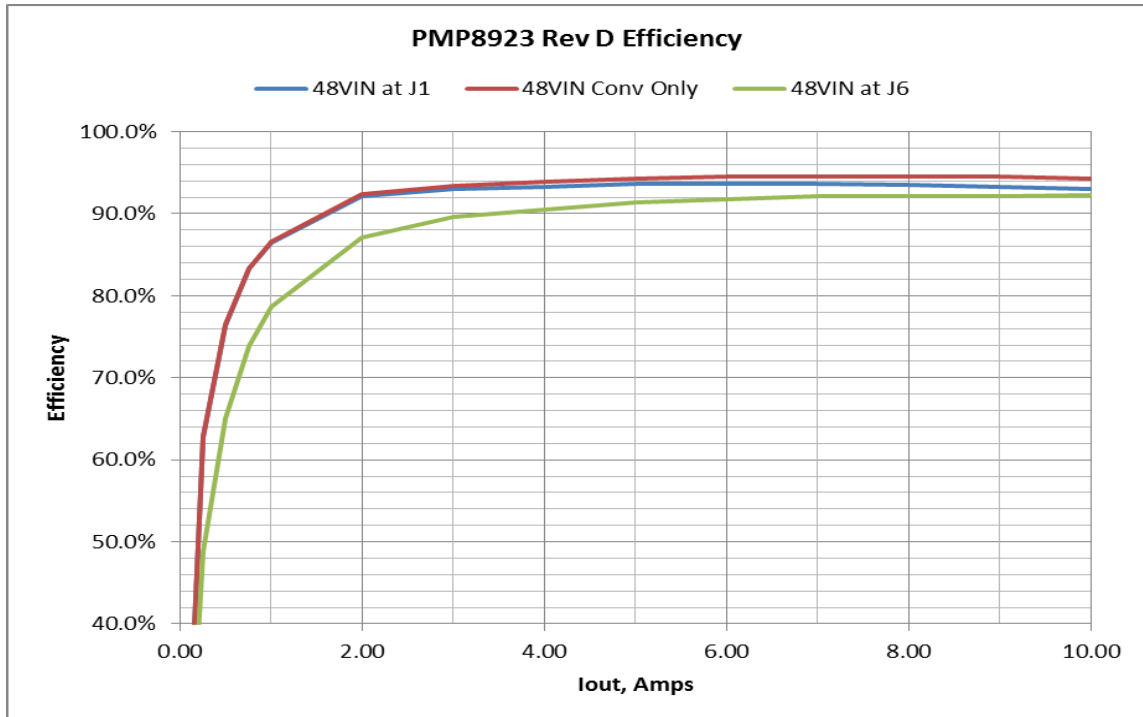


All testing performed with a 48V input, 10A load, and 20MHz BW unless otherwise noted.

Efficiency

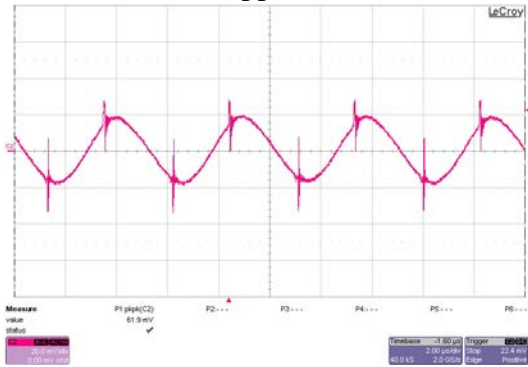
The efficiency is shown below:

