PMP8454 REV D TEST REPORT
TEXAS INSTRUMENTS 01-22-2013

These tests were performed with the Coilcraft NA6111-AL transformer.

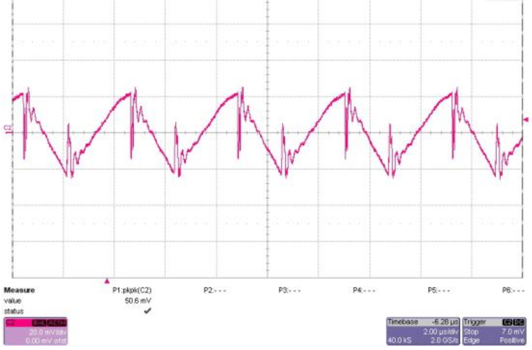
Efficiency and Regulation

				J3	**J3**	**J3**	
Iout	**Vout**	**Iout**	**Vout**	**Iin**	**Vin**	**Eff**	
2.00	3.329	1.00	5.064	0.3772	36.00	86.3%	
2.00	3.329	0.50	5.086	0.2942	36.00	86.9%	
2.00	3.329	0.00	5.108	0.2136	36.00	86.6%	
0.00	3.331	1.00	4.945	0.1573	36.00	87.3%	
0.00	3.331	0.00	4.989	0.0098	36.00	0.0%	
1.00	3.330	0.50	5.025	0.1848	36.00	87.8%	
1.00	3.330	1.00	5.003	0.2637	36.00	87.8%	
				J3	**J3**	**J3**	
Iout	**Vout**	**Iout**	**Vout**	**Iin**	**Vin**	**Eff**	
2.00	3.329	1.00	5.051	0.2754	48.00	88.6%	
2.00	3.329	0.50	5.069	0.2163	48.00	88.5%	
2.00	3.329	0.00	5.088	0.1585	48.00	87.5%	
0.00	3.331	1.00	4.951	0.1178	48.00	87.6%	
0.00	3.331	0.00	4.987	0.0094	48.00	0.0%	
1.00	3.330	0.50	5.018	0.1378	48.00	88.3%	
1.00	3.330	1.00	5.000	0.1948	48.00	89.1%	
				J3	**J3**	**J3**	
Iout	**Vout**	**Iout**	**Vout**	**Iin**	**Vin**	**Eff**	
2.00	3.329	1.00	5.045	0.2303	57.00	89.2%	
2.00	3.329	0.50	5.062	0.1815	57.00	88.8%	
2.00	3.329	0.00	5.079	0.1337	57.00	87.4%	
0.00	3.331	1.00	4.953	0.1001	57.00	86.8%	
0.00	3.331	0.00	4.987	0.0095	57.00	0.0%	
1.00	3.330	0.50	5.015	0.1166	57.00	87.8%	
1.00	3.330	1.00	4.999	0.1639	57.00	89.2%	
Max Load Efficiency without bridge							
Iout	**Vout**	**Iout**	**Vout**	**Iin**	**Vin**	**Eff**	
2.00	3.329	1.00	5.064	0.3772	34.16	91.0%	36.0V at J3
2.00	3.329	1.00	5.051	0.2754	46.21	92.0%	48.0V at J3
2.00	3.329	1.00	5.045	0.2303	55.28	91.9%	57.0V at J3
Vin measured at FB1/FB2							

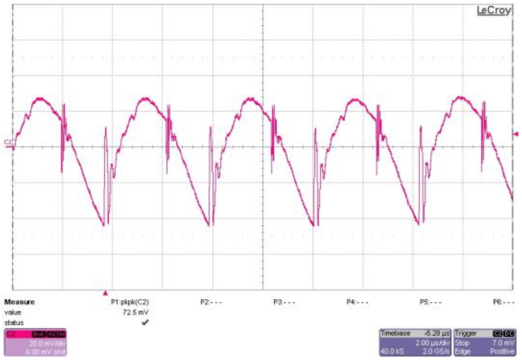
Ripple and Noise

48V input; 3.3V/2A, 5V/1A loads; 20MHz BWL.

