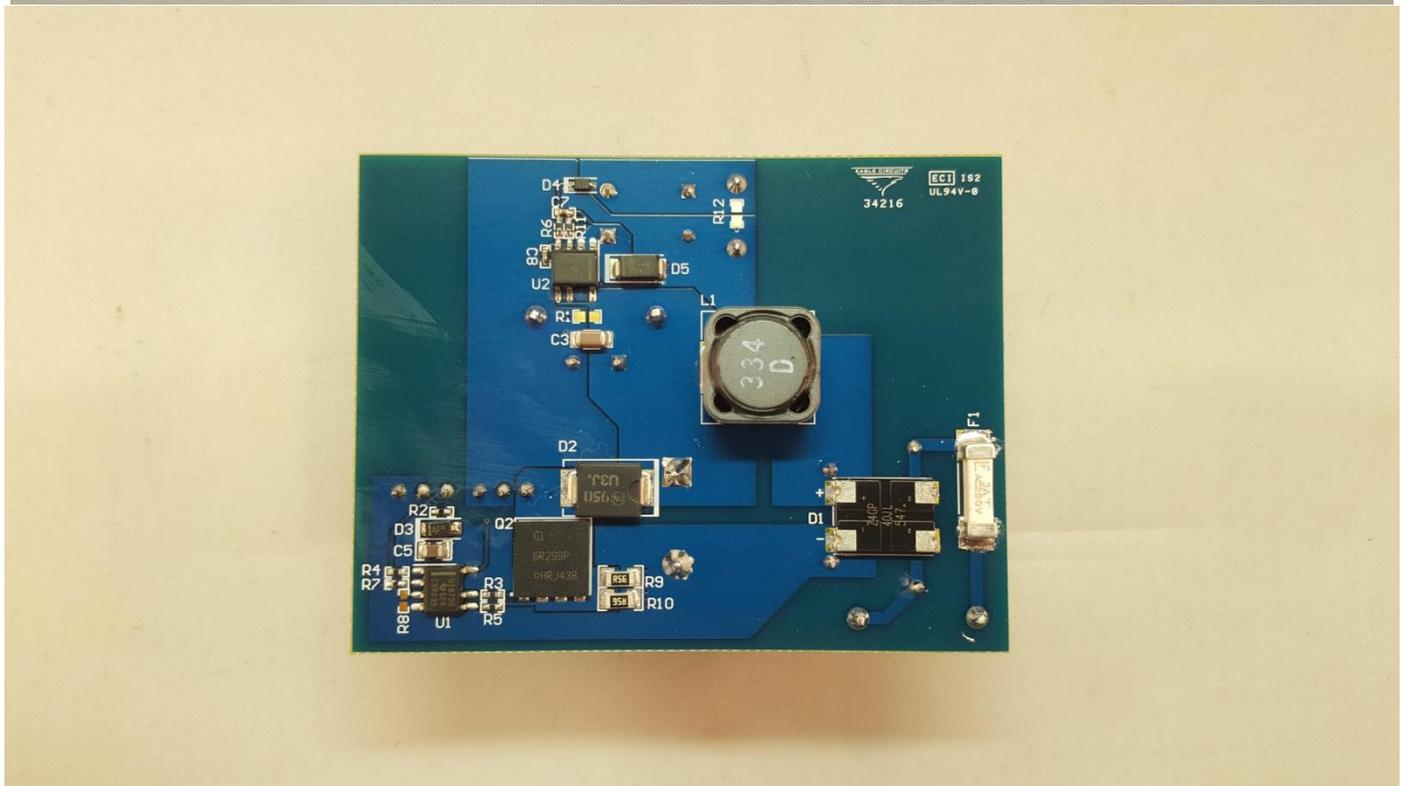
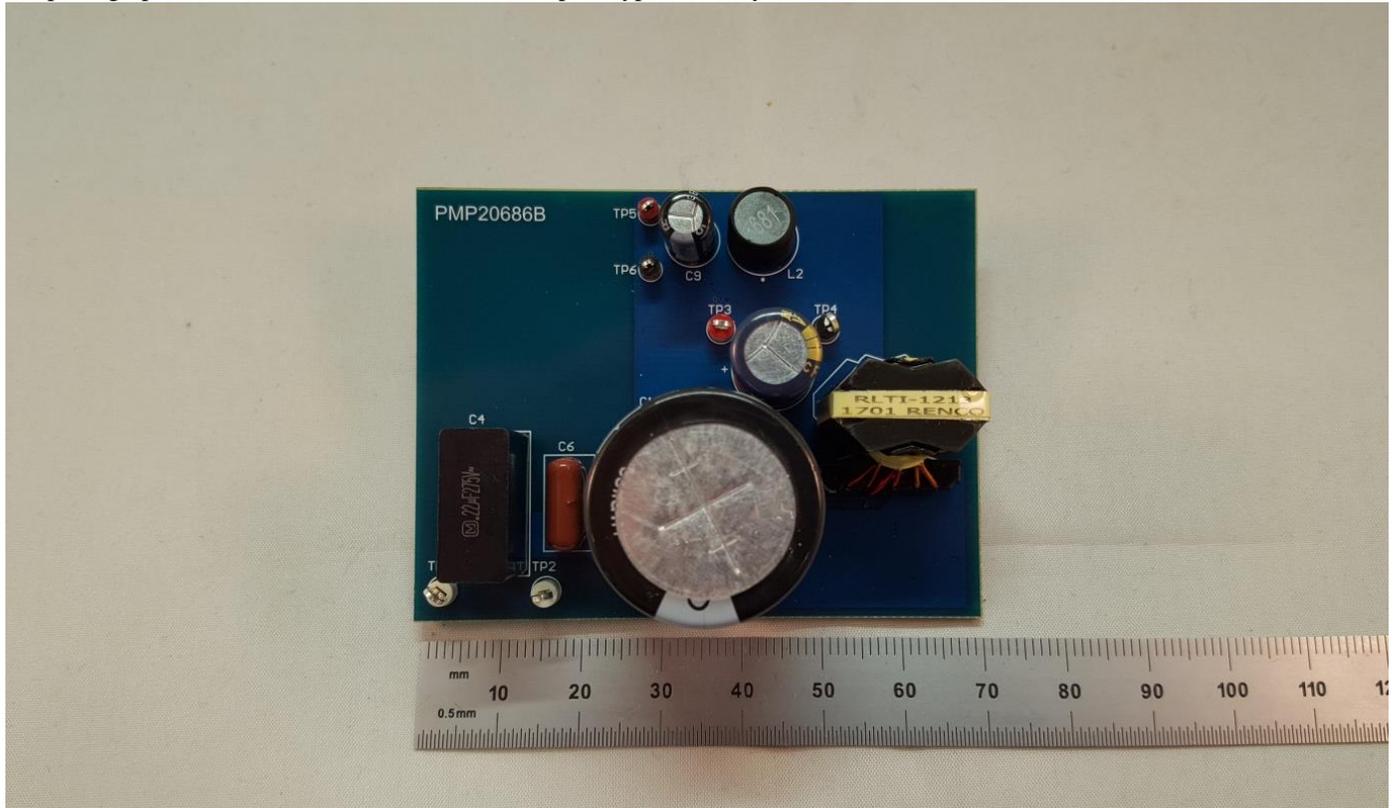


