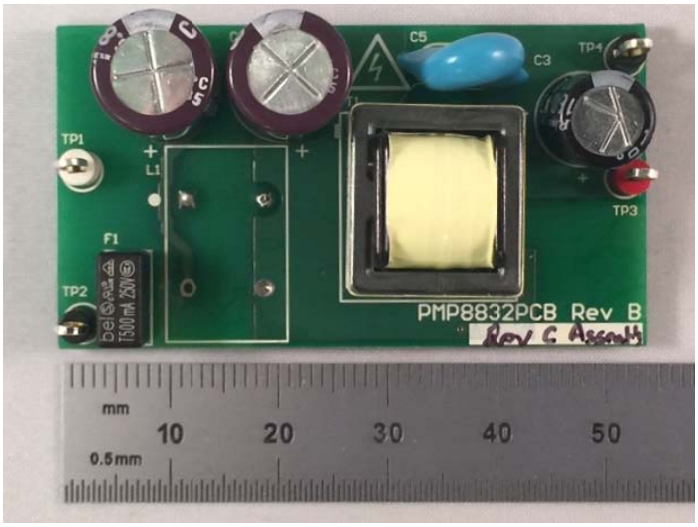
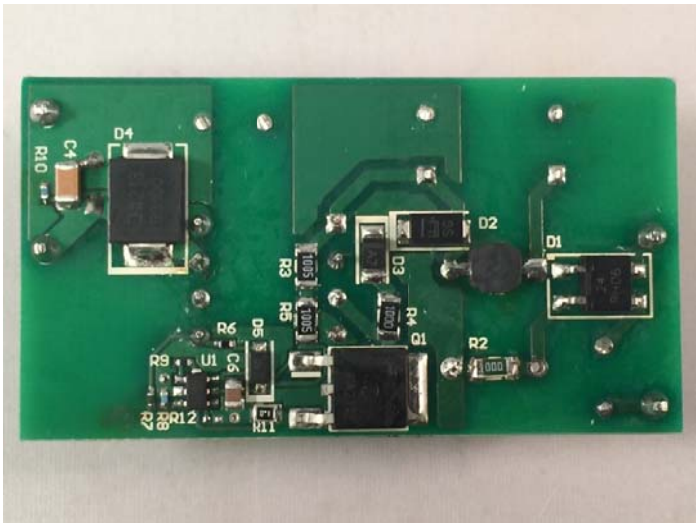
1 Photos

The photographs below show the PMP8832 Rev C prototype assembly. This circuit was built using a PMP8832 Rev B PCB.



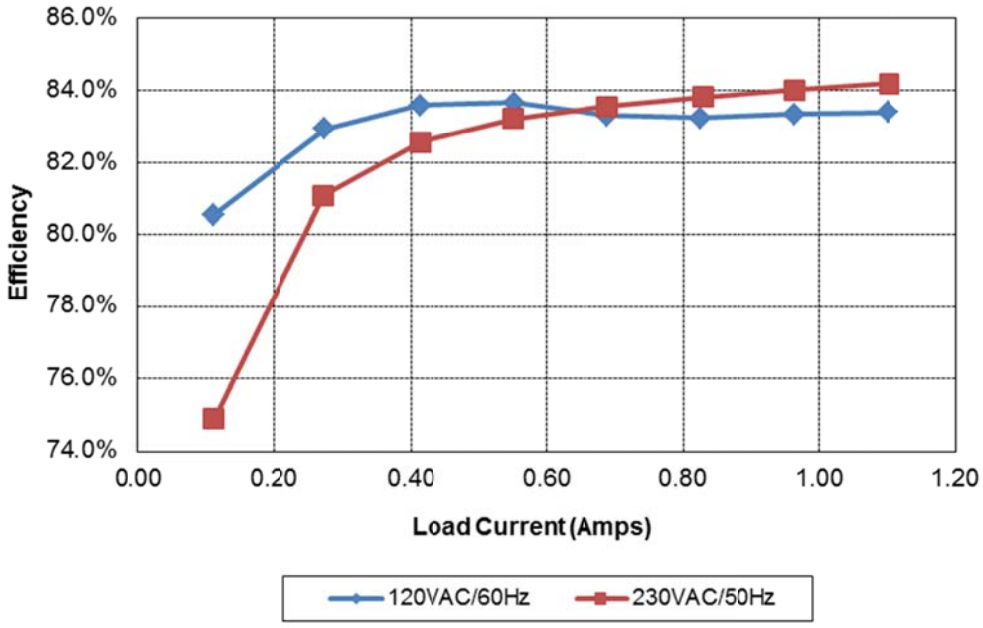


2 Standby Power (No Load)

Input Voltage	Input Power
120VAC/60Hz	32.8mW
230VAC/50Hz	39.2mW

3 Efficiency

3.1 Chart



3.2 Average Efficiency

Vin	Pin	Vout	Iout	Load	Efficiency	Avg. Eff.
120VAC/60Hz	1.66	12.14	0.110	10%	80.54%	
	4.02	12.13	0.275	25%	82.94%	**83.32%**
	8.00	12.13	0.552	50%	83.67%	
	12.04	12.15	0.825	75%	83.25%	
	16.05	12.17	1.100	100%	83.41%	
230VAC/50Hz	1.80	12.16	0.111	10%	74.90%	
	4.08	12.12	0.273	25%	81.08%	**83.09%**
	8.03	12.13	0.551	50%	83.23%	
	12.00	12.15	0.828	75%	83.84%	
	15.94	12.18	1.102	100%	84.21%	

3.3 Efficiency Data

120VAC/60Hz

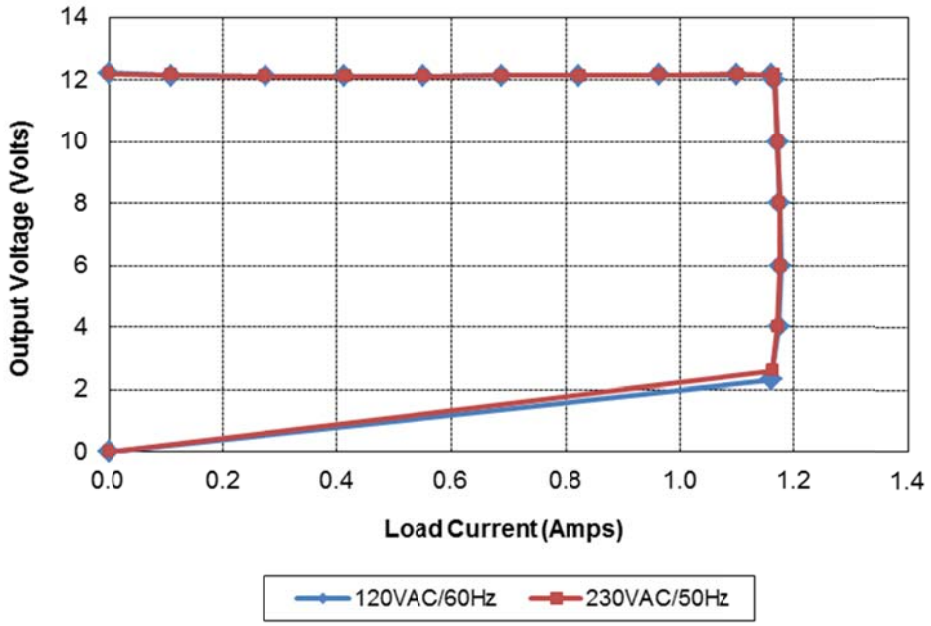
Iout	Vout	Vin	Iin	Pin	PF	Pout	Losses	Efficiency
0.000	12.23	120.0	0.00153	0.0328		0.00	0.0328	
0.110	12.14	120.0	0.0373	1.658	0.370	1.34	0.32	80.5%
0.275	12.13	120.0	0.0755	4.022	0.444	3.34	0.69	82.9%
0.413	12.13	120.0	0.1037	5.992	0.482	5.01	0.98	83.6%
0.552	12.13	120.0	0.1310	8.003	0.511	6.70	1.31	83.7%
0.689	12.14	120.0	0.1570	10.04	0.533	8.36	1.68	83.3%
0.825	12.15	120.0	0.1825	12.04	0.550	10.02	2.02	83.3%
0.963	12.17	120.0	0.2077	14.06	0.564	11.72	2.34	83.4%
1.100	12.17	120.0	0.2327	16.05	0.575	13.39	2.66	83.4%