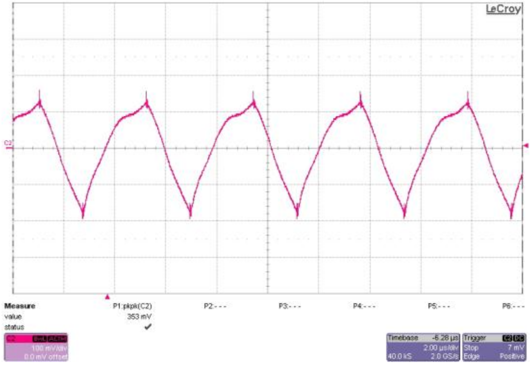
3.3V Output Ripple (C22), 20mV/div
Measured 50.6mVpeak to peak:



5V Output Ripple (C14), 20mV/div
Measured 72.5mV peak to peak:

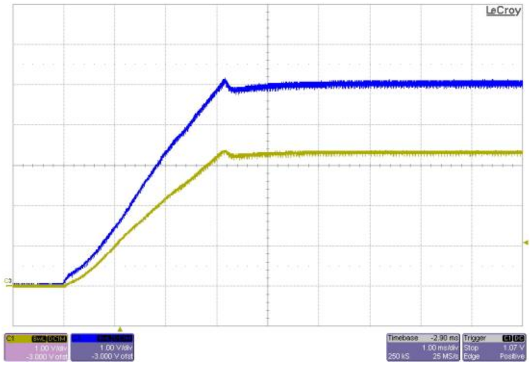


Input Ripple (C15), 100mV/div
Measured 353mVpeak to peak:

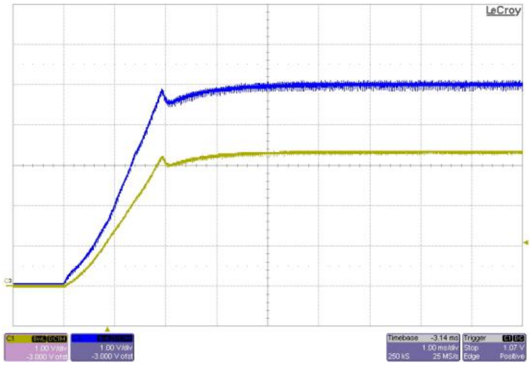


Turn On Response

48VIN, Max Loads, 1msec/div:



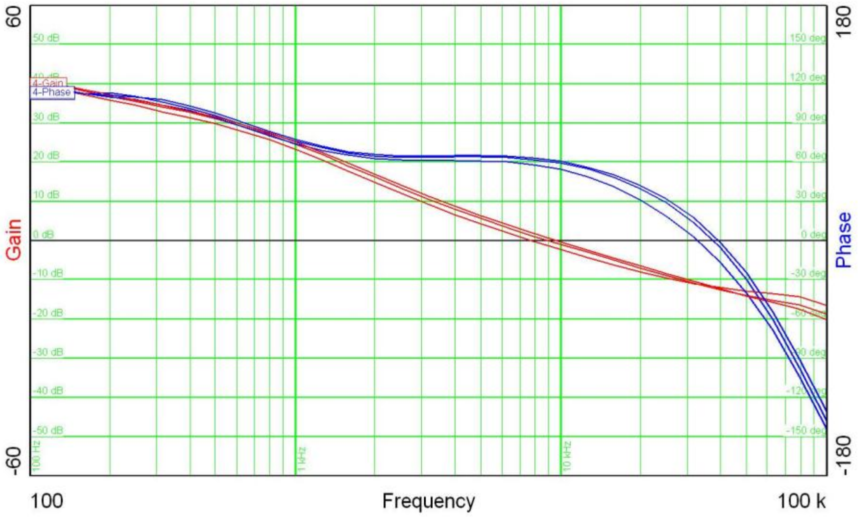
48VIN, 0A Loads, 1msec.div:



Top, 5V output, 1V/div; Bottom, 3.3V output, 1V/div

Loop Stability

The measured Bode plot of the converter is shown below.



Vin	BW	PM	GM
Volts	**KHz**	**Deg**	**dB**
36.00	7.7	58.0	11.1
48.00	8.9	60.0	12.1
57.00	9.7	60.0	12.2

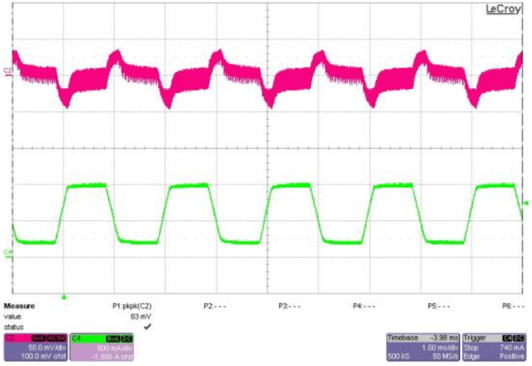
Dynamic Loading

One output was pulsed. The output not being pulsed was loaded to its max value.

