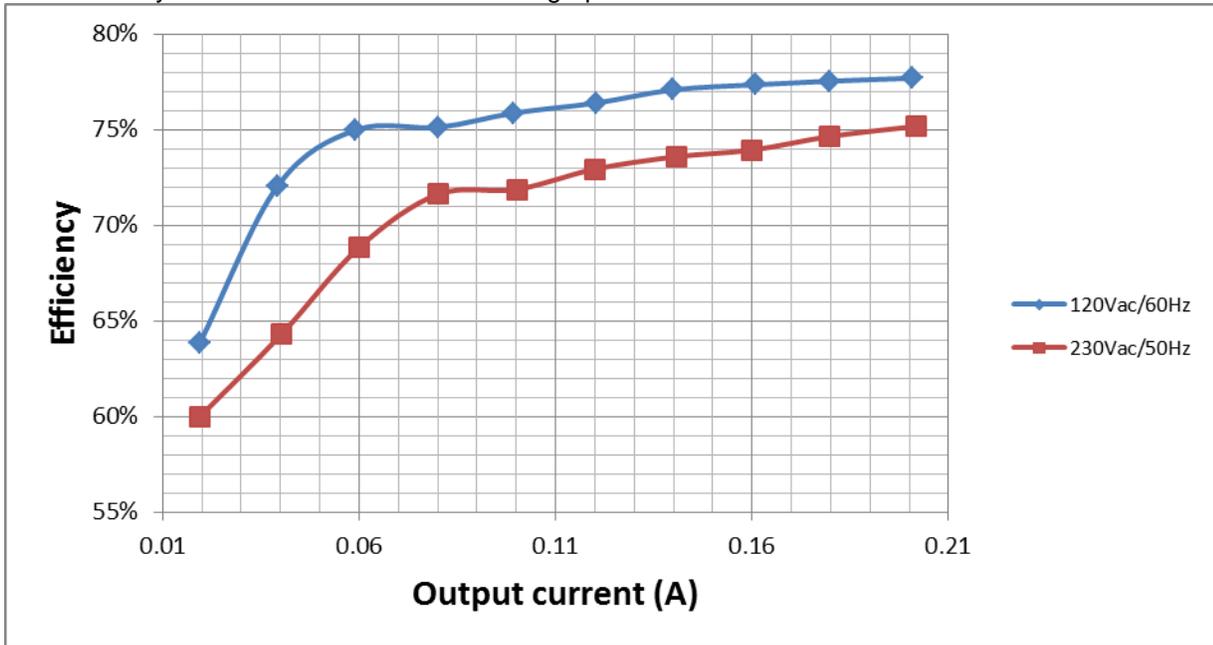
1 Photo

The photographs below show the PMP9087 Rev B assembly. This circuit was built on a PMP9087 Rev B PCB.



2 Converter Efficiency

The efficiency data is shown in the tables and graph below.



V_{in}=120V_{AC}/60Hz

V _{in} (V)	I _{in} (mA)	P _{in} (W)	V _{out} (V)	I _{out} (A)	P _{out} (W)	Losses(W)	Efficiency (%)
119.95	74.33	3.259	12.61	0.2008	2.532088	0.726912	77.70%
119.95	67.89	2.922	12.6	0.1798	2.26548	0.65652	77.53%
120	62.21	2.619	12.59	0.1609	2.025731	0.593269	77.35%
120.01	55.5	2.285	12.59	0.1399	1.761341	0.523659	77.08%
120.04	49.38	1.981	12.59	0.1202	1.513318	0.467682	76.39%
120.05	42.2	1.645	12.58	0.0992	1.247936	0.397064	75.86%
120.06	35.46	1.343	12.58	0.0802	1.008916	0.334084	75.12%
120.07	27.38	0.994	12.59	0.0592	0.745328	0.248672	74.98%
120.09	19.882	0.6877	12.61	0.0393	0.495573	0.192127	72.06%
120.11	11.834	0.3858	12.65	0.01947	0.246296	0.1395045	63.84%
120.11	0.905	0.03302	12.65	0	0	0.03302	0.00%