1 Photos

The photographs below show the PMP20686 Rev B prototype assembly.



2 Standby Power

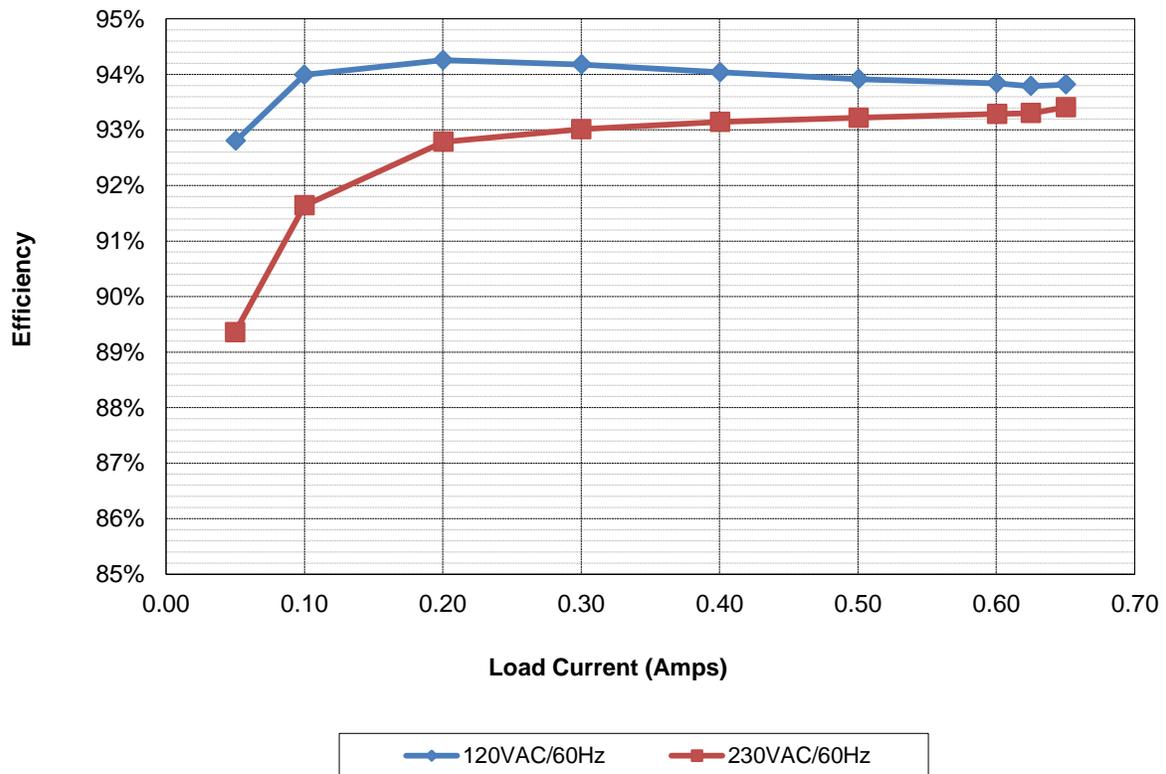
Measured with 0A load on the 80V output, and with a Pre-load of 20.25 kOhm on the 12V output

No Load	Pin AC (W)
120VAC/60Hz	0.035
230VAC/50Hz	0.045

3 Efficiency

3.1 Efficiency 80Vout

The efficiency measurements below were measured from the AC input to TP3/TP4. An external 20.25kOhm load was placed on the 12V rail.



120VAC/60Hz**Sweep Load on 80V, Pre-load 20250 Ohm on 12V**

Iout (80V)	Vout (80V)	Iout (12V)	Vout (12V)	Vin (V)	Iin (A)	Pin (W)	PF	Pout (W)	Losses (W)	Efficiency
0.000	77.900	0.001	14.500	120.1	0.021	0.035	0.021	0.00	0.03	0.0%
0.051	77.510	0.001	14.500	120.1	0.100	4.240	0.354	3.93	0.31	92.8%
0.100	77.400	0.001	14.500	120.1	0.178	8.255	0.386	7.76	0.50	94.0%
0.200	77.360	0.001	14.510	120.1	0.328	16.453	0.418	15.51	0.94	94.3%
0.300	77.170	0.001	14.510	120.1	0.469	24.630	0.437	23.20	1.43	94.2%
0.400	77.160	0.001	14.510	120.1	0.610	32.870	0.448	30.91	1.96	94.0%
0.501	77.170	0.001	14.510	120.1	0.751	41.150	0.456	38.65	2.50	93.9%
0.601	77.220	0.001	14.510	120.1	0.881	49.430	0.467	46.39	3.04	93.8%
0.625	77.200	0.001	14.510	120.1	0.911	51.460	0.470	48.26	3.20	93.8%
0.650	77.200	0.001	14.510	120.1	0.941	53.530	0.476	50.22	3.31	93.8%

