PMP11372 Rev C

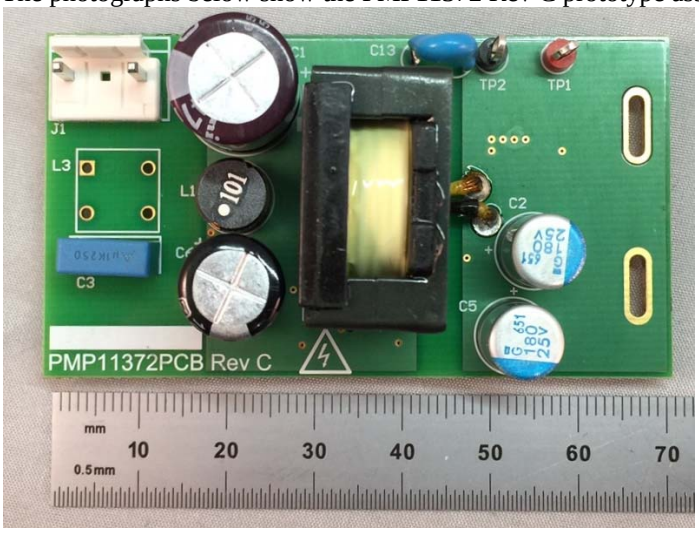
17V/2.3A; 120VACin Flyback with Lossless Passive Clamp

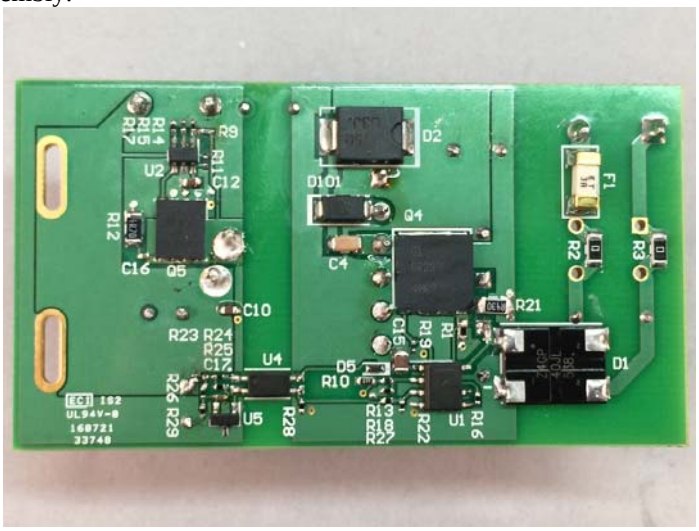
Test Results

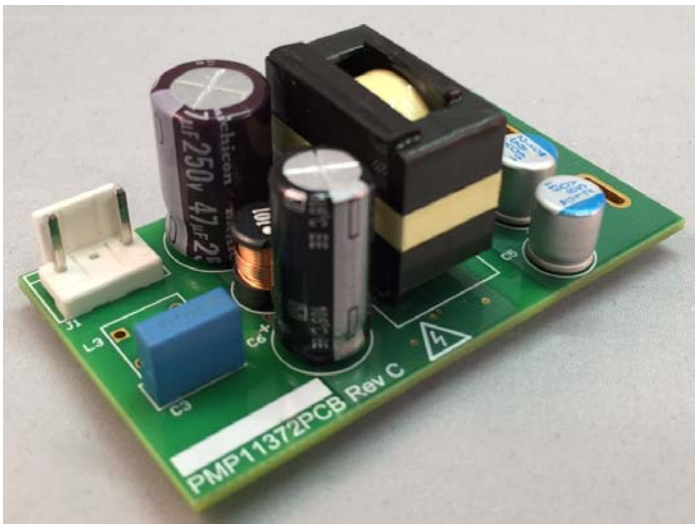
Contents

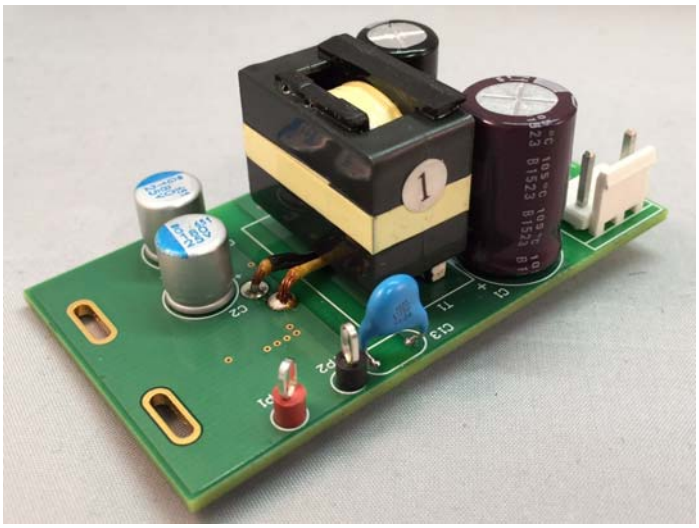
1 Photos

The photographs below show the PMP11372 Rev C prototype assembly.









