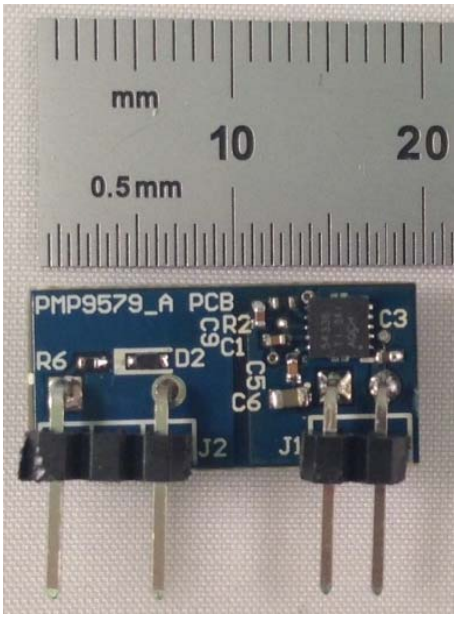
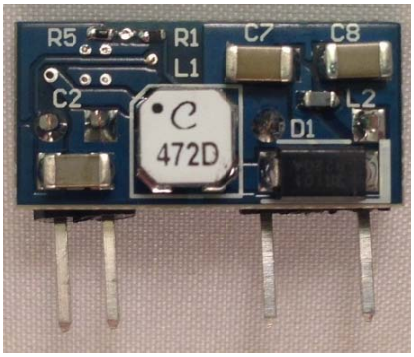
1 Photo

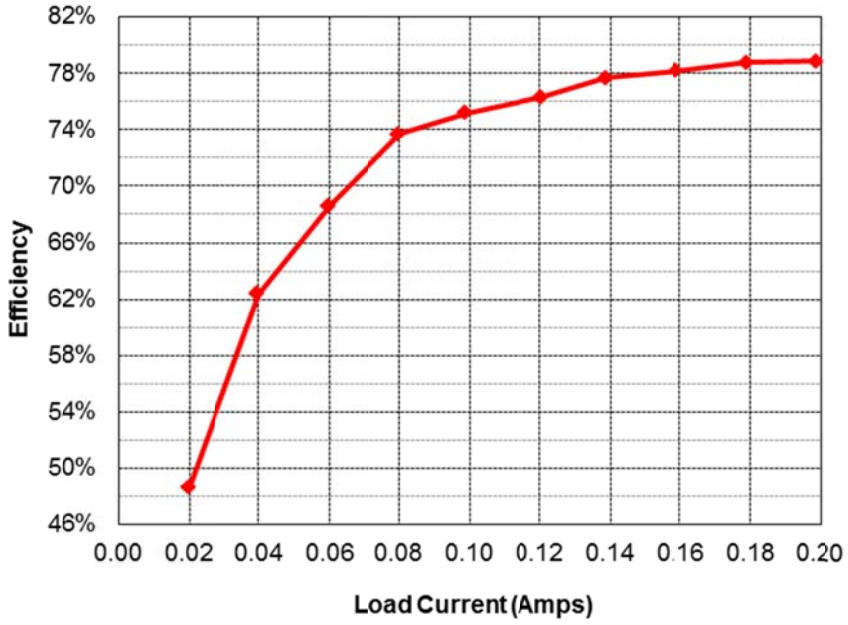
The photos below show the PMP9579 Rev A demo board.