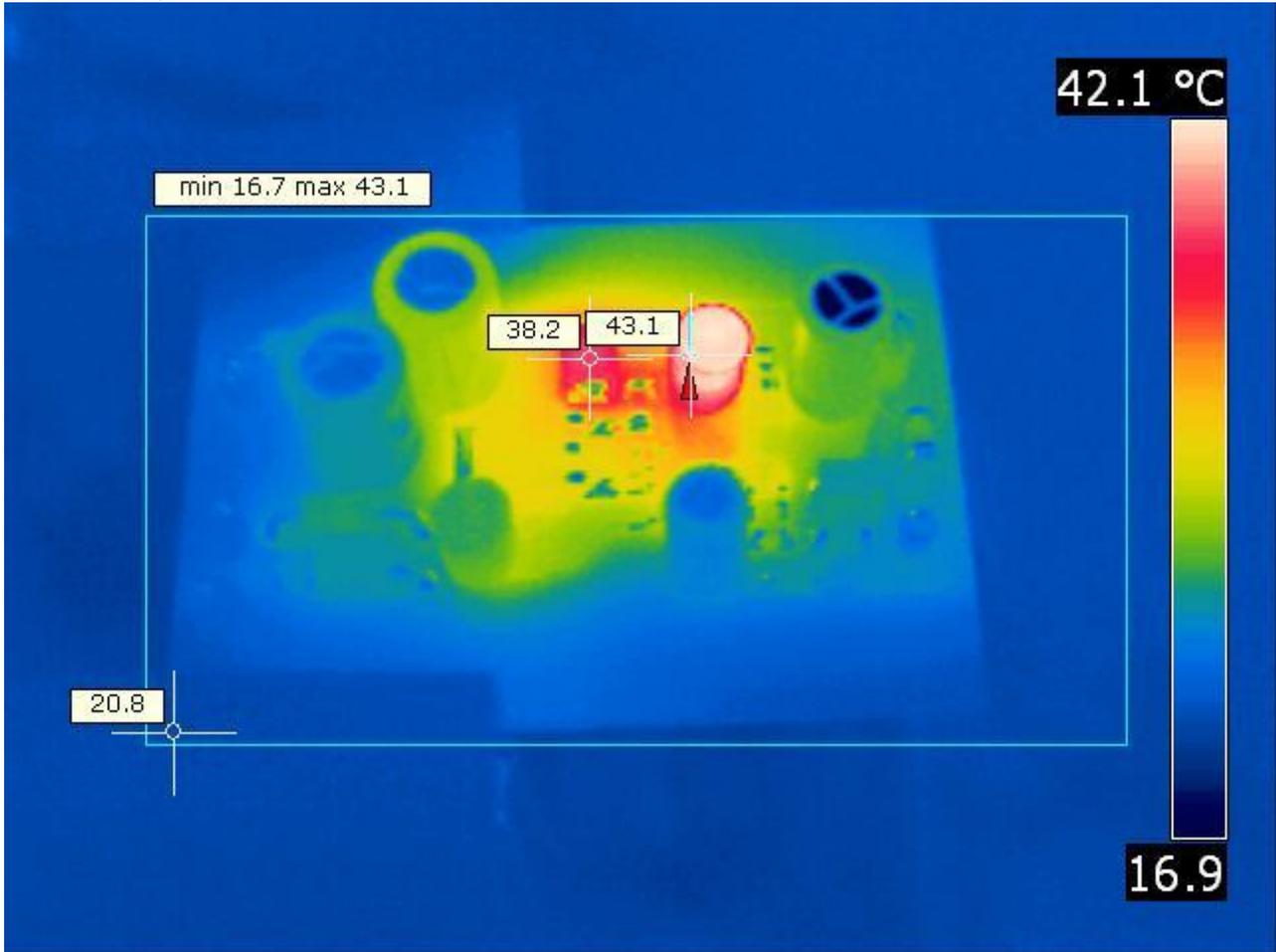
Vin=230V_{AC}/50Hz

Vin(V)	Iin(mA)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Losses(W)	Efficiency (%)
229.7	49.44	3.386	12.62	0.2017	2.545454	0.840546	75.18%
229.7	44.92	3.035	12.6	0.1798	2.26548	0.76952	74.65%
229.7	41.16	2.723	12.59	0.1599	2.013141	0.709859	73.93%
229.7	36.87	2.409	12.59	0.1408	1.772672	0.636328	73.59%
229.7	32.39	2.073	12.59	0.1201	1.512059	0.560941	72.94%
229.7	27.85	1.752	12.58	0.1001	1.259258	0.492742	71.88%
229.7	23.08	1.407	12.58	0.0801	1.007658	0.399342	71.62%
229.7	18.468	1.098	12.58	0.0601	0.756058	0.341942	68.86%
229.7	13.589	0.7885	12.61	0.0402	0.506922	0.281578	64.29%
229.7	7.112	0.4062	12.51	0.01948	0.243695	0.1625052	59.99%
229.8	0.6149	0.06584	12.66	0	0	0.06584	0.00%