230VAC/50Hz

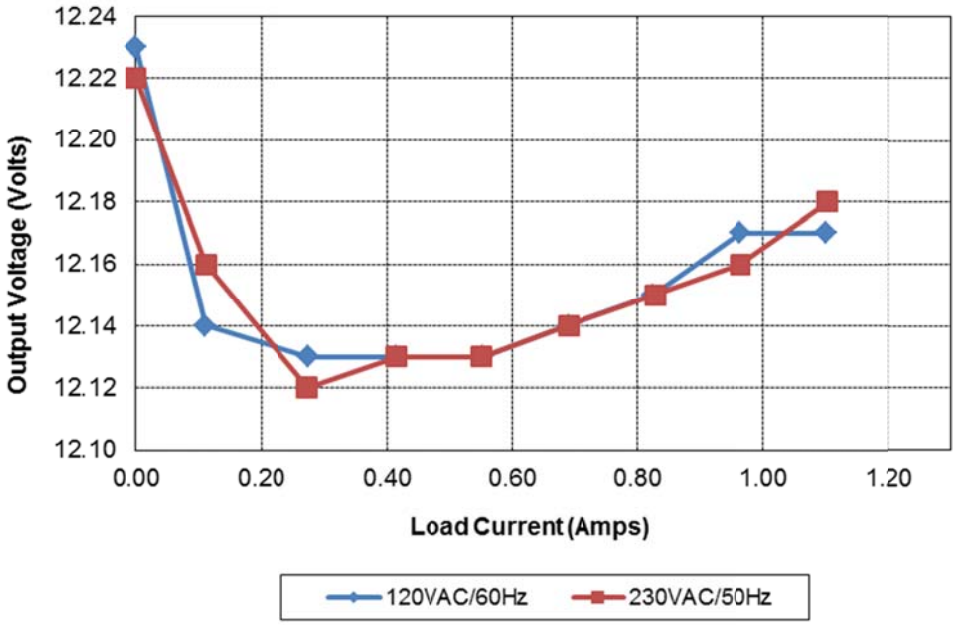
Iout	Vout	Vin	Iin	Pin	PF	Pout	Losses	Efficiency
0.000	12.22	230.0	0.00128	0.0392		0.00	0.0392	
0.111	12.16	230.0	0.0272	1.802	0.287	1.35	0.45	74.9%
0.273	12.12	230.0	0.0522	4.081	0.341	3.31	0.77	81.1%
0.414	12.13	230.0	0.0710	6.082	0.373	5.02	1.06	82.6%
0.551	12.13	230.0	0.0881	8.030	0.396	6.68	1.35	83.2%
0.689	12.14	230.0	0.1044	10.01	0.417	8.36	1.65	83.6%
0.828	12.15	230.0	0.1204	12.00	0.434	10.06	1.94	83.8%
0.964	12.16	230.0	0.1354	13.95	0.448	11.72	2.23	84.0%
1.102	12.18	230.0	0.1503	15.94	0.461	13.42	2.52	84.2%