2 Standby Power

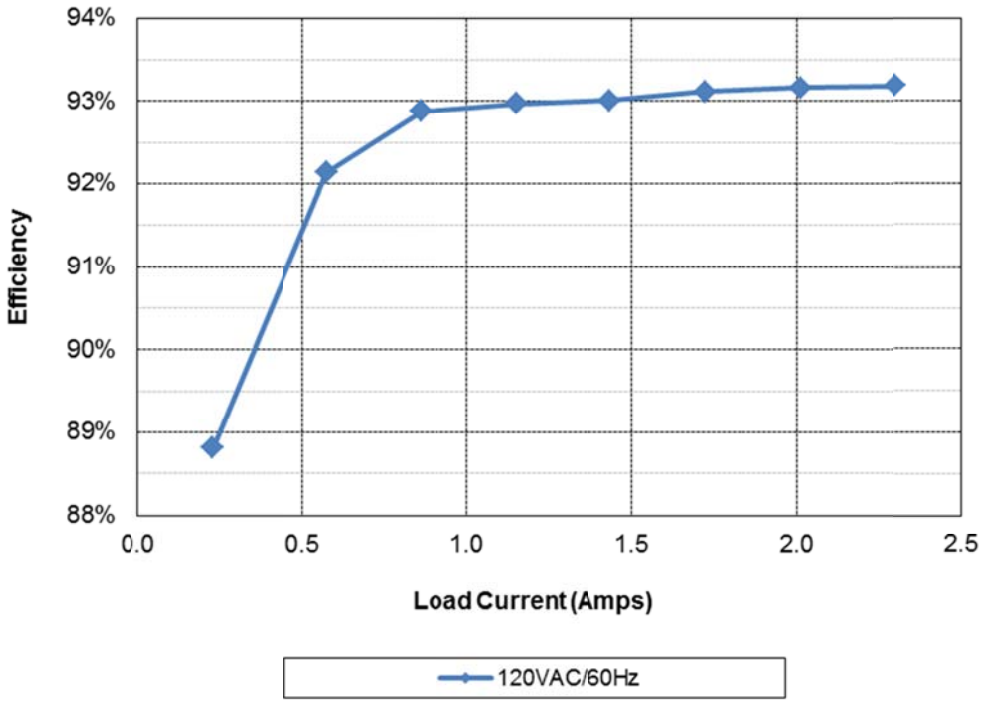
Input Voltage	Input Power
120VAC/60Hz	53.6mW

3 Efficiency

3.1 Average Efficiency

Vin	Pin	Vout	Iout	Load	Efficiency	Avg. Eff.
120VAC/60Hz	4.27	16.71	0.227	10%	88.81%	
	10.41	16.71	0.574	25%	92.14%	**92.85%**
	20.67	16.71	1.150	50%	92.97%	
	30.92	16.71	1.723	75%	93.12%	
	41.26	16.71	2.301	100%	93.19%	