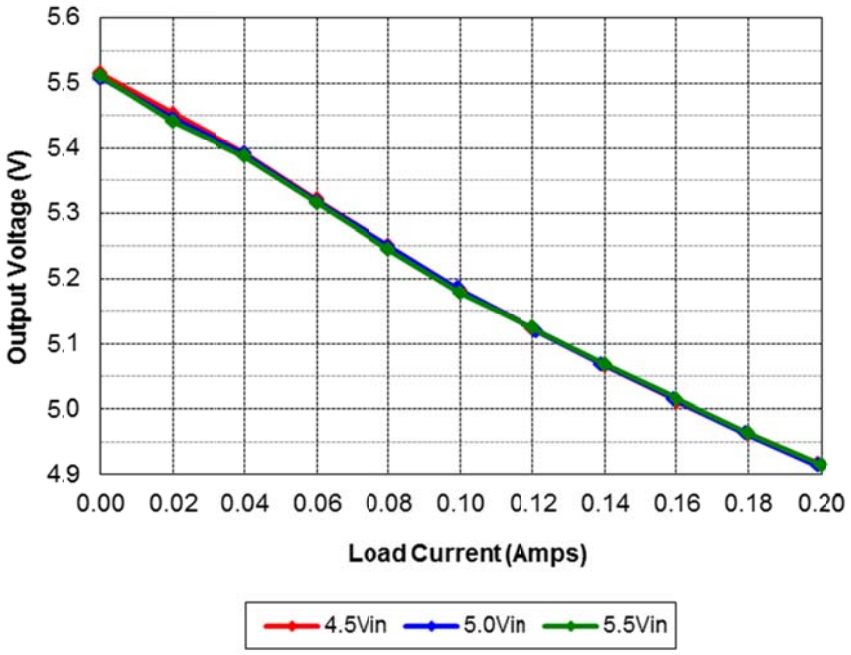
2 Efficiency

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



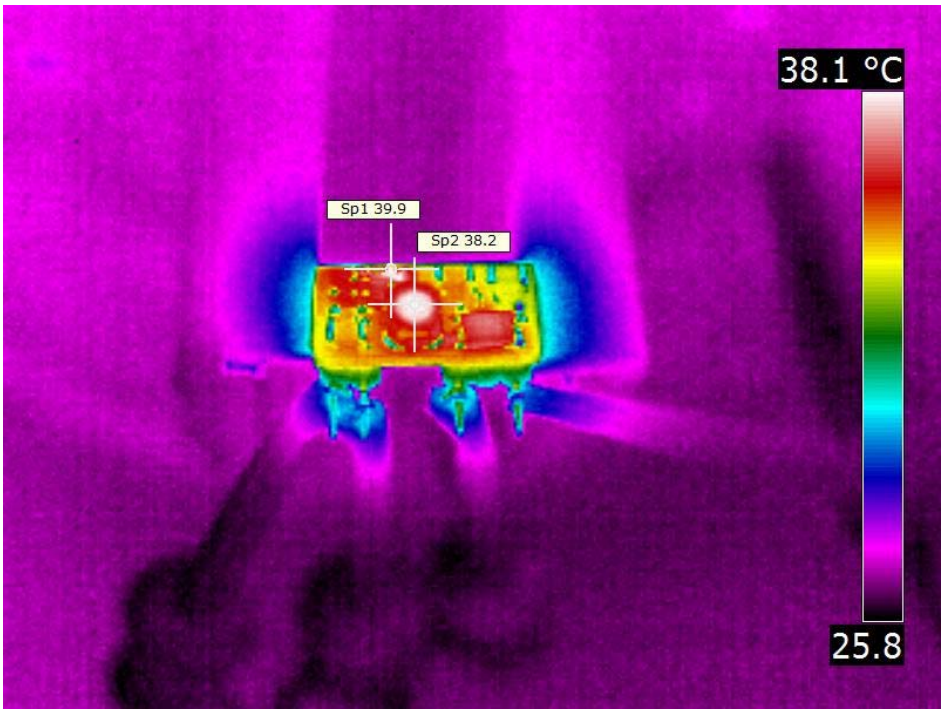
Vin	Iin	Iout	Vout	Pout	Losses	Efficiency
5.00	0.019	0.000	5.508	0.00	0.096	0.0%
4.98	0.045	0.020	5.446	0.11	0.115	48.6%
5.01	0.069	0.040	5.391	0.22	0.130	62.4%
5.00	0.093	0.060	5.318	0.32	0.146	68.6%
5.00	0.114	0.080	5.249	0.42	0.150	73.7%
5.02	0.136	0.099	5.185	0.51	0.169	75.2%
5.01	0.162	0.121	5.119	0.62	0.192	76.3%
5.01	0.181	0.139	5.068	0.70	0.202	77.7%
5.00	0.204	0.159	5.015	0.80	0.223	78.2%
4.99	0.226	0.179	4.963	0.89	0.239	78.8%
5.00	0.248	0.199	4.914	0.98	0.262	78.9%

