

Test Report of PMP10695

(Boost with LM2700)

22 May 2015



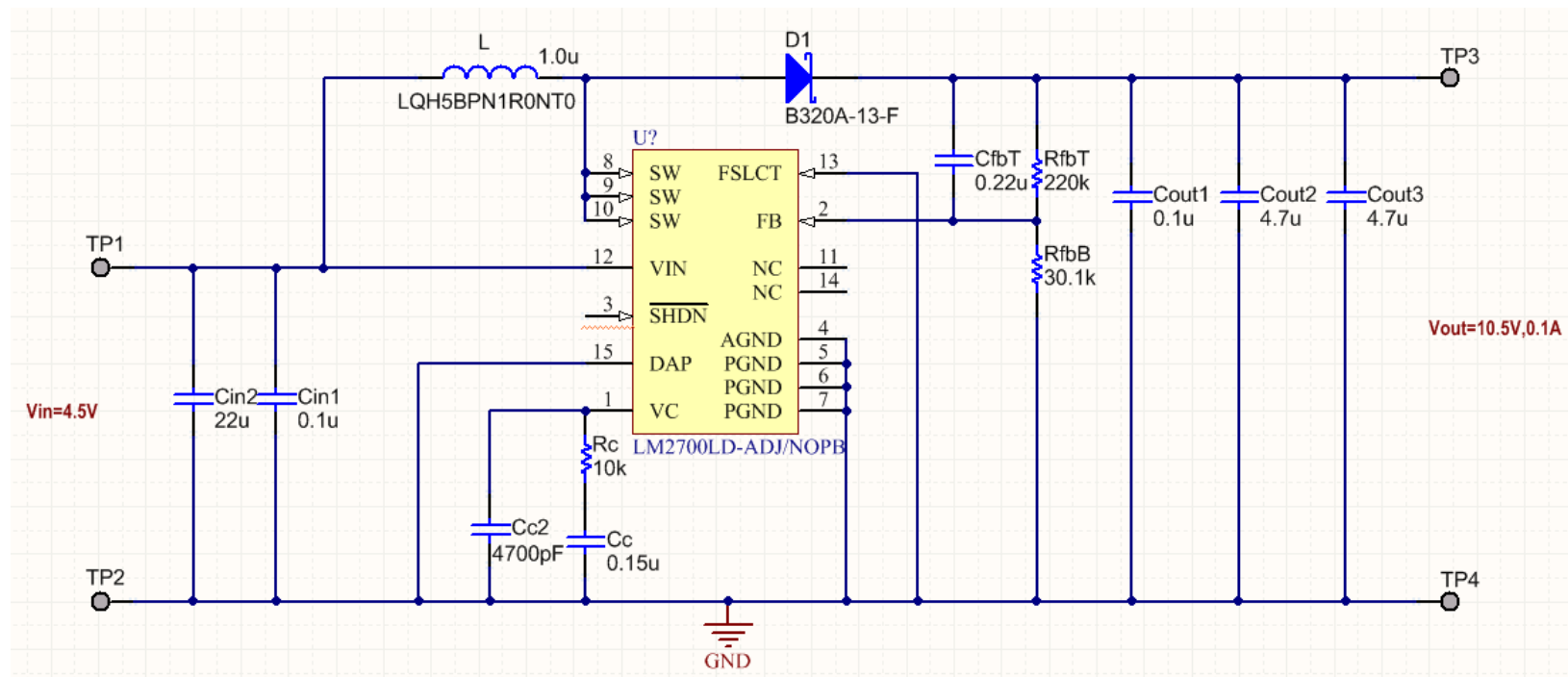
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1) Design Specifications

