Test Data
For PMP9446
6/20/2014

Table of Contents

1. Design Specifications

| Vin Minimum	10VDC
Vin Maximum	15VDC
Vin Nominal	12VDC
Vout	54VDC
Iout	0.75A Max.
Switching Frequency	≈ 333KHz

2. Circuit Description

PMP9446 is an Isolated Flyback Converter using the LM5022 controller IC. The design accepts an input voltage of 10Vin to 15Vin (12Vin Nominal) and provides an output of 54Vout capable of supplying 0.75A of continuous current to the load. The design was built on the PMP7899 PCB, which was modified to the PMP9446 design configuration and requirements.

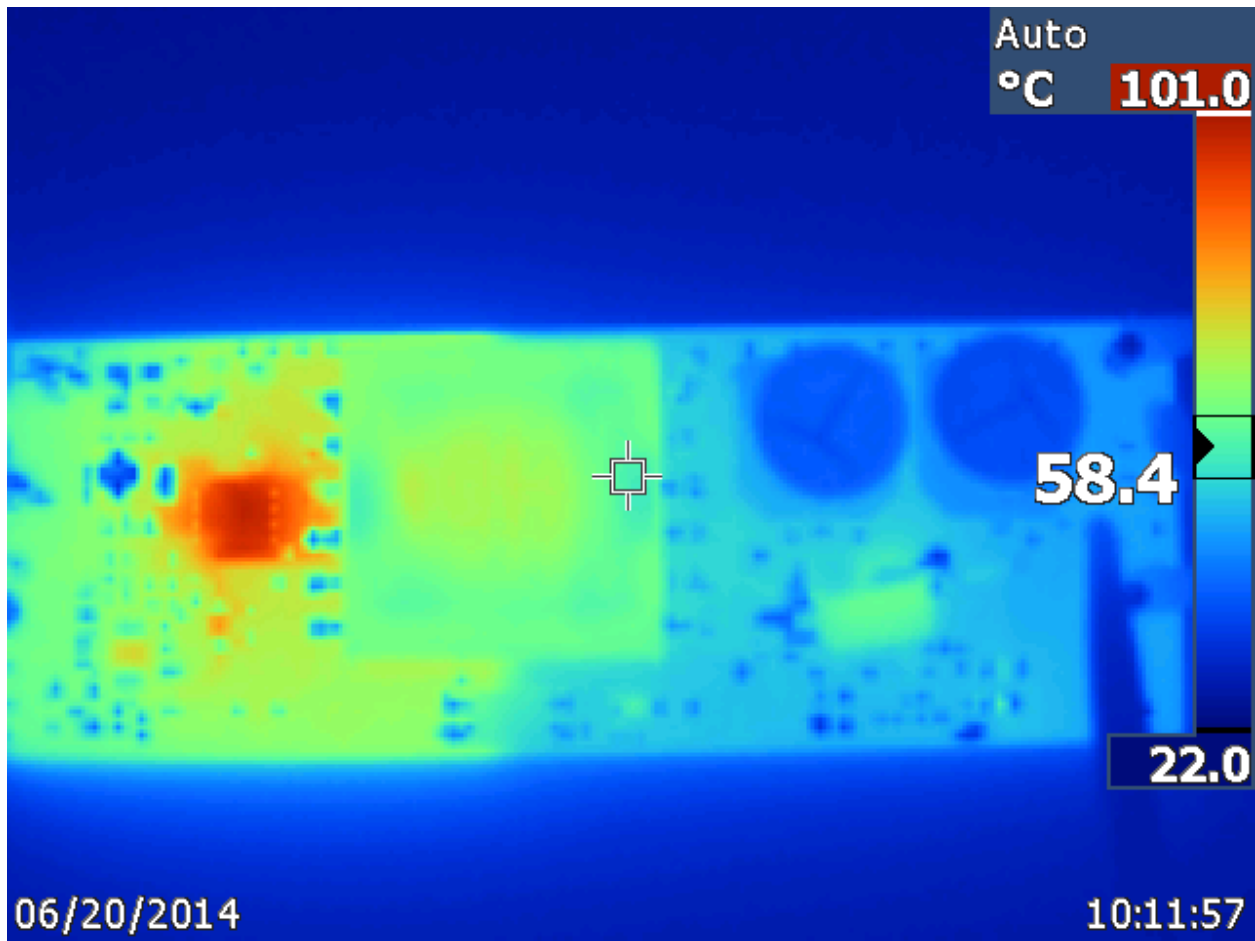## 3. PMP9446 Board Photos

Board Dimensions: 4" x 1.4"