4 Regulation

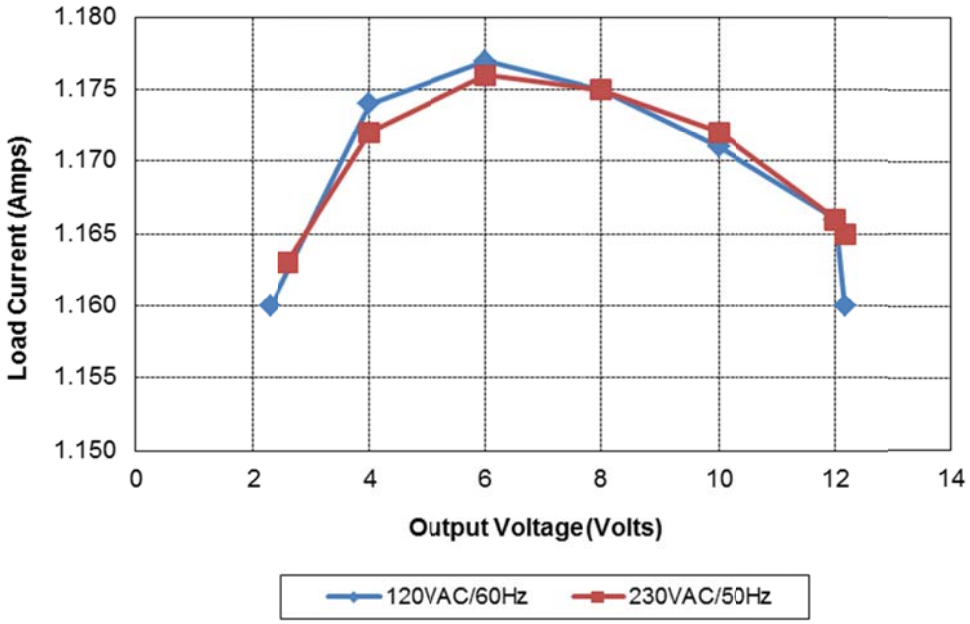
4.1 V-I Curve



4.2 CV Mode



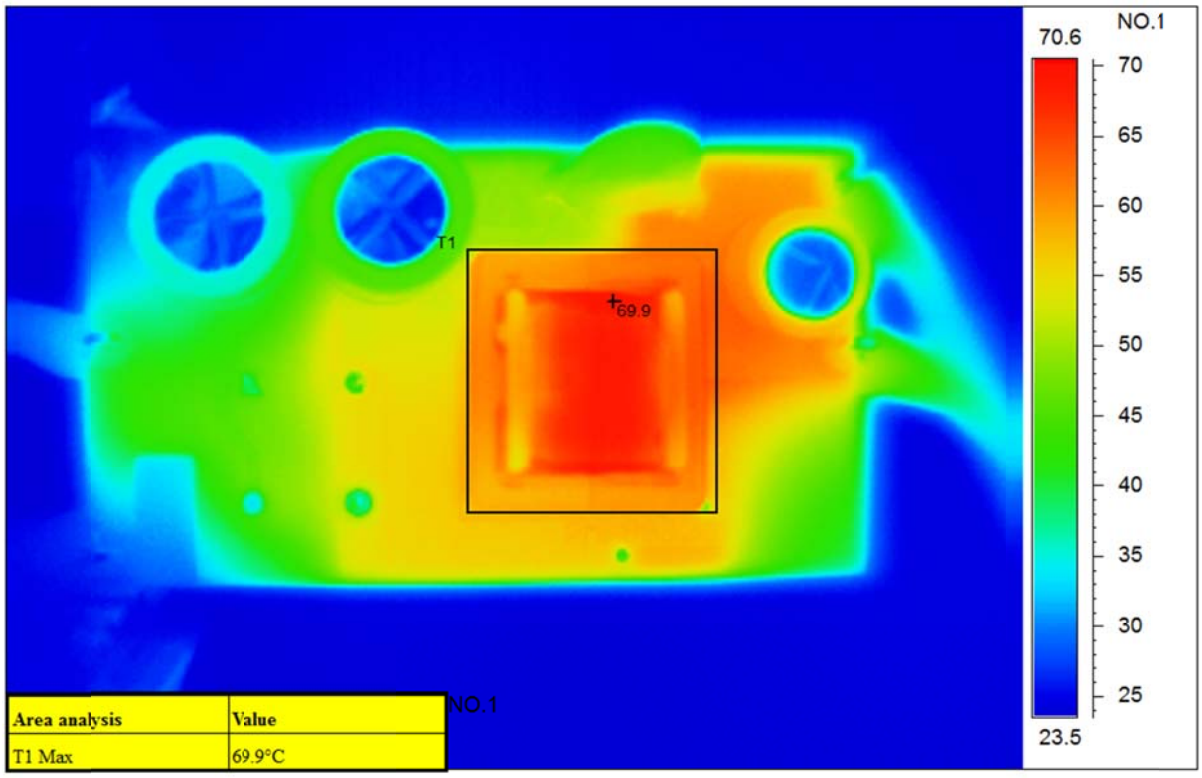
4.3 CC Mode

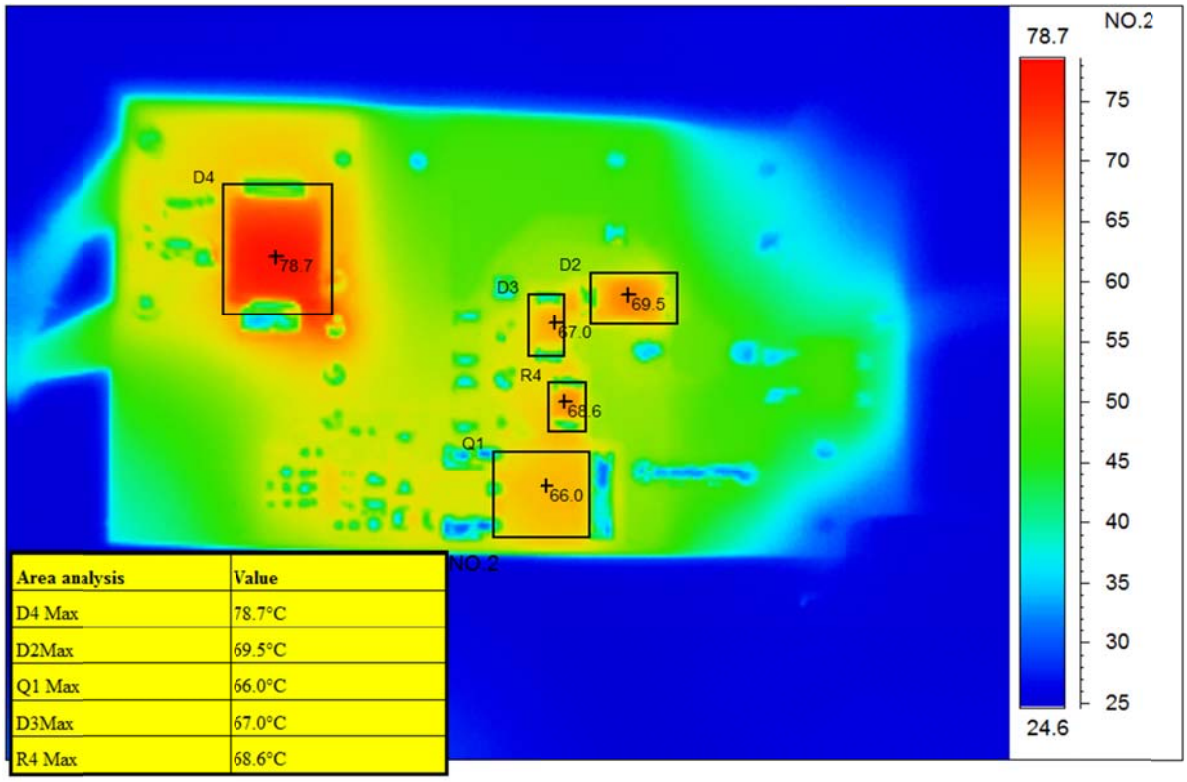


5 Thermal Images

The thermal images below show the assembly with loaded with 1.1A. The ambient temperature was 25ºC, with no forced air flow.