Vin	4.5Vdc
Vout	10.5Vdc
Iout	0.1A
Switching frequency	600k

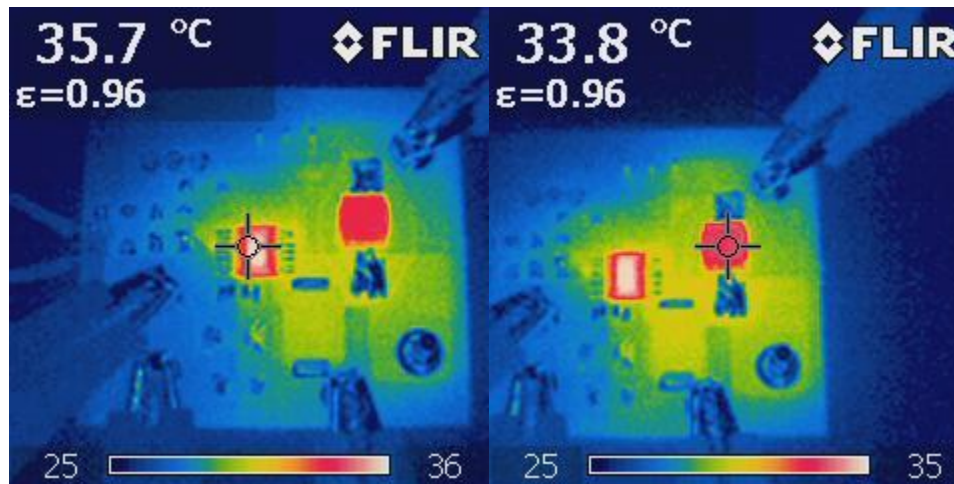
2) Circuit Schematic



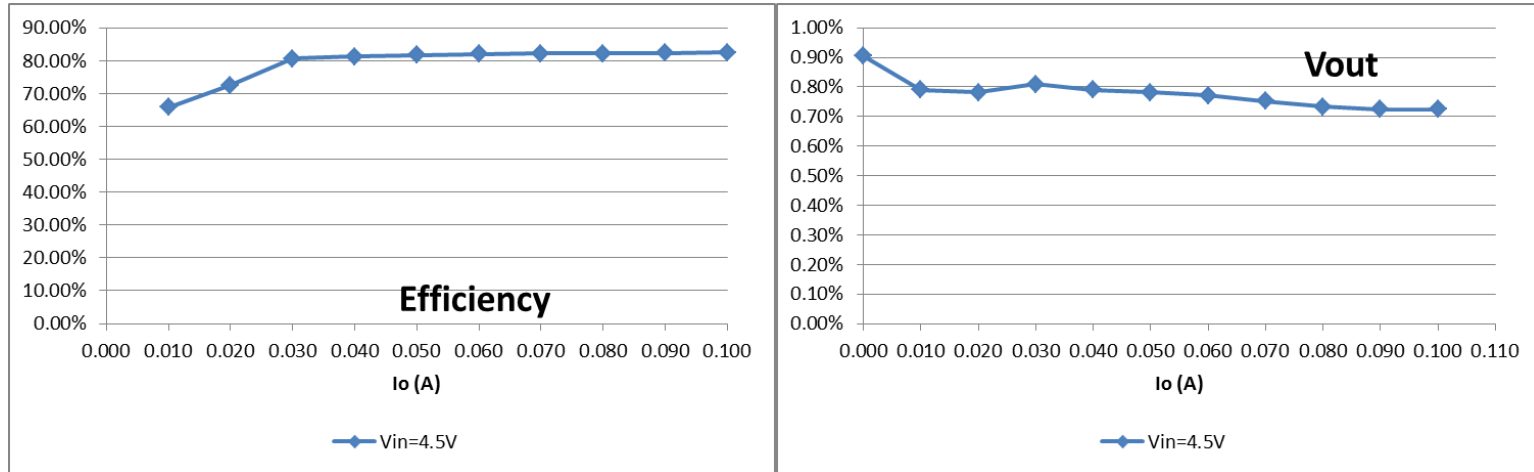
3) Typical Performances

3.1) Board and Thermal

Board Dimensions: 35mm x 38mm

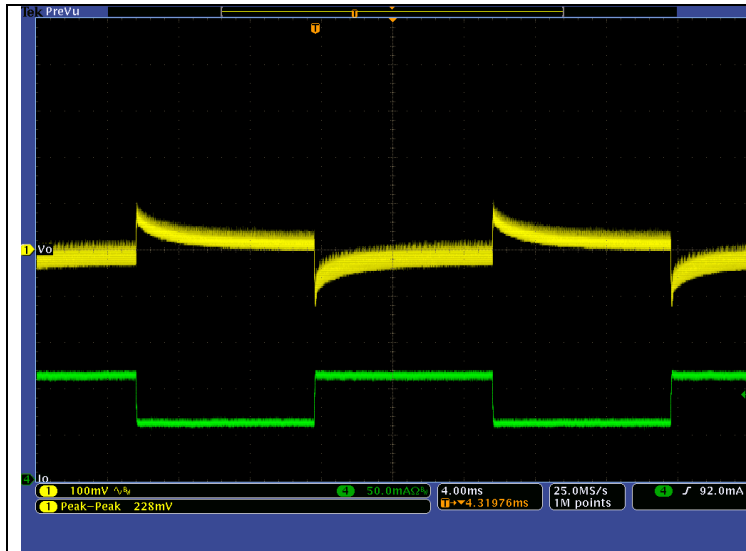


3.2) Efficiency and Load Regulation

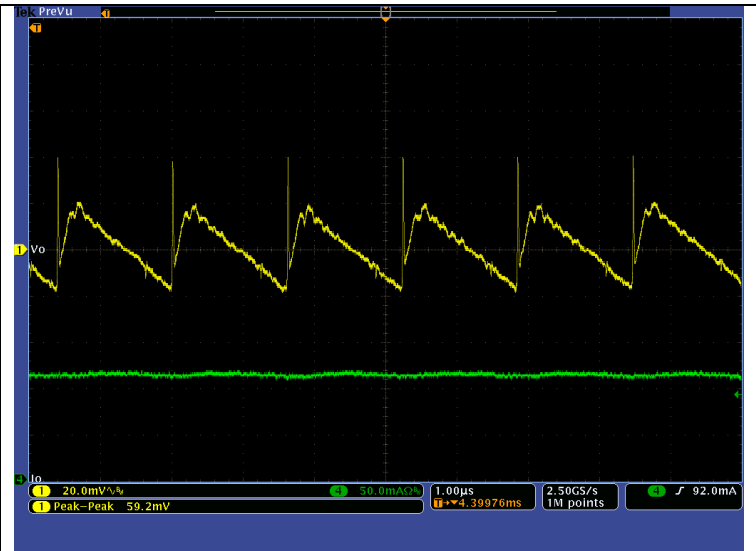


V_{in}	I_{in}	V_o	I_o	P_{in}	P_o	Efficiency	$V_o\%$
4.5	0.004	10.595	0.000	0.016			0.90%
4.5	0.036	10.583	0.010	0.161	0.106	65.88%	0.79%
4.5	0.065	10.582	0.020	0.292	0.212	72.47%	0.78%
4.5	0.088	10.585	0.030	0.394	0.318	80.56%	0.81%
4.5	0.116	10.583	0.040	0.522	0.423	81.17%	0.79%
4.5	0.144	10.582	0.050	0.648	0.529	81.71%	0.78%
4.5	0.172	10.581	0.060	0.774	0.635	82.07%	0.77%
4.5	0.200	10.579	0.070	0.901	0.741	82.16%	0.75%
4.5	0.229	10.577	0.080	1.030	0.846	82.15%	0.73%
4.5	0.257	10.576	0.090	1.156	0.952	82.34%	0.72%
4.5	0.285	10.576	0.100	1.283	1.058	82.44%	0.72%