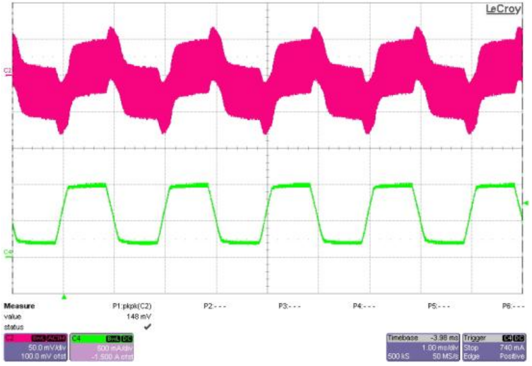
36V INPUT

3.3V load step, 200mA to 1A:

3.3V Response
50mV/div, 1msec/div
Measured 83mV peak to peak:



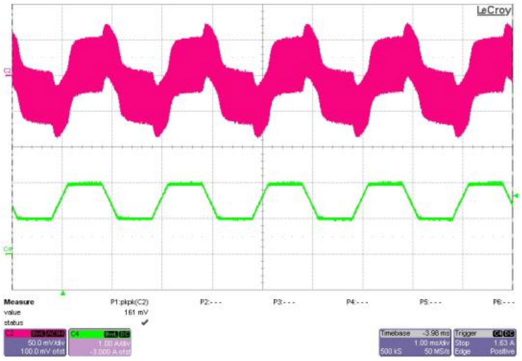
5V Response
50mV/div
Measured 148mV peak to peak:



3.3V load step, 1A to 2A:

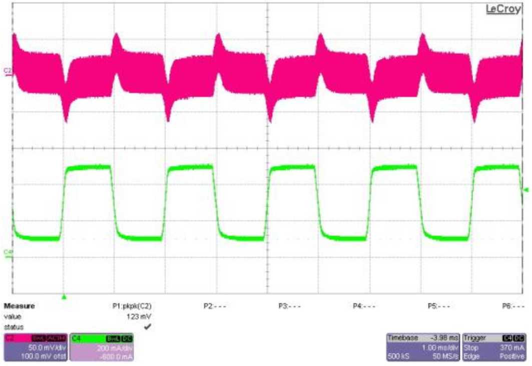
3.3V Response
50mV/div, 1msec/div
Measured 108mV peak to peak:

5V Response
50mV/div
Measured 161mV peak to peak:

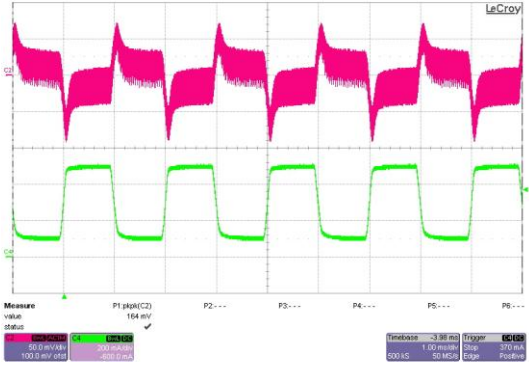


5V load step, 100mA to 500mA:

3.3V Response
50mV/div, 1msec/div
Measured 123mV peak to peak:

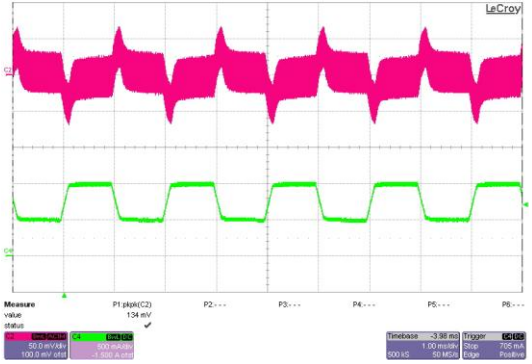


5V Response
50mV/div
Measured 164mV peak to peak:

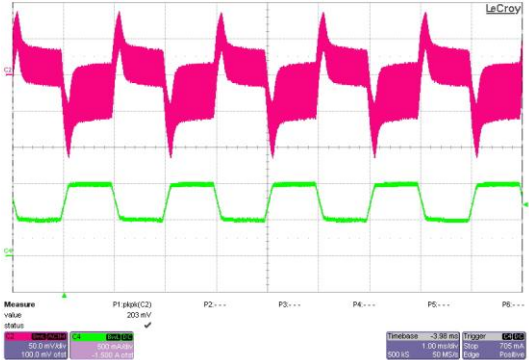


5V load step, 500mA to 1A:

3.3V Response
50mV/div, 1msec/div
Measured 134mV peak to peak:



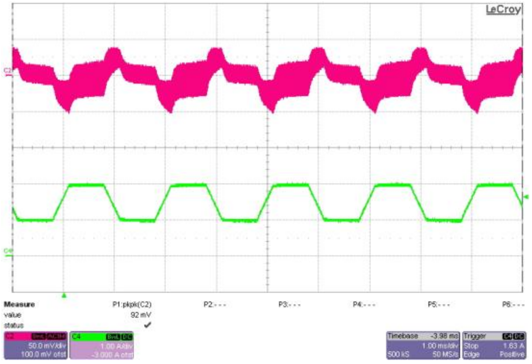
5V Response
50mV/div
Measured 203mV peak to peak:



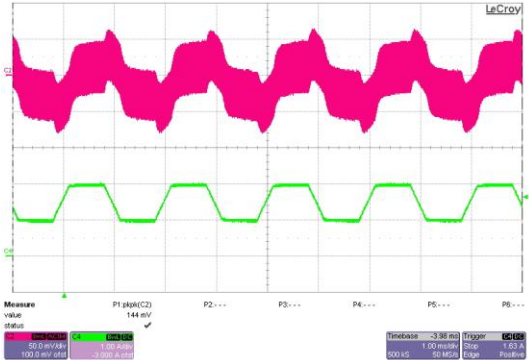
48V INPUT

3.3V load step, 1A to 2A:

3.3V Response
50mV/div, 1msec/div
Measured 92mV peak to peak:

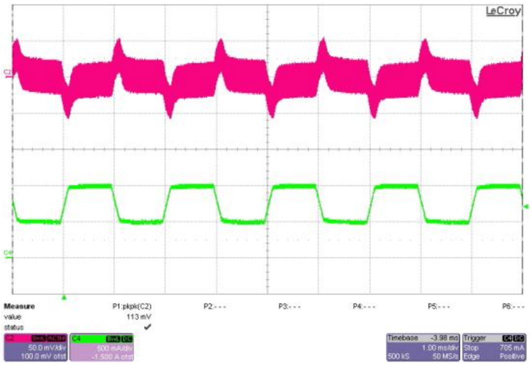


5V Response
50mV/div
Measured 144mV peak to peak:

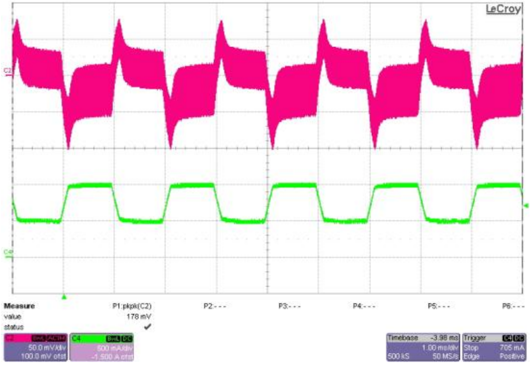


5V load step, 500mA to 1A:

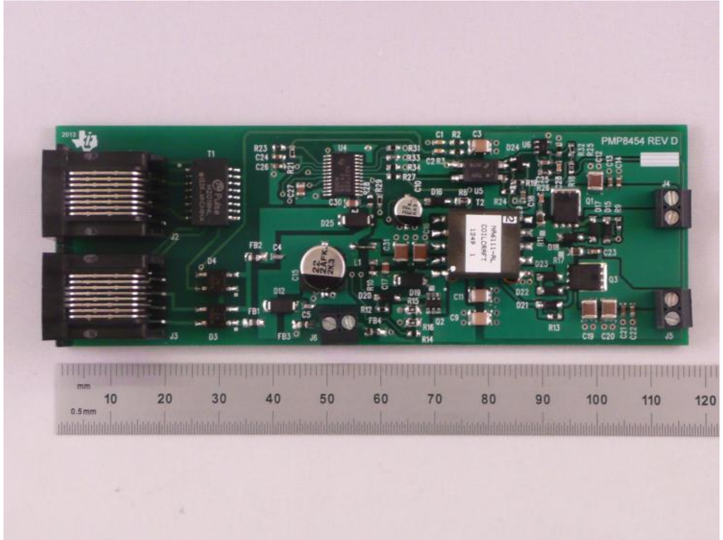
3.3V Response
50mV/div, 1msec/div
Measured 113mV peak to peak:



5V Response
50mV/div
Measured 178mV peak to peak:



Photo



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