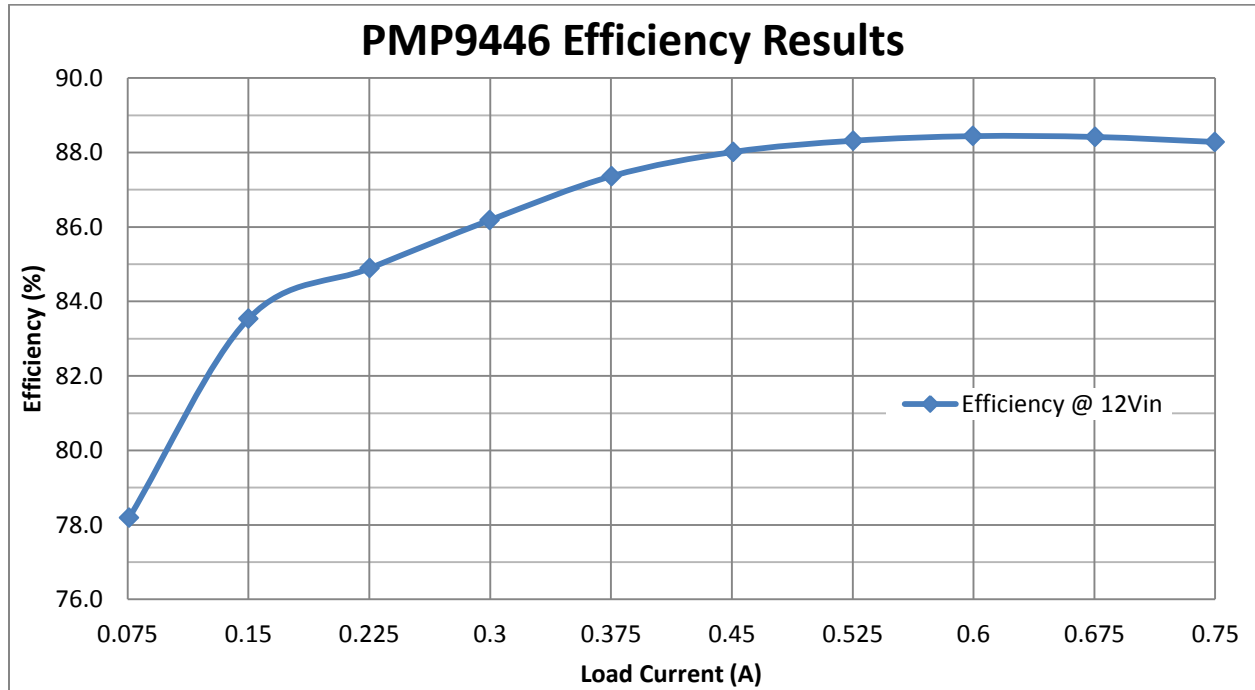**Board Photo (Top)**
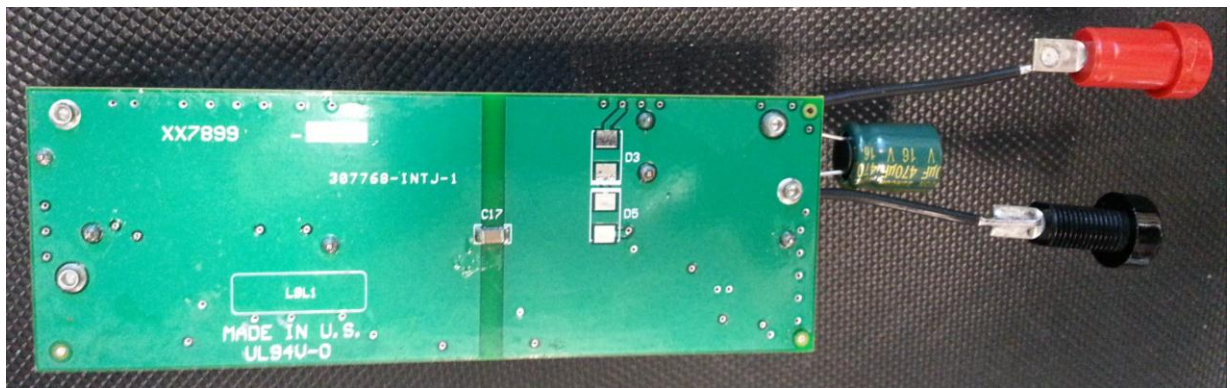
Board Photo (Bottom)