3.3) Dynamic Response and Output Ripple

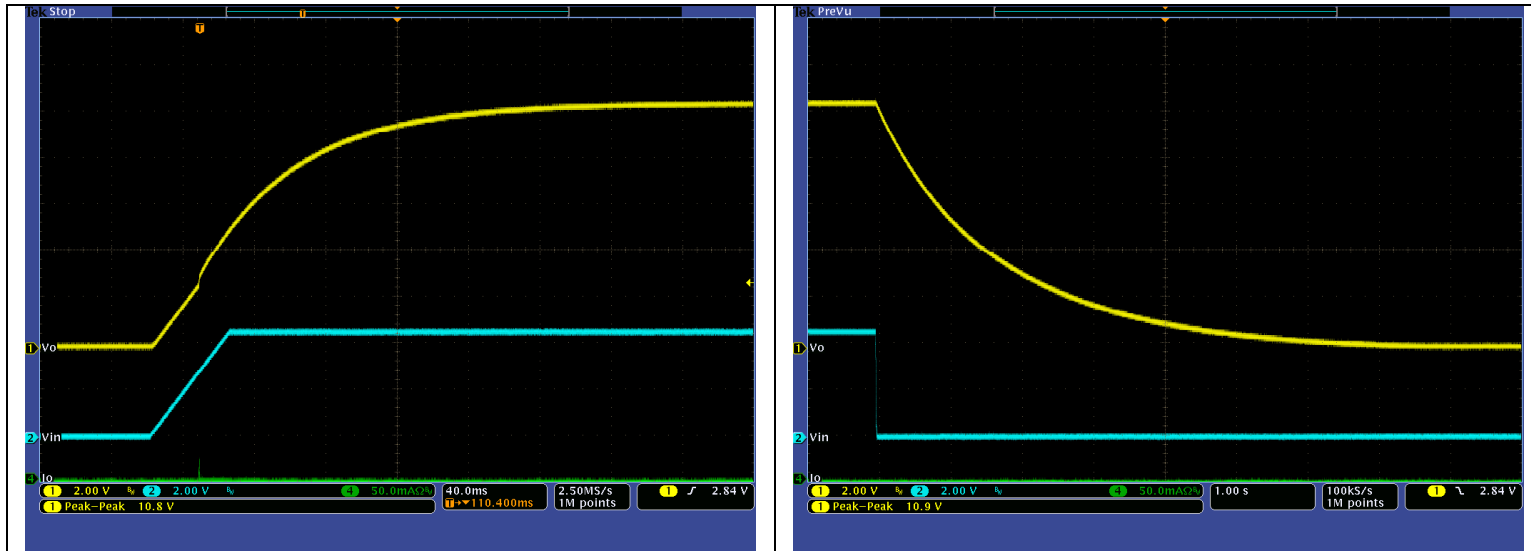


Vin = 4.5V, Io=0.05A→0.1A, 10ms,10ms,100mA/us

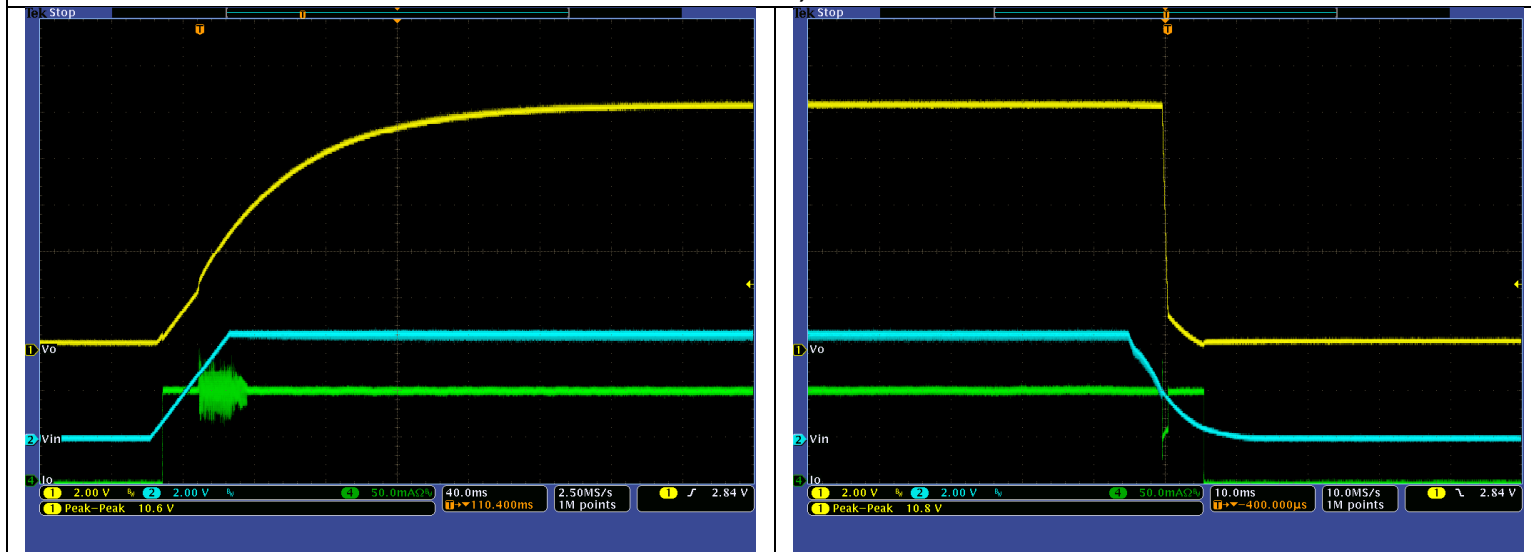