3.2 Charts



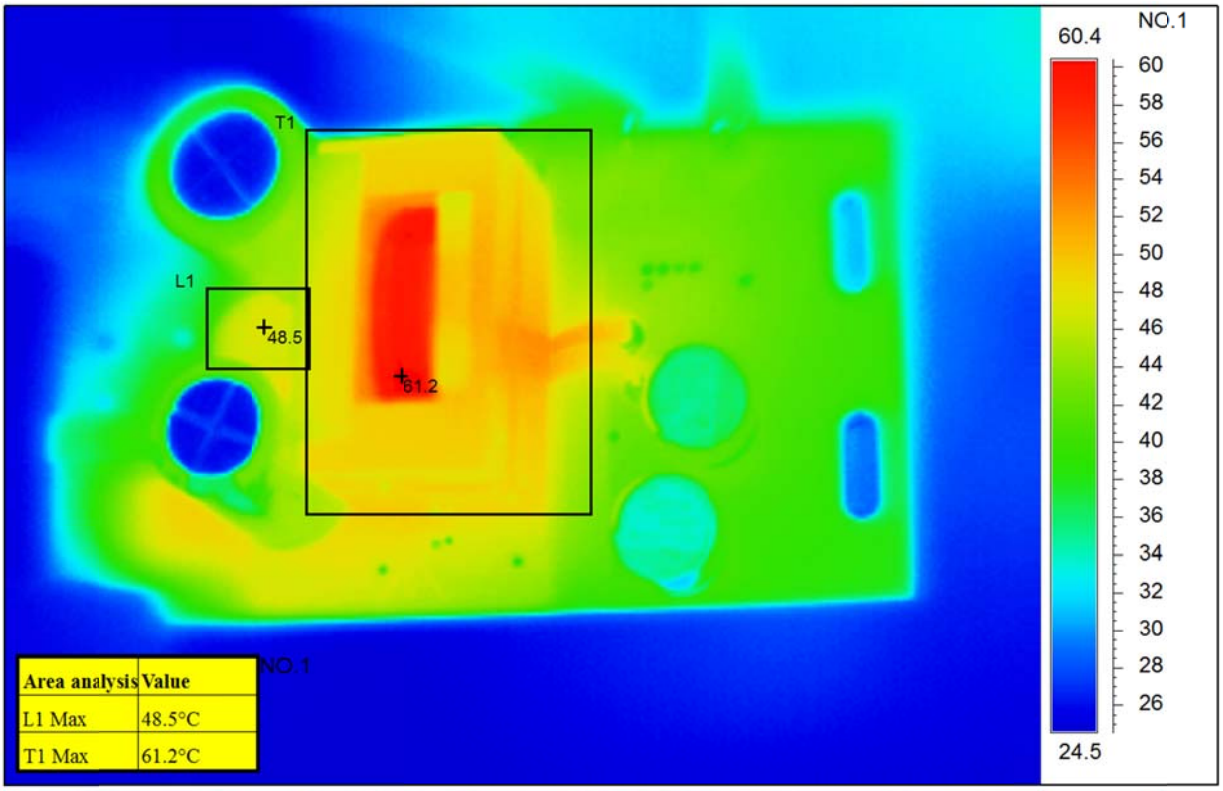
3.3 Raw Data

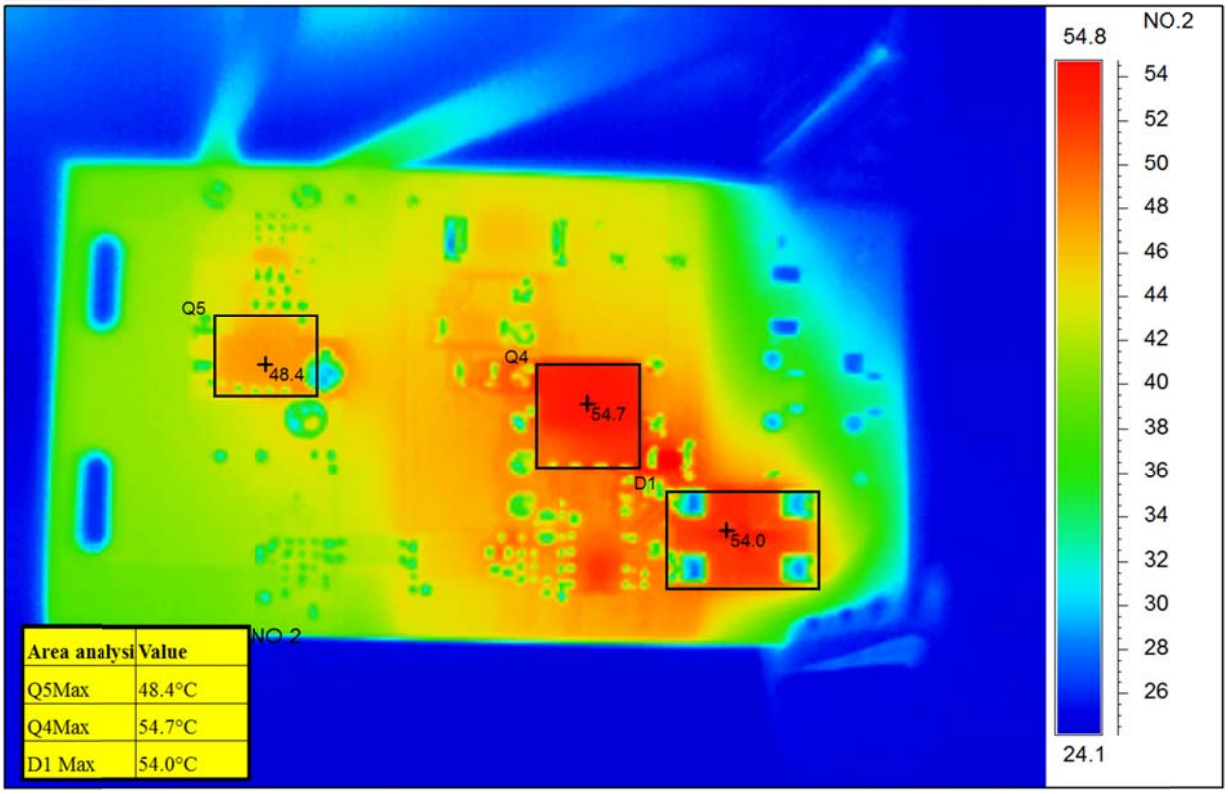
120VAC/60Hz

Iout	Vout	Vin	Iin	Pin	PF	Pout	Losses	Efficiency
0.000	16.72	119.9	0.0056	0.0536		0.00	0.0536	0.0%
0.227	16.71	120.1	0.108	4.271	0.329	3.79	0.48	88.8%
0.574	16.71	120.1	0.237	10.41	0.365	9.59	0.82	92.1%
0.861	16.71	120.1	0.325	15.49	0.397	14.39	1.10	92.9%
1.150	16.71	120.1	0.403	20.67	0.428	19.22	1.45	93.0%
1.435	16.71	120.1	0.476	25.78	0.451	23.98	1.80	93.0%
1.723	16.71	120.1	0.549	30.92	0.469	28.79	2.13	93.1%
2.015	16.71	120.1	0.621	36.14	0.485	33.67	2.47	93.2%
2.301	16.71	120.1	0.691	41.26	0.498	38.45	2.81	93.2%