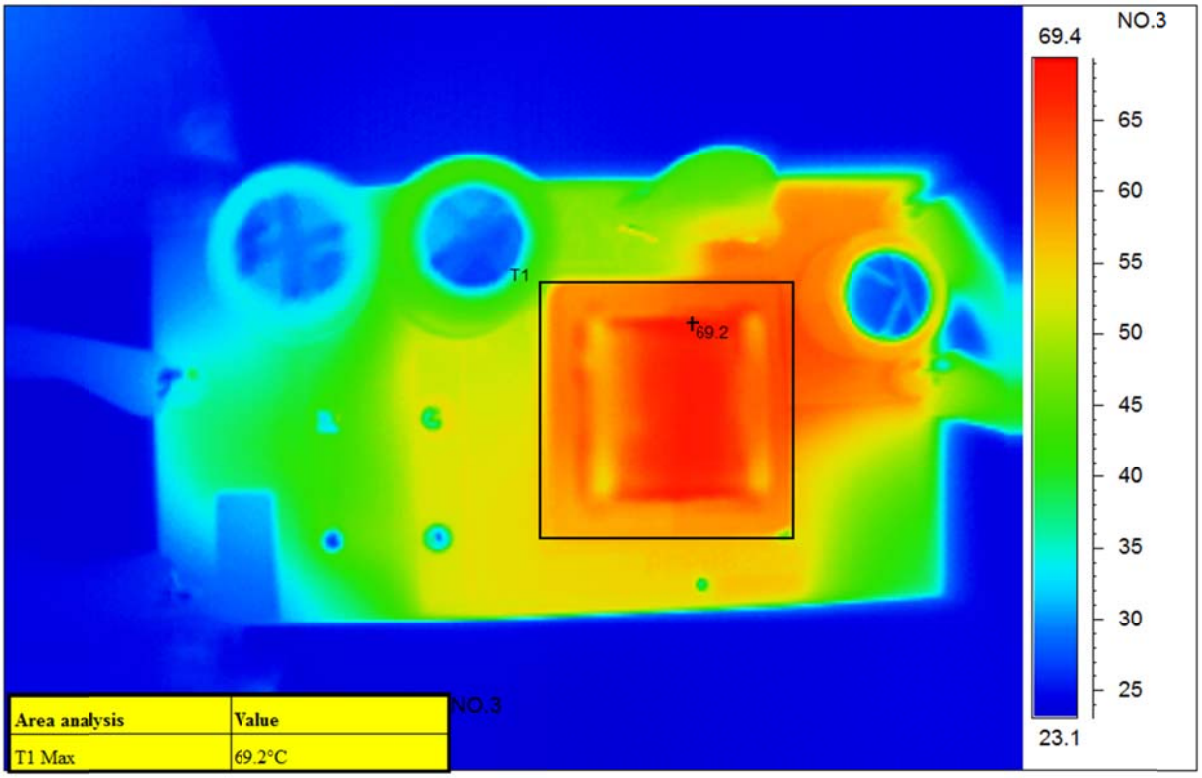
5.1 120VAC/60Hz



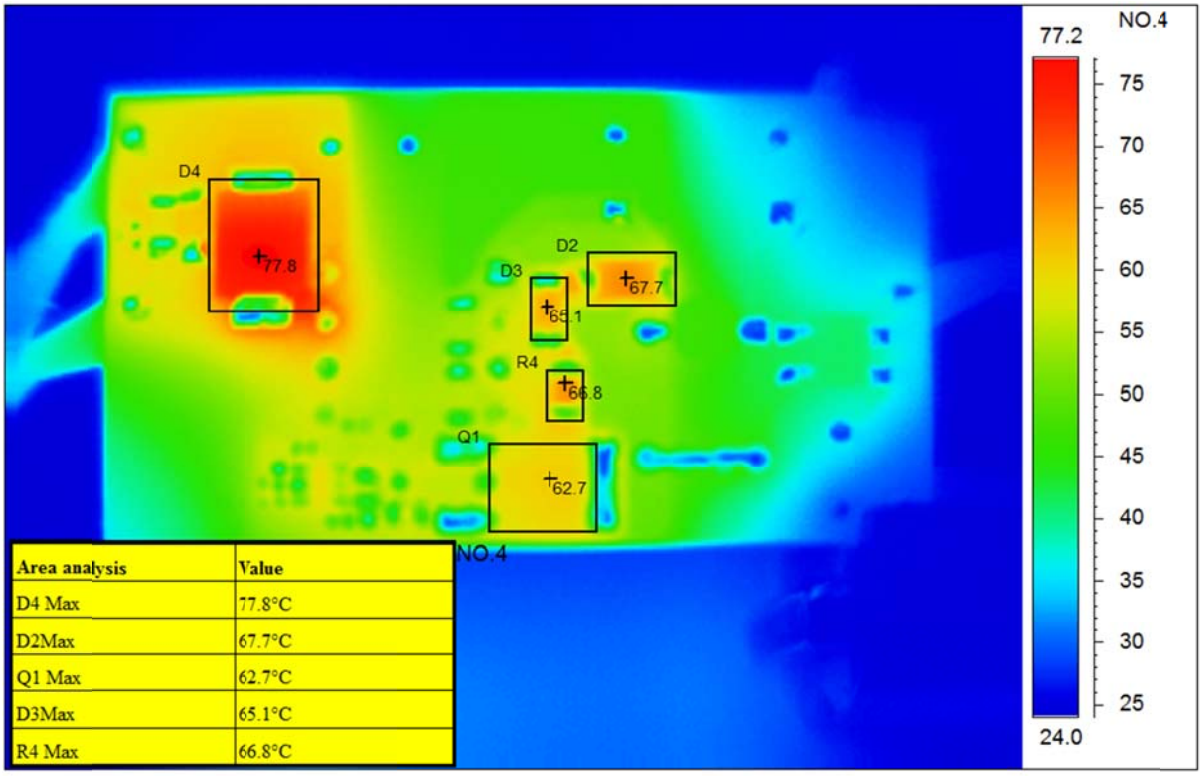


Area analysis	Value
D4 Max	78.7°C
D2Max	69.5°C
Q1 Max	66.0°C
D3Max	67.0°C
R4 Max	68.6°C

5.2 230VAC/50Hz



Area analysis	Value
T1 Max	69.2°C

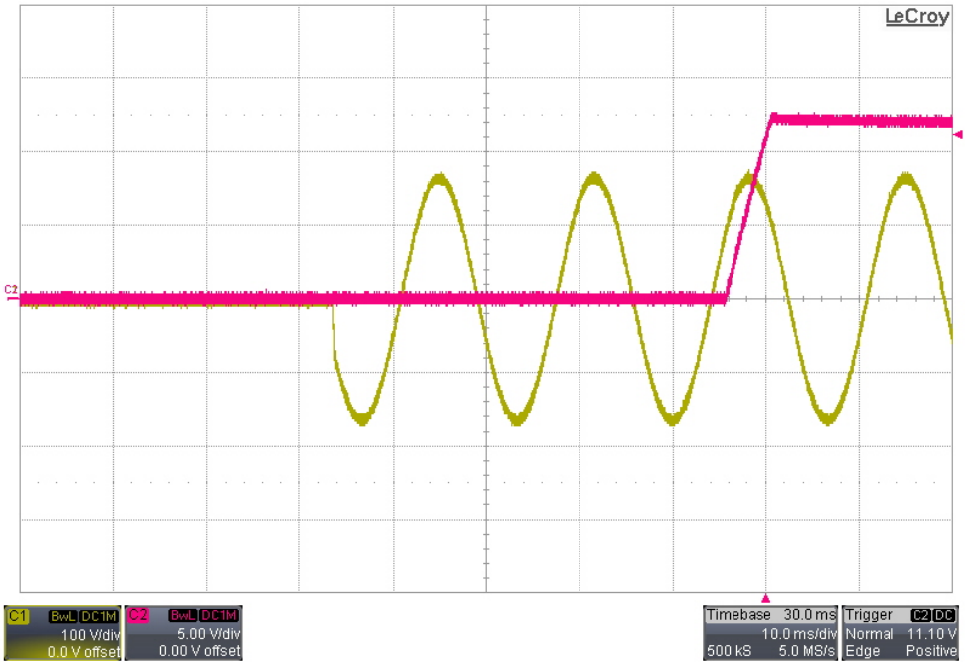


Area analysis	Value
D4 Max	77.8°C
D2Max	67.7°C
Q1 Max	62.7°C
D3Max	65.1°C
R4 Max	66.8°C

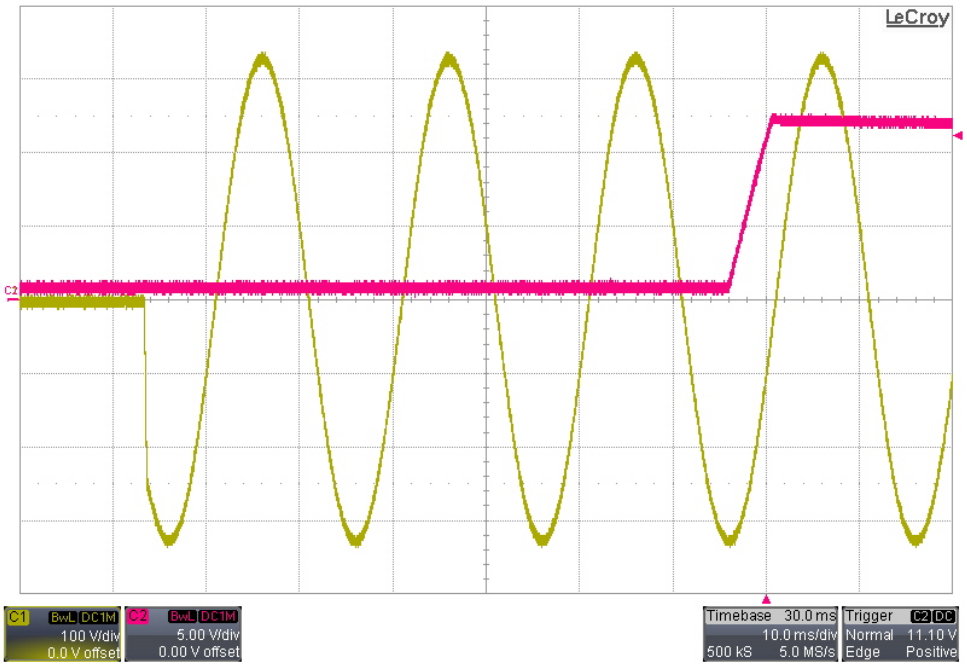
6 Startup

Channel 1 shows the AC input voltage. Channel 2 shows the output voltage.