Sweep Load on 12V, No Load on 80V

0.000	77.900	0.001	14.500	120.1	0.021	0.035	0.021	0.00	0.03	0.0%
0.000	77.850	0.010	12.310	120.1	0.022	0.168	0.068	0.12	0.04	73.4%
0.000	77.870	0.020	12.180	120.1	0.023	0.320	0.118	0.24	0.08	76.2%
0.000	77.830	0.030	12.180	120.1	0.026	0.473	0.162	0.37	0.11	77.3%
0.000	77.800	0.040	12.160	120.1	0.028	0.636	0.191	0.49	0.15	76.5%
0.000	77.740	0.050	12.150	120.1	0.031	0.795	0.217	0.61	0.19	76.4%

230VAC/50Hz**Sweep Load on 80V, Pre-load 20250 Ohm on 12V**

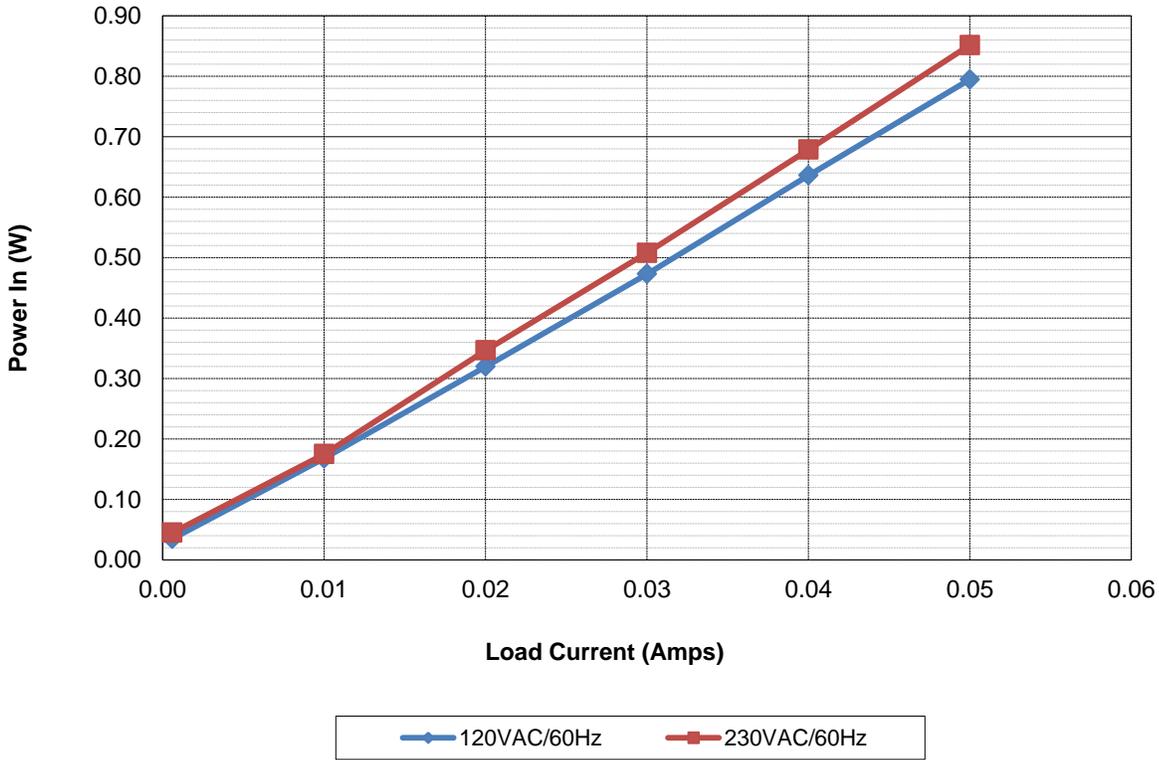
Iout (80V)	Vout (80V)	Iout (12V)	Vout (12V)	Vin (V)	Iin (A)	Pin (W)	PF	Pout (W)	Losses (W)	Efficiency
0.000	78.100	0.001	14.500	230.2	0.031	0.045	0.014	0.00	0.05	0.0%
0.050	77.610	0.001	14.510	230.2	0.072	4.359	0.265	3.90	0.46	89.4%
0.100	77.490	0.001	14.520	230.2	0.117	8.487	0.315	7.78	0.71	91.6%
0.201	77.230	0.001	14.520	230.2	0.204	16.709	0.356	15.50	1.21	92.8%
0.300	77.260	0.001	14.520	230.2	0.287	24.950	0.377	23.21	1.74	93.0%
0.401	77.310	0.001	14.520	230.2	0.369	33.260	0.391	30.98	2.28	93.1%
0.501	77.350	0.001	14.520	230.2	0.450	41.55	0.401	38.73	2.82	93.2%
0.601	77.400	0.001	14.520	230.2	0.530	49.85	0.409	46.50	3.35	93.3%
0.625	77.380	0.001	14.520	230.2	0.550	51.85	0.410	48.38	3.47	93.3%
0.651	77.360	0.001	14.520	230.2	0.571	53.890	0.410	50.34	3.55	93.4%

Sweep Load on 12V, No Load on 80V

0.000	78.100	0.001	14.500	230.2	0.031	0.045	0.014	0.00	0.05	0.0%
0.000	78.050	0.010	12.300	230.2	0.032	0.175	0.032	0.12	0.05	70.3%
0.000	77.970	0.020	12.180	230.2	0.033	0.347	0.053	0.24	0.10	70.3%
0.000	78.060	0.030	12.180	230.2	0.034	0.508	0.072	0.37	0.14	71.9%
0.000	78.050	0.040	12.160	230.2	0.035	0.679	0.092	0.49	0.19	71.7%
0.000	78.010	0.050	12.150	230.2	0.036	0.852	0.108	0.61	0.24	71.3%