4 Thermal Images

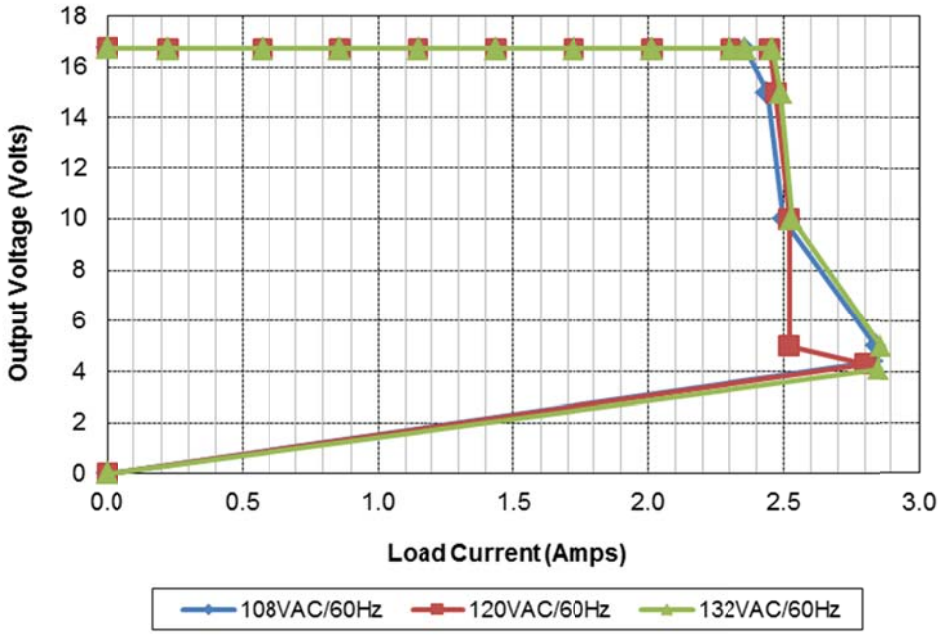
The thermal images below show the output loaded with 2.3A. The ambient temperature was 25ºC, with no airflow. The input was 120VAC/60Hz.





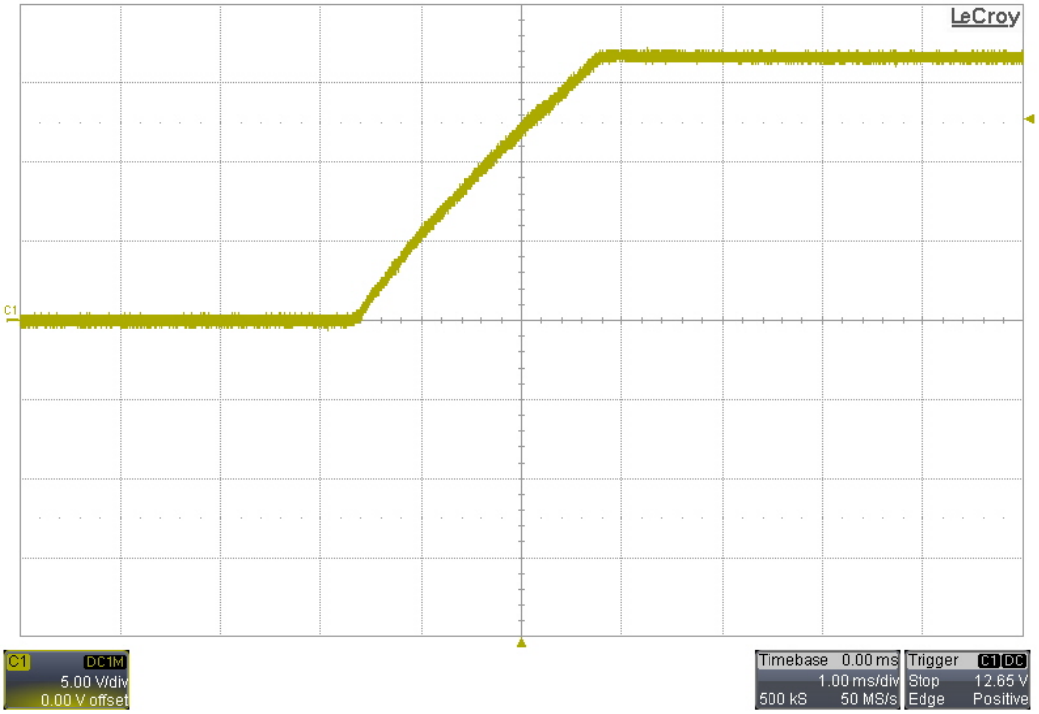
5 V-I Curve

At lower inputs, the input capacitor energy storage limits max current.