					Iin at J1				
			TP2/3		VDD/PWRGND				
	TP6/7	J1	J1	J1	Conv	Conv	J6	J6	J6
Iout	Vout	Iin	Vin	Eff	Vin	Eff	Iin	Vin	Eff
0.00	5.063	0.016	48.00	0.0%	48.00	0.0%	0.028	48.00	0.0%
0.25	5.063	0.042	48.00	62.8%	47.98	62.8%	0.054	48.00	48.8%
0.50	5.063	0.069	48.00	76.4%	47.96	76.5%	0.081	48.00	65.1%
0.75	5.063	0.095	48.00	83.3%	47.94	83.4%	0.107	48.00	73.9%
1.00	5.063	0.122	48.00	86.5%	47.92	86.6%	0.134	48.00	78.7%
2.00	5.062	0.229	48.00	92.1%	47.88	92.3%	0.242	48.00	87.2%
3.00	5.062	0.340	48.00	93.1%	47.80	93.4%	0.353	48.00	89.6%
4.00	5.061	0.452	48.00	93.3%	47.72	93.9%	0.466	48.00	90.5%
5.00	5.061	0.563	48.00	93.6%	47.67	94.3%	0.577	48.00	91.4%
6.00	5.060	0.675	48.00	93.7%	47.60	94.5%	0.689	48.00	91.8%
7.00	5.060	0.788	48.00	93.6%	47.54	94.6%	0.801	48.00	92.1%
8.00	5.060	0.902	48.00	93.5%	47.46	94.6%	0.915	48.00	92.2%
9.00	5.059	1.017	48.00	93.3%	47.39	94.5%	1.029	48.00	92.2%
10.00	5.059	1.133	48.00	93.0%	47.33	94.3%	1.143	48.00	92.2%

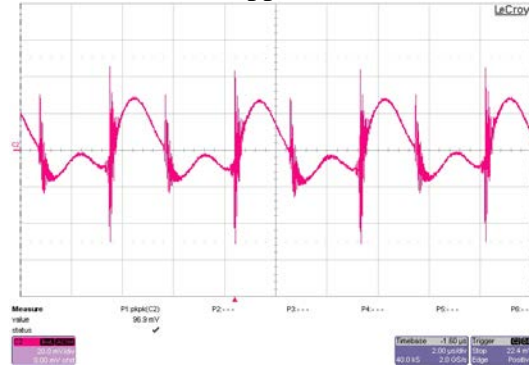


Ripple and Noise

Output Ripple (C34), 20mV/div
Measured 61.9mVpp:

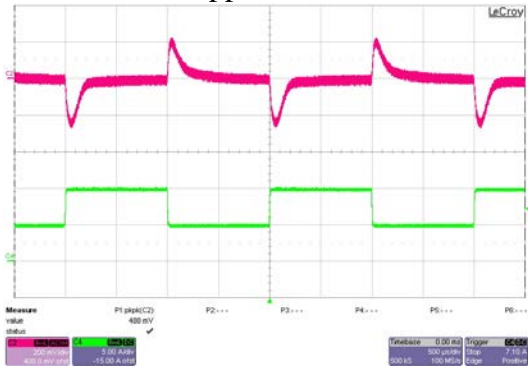


Input Ripple (C24), 20mV/div
Measured 96.9mVpp:



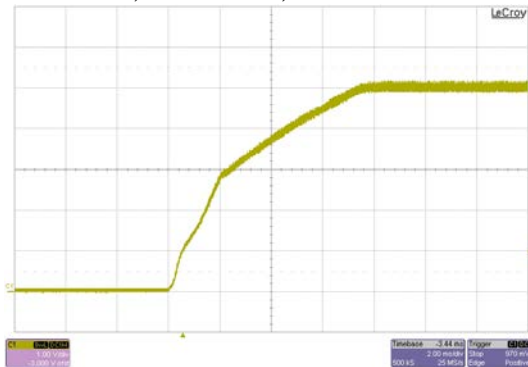
Dynamic Loading

Output Load Step; 5A to 10A load step; 500mA/usec; 200mV/div, 5A/div, 500usec/div
Measured 488Vpp across C34:

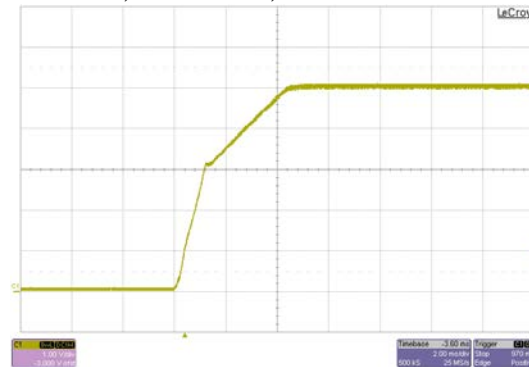


Turn On Response

10A Load, 2msec/div, 1V/div:

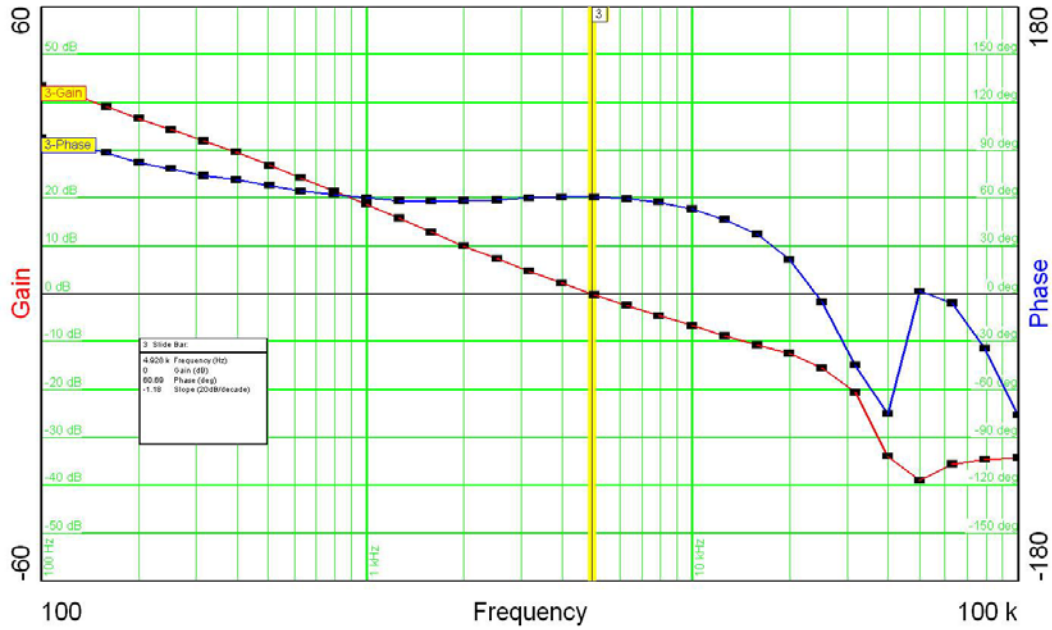


0A Load, 2msec.div, 1V/div:



Loop Stability

The measured Bode plot of the converter with a 10A load is shown below:



Bandwidth: 4.9KHz

Phase Margin: 60 degrees

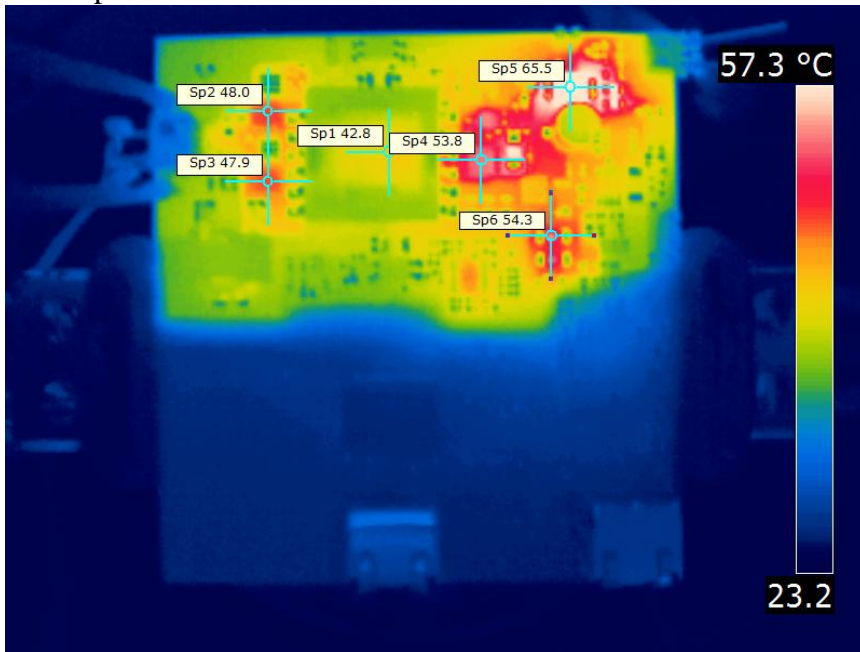
Gain Margin: 15dB

Thermal Plots

PoE Input at J1:



48V input at J6:



Photo



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