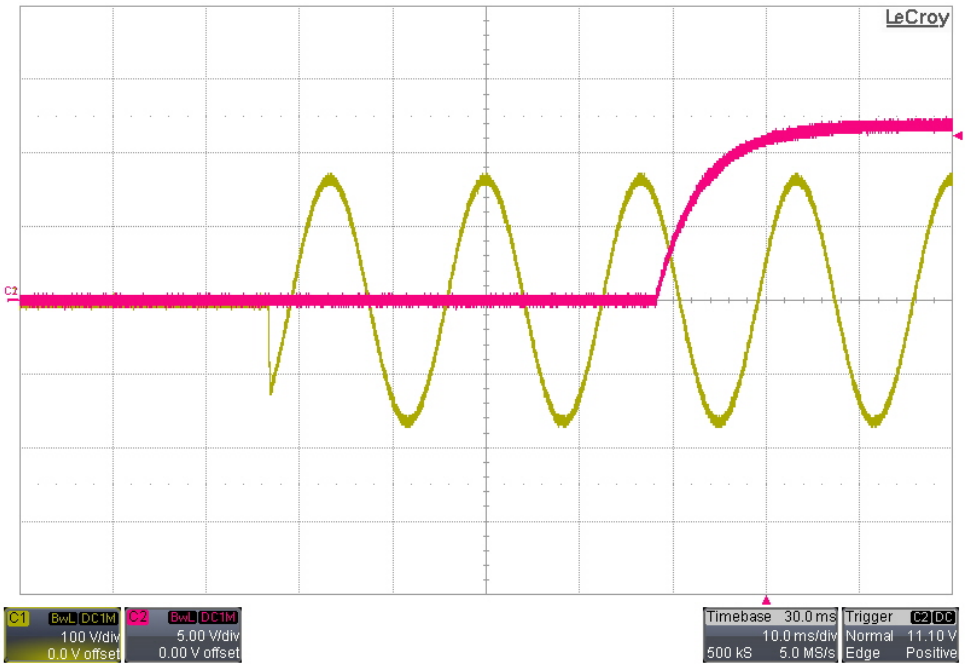
6.1 120VAC/60Hz – No Load



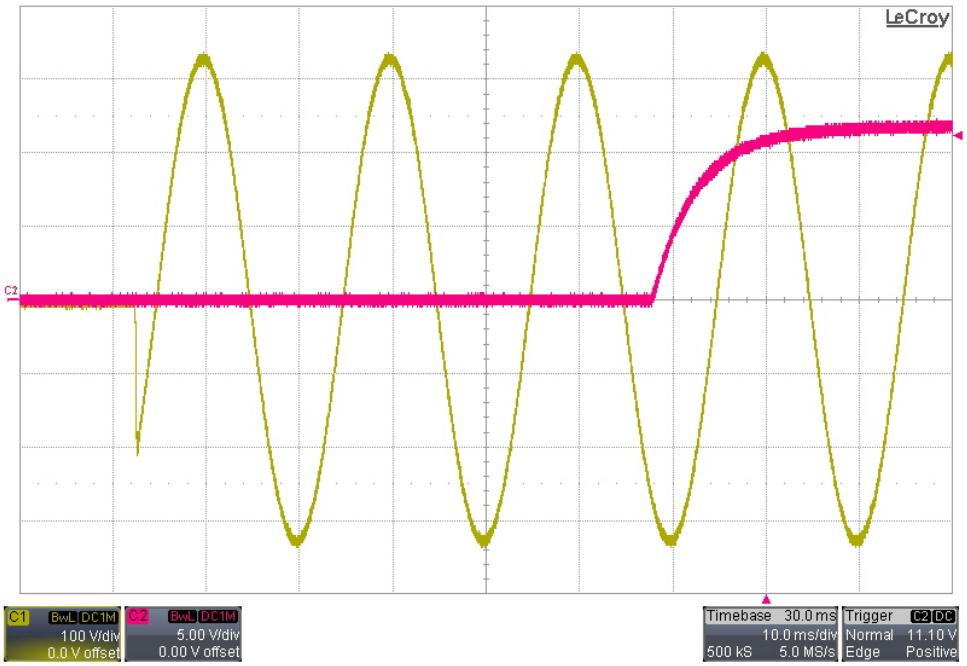
6.2 230VAC/50Hz – No Load



6.3 120VAC/60Hz – 10Ω Load

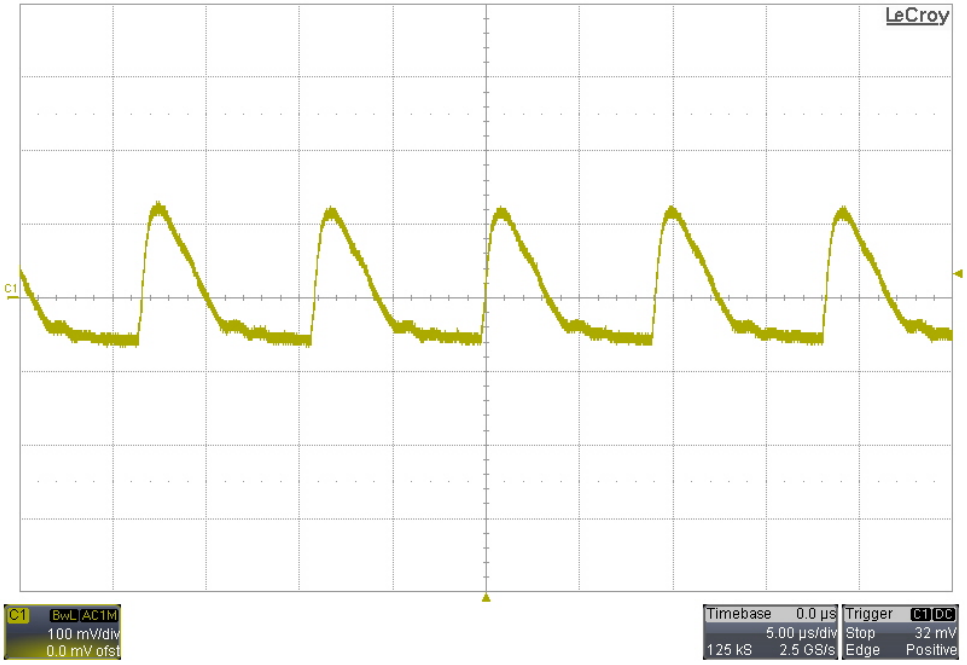


6.4 230VAC/50Hz –10Ω Load

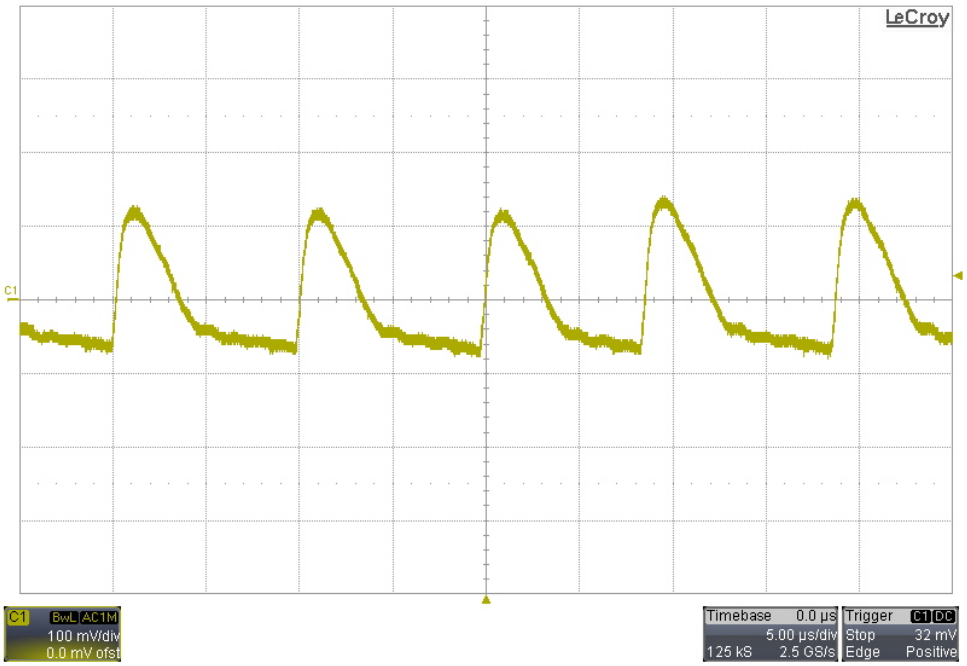