4. Thermal Data

IR thermal image taken at steady state with 12Vin and 0.75A load (no airflow)

5. Efficiency

5.1 Efficiency Chart

5.2 Efficiency Data

Vin (V)	Iin (A)	Vout (V)	Iout (A)	Pin (W)	Pout (W)	Efficiency (%)
12	0.4404	54.44	0.0759	5.2848	4.131996	78.2
12	0.815	54.43	0.1501	9.78	8.169943	83.5
12	1.2041	54.421	0.2254	14.4492	12.26649	84.9
12	1.5774	54.414	0.2998	18.9288	16.31332	86.2
12	1.9482	54.407	0.3754	23.3784	20.42439	87.4
12	2.3229	54.4	0.451	27.8748	24.5344	88.0
12	2.696	54.392	0.5253	32.352	28.57212	88.3
12	3.0732	54.386	0.5997	36.8784	32.61528	88.4
12	3.4627	54.381	0.6756	41.5524	36.7398	88.4
12	3.8488	54.373	0.7499	46.1856	40.77431	88.3

6 Waveforms

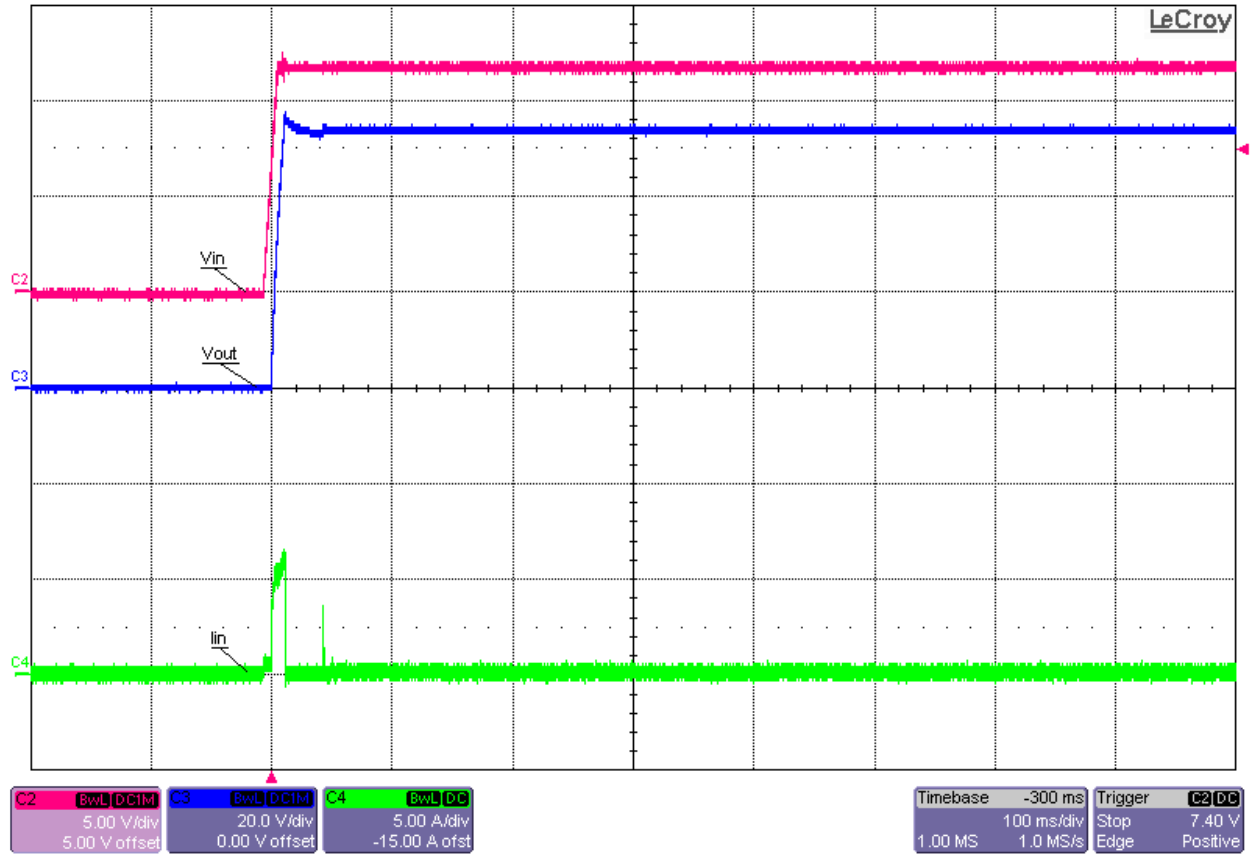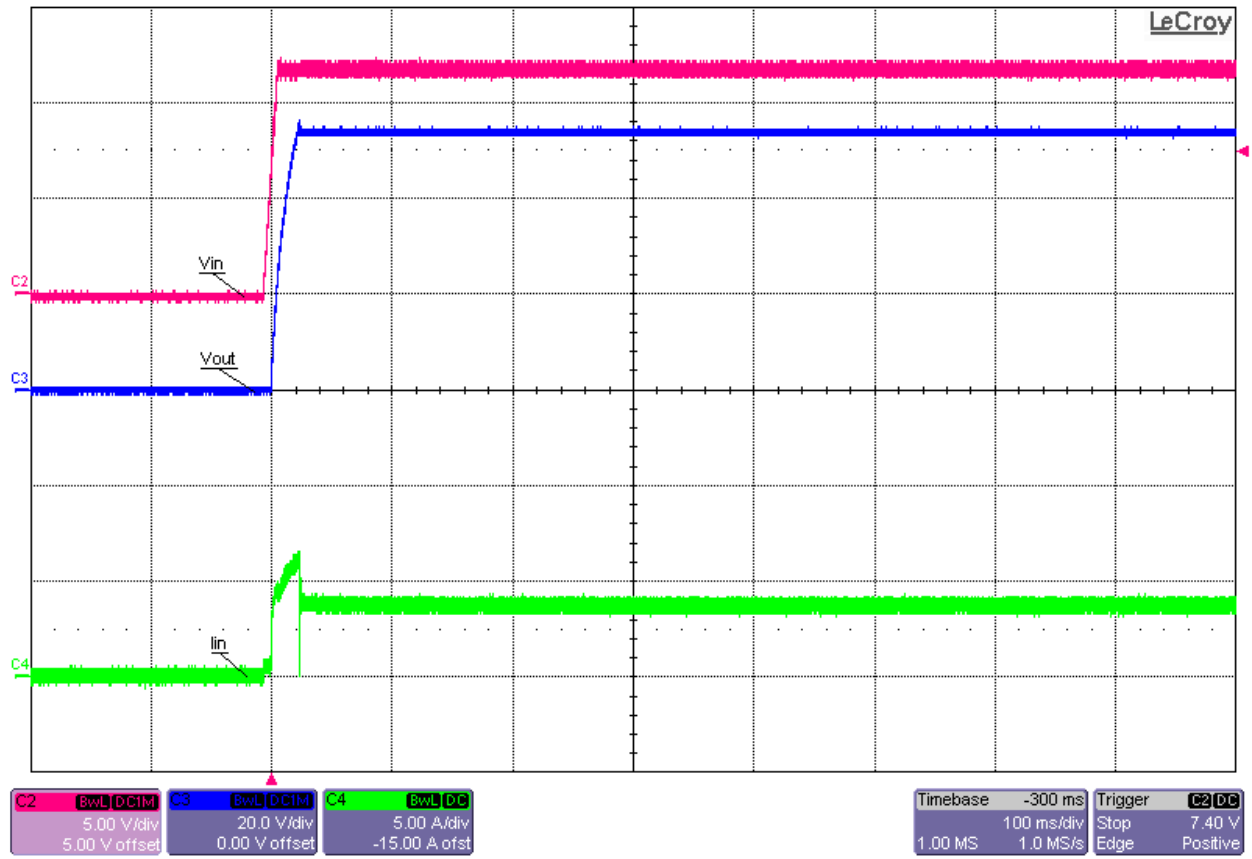## 