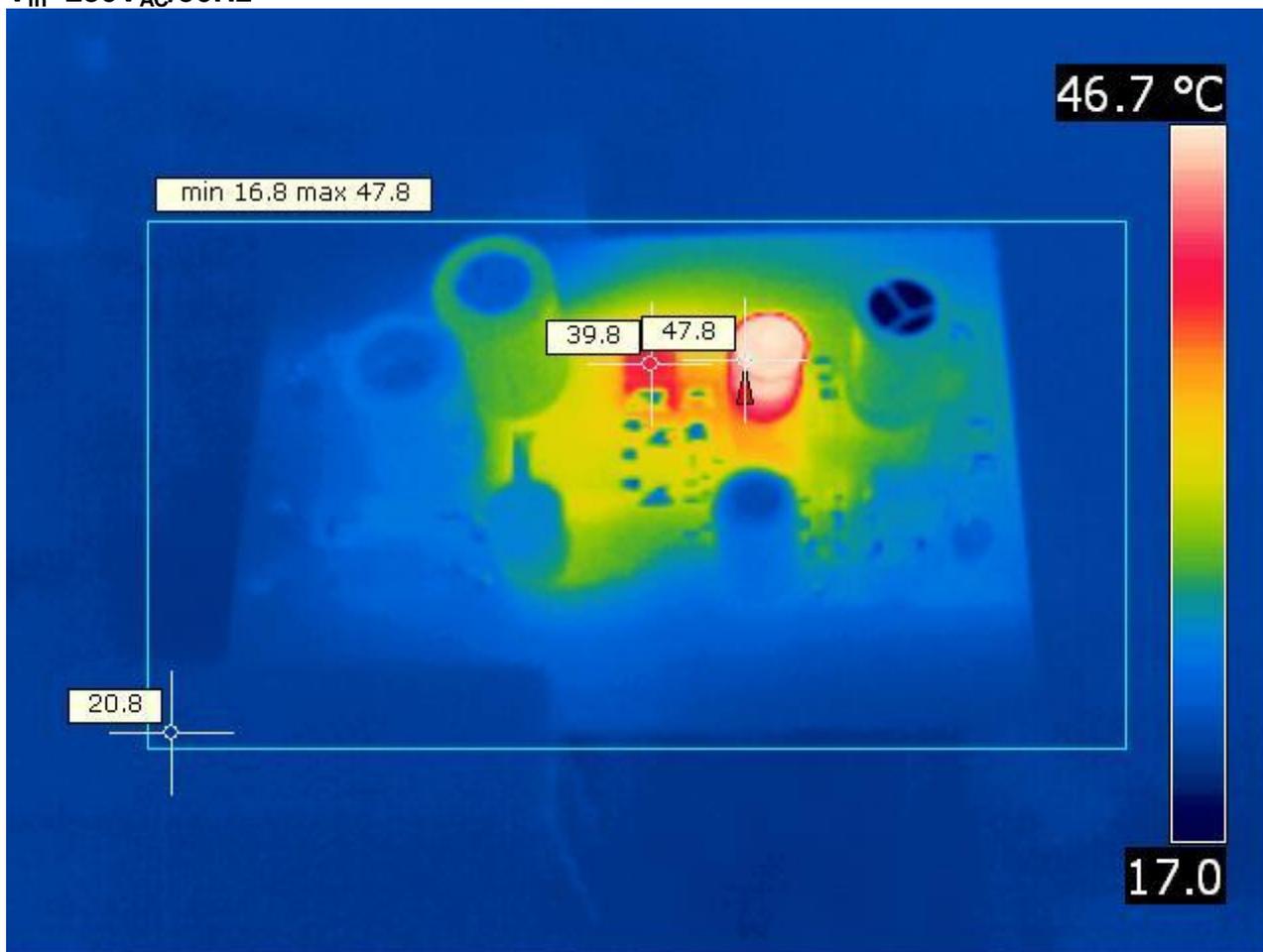
3 Thermal Images

The thermal images below show a top view and bottom view of the board under 120V_{ac}/60Hz and 230V_{ac}/50Hz input conditions. The ambient temperature was 20°C with no forced air flow. The output was at full load: 12V/0.2A.

V_{in}=120V_{AC}/60Hz



$V_{in}=230V_{AC}/50Hz$



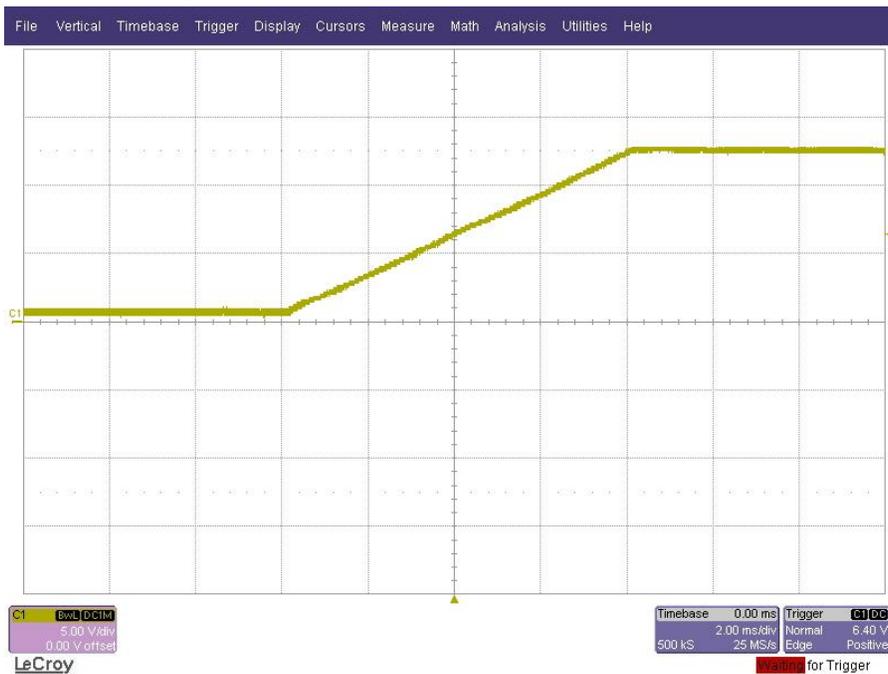
4 Startup Waveforms

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

4.1 Start Up @ 120V_{ac}: 12V/0.2A.



4.2 Start Up @ 120V_{ac}: no load.



5 Turn off

The output voltage at turn off transient is shown in the image below at full load (12V/0.2A) and 120V_{ac}/60Hz input.



6 Output Ripple Voltages

The output ripple voltages are shown in the plots below with 120V_{ac}/60Hz input.