3.2 12V Output Power Consumption

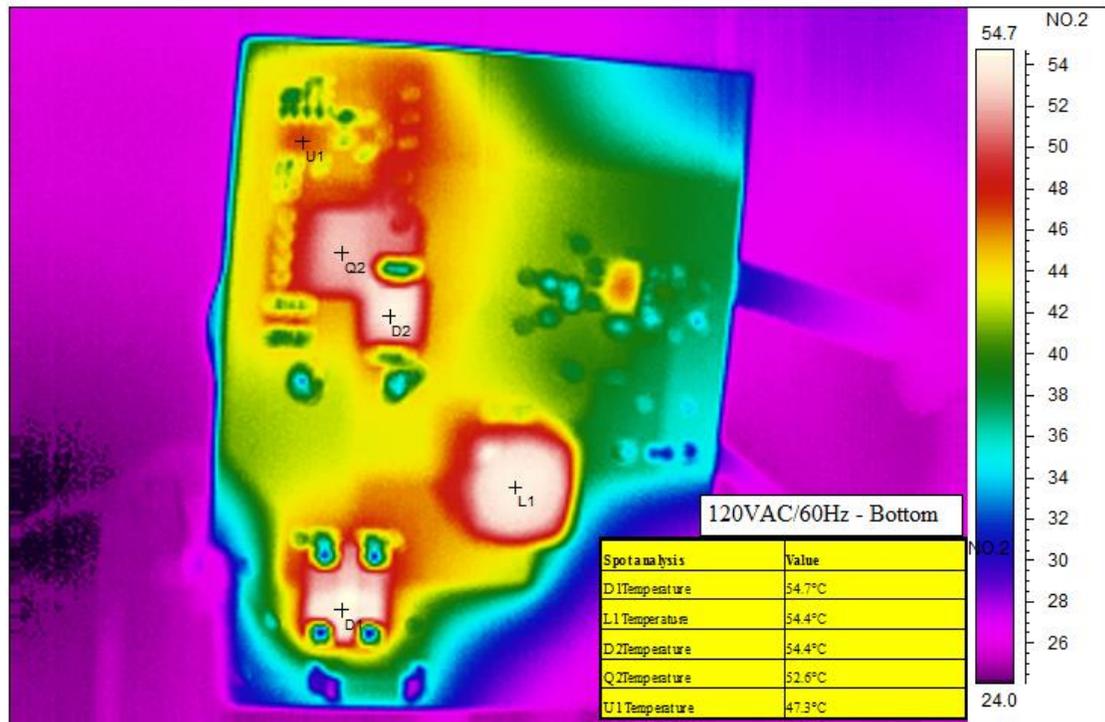
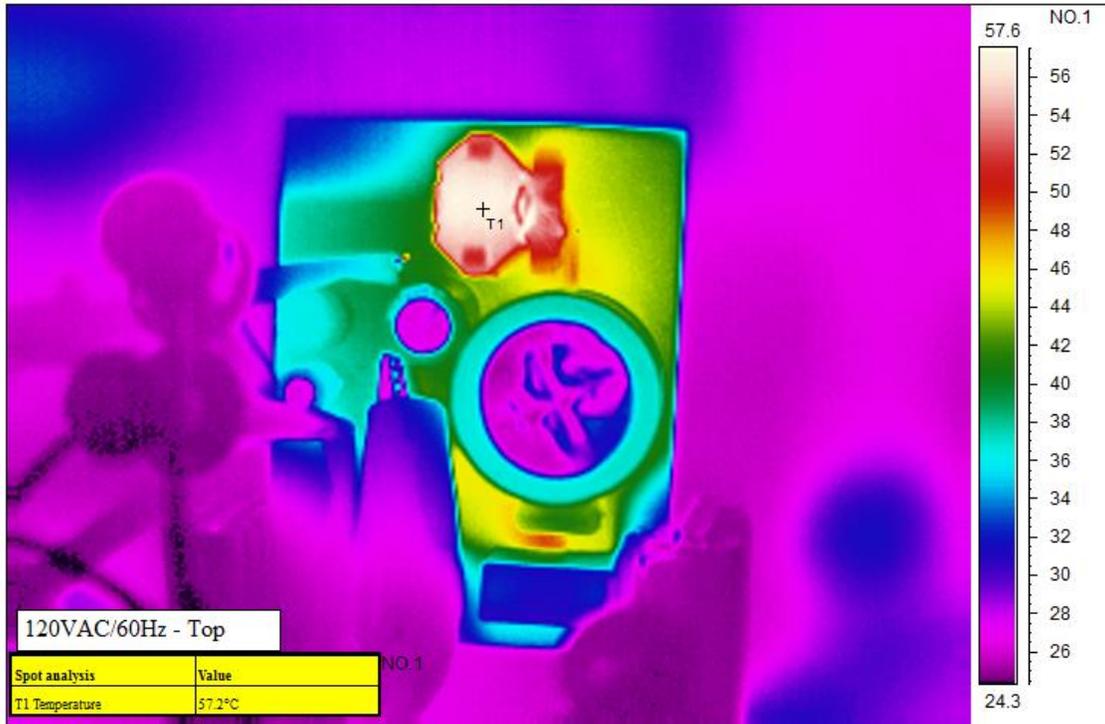
The graph below shows the System Power In vs. Load Current when the 12V output is swept from the minimum preload of 20.25kOhms (0.5mA), up to 248Ohm (50mA). During this sweep, the 80V output is not loaded. The numerical results are shown in the table above.