Vin = 4.5V, Io=0.1A

3.4) Start up and Shutdown

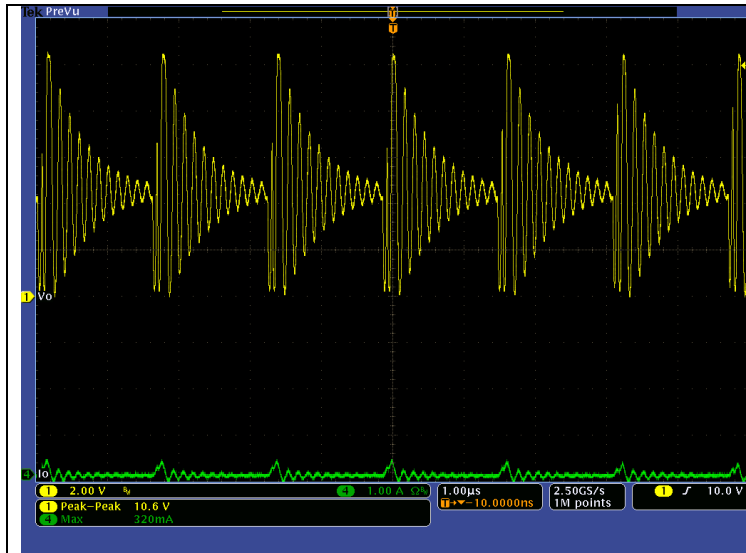


$V_{in} = 4.5V$, $I_o = 0$

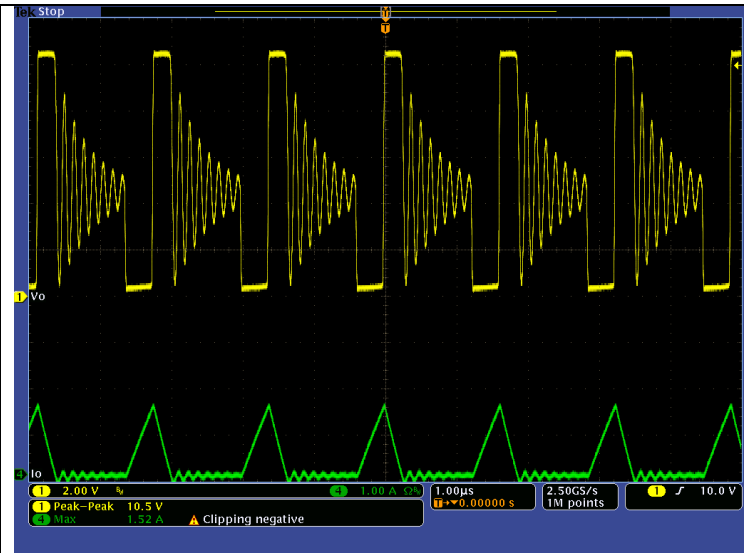