7 Output Ripple Voltage

7.1 120VAC/60Hz –1.15A Load

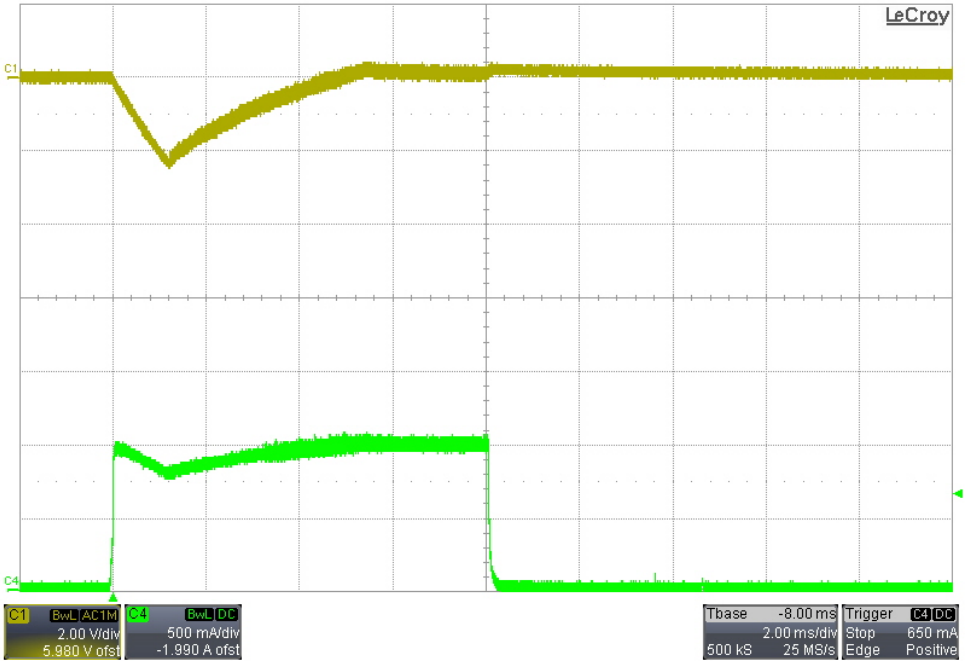


7.2 230VAC/50Hz –1.15A Load

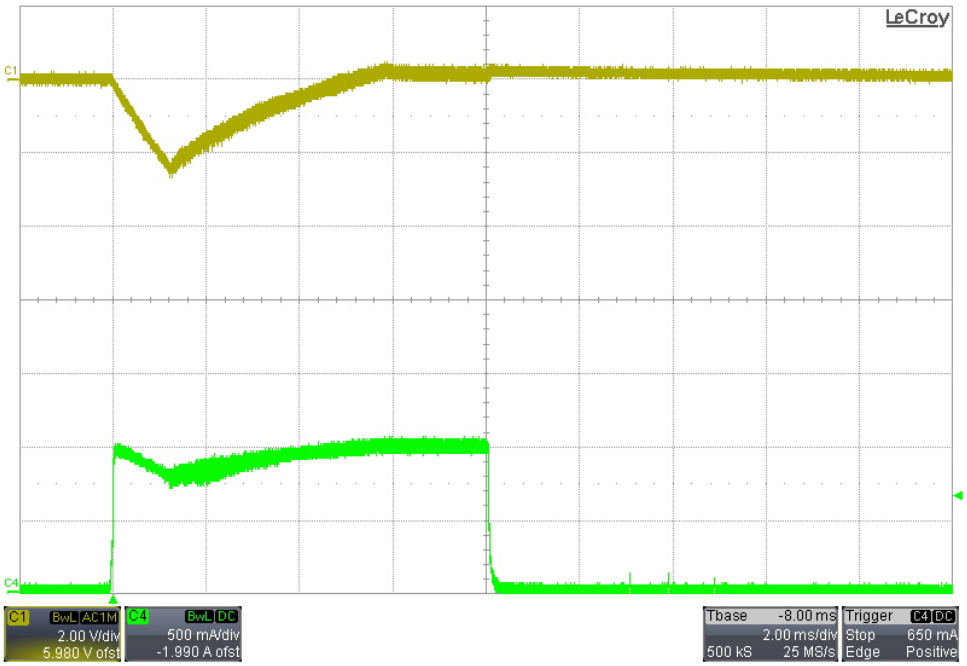


8 Load Transients

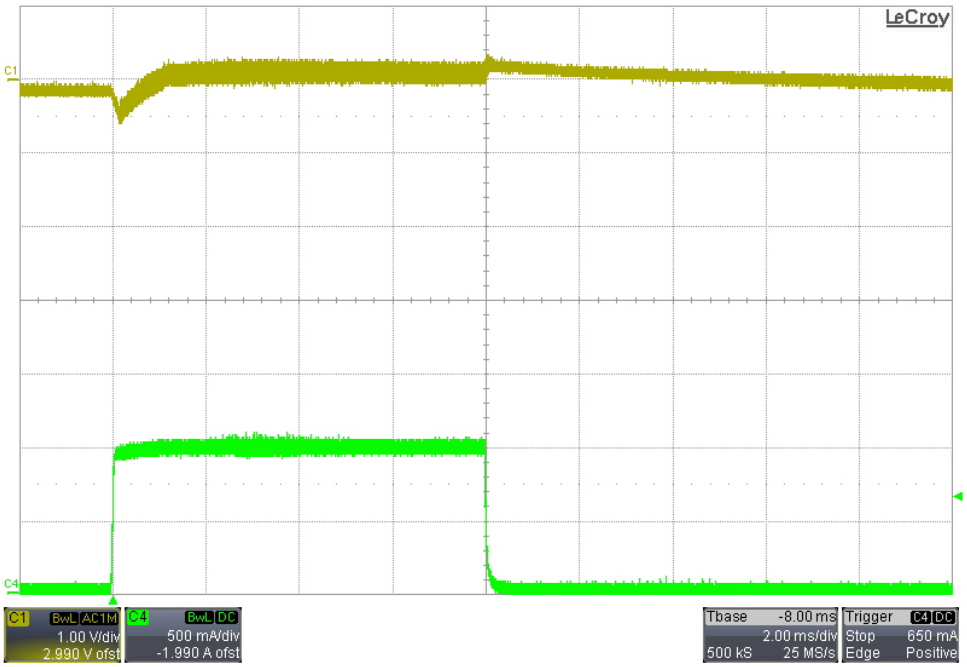
8.1 0A to 1.0A Transient; 120VAC/60Hz Input