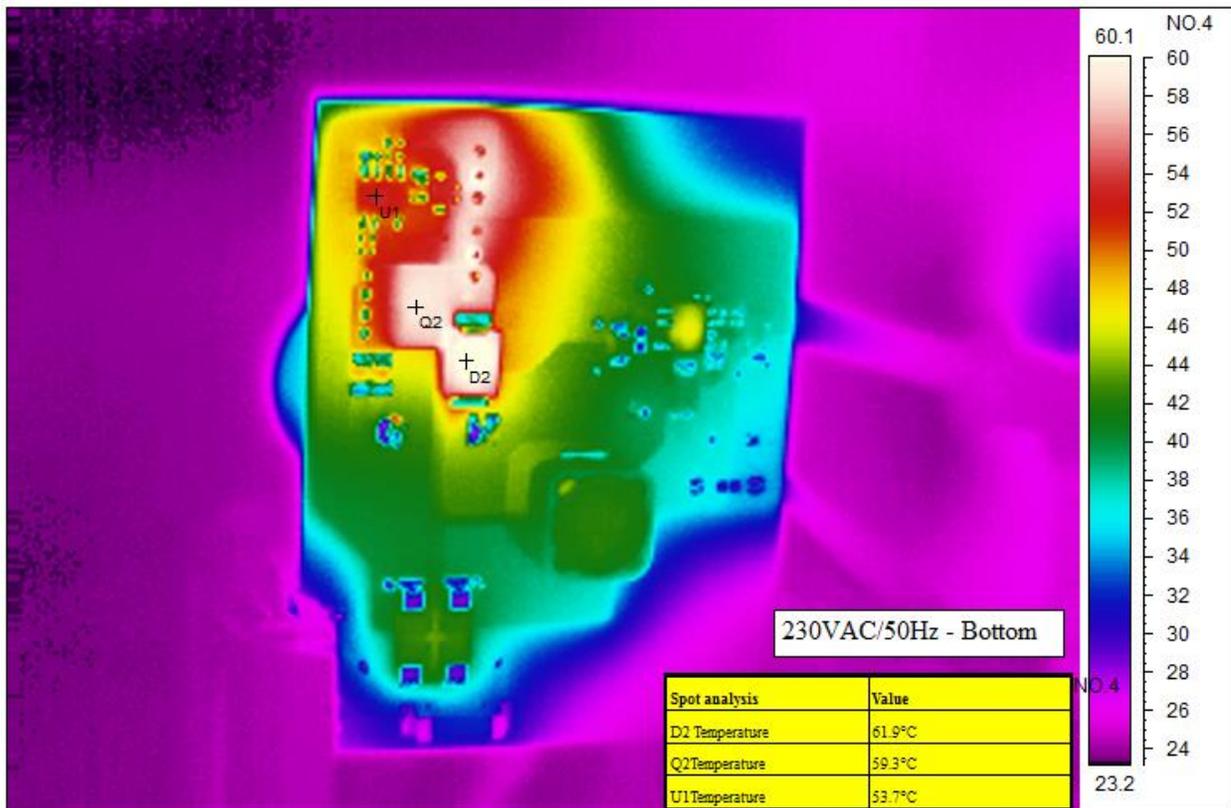
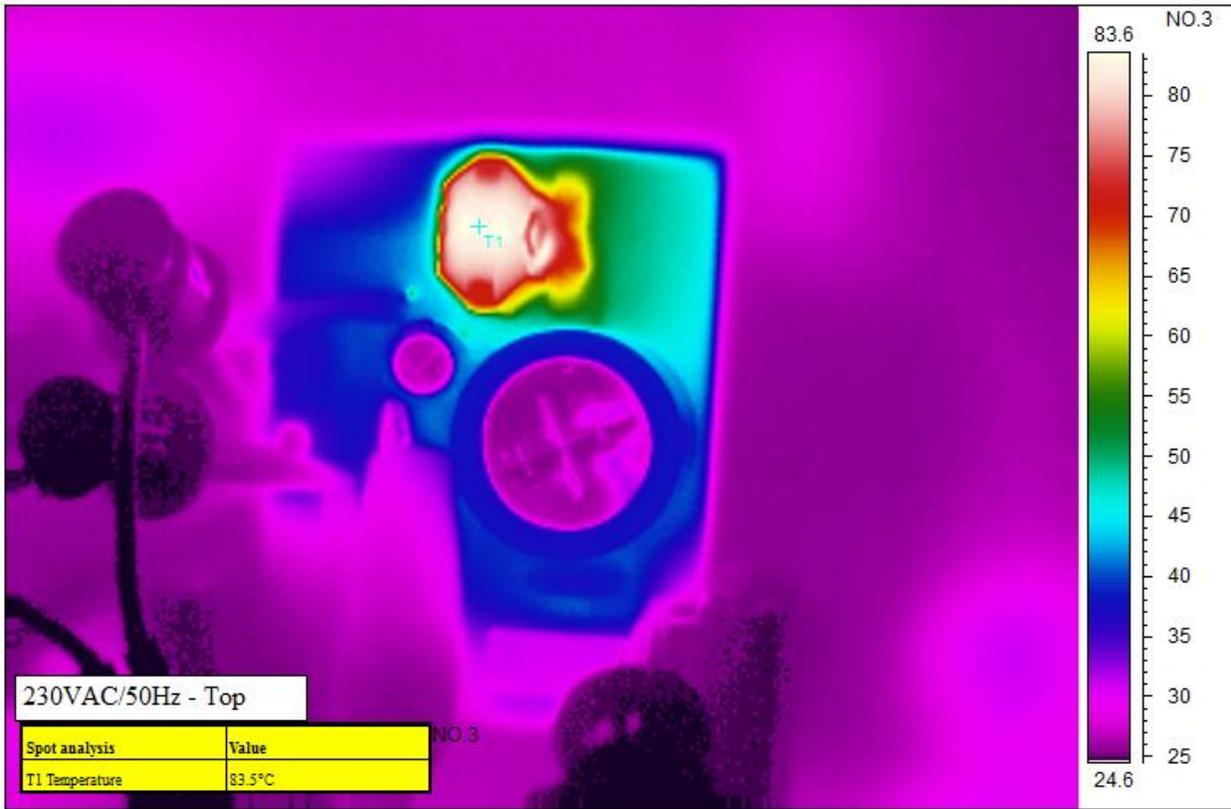
4 Thermal Images

The thermal images below show the 80V output fully loaded at 50W, the 12V output is fully loaded at 600mW. The ambient temperature was 25°C, with no airflow.