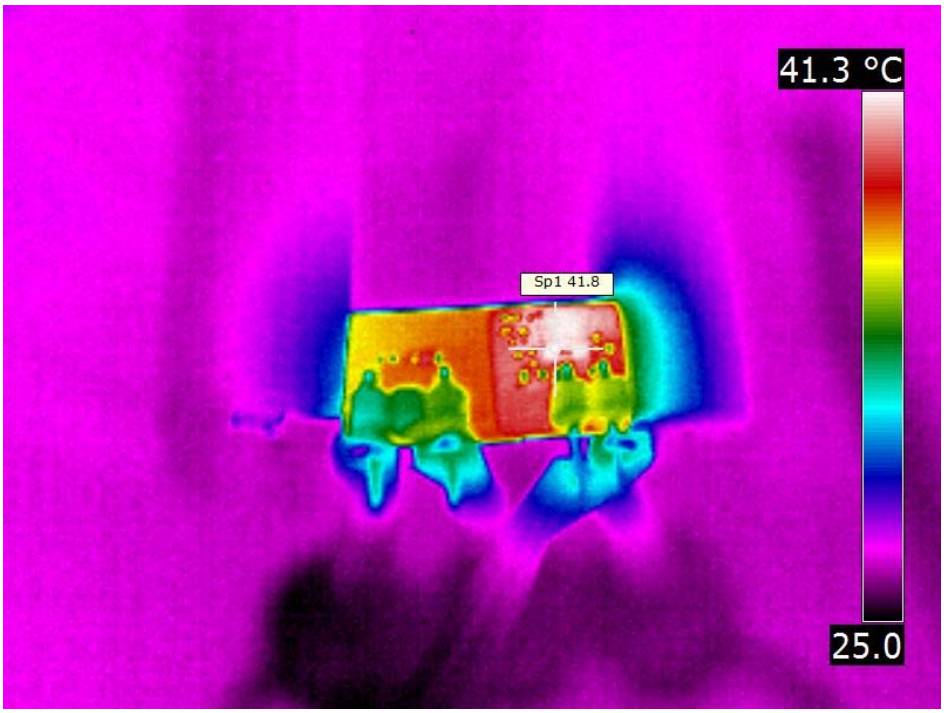
3 Regulation



4 Thermal Images

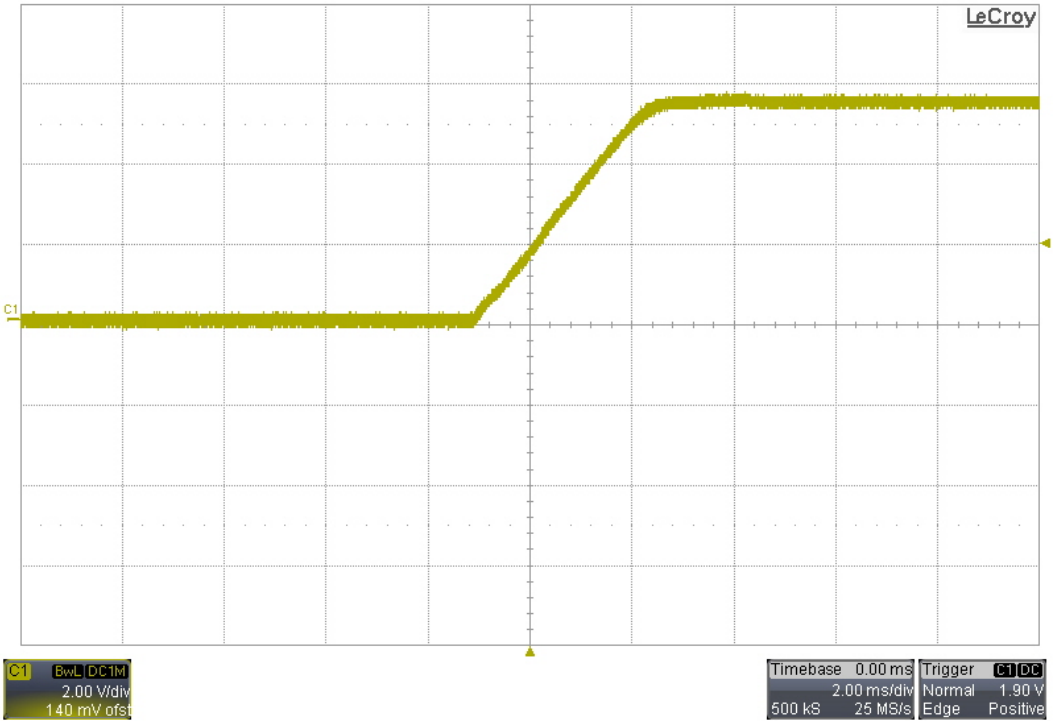
The thermal images below show the top and bottom of the board with a 200mA load and no forced air flow. The ambient temperature was 25ºC.