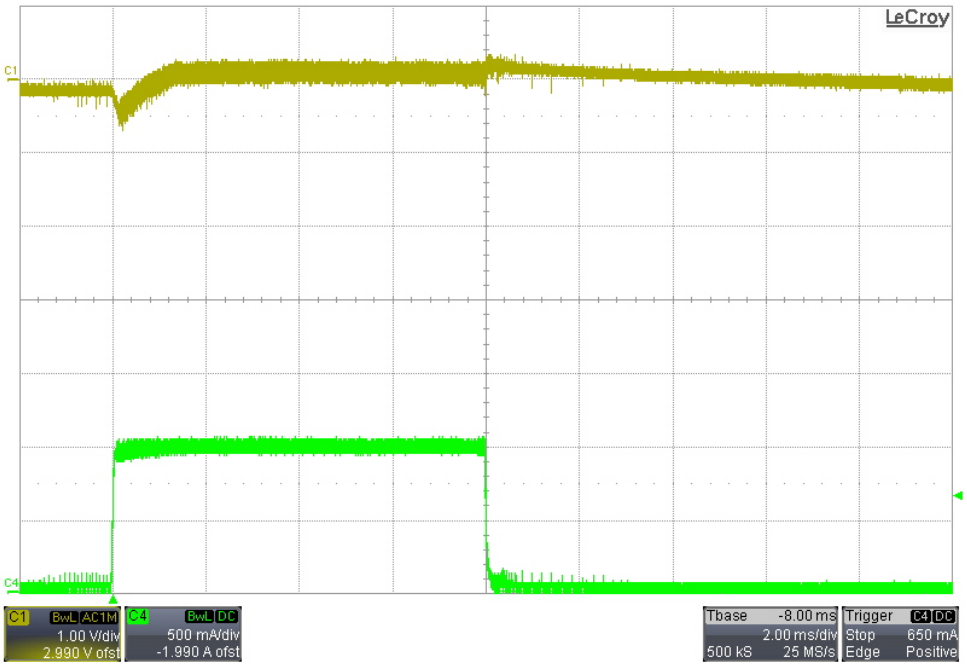
8.2 0A to 1A Transient – 230VAC/50Hz Input



8.3 20mA to 1.0A Transient; 120VAC/60Hz Input



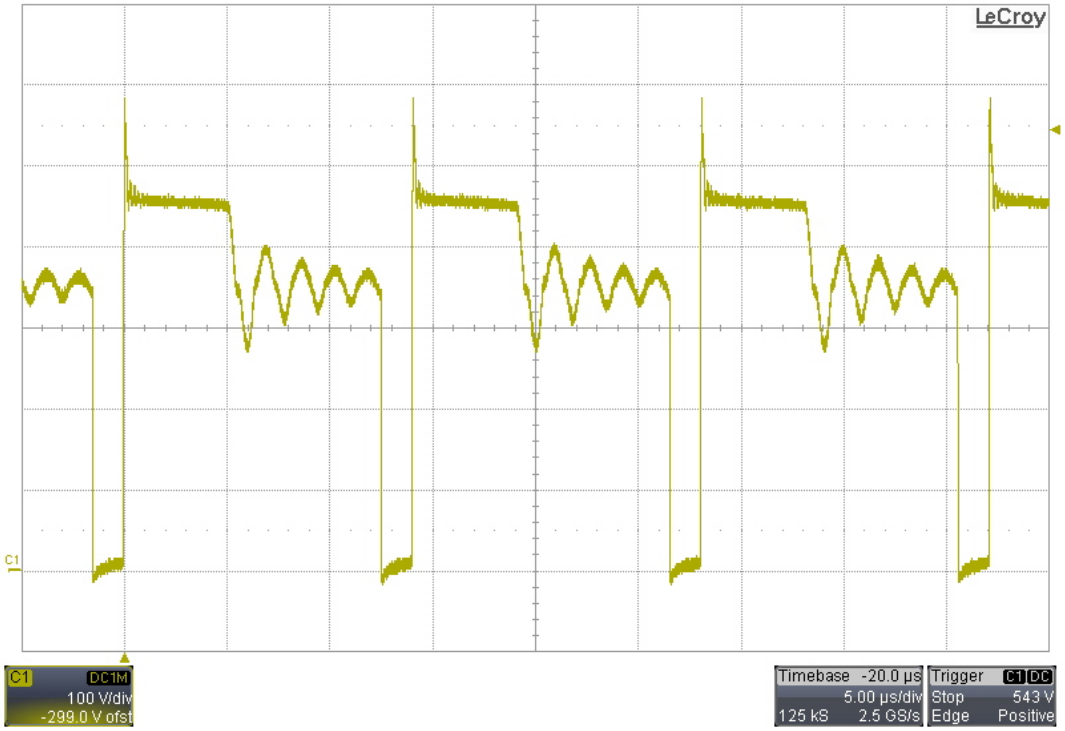
8.4 20mA to 1.0A Transient; 230VAC/50Hz Input



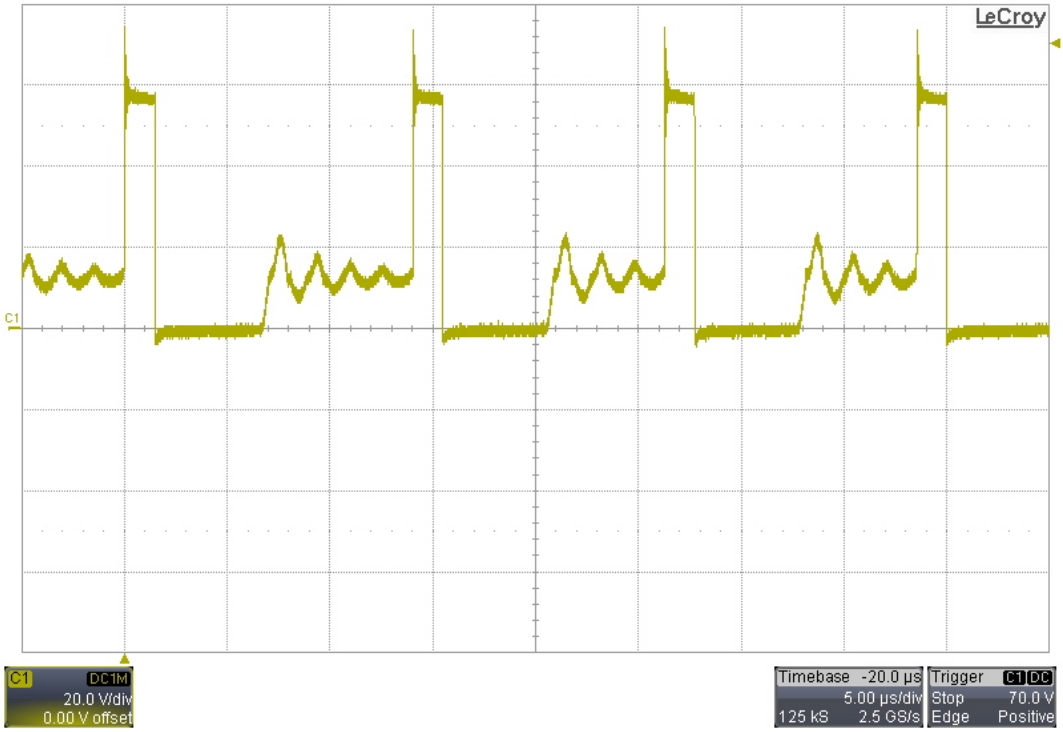
9 Switching Waveforms

The input was 265VAC/50Hz, and the output was loaded with 1.1A.