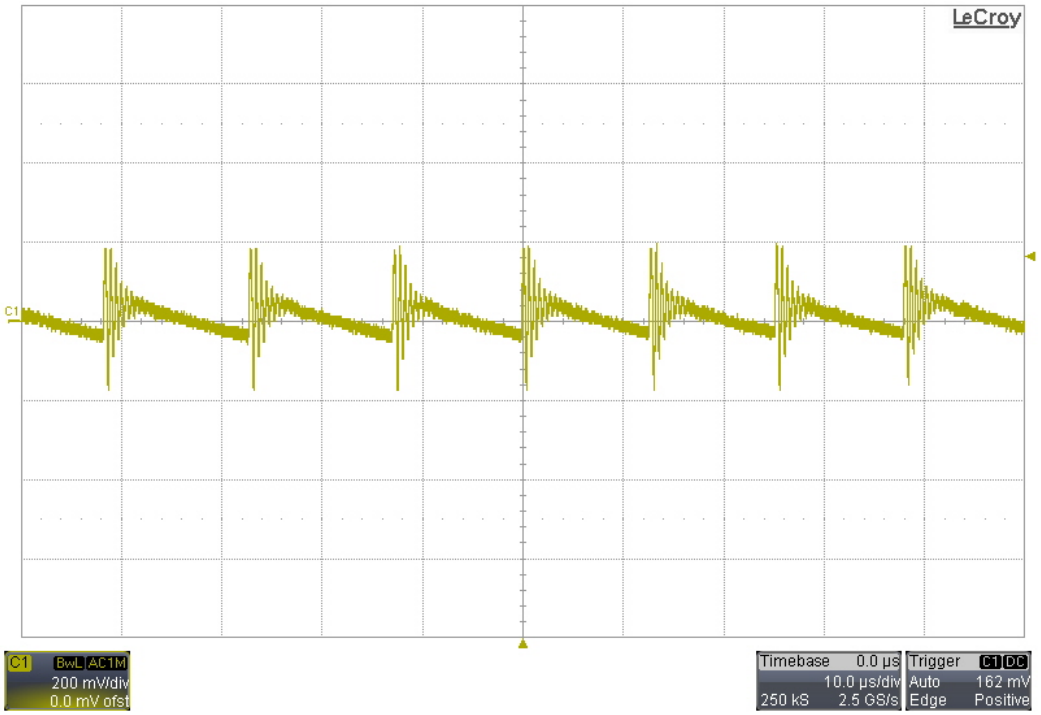
6 Startup

6.1 120VAC/60Hz –No Load



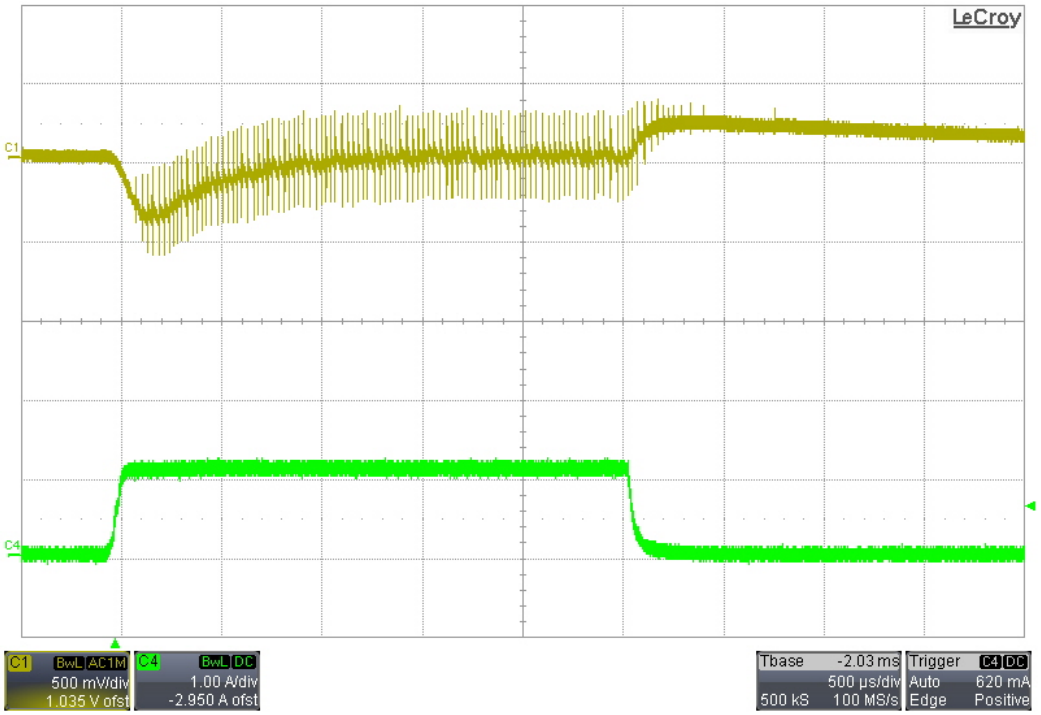
7 Output Ripple Voltage

