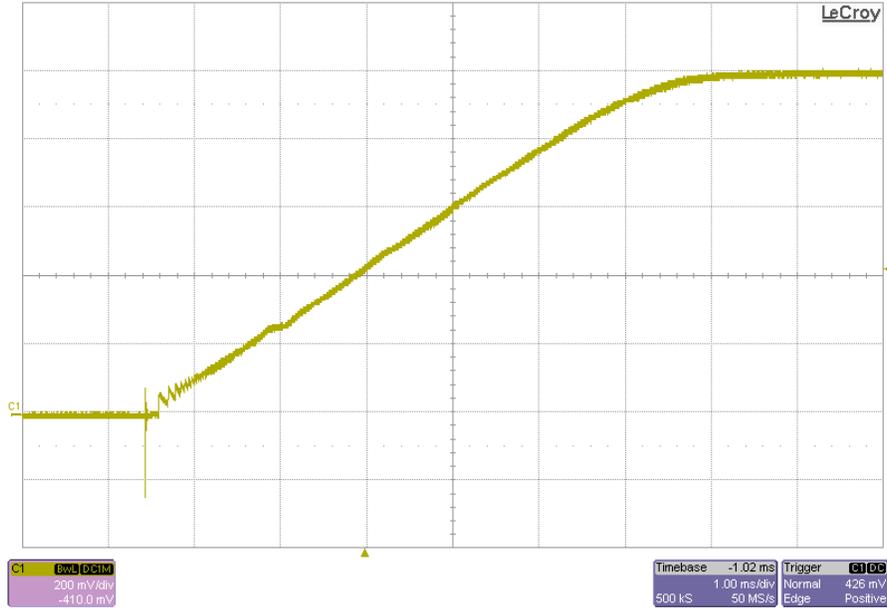


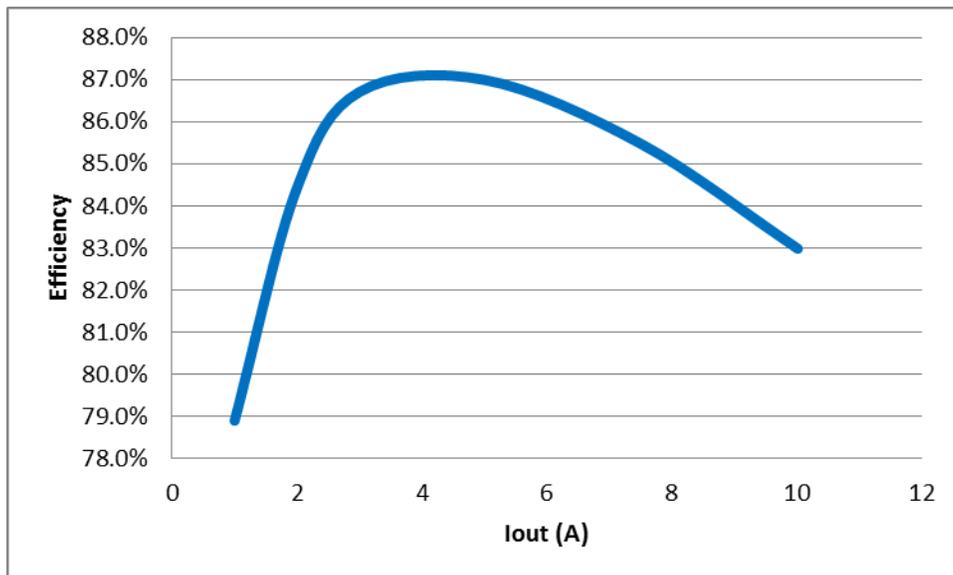
1 Startup

The startup waveform is shown in the figure below. The input voltage was set at 12V, with 1 A load on the output.



