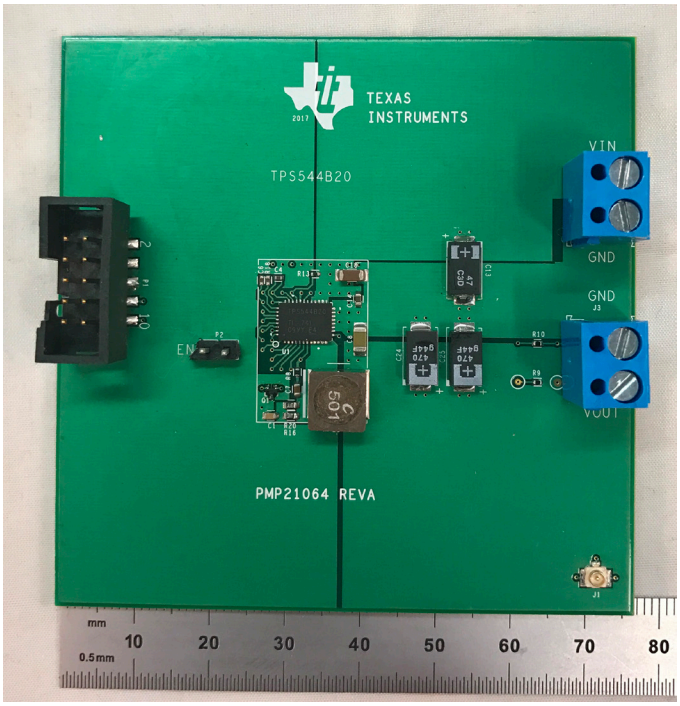
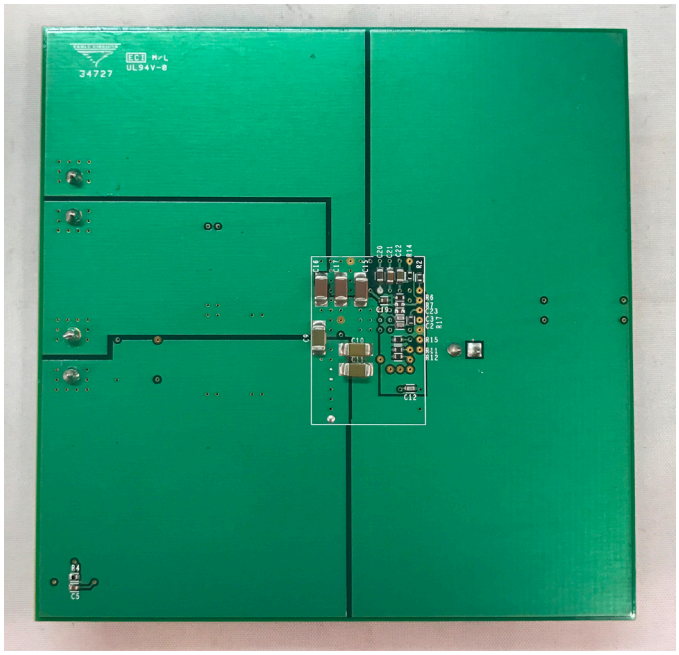
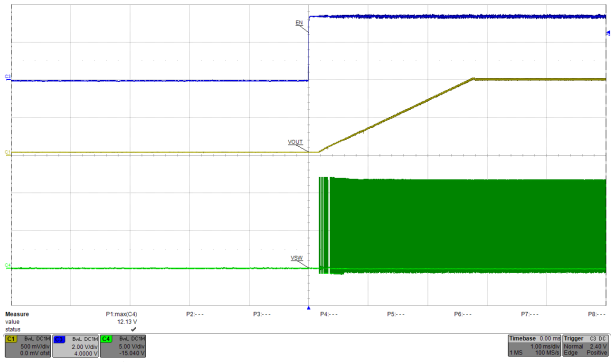
Photo of the prototype