7.1 120VAC/60Hz – 2.3A Load

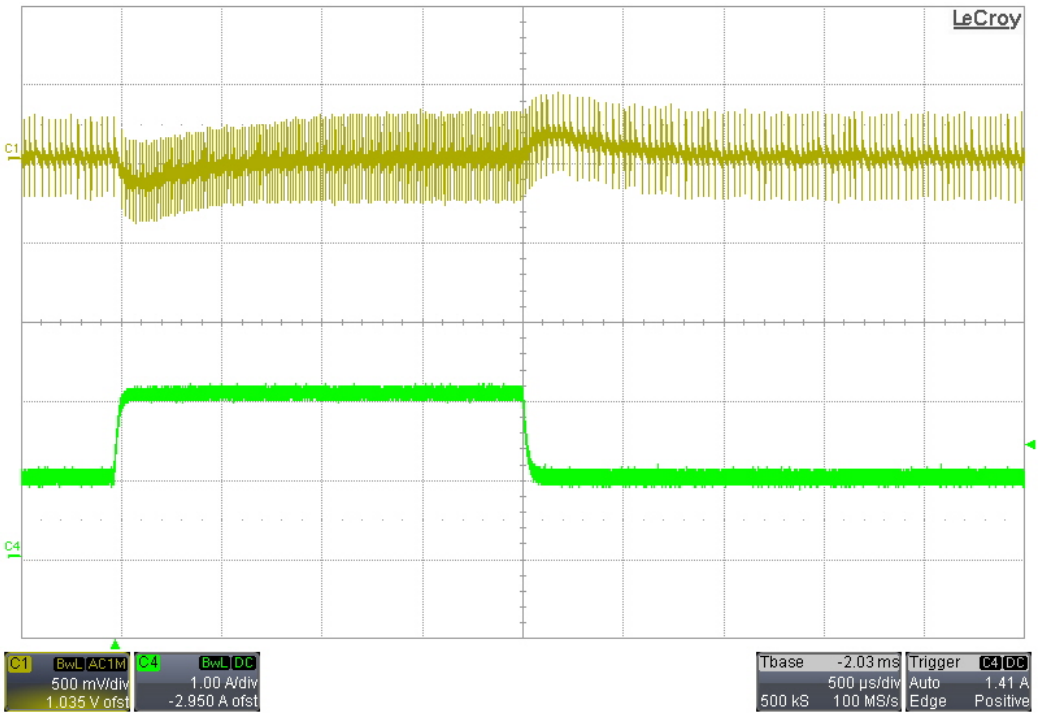


8 Load Transients

8.1 120VAC/60Hz Input – 5mA to 1A

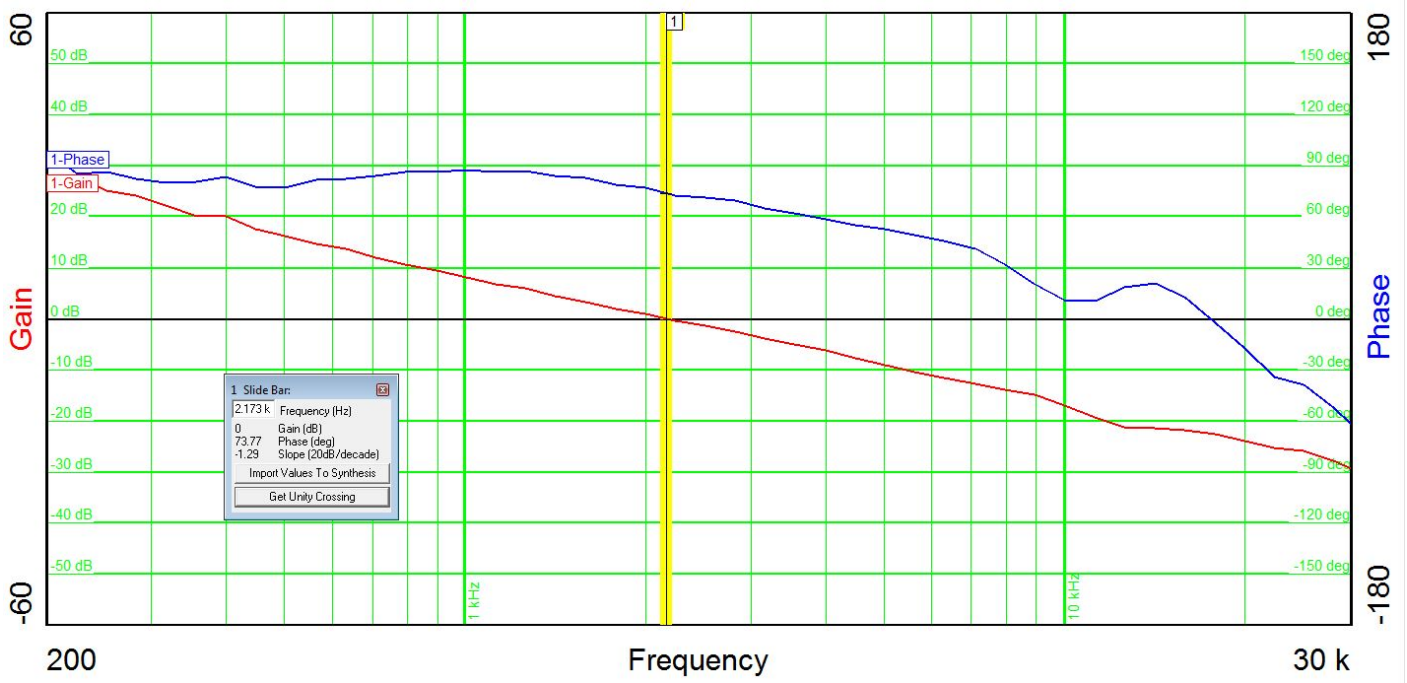