6.1 Load Transient Response
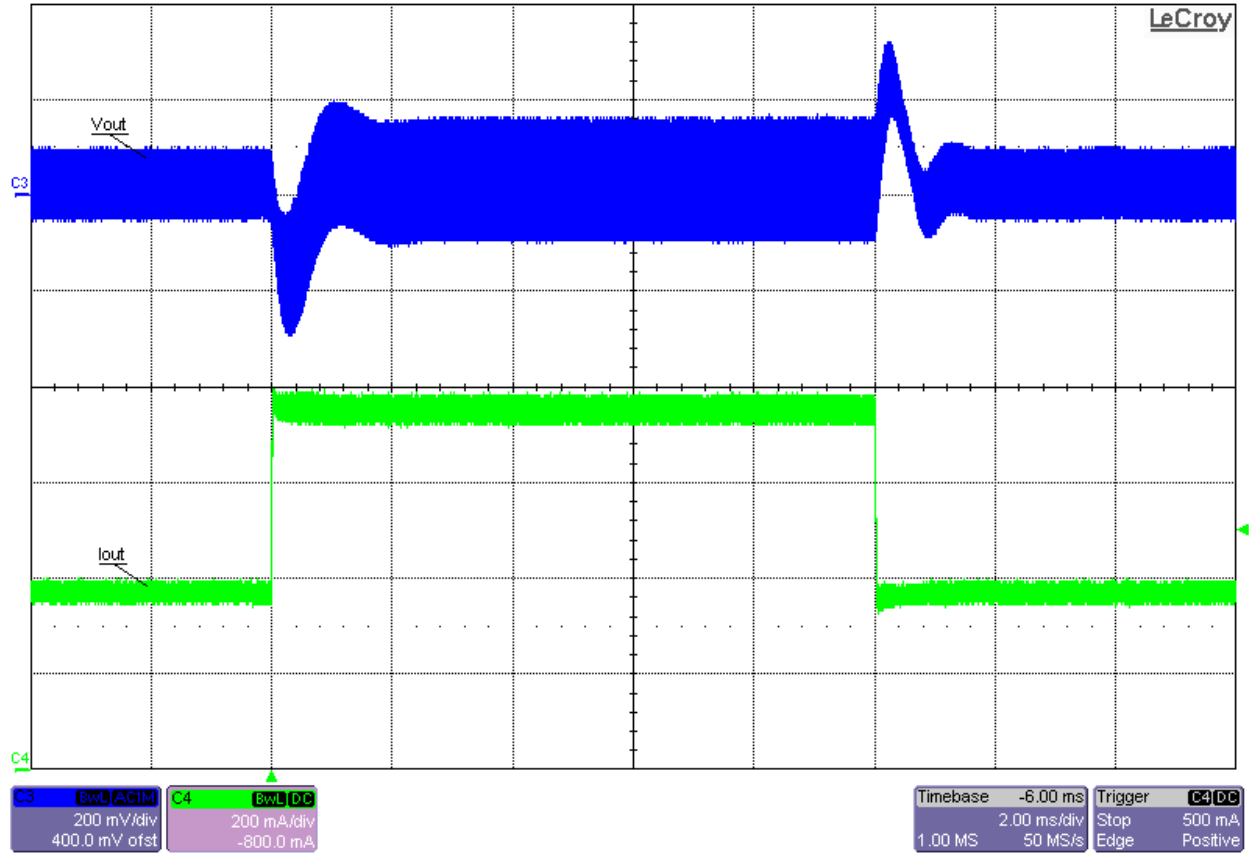
Load Transient Response at 12Vin and 50%-to-100% (0.375A-to-0.75A) Load Step
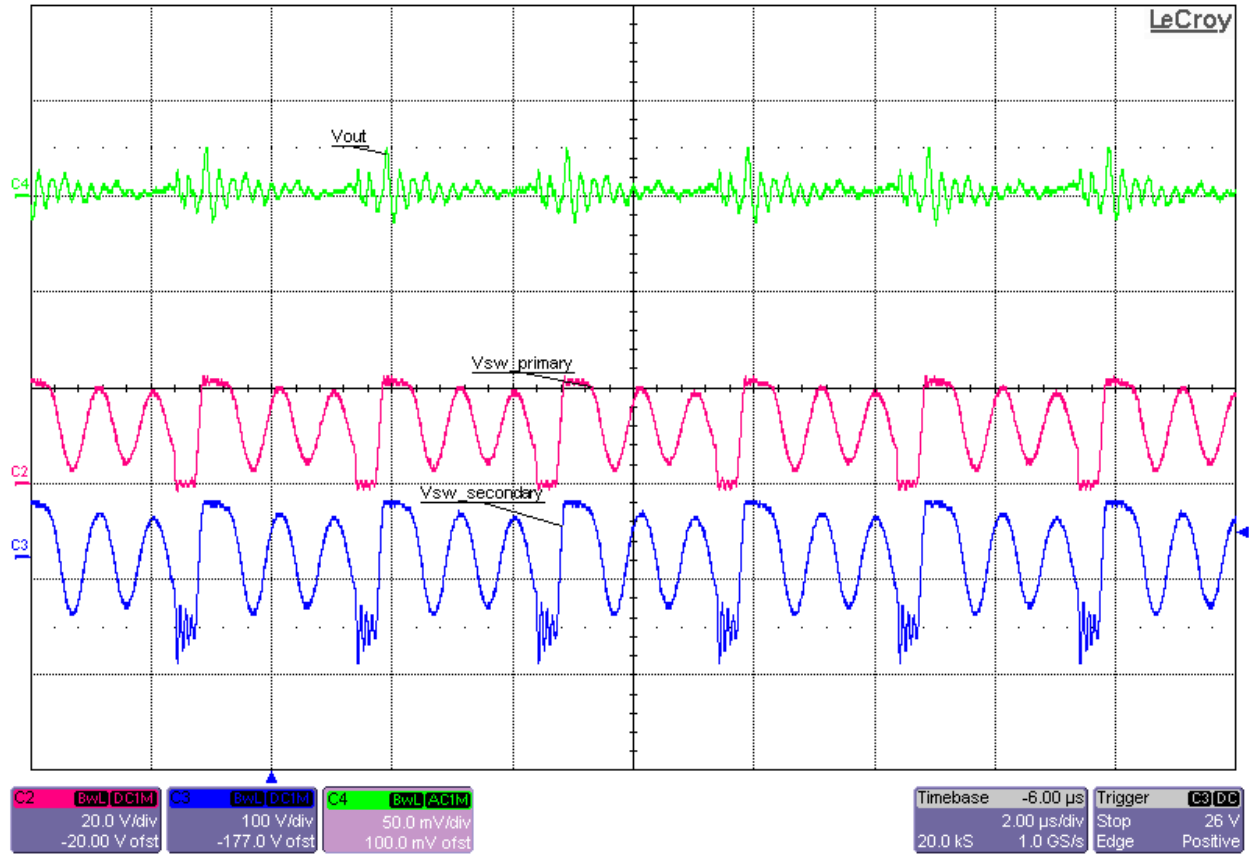
6.2 Startup
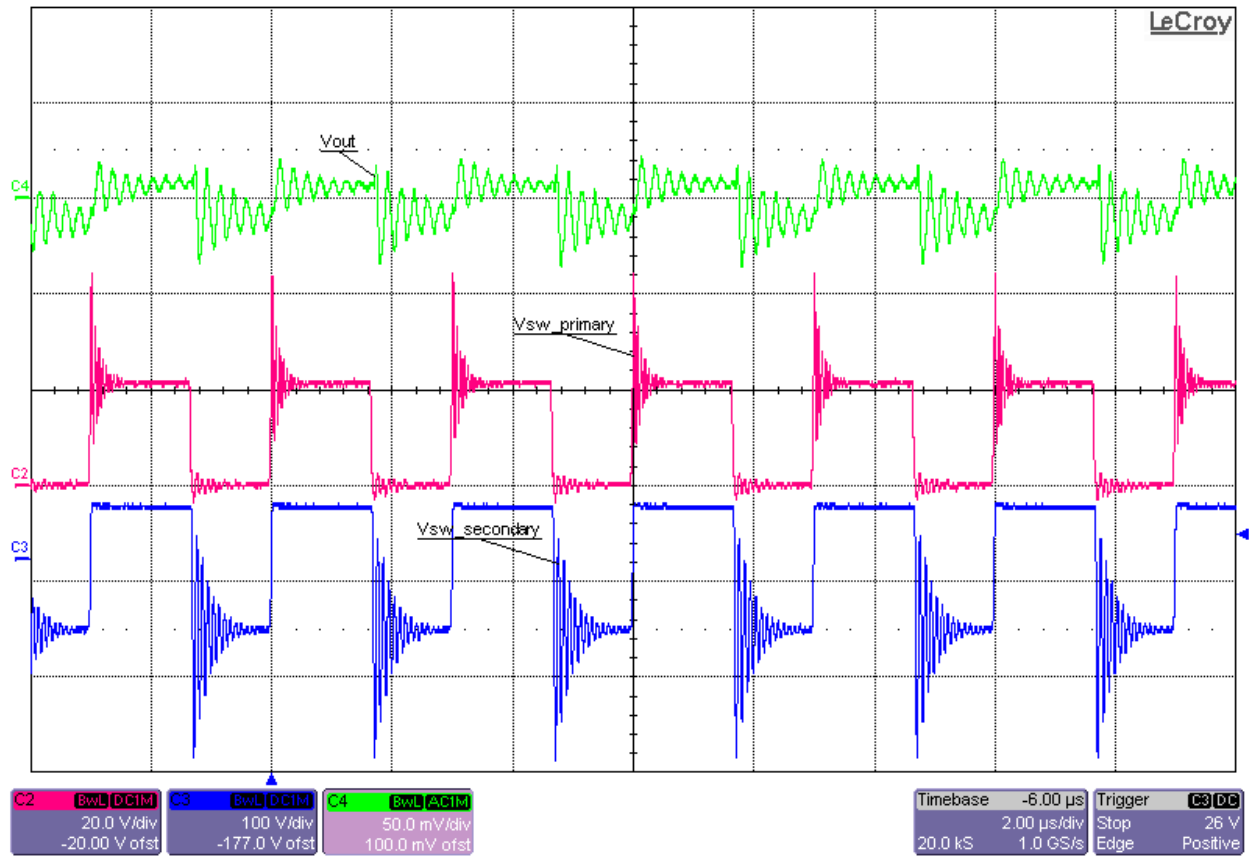