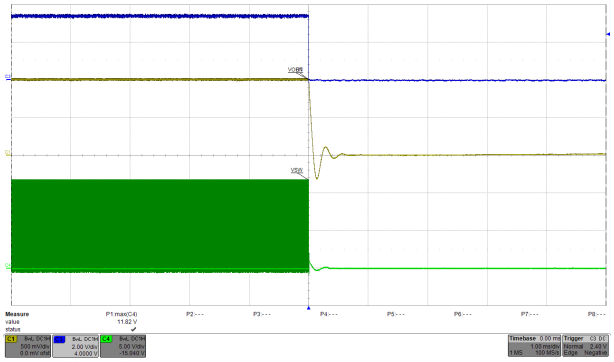




1 Startup and shutdown

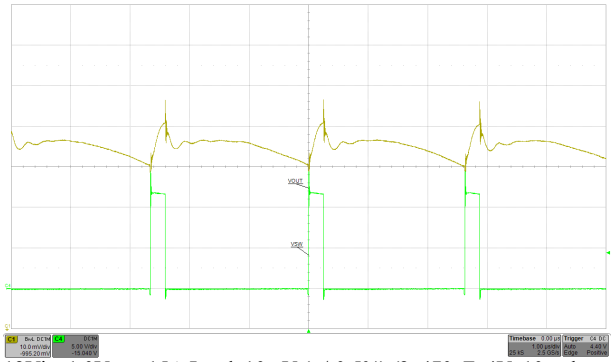


Turn-on, 12Vin, 1.0Vout

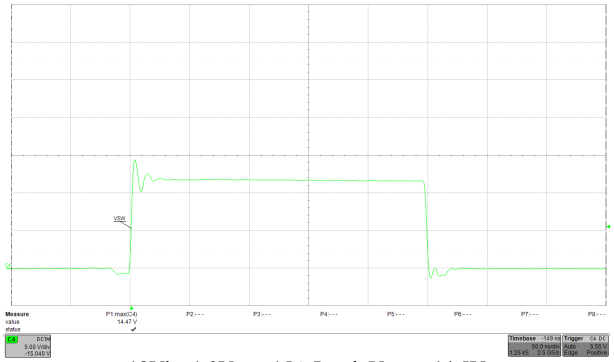


Turn-off, 12Vin, 1.0Vout

2 Ripple and Switching Node

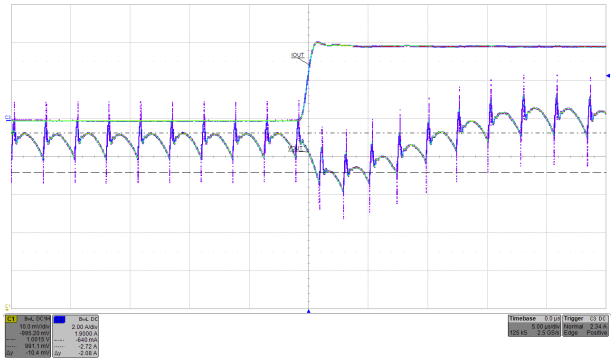


12Vin, 1.0Vout, 15A Load, 10mV (+/-0.5%) (2x470uF, 4V, 10mohm+ 4x 100uF,6.3V,1206)

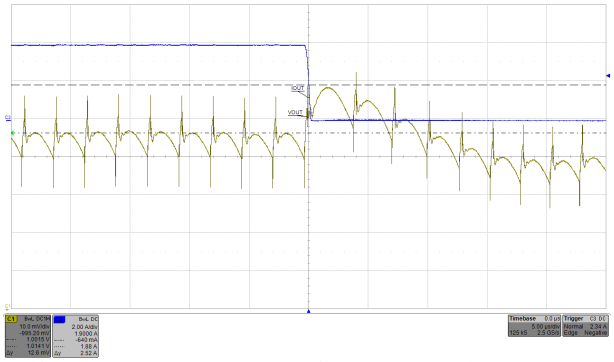


12Vin, 1.0Vout, 15A Load, Vmax=14.5V

3 Transient

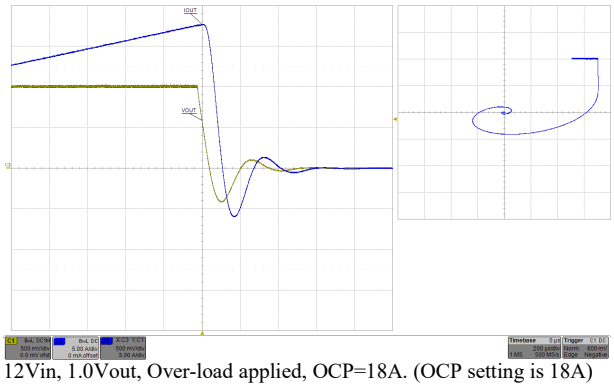


12Vin, 1.0Vout, 11.25A to 15A Load Step, -10.4mV (-1.0%)