6.1 Full load (12V/0.2A)



6.2 No load



7 Load Transient

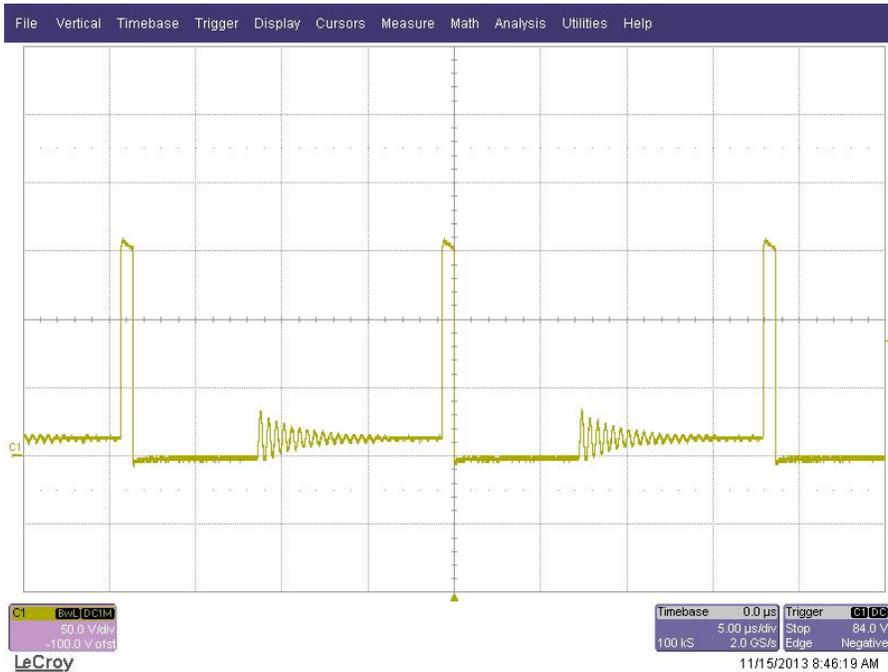
The image below shows $12V_{out}$ voltage response to a **0.1A** to **0.2A** load transient.



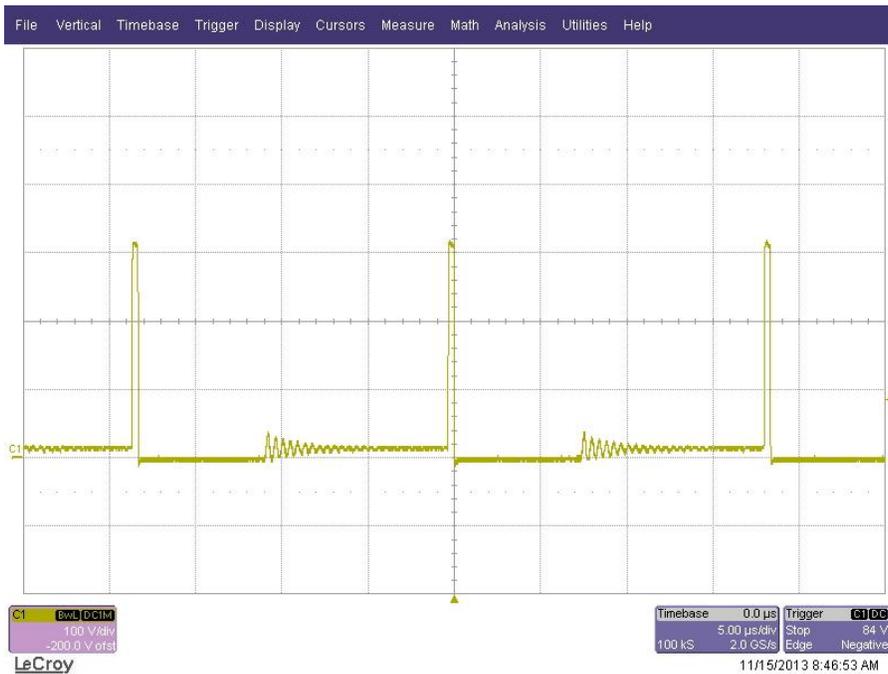
8 Switching Waveforms

The images below show key switching waveforms of PMP9087RevB. The waveforms are measured with 0.2A full load.