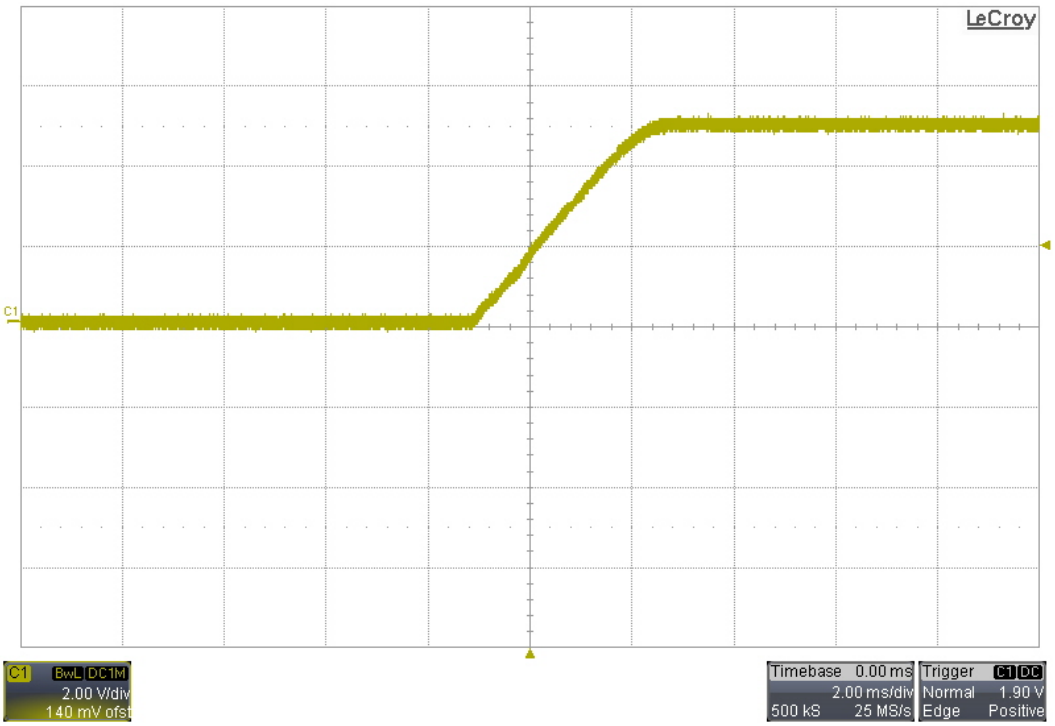




5 Startup

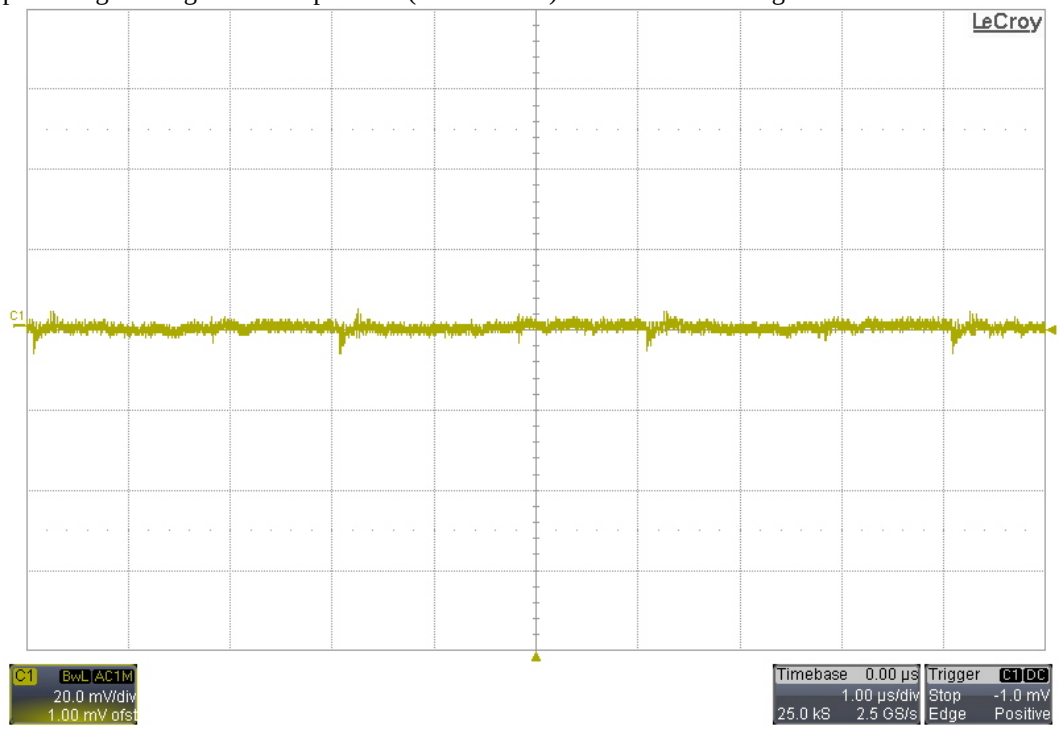
The output voltage at startup is shown in the images below. The top image was captured with no load, and the bottom