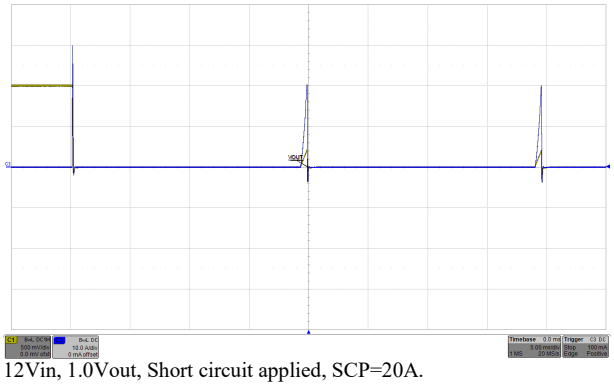
12Vin, 1.0Vout, 15A to 11.25A Load Step, +12.6mV (+1.26%)

4 Over-current protection

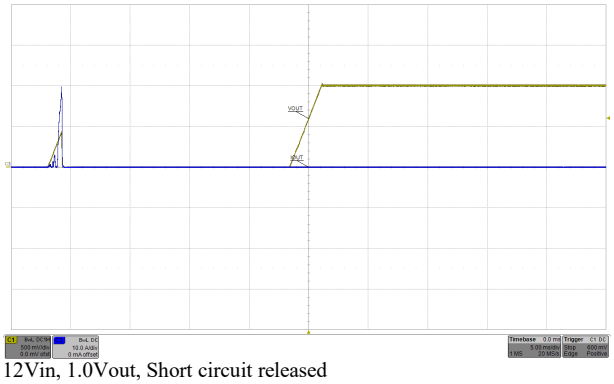


12Vin, 1.0Vout, Over-load applied, OCP=18A. (OCP setting is 18A)

5 Short-circuit protection

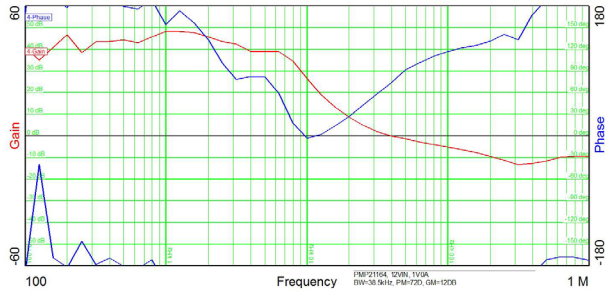


12Vin, 1.0Vout, Short circuit applied, SCP=20A.

