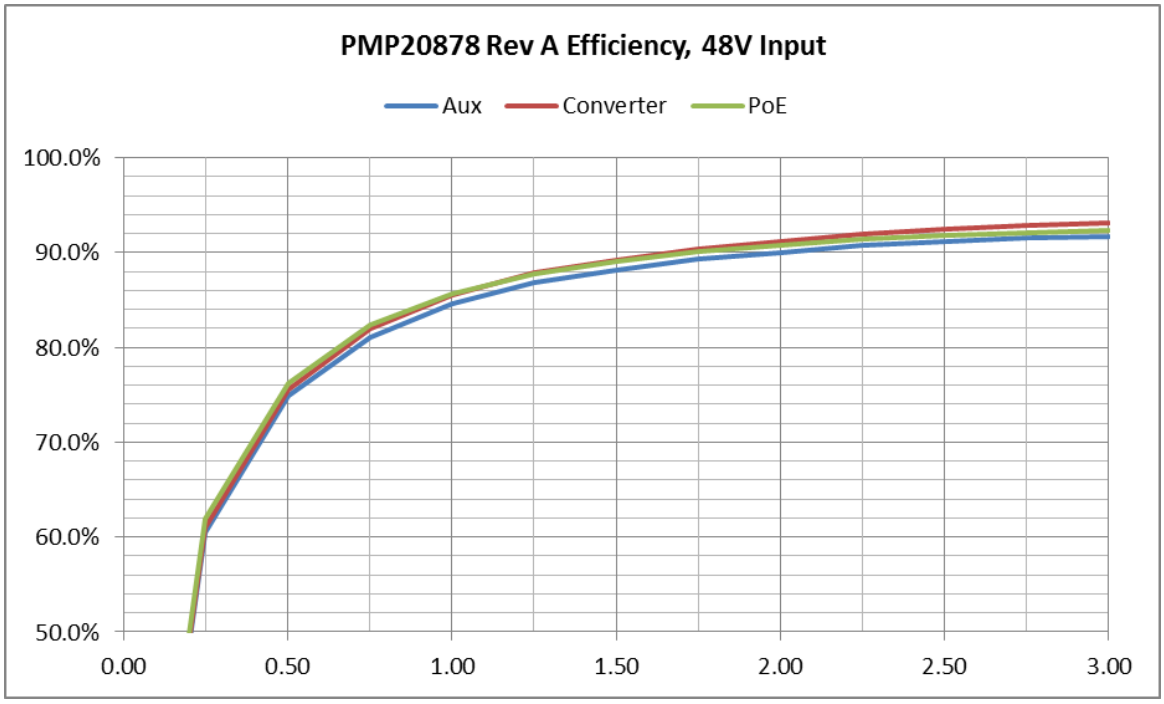
All testing performed with a 48V input, 3A load and 20MHz bandwidth unless otherwise noted.