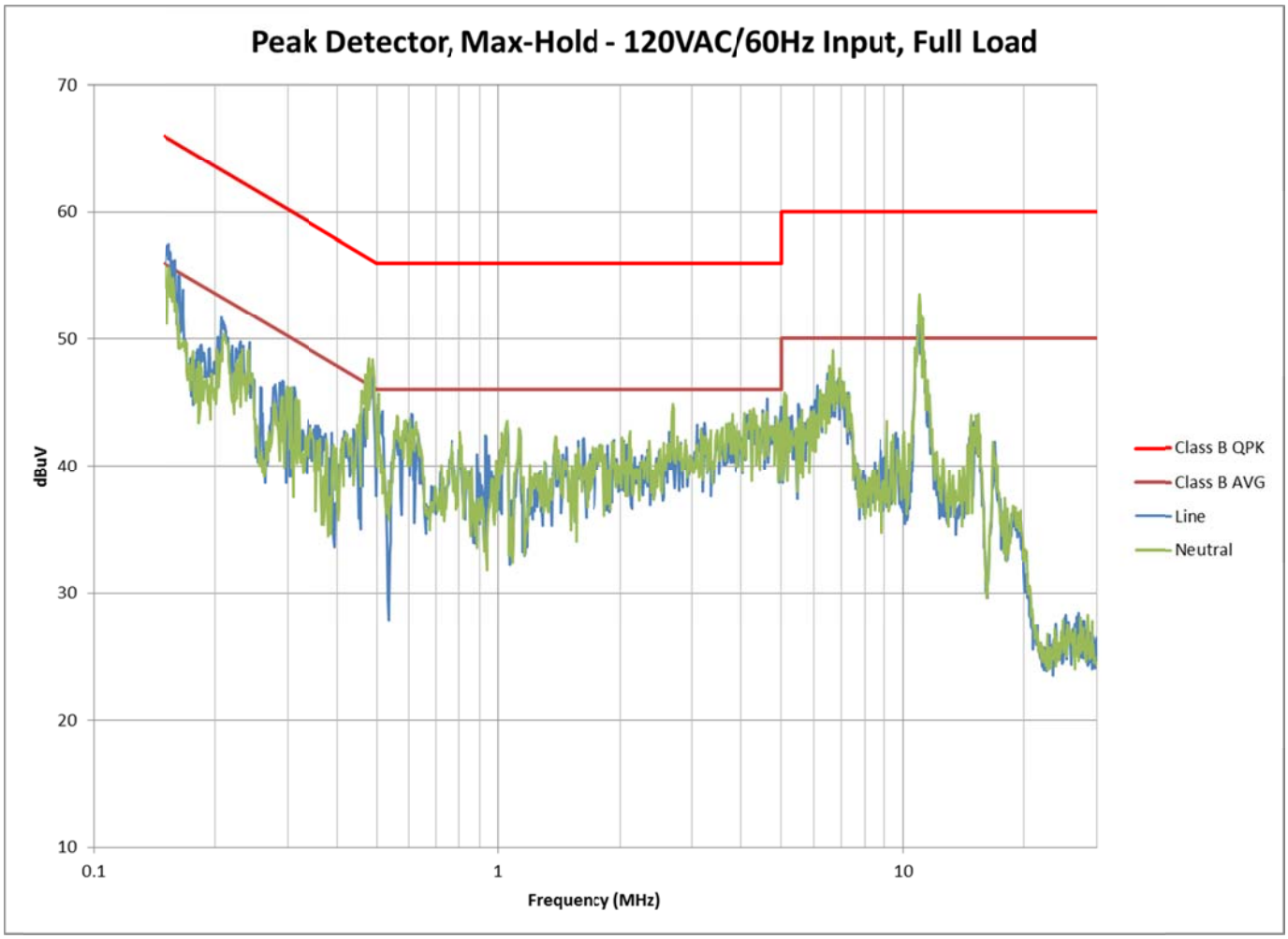
9.1 Drain of Primary FET – Q1

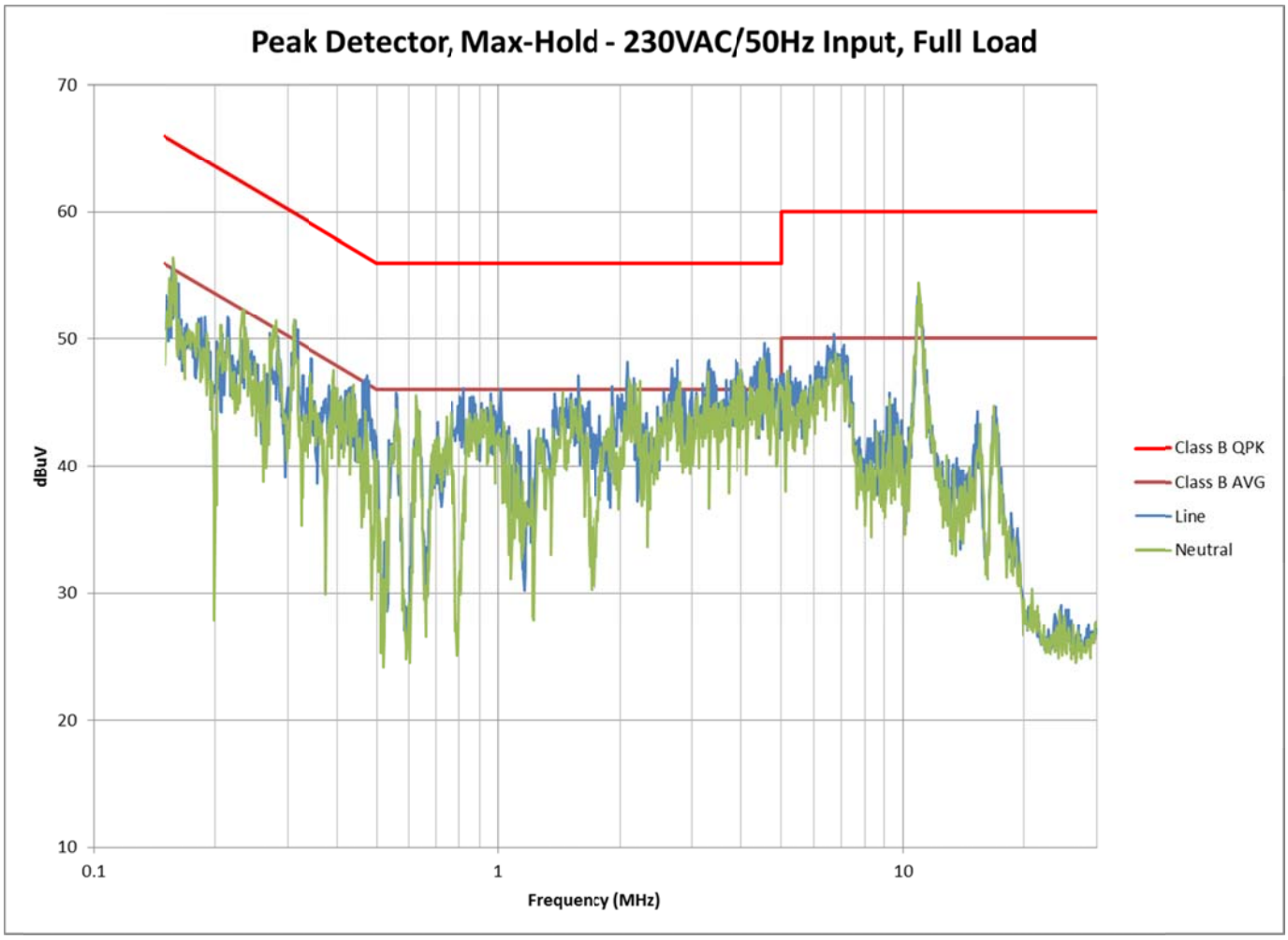


9.2 Cathode of Output Diode – D4



10 Conducted Emissions




Peak Detector, Max-Hold - 230VAC/50Hz Input, Full Load
70
60
50
40
30
20
10
dBuV
0.1
1
10
Frequency (MHz)
Class B QPK
Class B AVG
Line
Neutral

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