8.2 120VAC/60Hz Input – 1A to 2A



9 Loop Response

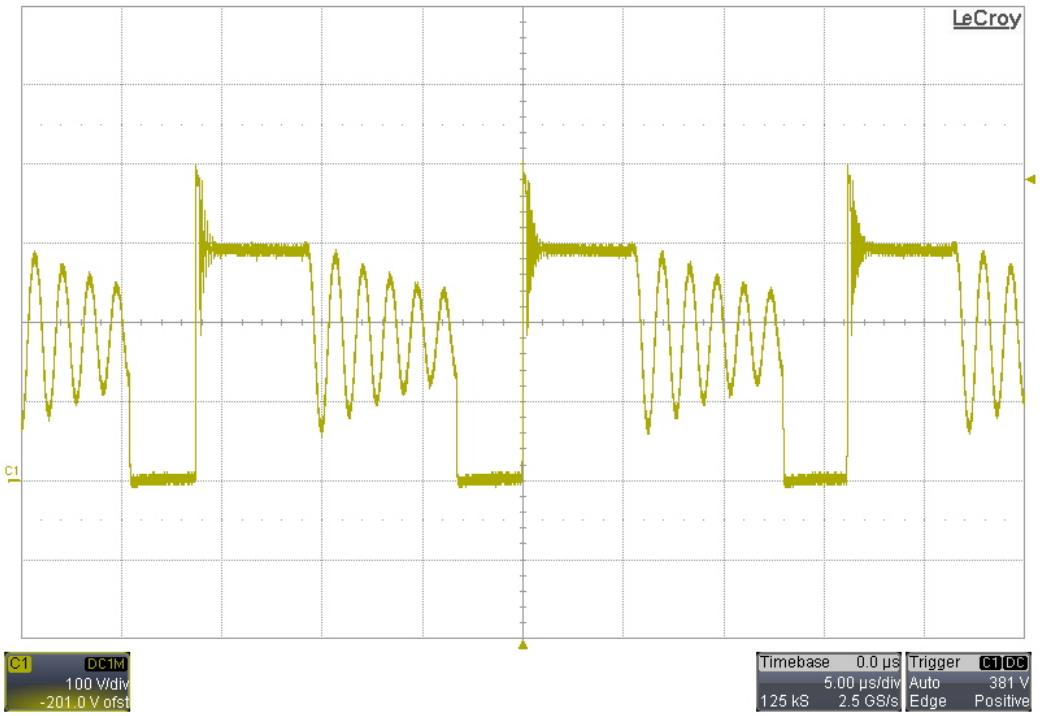
The following plots show the loop response at full load (2.3A).