image was captured with a 25 ohm load.





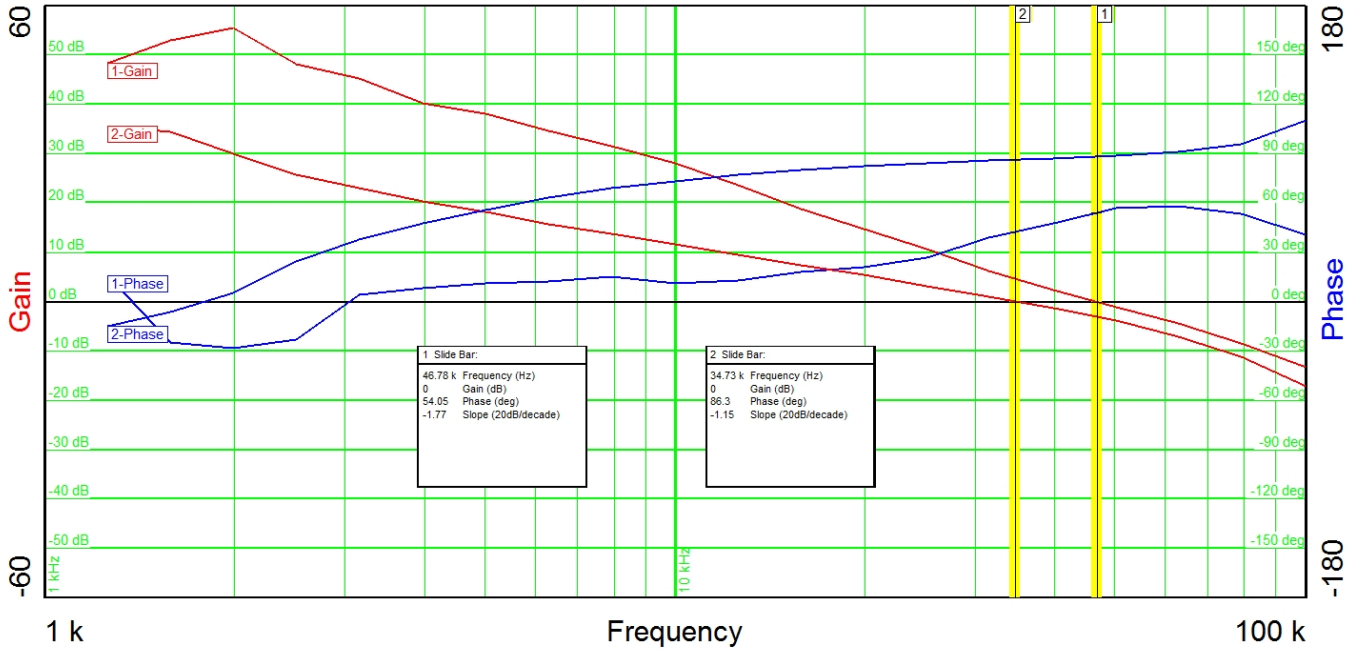
6 Output Ripple Voltage

The output ripple voltage during full load operation (200mA load) is shown in the image below.