$V_{in} = 4.5V$, $I_o = 0.1A$

3.5) Inductor Current and SW waveform

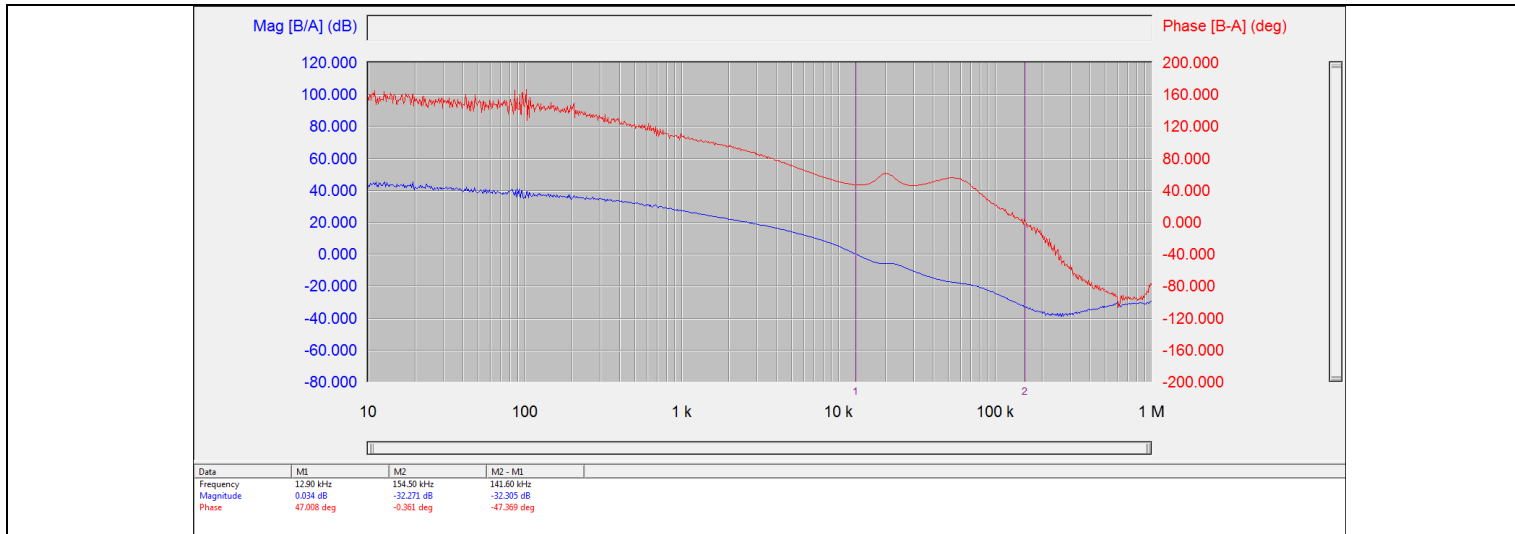


Vin = 4.5V, Io=1mA (yellow-SW, green-iL)