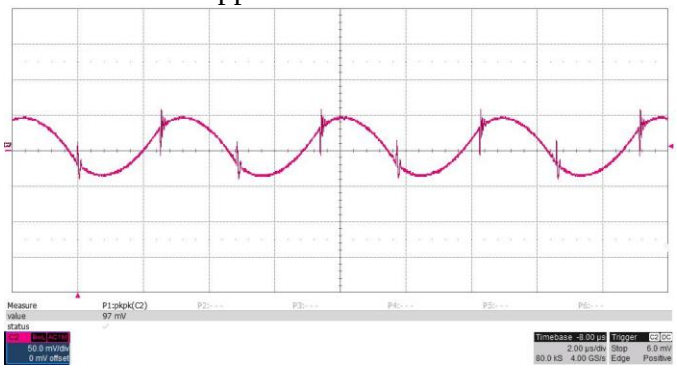
Efficiency



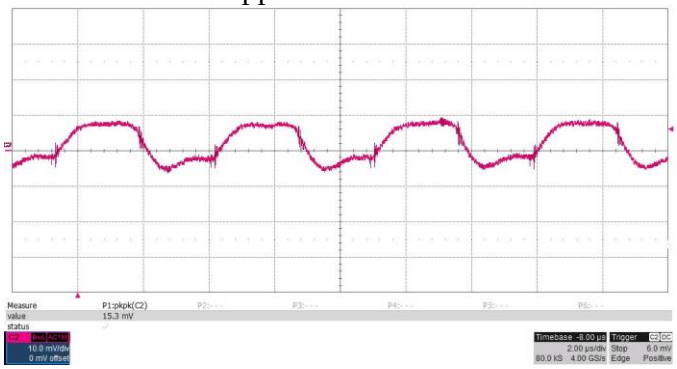
Aux Iout	Aux Vout	Aux Vin	Aux Iin	J3 Eff	Conv Vin	Conv Eff	PoE Vin	PoE Iin	PoE Eff
0.00	24.14	48.00	0.082	0.0%	47.66	0.0%	48.00	0.077	0.0%
0.25	24.14	48.00	0.208	60.4%	47.57	61.0%	48.00	0.203	61.9%
0.50	24.14	48.00	0.336	74.8%	47.53	75.6%	48.00	0.330	76.2%
0.75	24.13	48.00	0.465	81.1%	47.51	81.9%	48.00	0.458	82.3%
1.00	24.13	48.00	0.594	84.6%	47.47	85.6%	48.00	0.587	85.6%
1.25	24.13	48.00	0.724	86.8%	47.44	87.8%	48.00	0.716	87.8%
1.50	24.12	48.00	0.855	88.2%	47.42	89.2%	48.00	0.846	89.1%
1.75	24.12	48.00	0.985	89.3%	47.40	90.4%	48.00	0.976	90.1%
2.00	24.11	48.00	1.116	90.0%	47.37	91.2%	48.00	1.106	90.8%
2.25	24.11	48.00	1.246	90.7%	47.36	91.9%	48.00	1.237	91.4%
2.50	24.11	48.00	1.377	91.2%	47.33	92.5%	48.00	1.368	91.8%
2.75	24.10	48.00	1.509	91.5%	47.32	92.8%	48.00	1.499	92.1%
3.00	24.10	48.00	1.642	91.7%	47.31	93.1%	48.00	1.632	92.3%

Ripple and Noise

Output Ripple (J13), 50mV/div, 2usec/div
Measured 97mVpp:

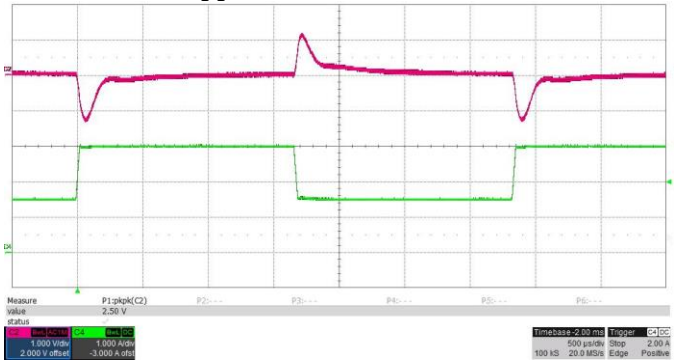


Input Ripple (C68), 10mV/div, 2usec/div
Measured 15.3mVpp:



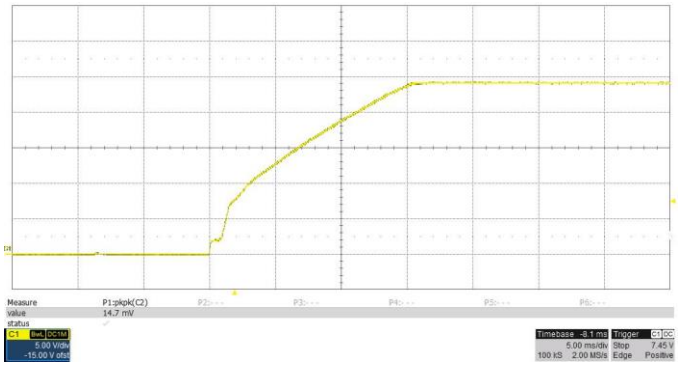
Dynamic Loading

Output response to load step
1.5A to 3.0A load step
1V/div, 1A/div, 500usec/div
Slew Rate = 300mA/usec
Measured 2.5Vpp across J13:



Turn On Response

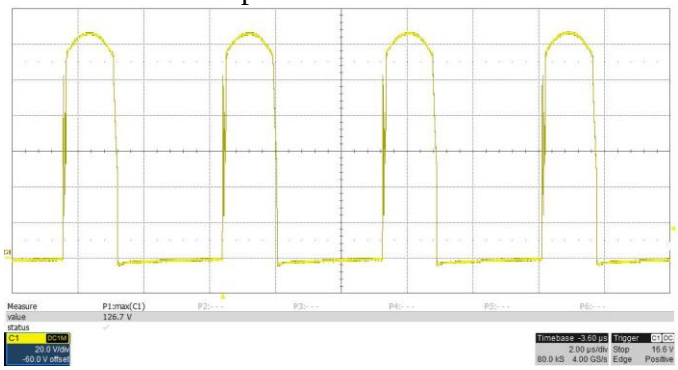
3.0A load, 5V/div, 5msec/div



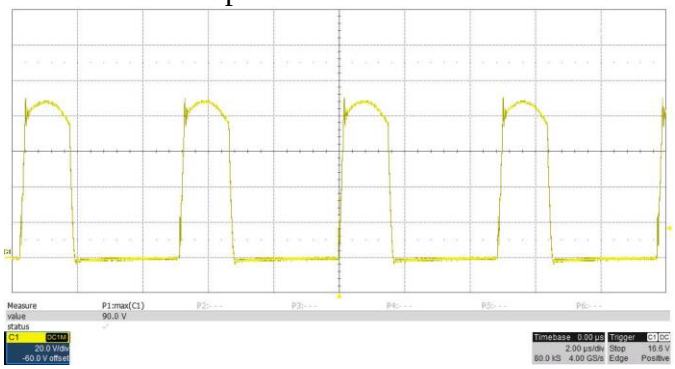
0A load, 5V/div, 5msec/div

Waveforms

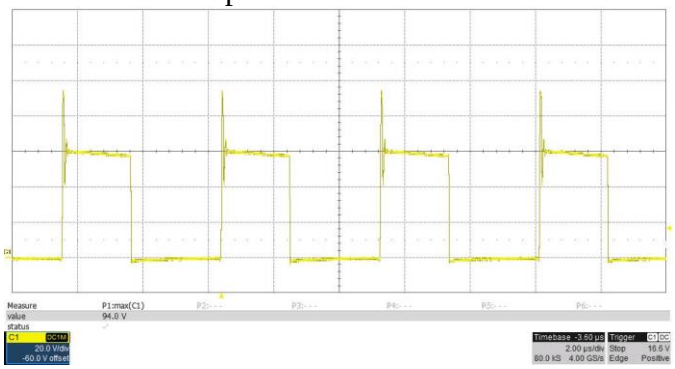
Drain to source, Q16, 38V input, 3.0A load
20V/div, 2usec/div, 750MHz bandwidth
Measured 126.7V peak:



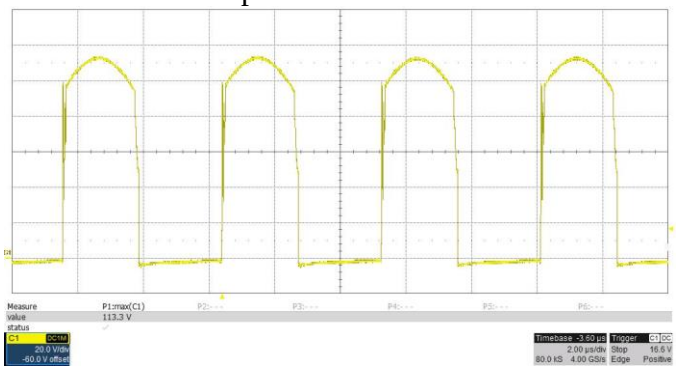
Drain to source, Q13, 38V input, 3.0A load
20V/div, 2usec/div, 750MHz bandwidth
Measured 90.0V peak:



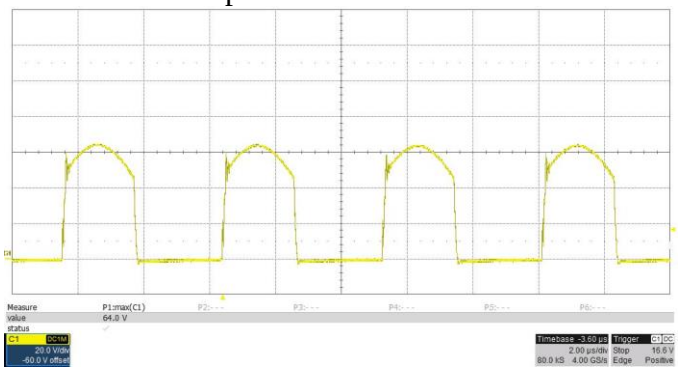
Drain to source, Q15, 57V input, 3.0A load
20V/div, 2usec/div, 750MHz bandwidth
Measured 94.0V peak:



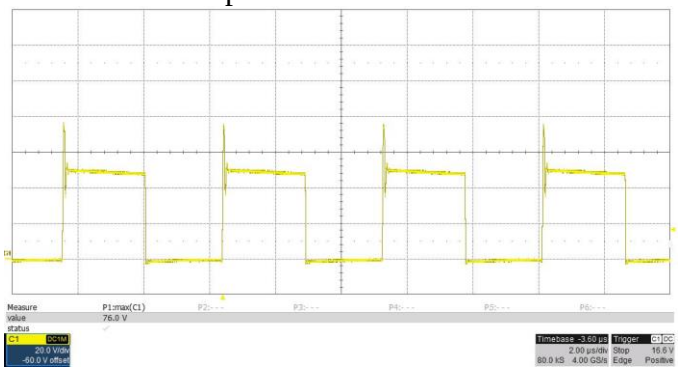
Drain to source, Q16, 48V input, 3.0A load
20V/div, 2usec/div, 750MHz bandwidth
Measured 113.3V peak:



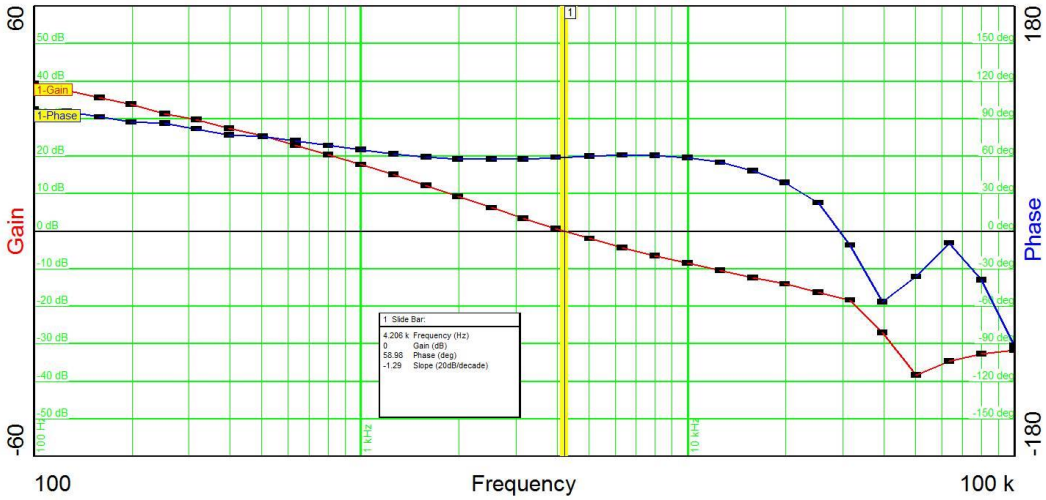
Drain to source, Q13, 48V input, 3.0A load
20V/div, 2usec/div, 750MHz bandwidth
Measured 64.0V peak:



Drain to source, Q15, 48V input, 3.0A load
20V/div, 2usec/div, 750MHz bandwidth
Measured 76.0V peak:



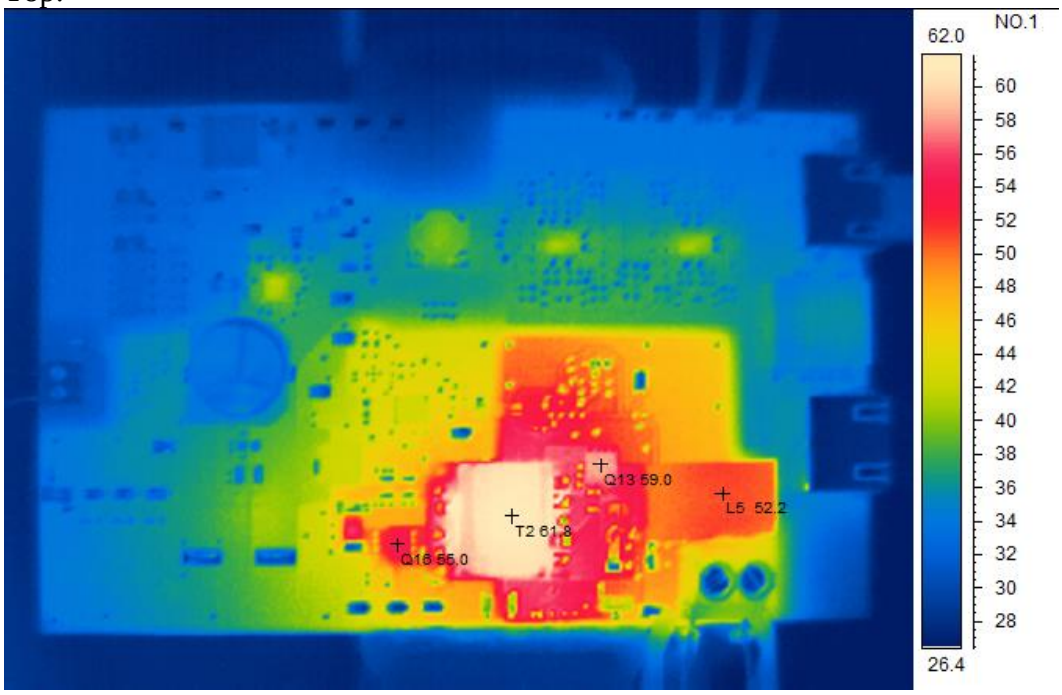
Loop Stability



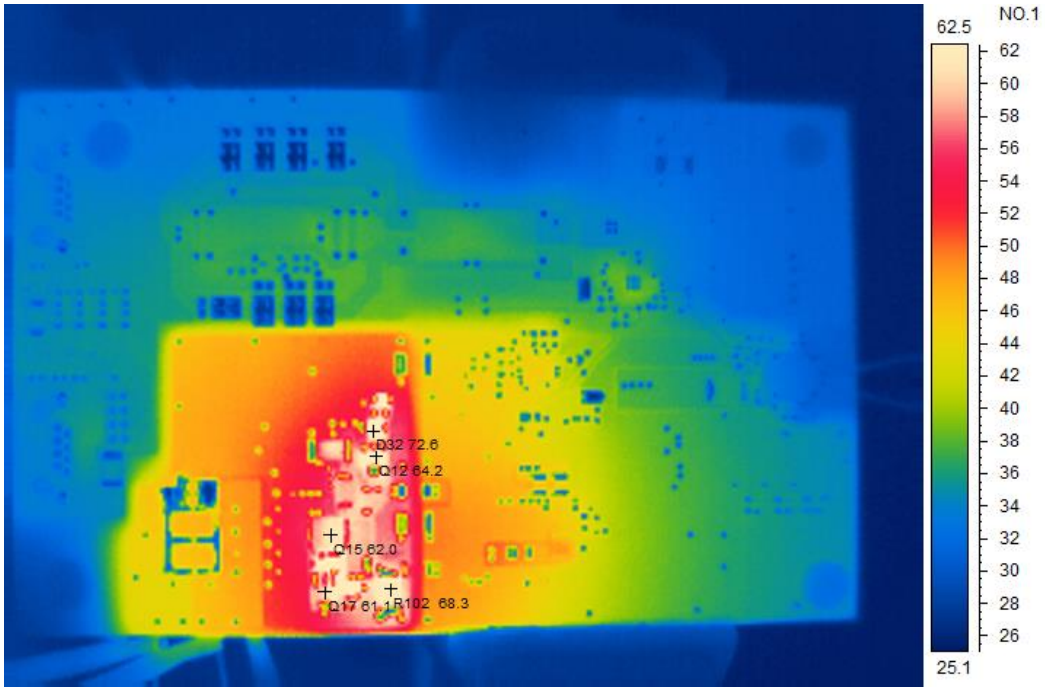
Bandwidth= 4.2 kHz Phase Margin=59 degrees Gain Margin=18dB

Thermal Plot

Top:

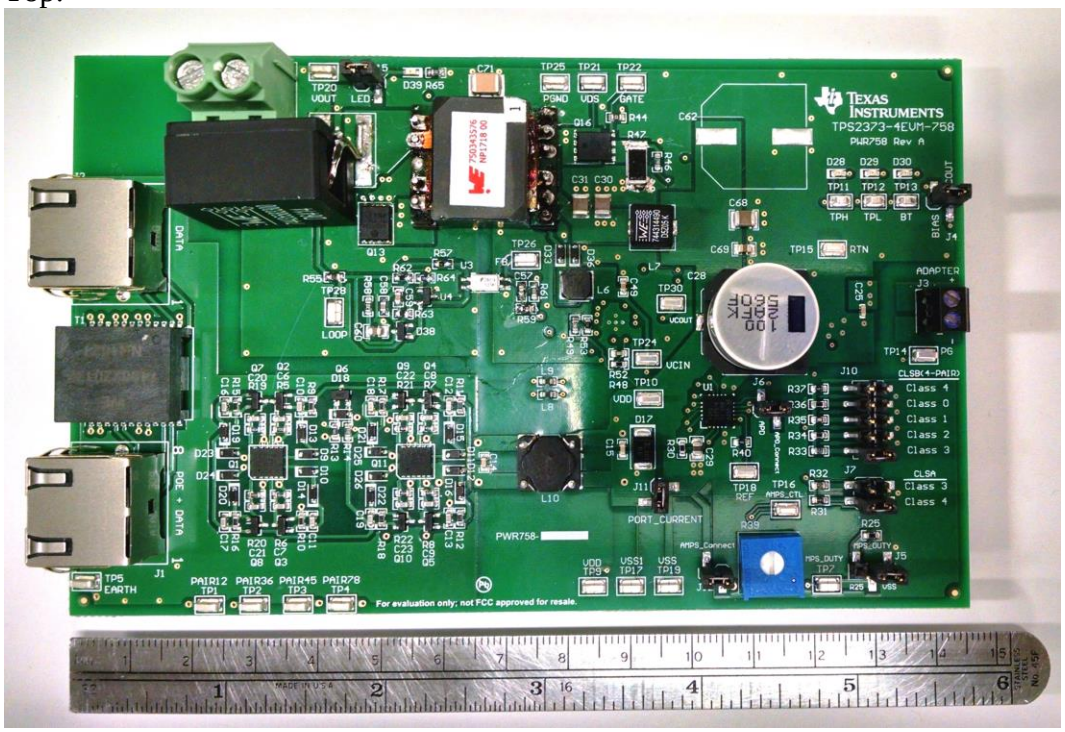


Bottom:

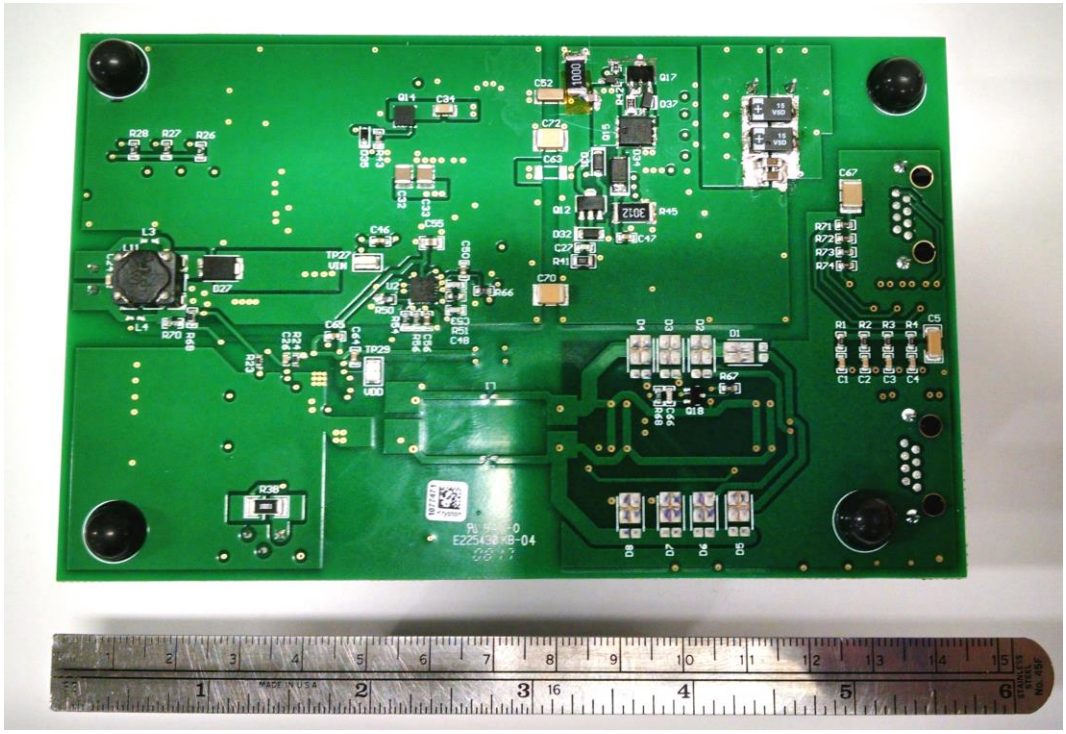


Photo

Top:



Bottom:



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