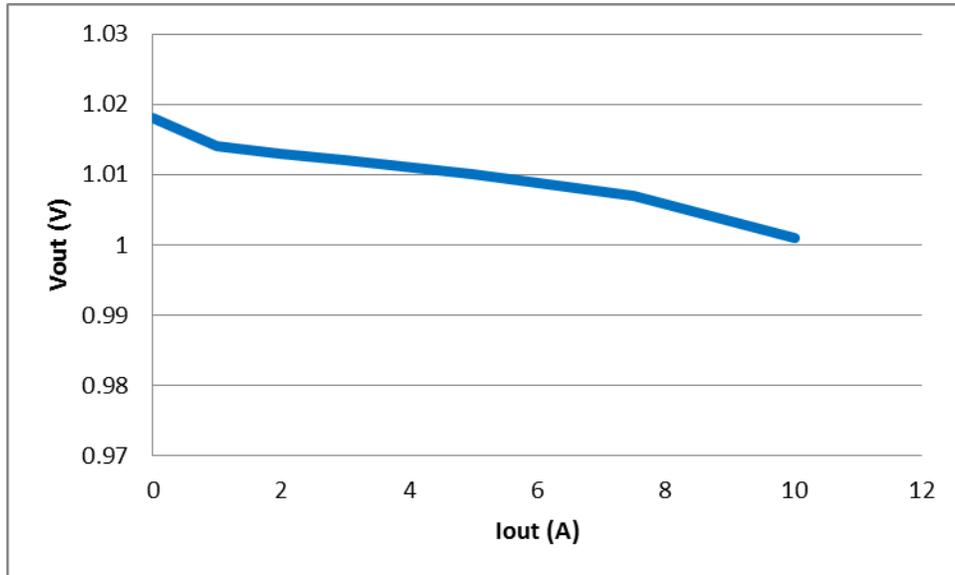
2 Efficiency

The efficiency is shown in the figure below. $V_{in} = 12$ volts, $V_{out} = 1.0$ volts



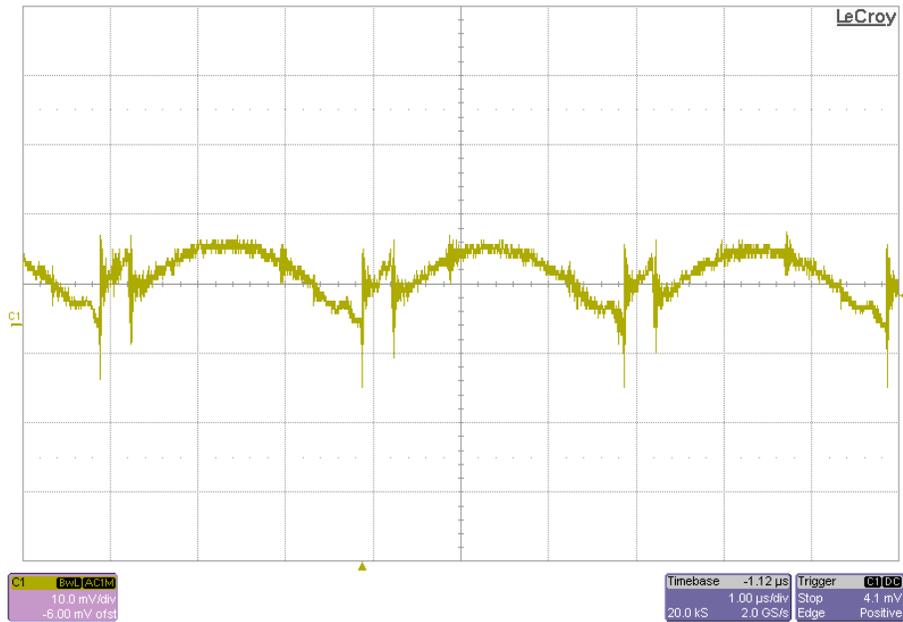
3 Load Regulation

The load regulation of the output is shown in the graph below.



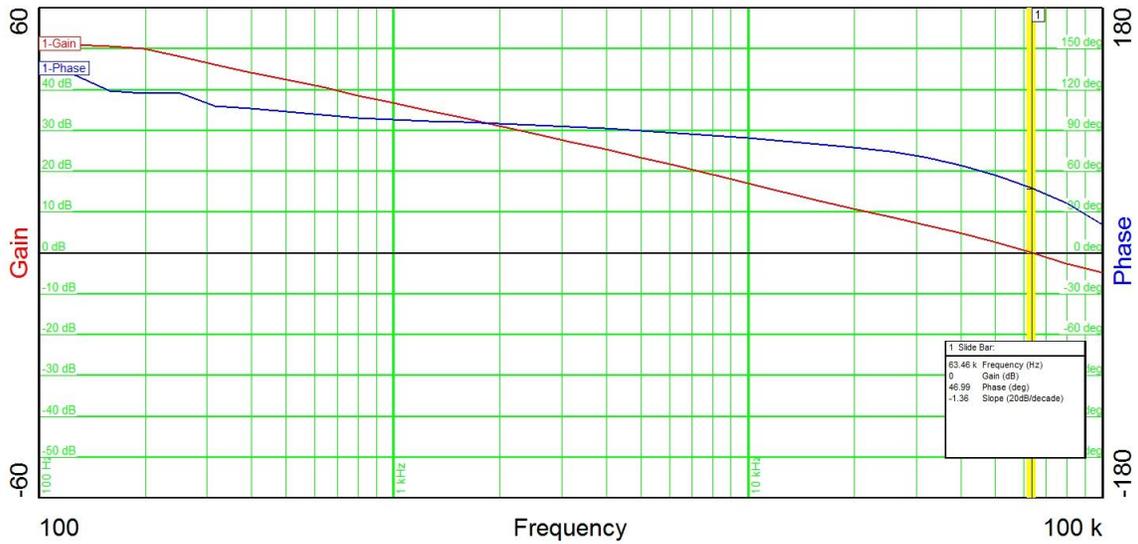
4 Output Ripple Voltage

The output ripple voltage is shown in the figure below. The image was taken with a 10 A load. 10 mV/div Vertical and 2 μ S/div Horizontal.