7 Loop Response

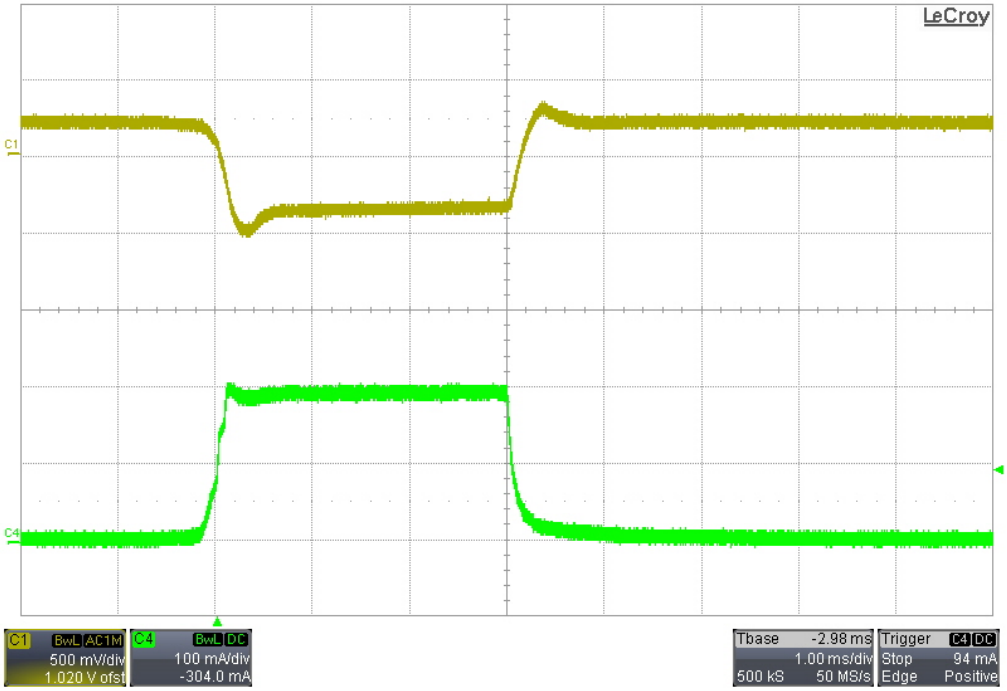
The image below shows the loop response of the converter. For plot #1, the output was unloaded. For plot #2, the output was loaded with 200mA.



8 Load Transients

The image below shows the response to a 0mA to 200mA load transient.