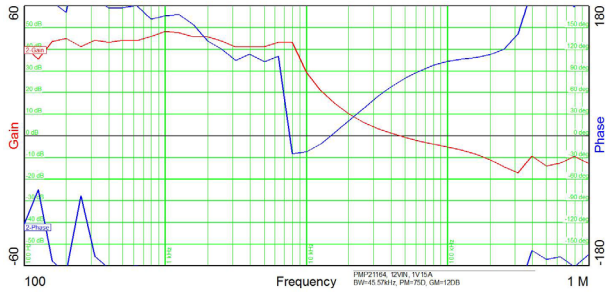


12Vin, 1.0Vout, Short circuit released

6 Bode Plot

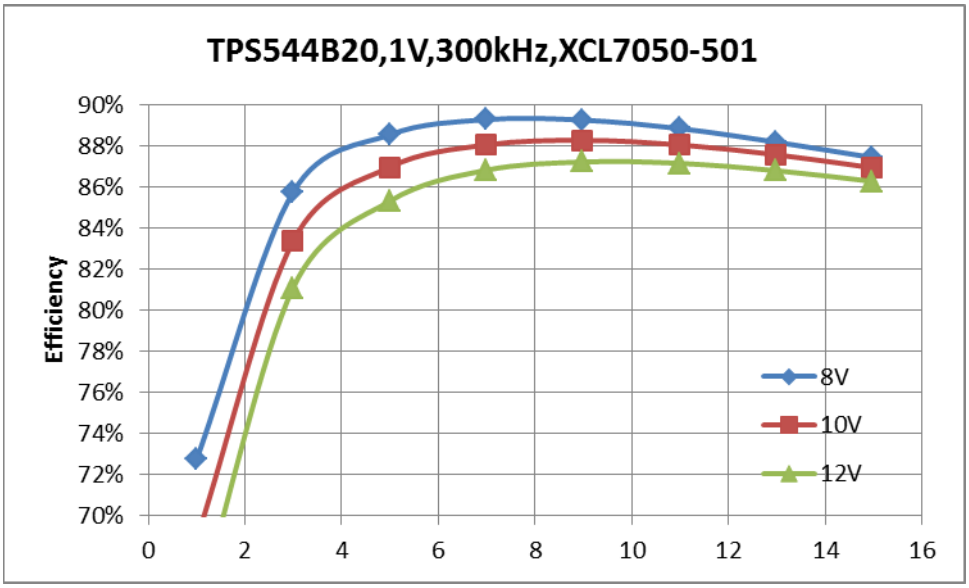


12Vin, 1.0Vout, No Load, BW=38.5kHz, PM=72deg



12Vin, 1.0Vout, 15A Load, BW=45.6kHz, PM=75deg

7 Efficiency

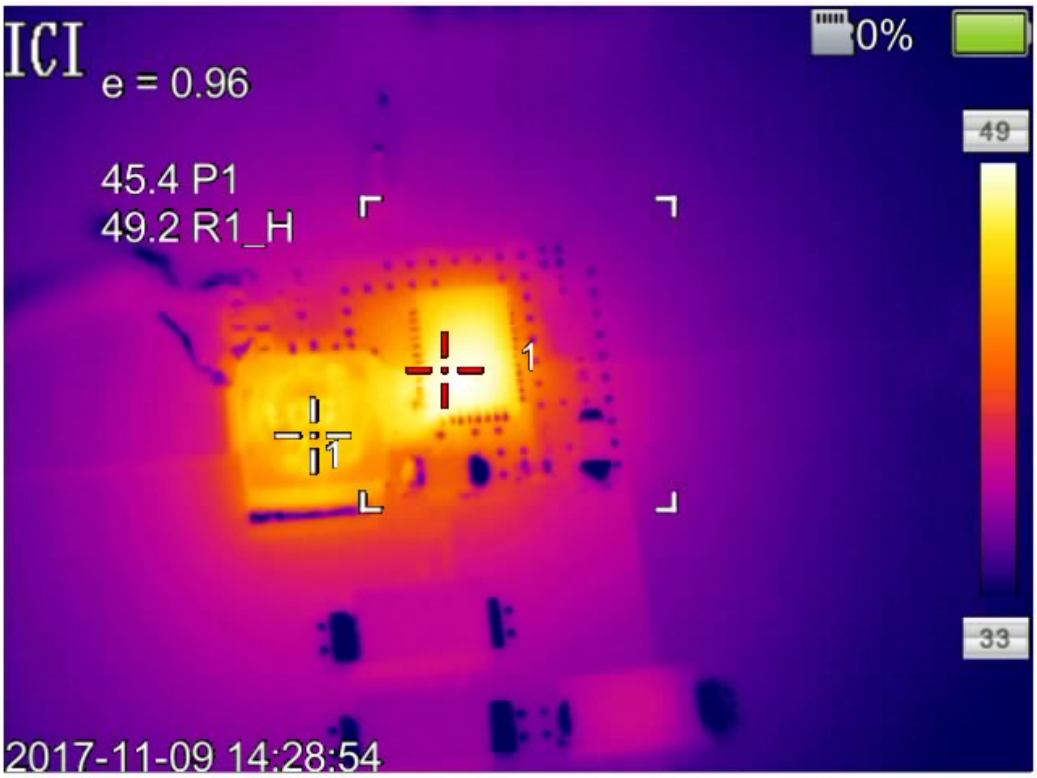


Test conditions: 1.0Vout, 300kHz, XCL7050-501.