8.1 Diode D4 @ 120V_{ac}/60Hz



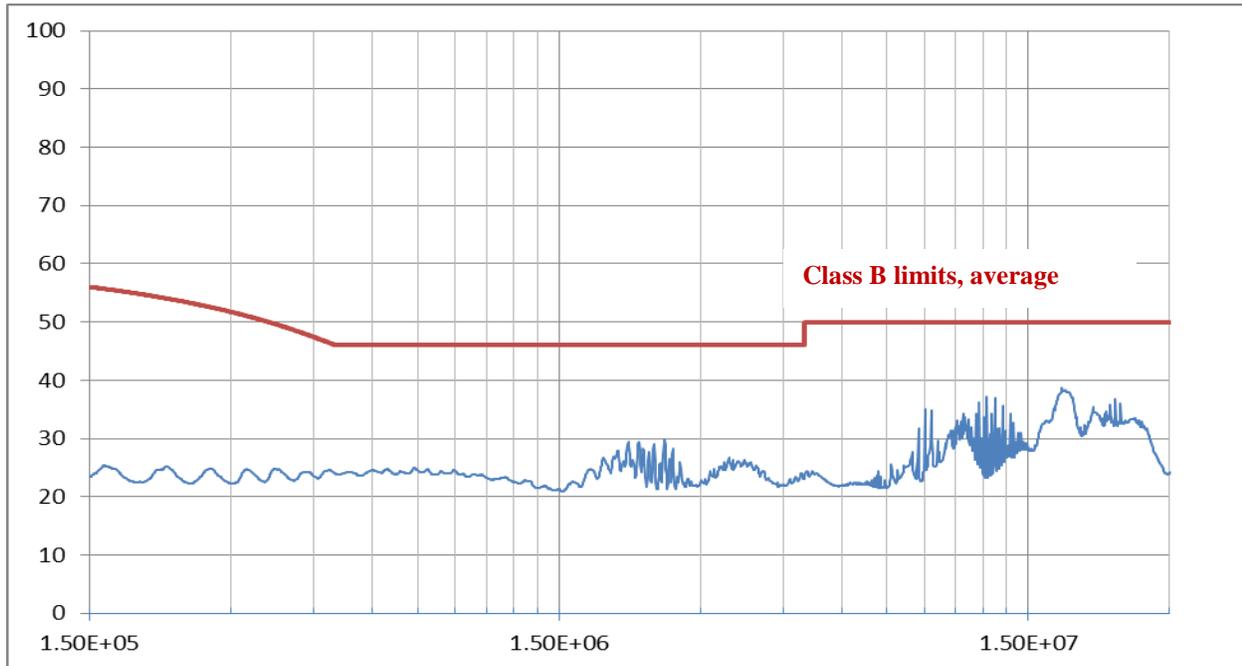
8.2 Diode D4 @ 230V_{ac}/50Hz



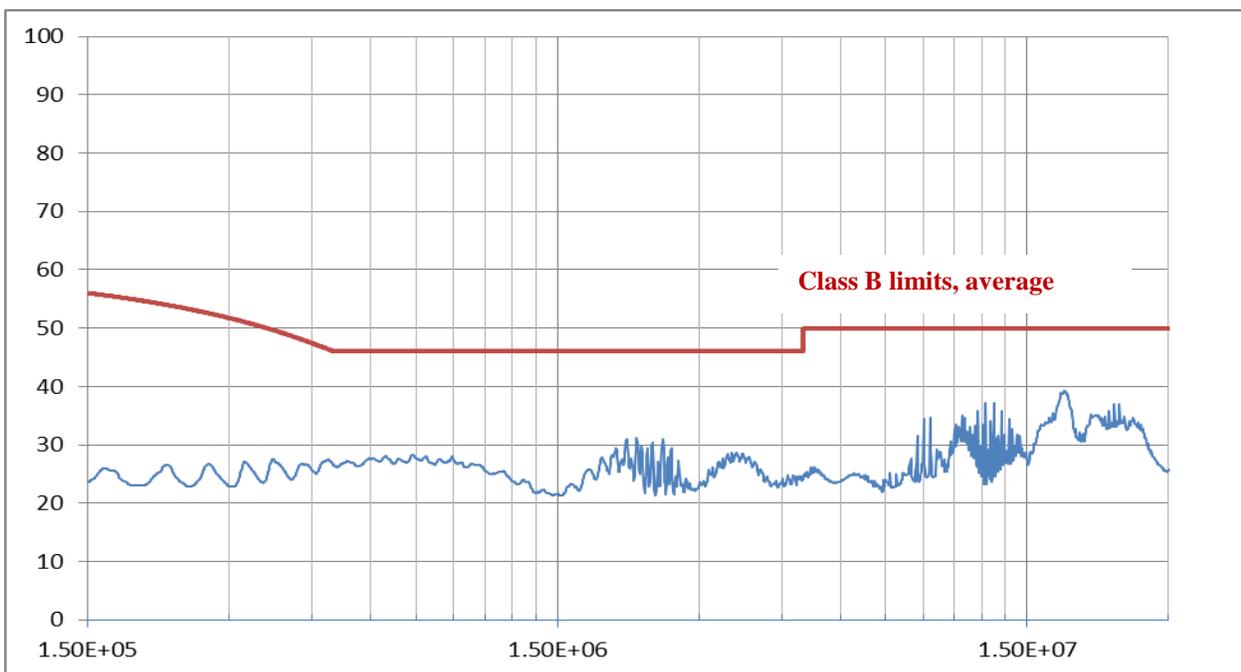
9 Conducted EMI:

Conducted EMI of PMP9087 Rev B was tested with 12V/0.2A load. The following curves show the average scan results. PMP9087 Rev B is not connected to Earth ground during the test. The board is supplied by California Instruments 1251P with an isolated transformer.

