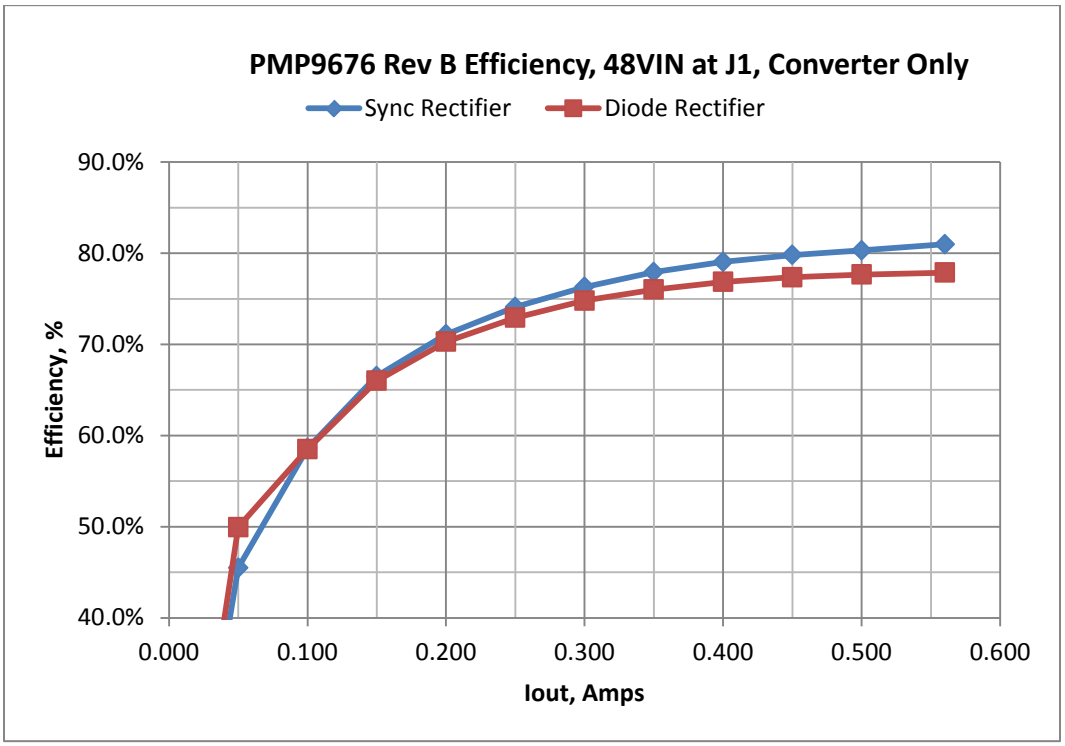
PMP9676 REV B **TEST REPORT**
TEXAS INSTRUMENTS **08-25-2015**

All testing performed with 48VIN, 560mA load and 20MHz BW unless otherwise noted.

Efficiency

Efficiency of the Si1480DH sync rectifier versus the MBRS100 diode recitifier:



The efficiency using the Si1480DH synchronous rectifier:

								VDD/	Conv
		J1	J1	J1	J4	J4	J4	GND	Only
Iout	Vout	Iin	Vin	Eff	Iin	Vin	Eff	Vin	Eff
0.000	5.032	0.0055	48.00	0.0%	0.0056	48.00	0.0%	47.64	0.0%
0.050	5.027	0.0116	48.00	45.1%	0.0116	48.00	45.1%	47.64	45.5%
0.100	5.025	0.0180	48.00	58.2%	0.0180	48.00	58.2%	47.62	58.6%
0.150	5.024	0.0240	48.00	65.4%	0.0238	48.00	66.0%	47.60	66.5%
0.200	5.024	0.0300	48.00	69.8%	0.0297	48.00	70.5%	47.58	71.1%
0.250	5.022	0.0360	48.00	72.7%	0.0356	48.00	73.5%	47.59	74.1%
0.300	5.022	0.0420	48.00	74.7%	0.0415	48.00	75.6%	47.58	76.3%
0.350	5.021	0.0483	48.00	75.8%	0.0474	48.00	77.2%	47.58	77.9%
0.400	5.020	0.0544	48.00	76.9%	0.0534	48.00	78.3%	47.57	79.0%
0.450	5.020	0.0606	48.00	77.7%	0.0595	48.00	79.1%	47.57	79.8%
0.500	5.019	0.0668	48.00	78.3%	0.0657	48.00	79.6%	47.56	80.3%
0.560	5.019	0.0745	48.00	78.6%	0.0730	48.00	80.2%	47.55	81.0%