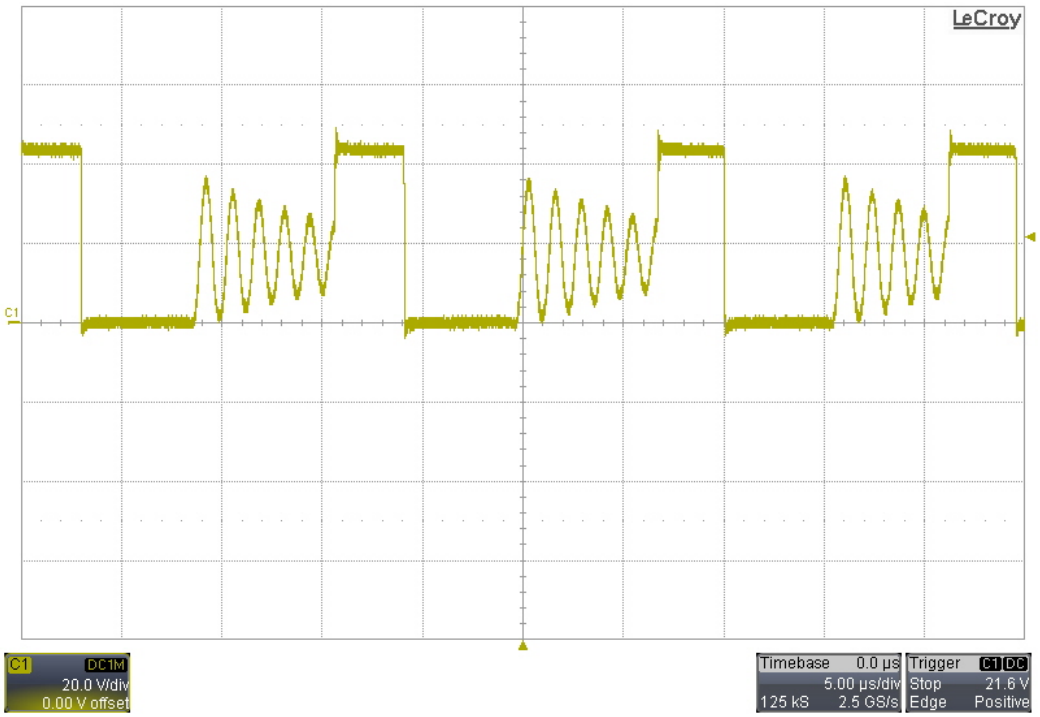
10 Switching Waveforms

The input was 132VAC/60Hz, and the output was loaded with 2.3A.

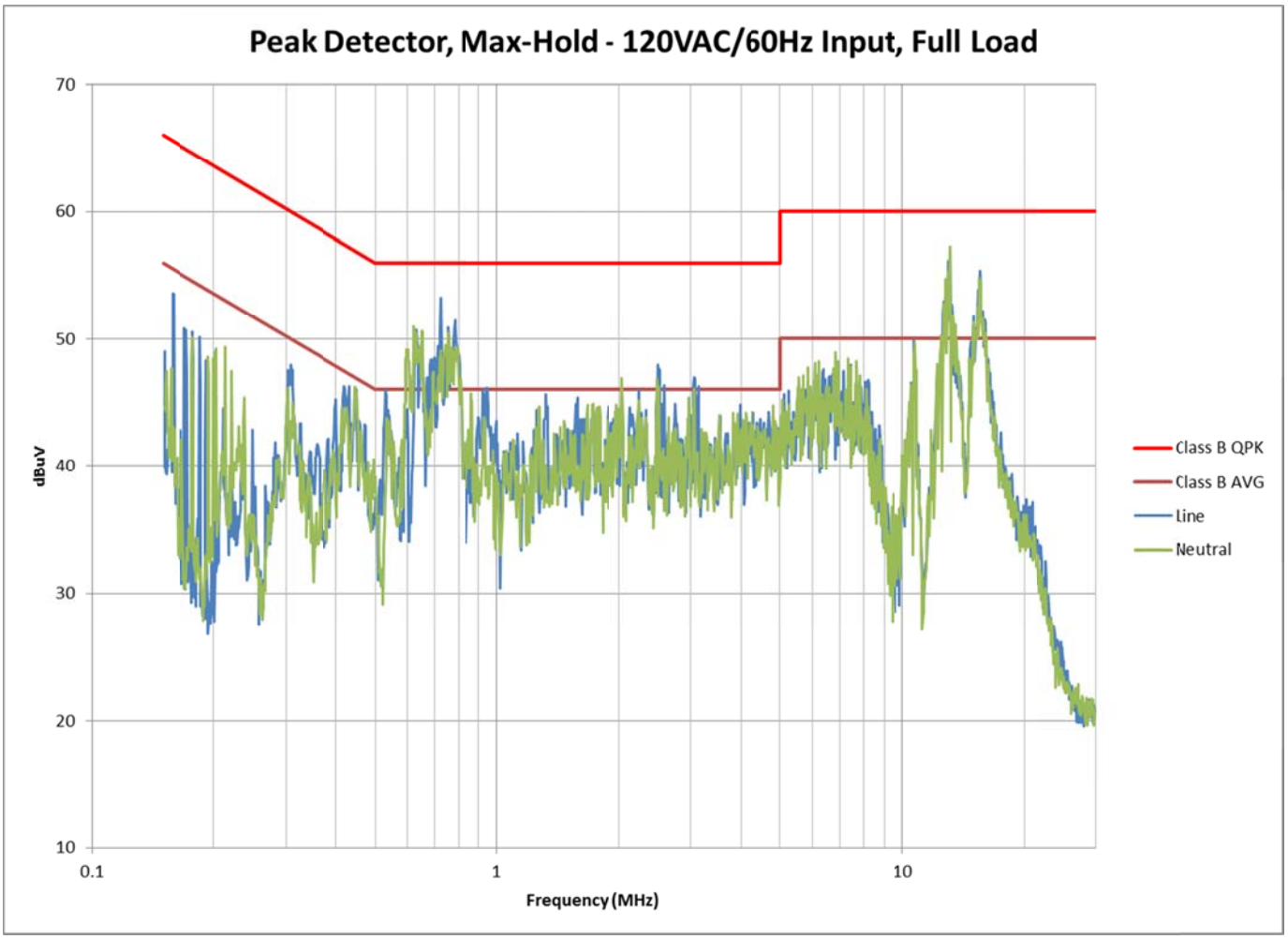
10.1 Drain of Primary FET – Q4



10.2 Drain of Sync FET – Q5



11 Conducted Emissions



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 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