Startup into No Load at 12Vin

Startup into 0.75A Load at 12Vin
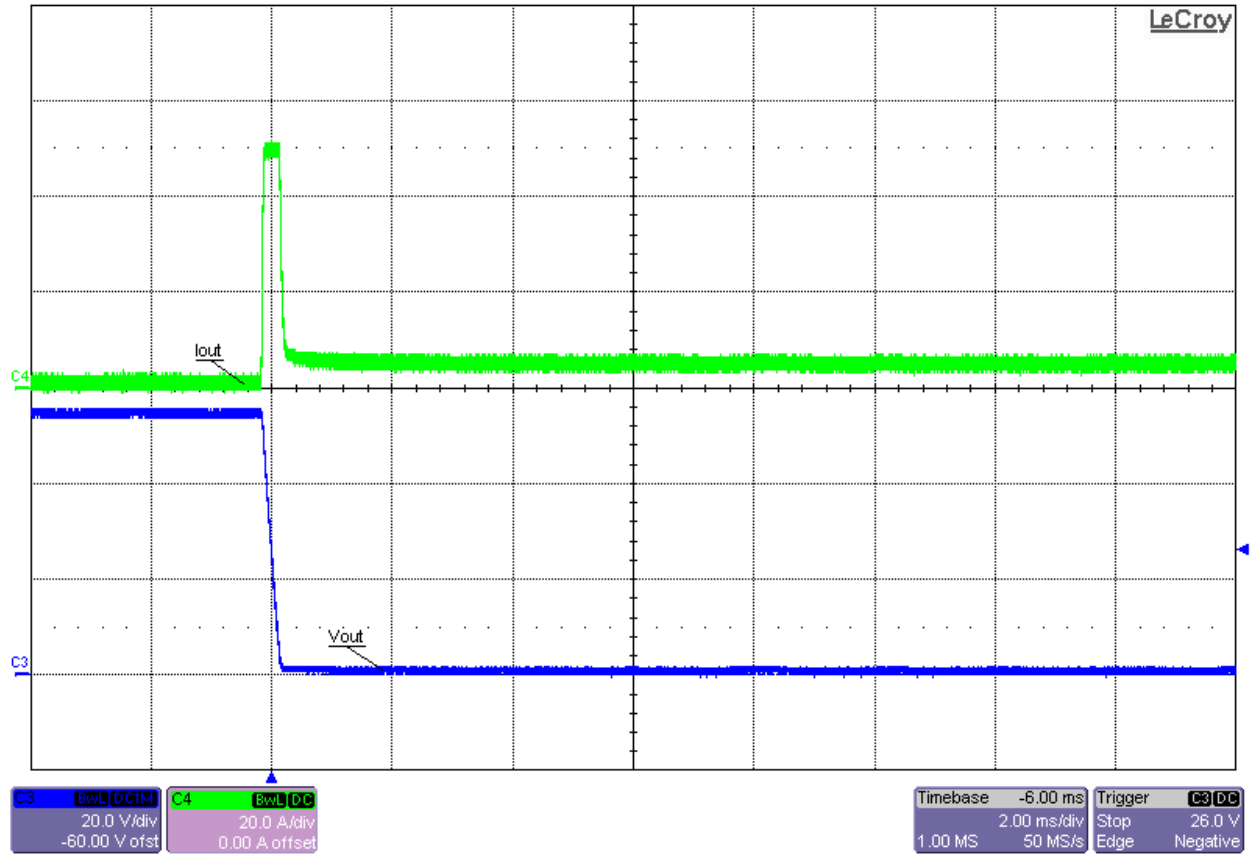
6.3 Output Voltage Ripple and Switch Node Voltage