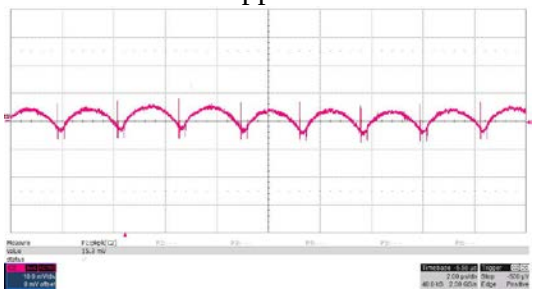
The efficiency using the MBRS1100 diode rectifier:

								VDD/	Conv
		J1	J1	J1	J4	J4	J4	GND	Only
Iout	**Vout**	**Iin**	**Vin**	**Eff**	**Iin**	**Vin**	**Eff**	**Vin**	**Eff**
0.000	5.000	0.0021	48.00	0.0%	0.0023	48.00	0.0%	47.70	0.0%
0.050	4.996	0.0105	48.00	49.6%	0.0105	48.00	49.6%	47.64	49.9%
0.100	4.989	0.0180	48.00	57.7%	0.0179	48.00	58.1%	47.63	58.5%
0.150	4.987	0.0241	48.00	64.7%	0.0238	48.00	65.5%	47.62	66.0%
0.200	4.986	0.0302	48.00	68.8%	0.0298	48.00	69.7%	47.61	70.3%
0.250	4.985	0.0364	48.00	71.3%	0.0359	48.00	72.3%	47.61	72.9%
0.300	4.985	0.0426	48.00	73.1%	0.0420	48.00	74.2%	47.60	74.8%
0.350	4.983	0.0490	48.00	74.2%	0.0482	48.00	75.4%	47.60	76.0%
0.400	4.983	0.0554	48.00	75.0%	0.0545	48.00	76.2%	47.59	76.8%
0.450	4.982	0.0619	48.00	75.5%	0.0609	48.00	76.7%	47.58	77.4%
0.500	4.981	0.0686	48.00	75.6%	0.0674	48.00	77.0%	47.58	77.7%
0.560	4.980	0.0767	48.00	75.7%	0.0753	48.00	77.2%	47.56	77.9%

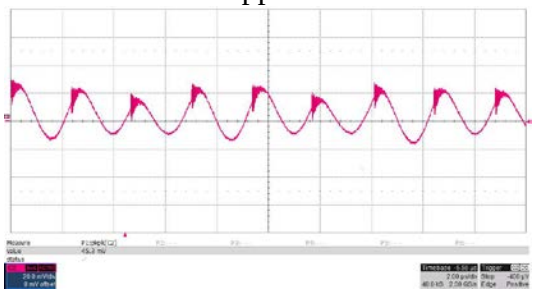
Synchronous Rectifier

Ripple and Noise

Output Ripple across J3
10mV/div, 2usec/div
Measured 15.3mVpp:

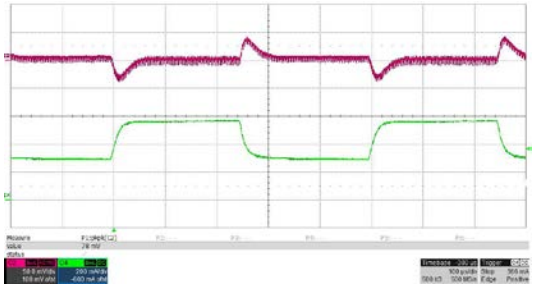


Input Ripple across C2
20mV/div, 2usec/div
Measured 45.3mVpp:

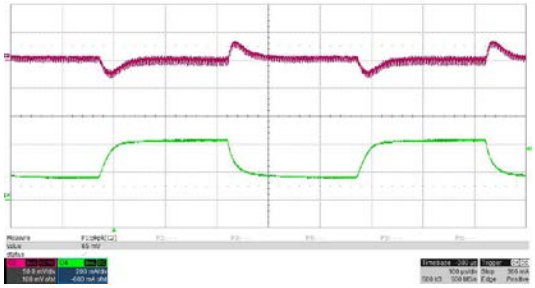


Dynamic Loading

280mA to 560mA load step
Slew Rate = 50mA/usec
50mV/div, 200mA/div, 100usec/div
Measured 78mVpp:

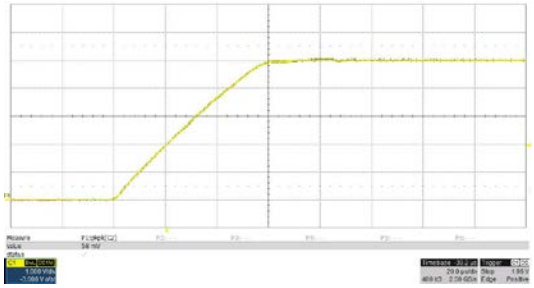


150mA to 420mA load step
Slew Rate = 50mA/usec
50mV/div, 200mA/div, 100usec/div
Measured 65mVpp:

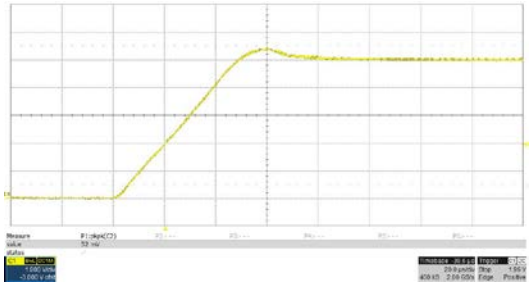


Turn On Response

560mA Load, 20usec/div, 1V/div:



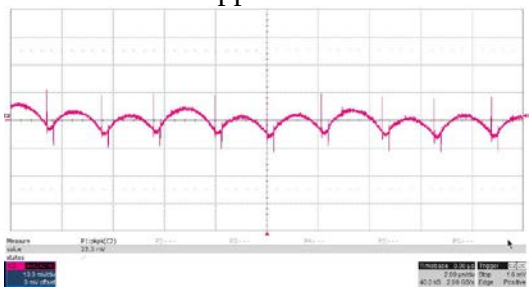
0A Load, 20usec/div, 1V/div:



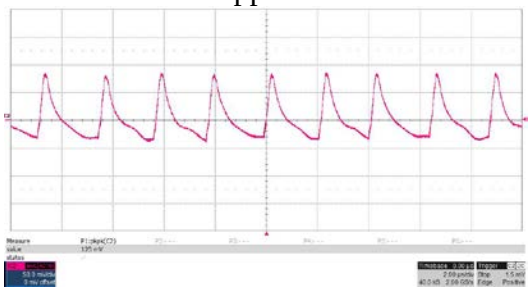
Diode Rectifier

Ripple and Noise

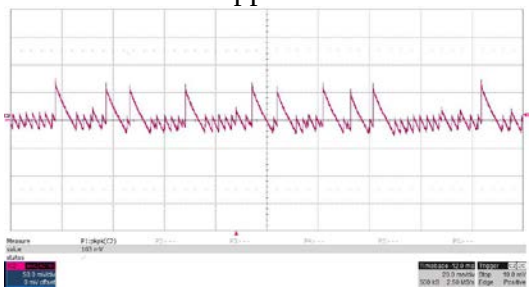
Output Ripple across J3
10mV/div, 2usec/div
Measured 22mVpp:



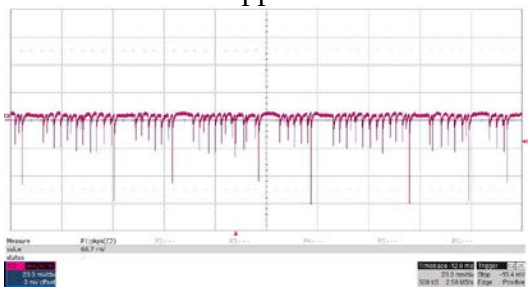
Input Ripple across C2
50mV/div, 2usec/div
Measured 125mVpp:



Output Ripple across J3, 0A load
50mV/div, 20msec/div
Measured 103mVpp:

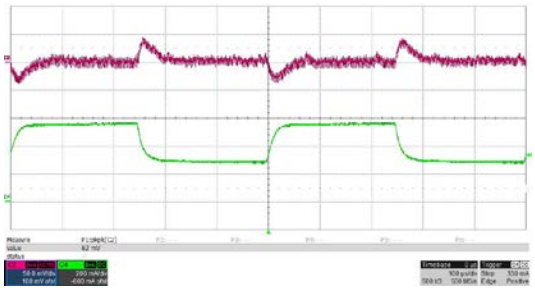


Input Ripple across C2, 0A load
20mV/div, 20msec/div
Measured 66.7mVpp:

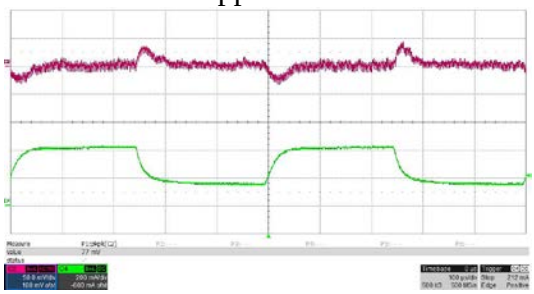


Dnamic Loading

280mA to 560mA load step
Slew Rate = 50mA/usec
50mV/div, 200mA/div, 100usec/div
Measured 82mVpp:

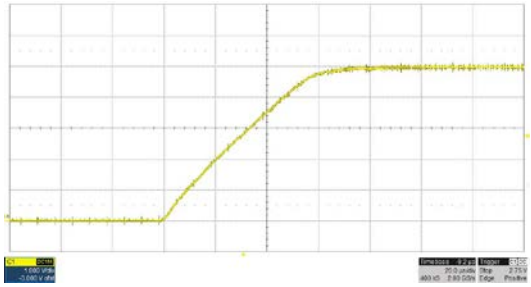


150mA to 420mA load step
Slew Rate = 50mA/usec
50mV/div, 200mA/div, 100usec/div
Measured 77mVpp:

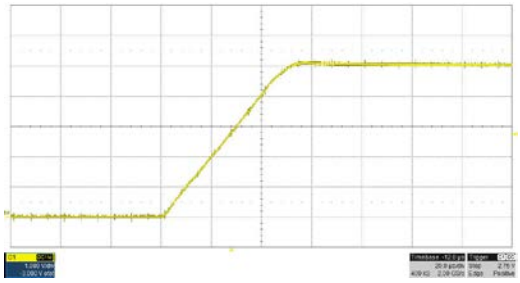


Turn On Response

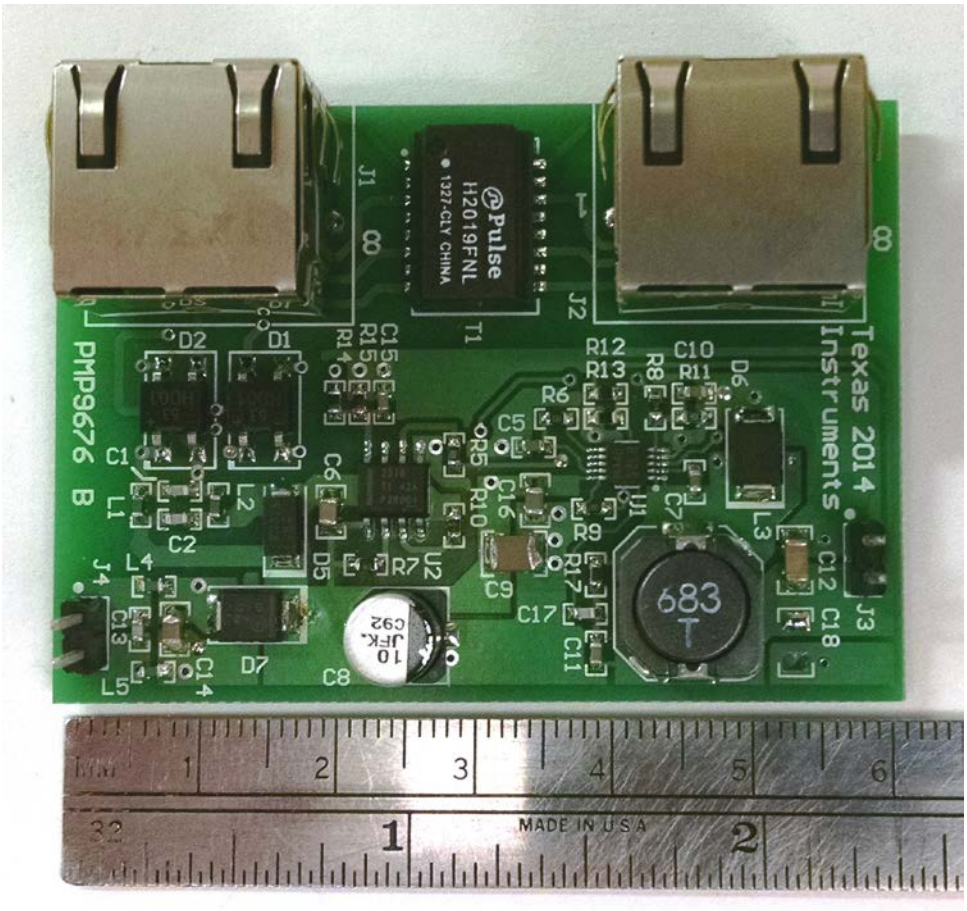
560mA Load, 20usec/div, 1V/div:



0A Load, 20usec/div, 1V/div:



Photo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