Vin(V)	Vout(V)	Iin(A)	Iout(A)	Effciency	P_{LOSS}(W)
7.977	1.000	0.172	0.999	72.75%	0.37
7.940	1.001	0.440	2.993	85.75%	0.50
7.901	1.001	0.714	4.989	88.54%	0.65
7.861	1.002	0.997	6.985	89.28%	0.84
7.818	1.002	1.290	8.983	89.26%	1.08
7.774	1.003	1.594	10.981	88.85%	1.38
7.735	1.003	1.908	12.978	88.19%	1.74
7.706	1.003	2.230	14.976	87.44%	2.16
9.985	1.000	0.145	1.000	68.86%	0.45
9.957	1.001	0.361	2.993	83.37%	0.60
9.928	1.001	0.578	4.989	86.96%	0.75
9.899	1.001	0.803	6.985	88.05%	0.95
9.867	1.002	1.033	8.983	88.27%	1.20
9.834	1.003	1.271	10.980	88.06%	1.49
9.801	1.003	1.516	12.977	87.58%	1.85
9.768	1.003	1.770	14.977	86.94%	2.26
11.989	1.000	0.128	1.000	65.31%	0.53
11.966	1.001	0.309	2.993	81.09%	0.70
11.943	1.001	0.490	4.988	85.31%	0.86
11.919	1.001	0.676	6.985	86.82%	1.06
11.895	1.002	0.868	8.984	87.22%	1.32

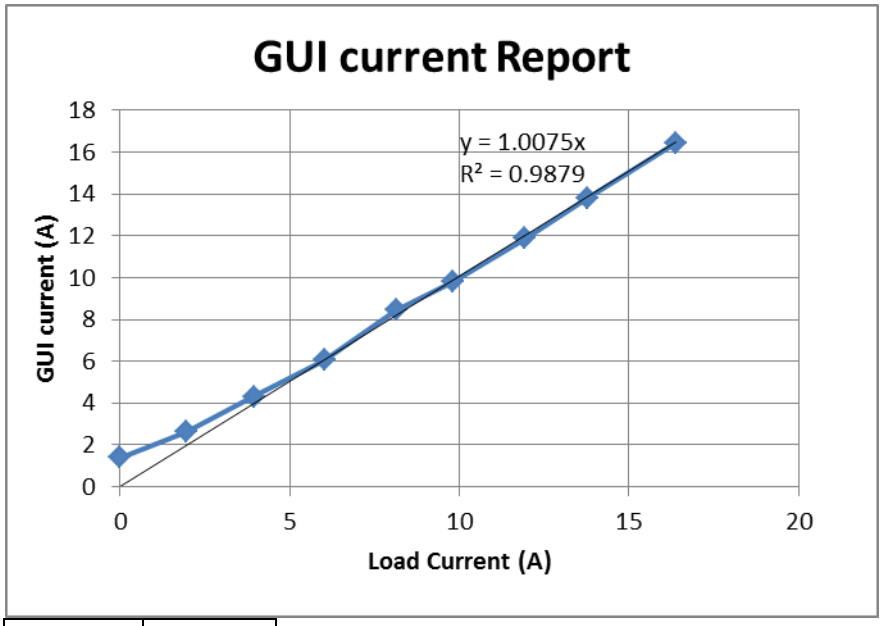
11.869	1.002	1.064	10.980	87.15%	1.62
11.842	1.003	1.266	12.977	86.80%	1.98
11.813	1.003	1.474	14.976	86.28%	2.39

8 Thermal



Test conditions: 12Vin, 1.0V/15Aout, 300 kHz, XCL7050-501, Room Temperature, Natural convection. T_{IC}=49.2C, T_{IND}=45.4C

9 Current Report Accuracy



I_{OUT}(A)	I_{GUI}(A
0	1.38
1.94	2.63
3.94	4.31
6.02	6.06
8.13	8.44
9.79	9.81
11.94	11.88
13.79	13.81
16.39	16.44

Above table and curve is with IOUT_CAL_OFFSET=1.312A in the GUI.

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