Switch Node Voltage and Output Voltage Ripple at 12Vin and No Load (Vripple ≈ 40mVp-p)

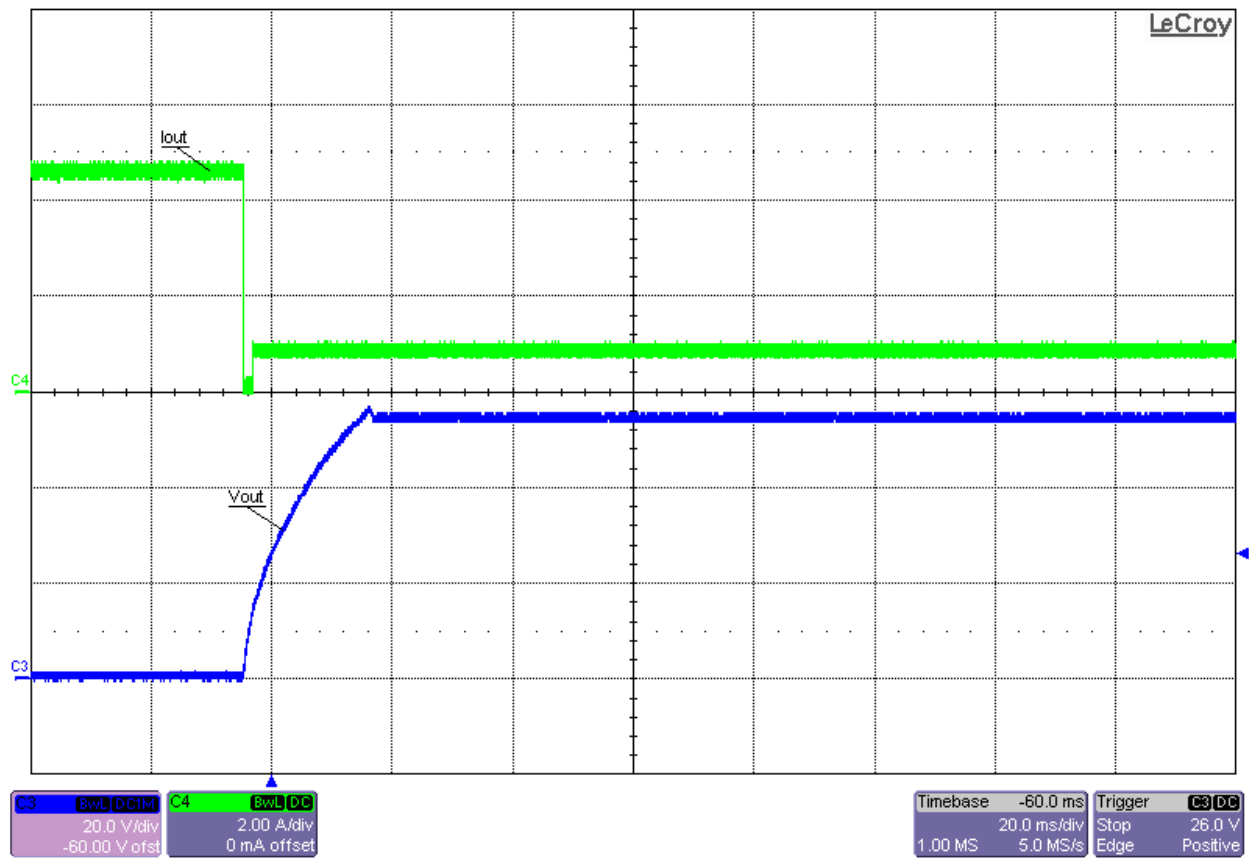**Switch Node Voltage and Output Voltage Ripple at 12Vin and 0.75A Load (Vripple ≈ 60mVp-p)**

6.4 Short Circuit

Short Circuit applied from 0.75A Load at 12Vin

Short Circuit released into 0.75A Load at 12Vin

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