5 Control Loop Frequency Response

The figure below shows the loop response with a 12V input, and a 1A load.

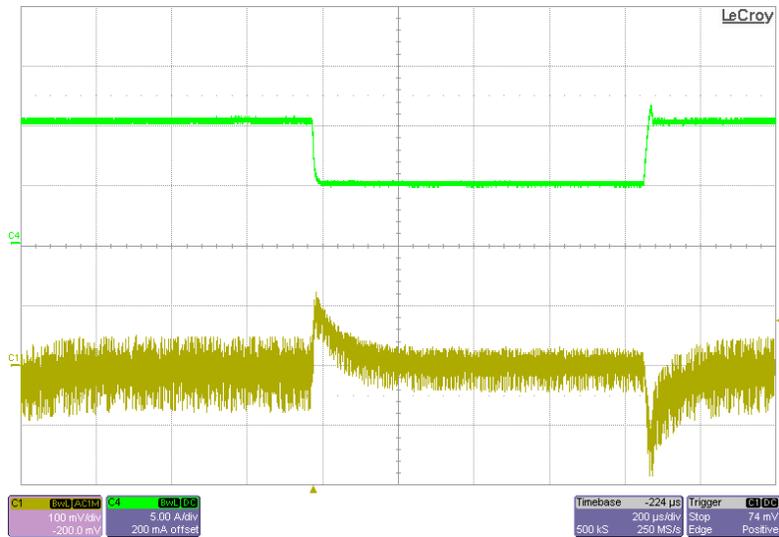


6 Load Transients

The figures below show the response to load transients. The input voltage was set to 12V.

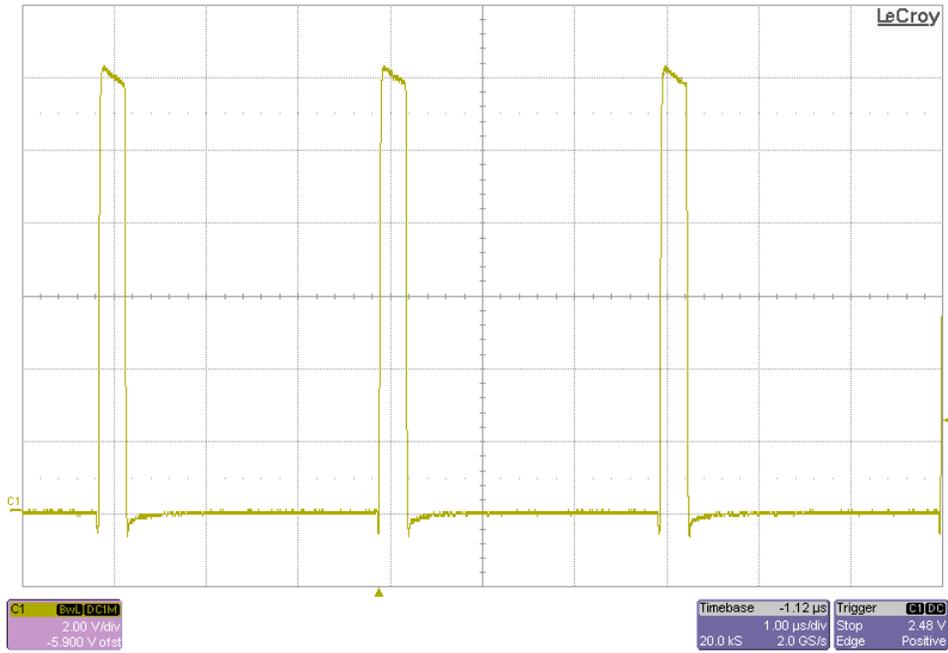
Channel 1 : Vout (AC coupled)