4.1 120VAC/60Hz

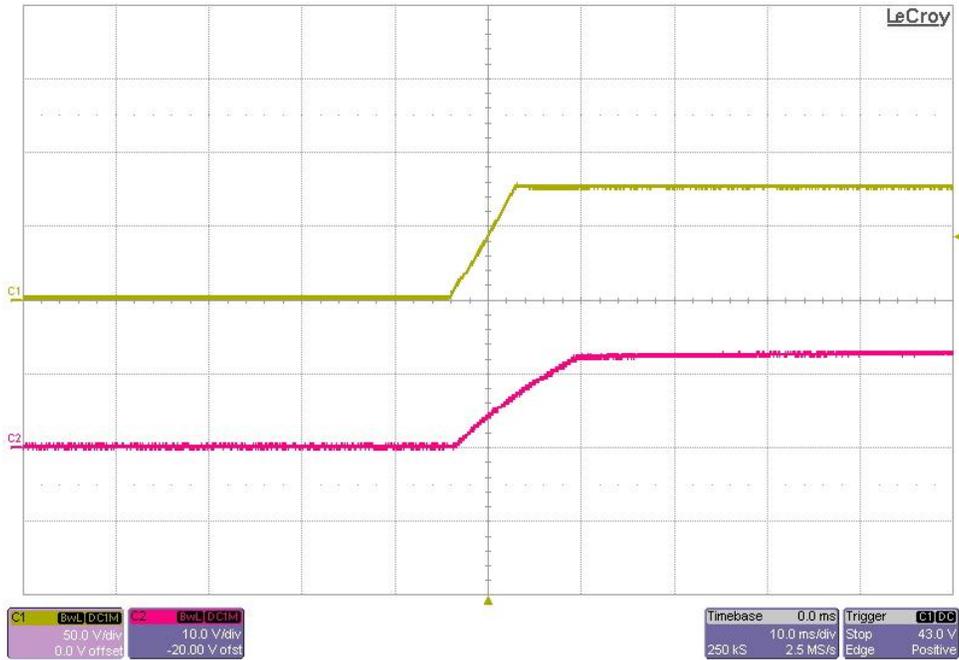


4.2 230VAC/50Hz



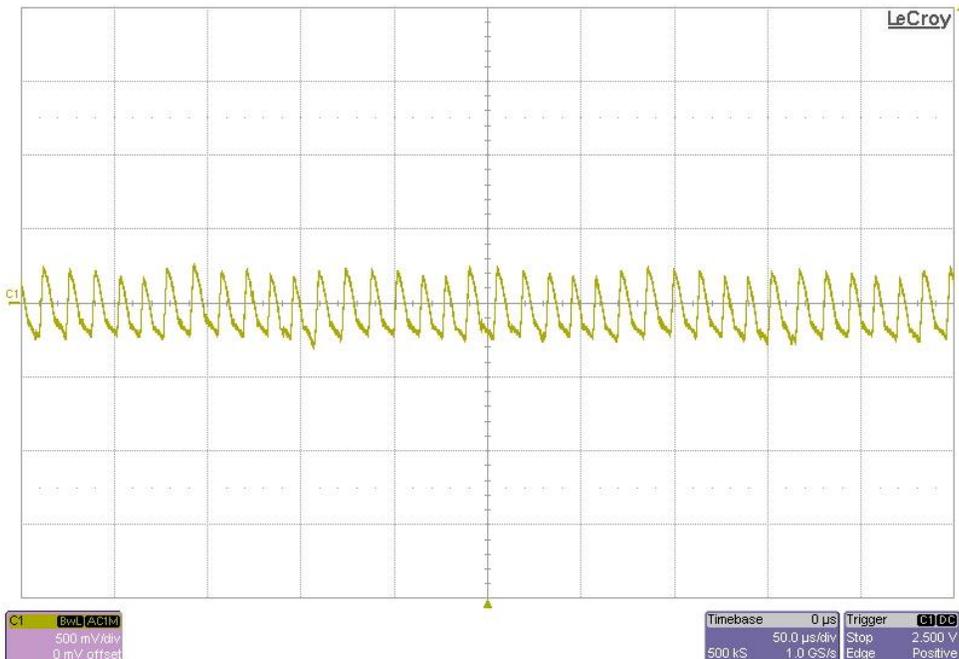
5 Startup

The image below shows the output voltage of 80V (Channel 1, top) at TP3/TP4 during startup with no external load. The 12V output is shown in Channel 2.