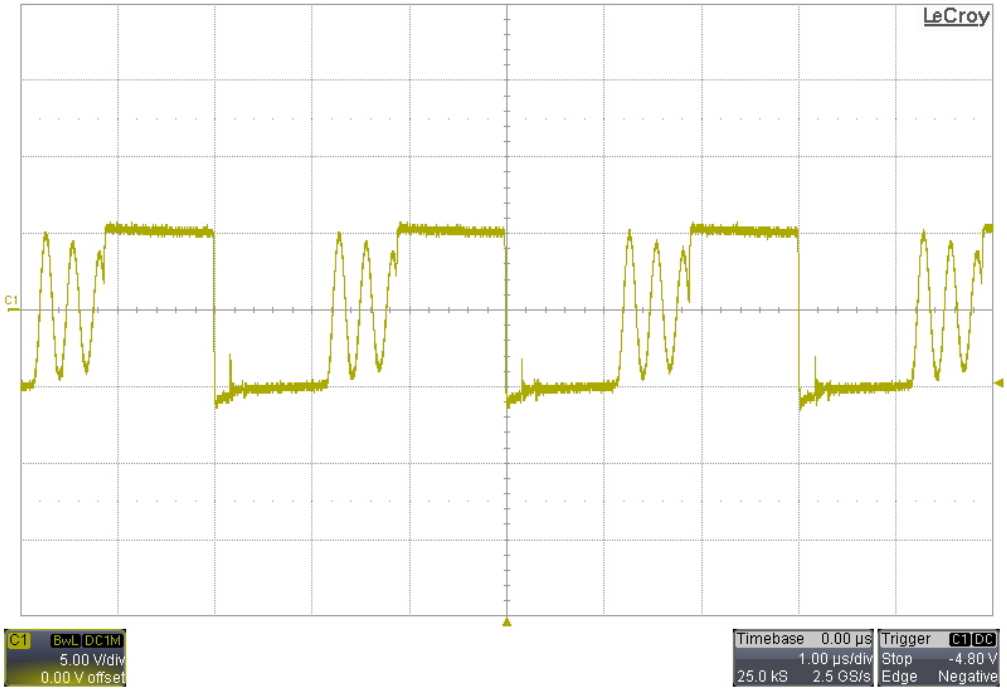
Channel 1: Vout (ac coupled) Channel 4: Iout



9 Switching Waveforms

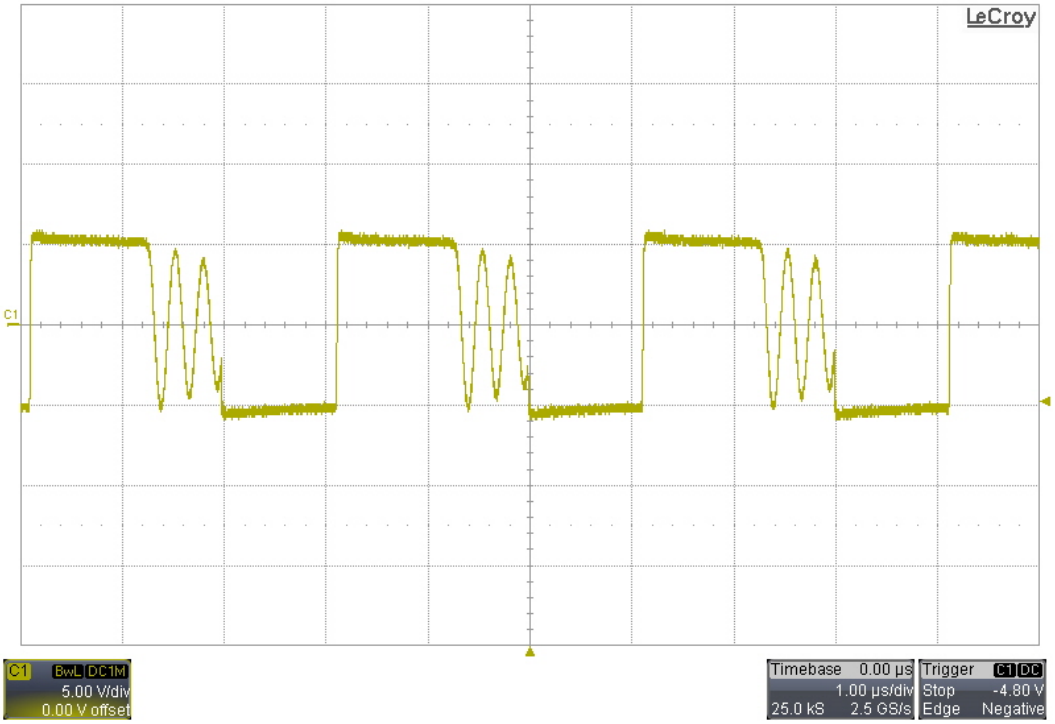
9.1 Primary Waveform

The image below shows the voltage waveform on the phase pin (pin 2) of the controller (U1). The output was loaded with 200mA and the input was 5.5V.



9.2 Secondary Waveform

The image below shows the voltage waveform on the anode of the output diode (D1). The output was loaded with 200mA and the input was 5.5V.



IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATA SHEETS), 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, regulatory 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 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.

TI objects to and rejects any additional or different terms you may have proposed.

Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265