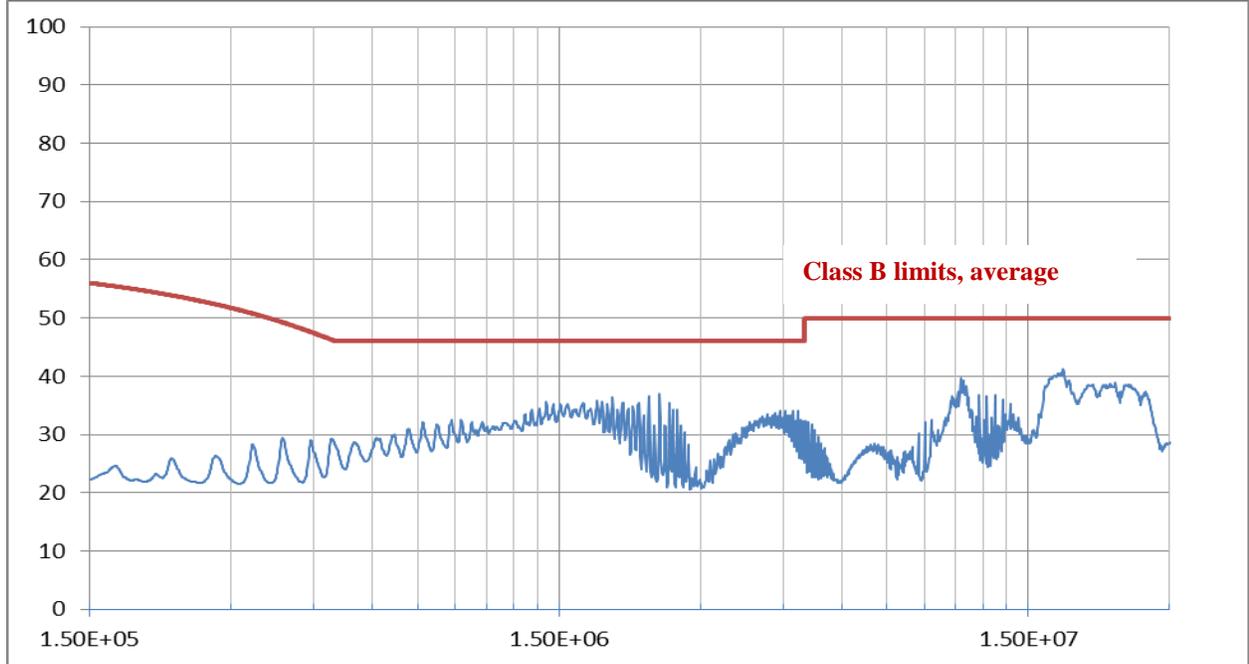
9.1 120V_{AC}/60Hz, Neutral



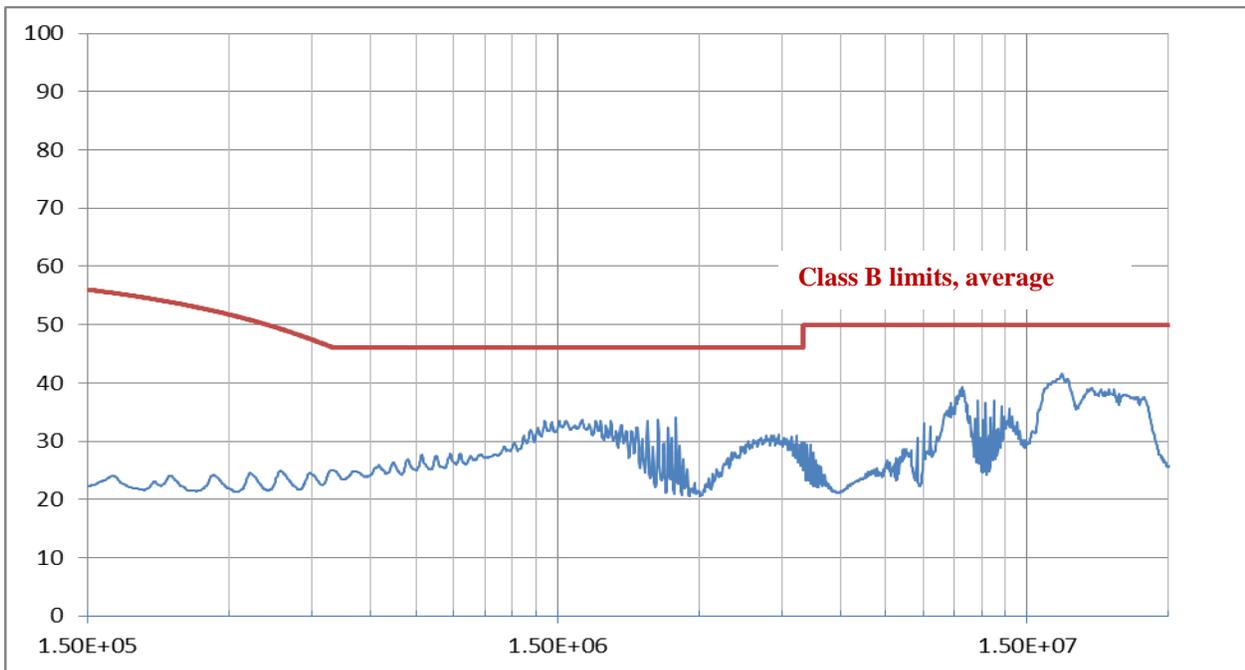
9.2 120V_{AC}/60Hz, Line



9.3 230V_{AC}/50Hz, Neutral



9.4 230V_{AC}/50Hz, Line



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