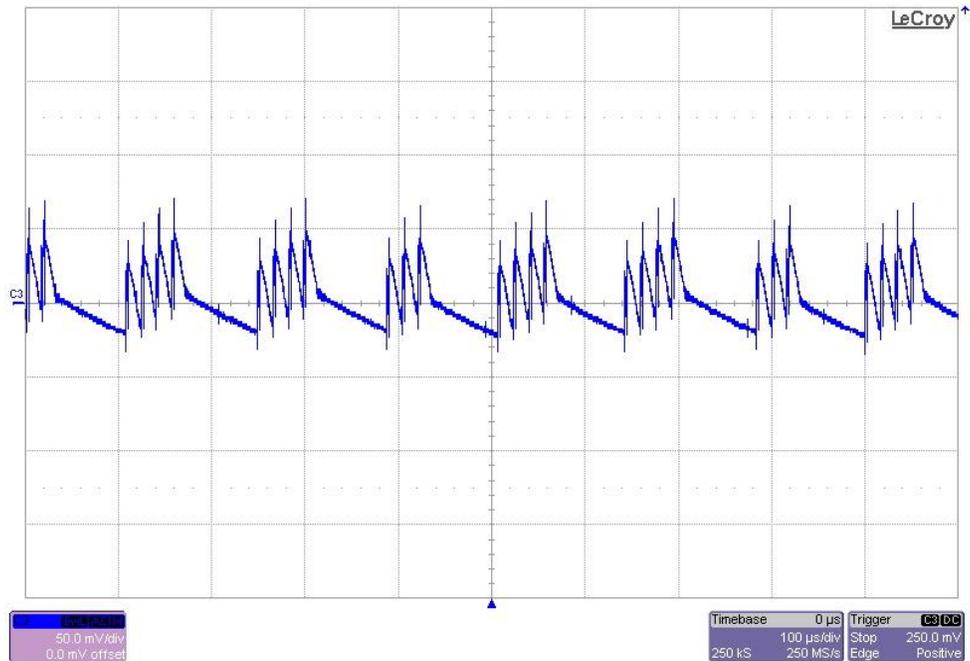


6 Output Ripple Voltage

6.1 230VAC/50Hz – 80V@50W



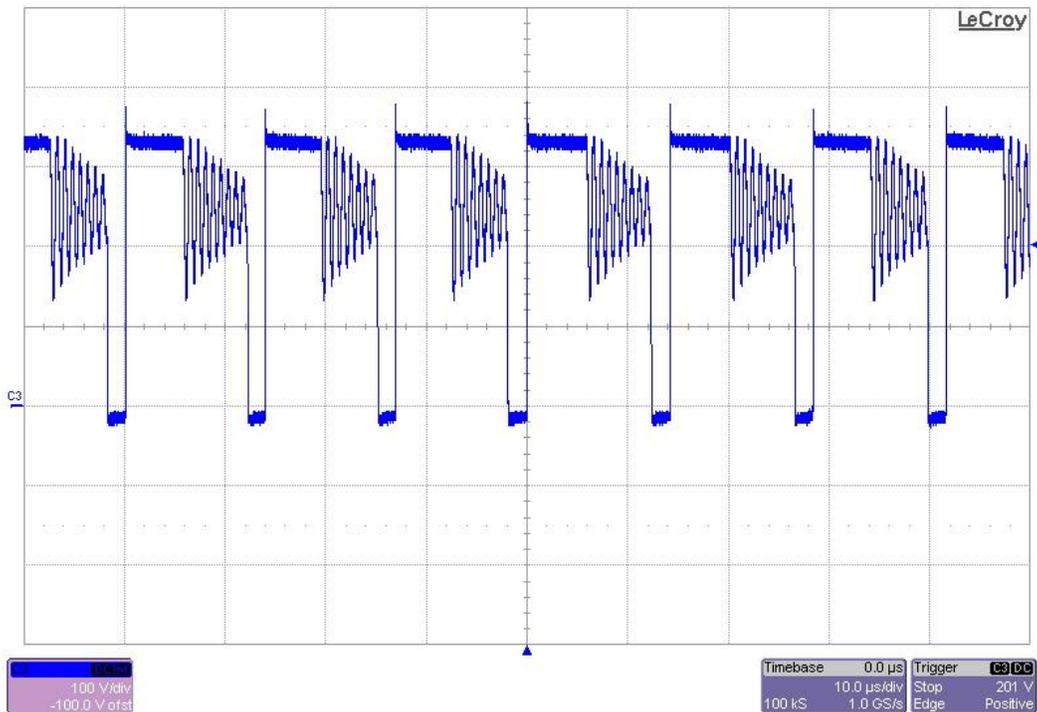
6.2 230VAC/50Hz – 12V@50mA



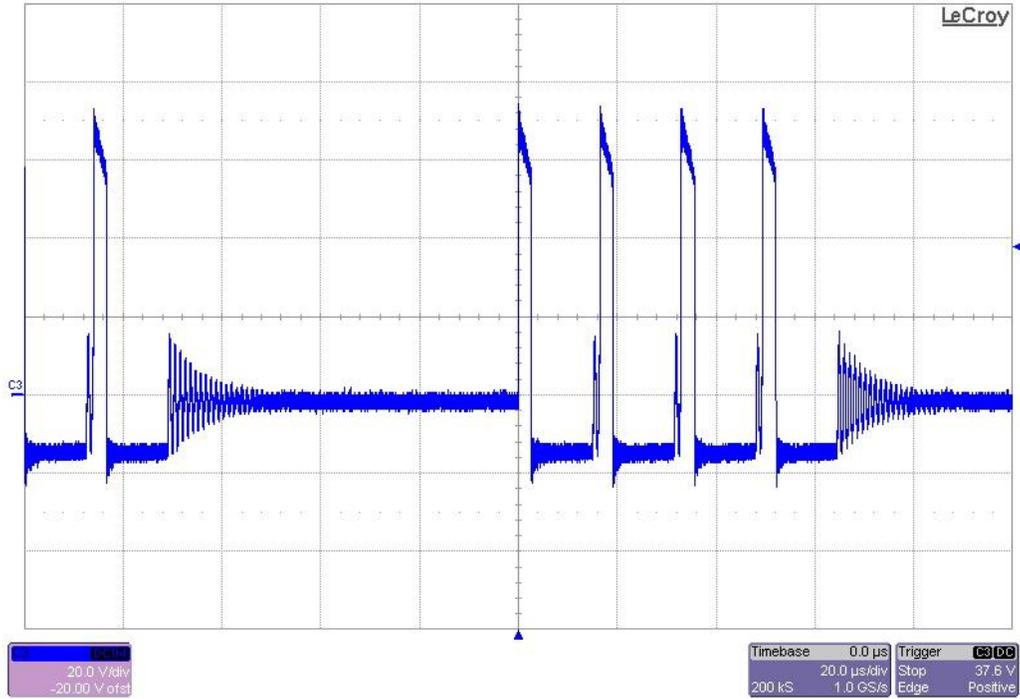
7 Switching Waveforms

The input was 265VAC/50Hz, and the outputs were fully loaded.