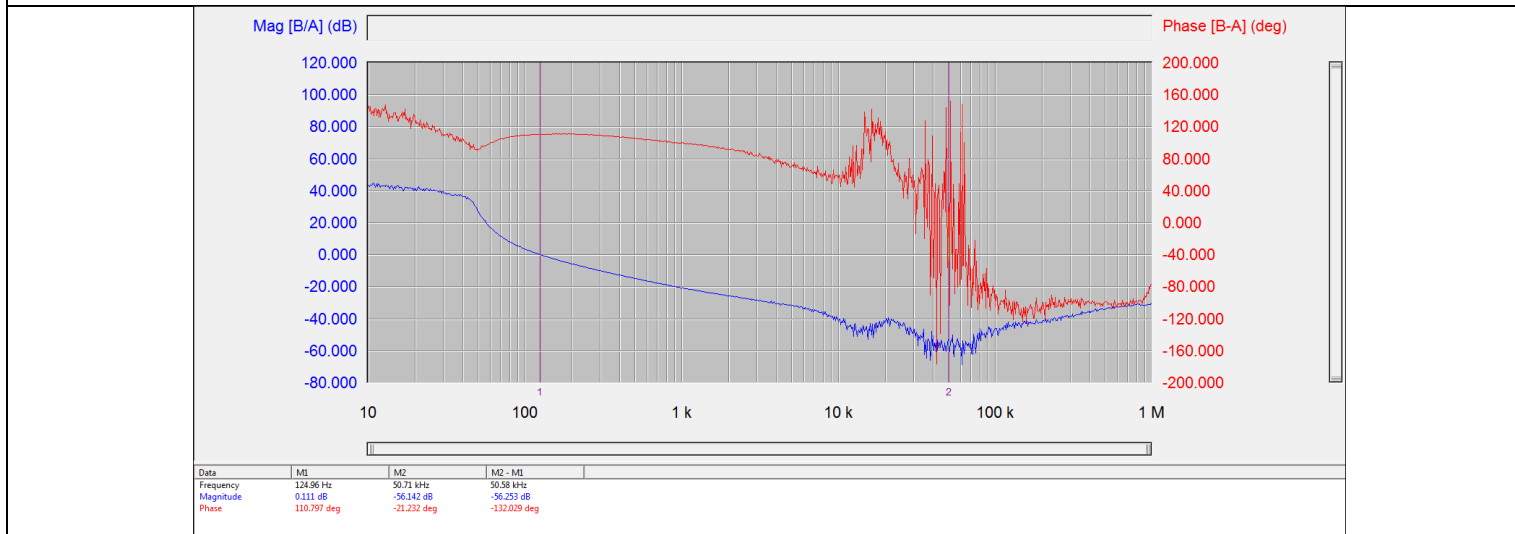


Vin = 4.5V, Io=0.1A (yellow-SW, green-iL)

3.6) Loop Gain

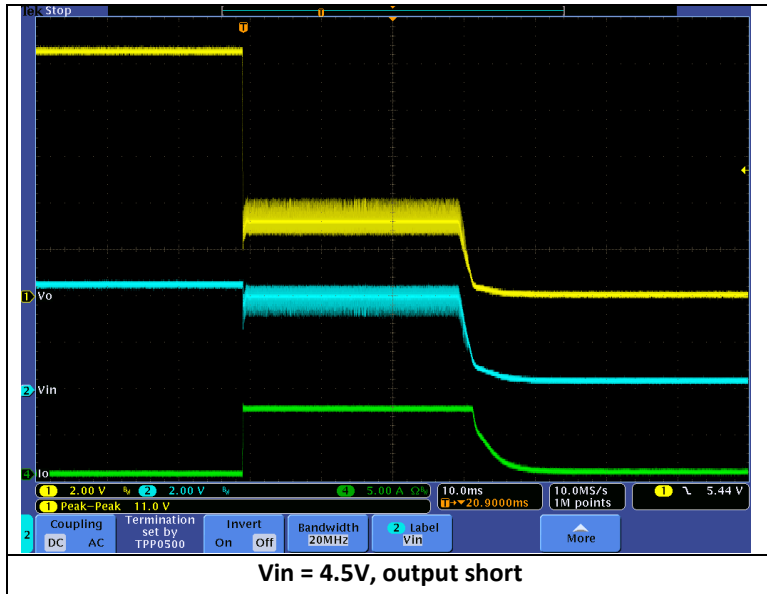


Vin = 4.5V, Io=0.1A, fsw=12.9k, PM=47deg, GM=-32dB



Vin = 4.5V, Io=0, fsw=124k, PM=110deg, GM=-58dB

3.7) Short Protection



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