Channel 4 : Load current



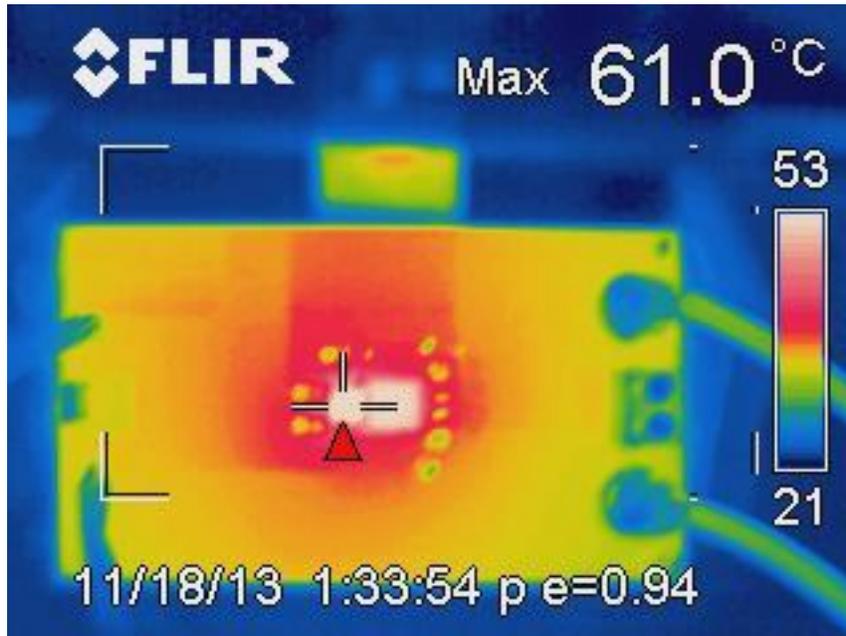
7 Switch Node Waveform

The figure below shows the switch node waveform at 12 volts in and 10 amps out.



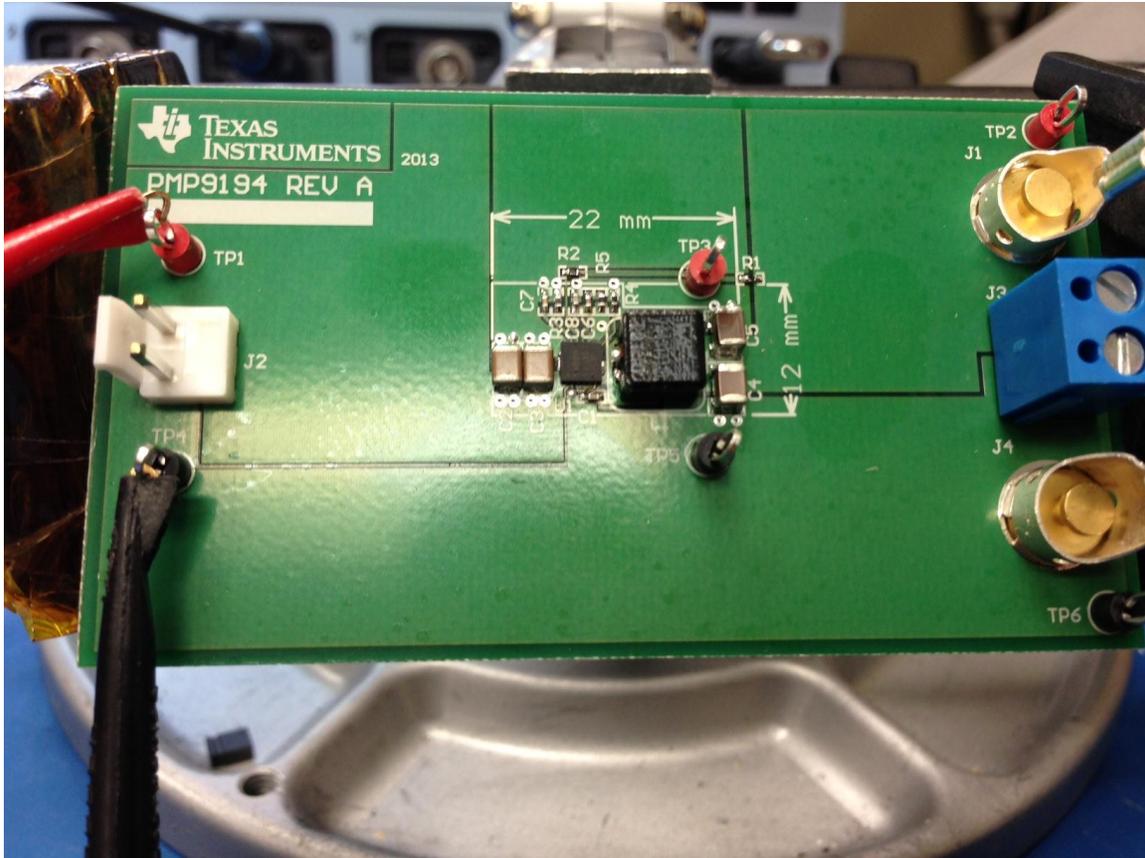
8 Thermal Map

The figure below shows thermal map after 1 hour at 10 amp load and 1 volt in 25 C degree ambient. Max temperature rise was 35 C degrees.



9 Picture

The figure below shows the board in the same orientation as the thermal picture.



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](https://www.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
Copyright © 2021, Texas Instruments Incorporated