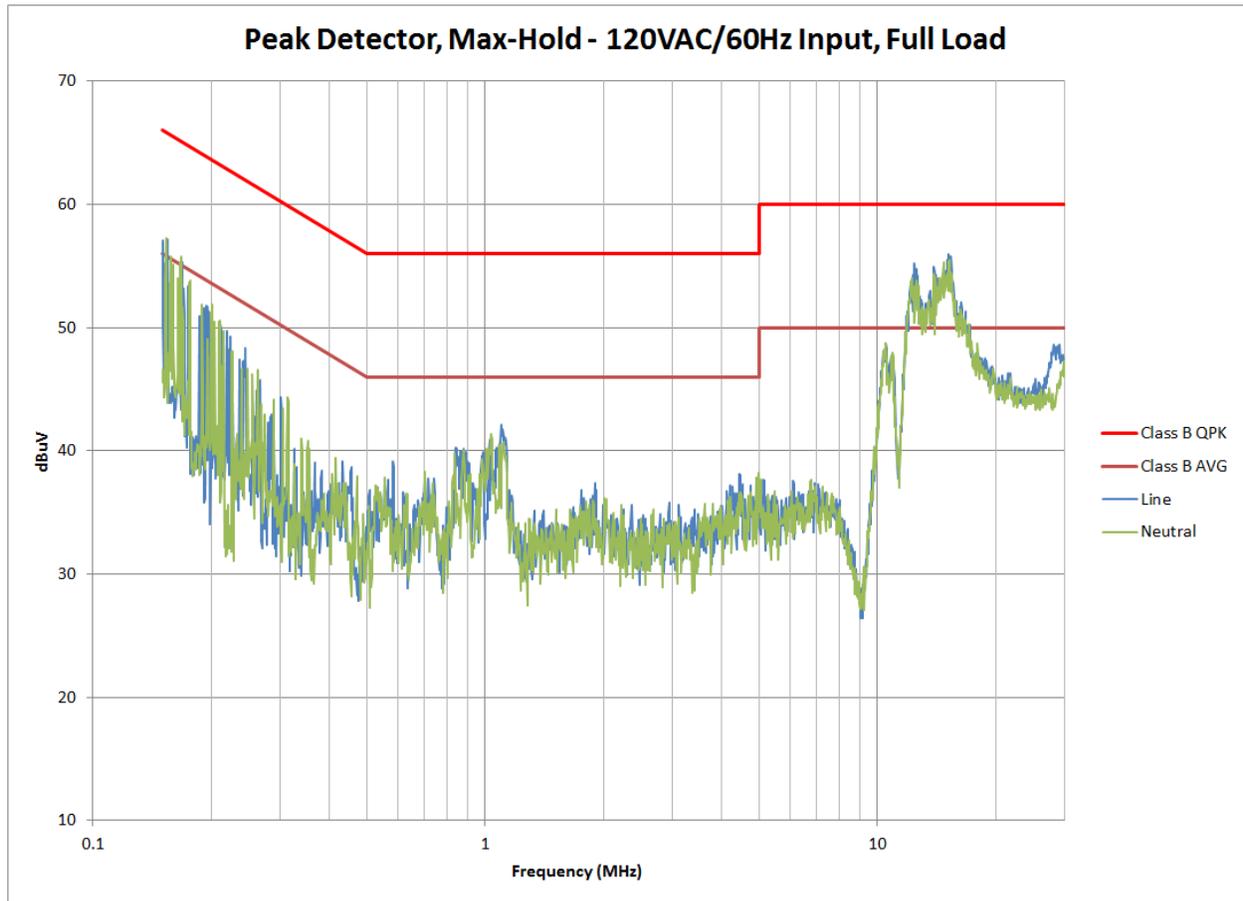
7.1 80Vout, Switch node

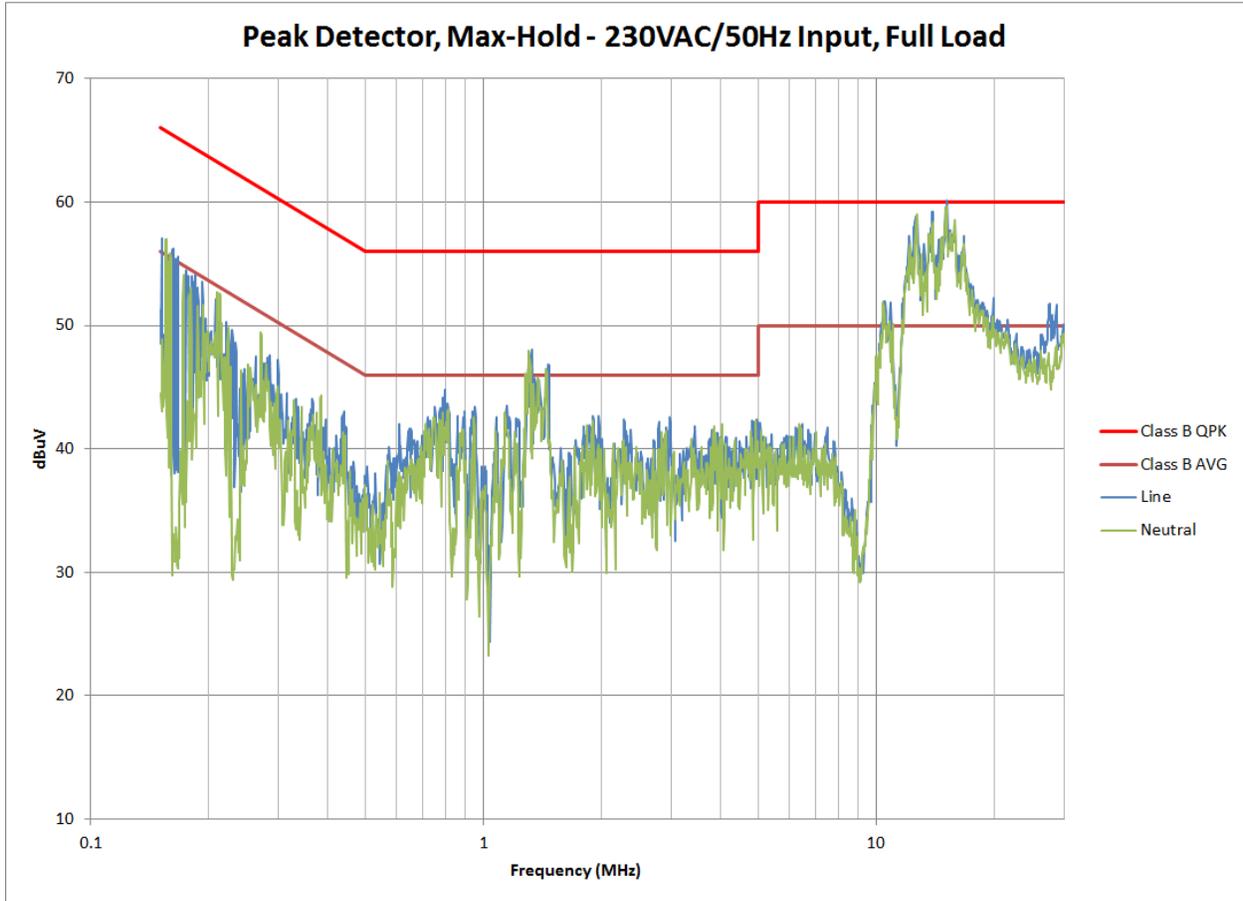


7.2 12Vout, Switch node



8 EMI – Conducted Emissions





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