

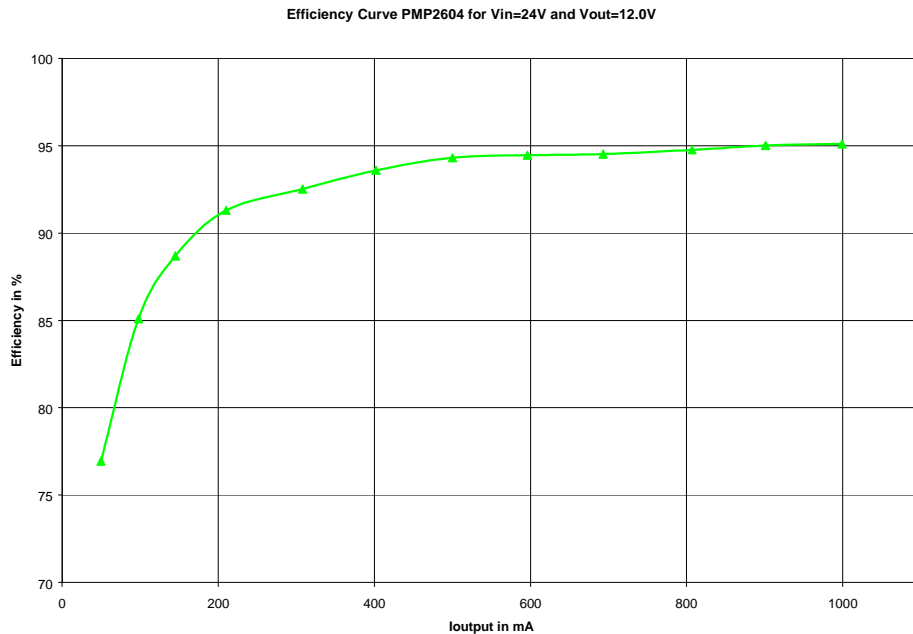
1 Startup

The startup waveform is shown in the figure below. The input voltage was set at 24V, with 1A load on the output.



2 Efficiency

The efficiency is shown in the figure below. Measured at 24 V input voltage.



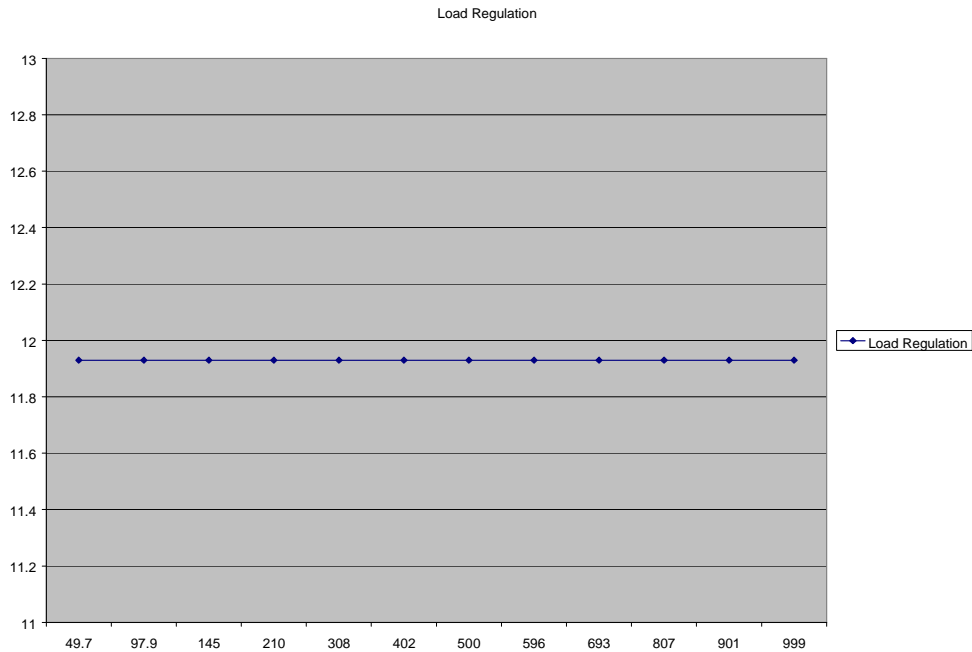
The following table shows the measured values:

Efficiency Curve TPS40200 for Vin=24V and Vout=12.0V

Uin/V	Iin/mA	Uout/V	Iout/mA	Pin/W	Pout/W	n/%
24.08	32	11.93	49.7	0.77056	0.592921	76.94677
24.08	57	11.93	97.9	1.37256	1.167947	85.0926
24.08	81	11.93	145	1.95048	1.72985	88.68843
24.07	114	11.93	210	2.74398	2.5053	91.30169
24.07	165	11.93	308	3.97155	3.67444	92.51904
24.06	213	11.93	402	5.12478	4.79586	93.58177
24.05	263	11.93	500	6.32515	5.965	94.30606
24.05	313	11.93	596	7.52765	7.11028	94.45551
24.03	364	11.93	693	8.74692	8.26749	94.51887
24.02	423	11.93	807	10.16046	9.62751	94.75467
24.02	471	11.93	901	11.31342	10.74893	95.01044
24.01	522	11.93	999	12.53322	11.91807	95.09184

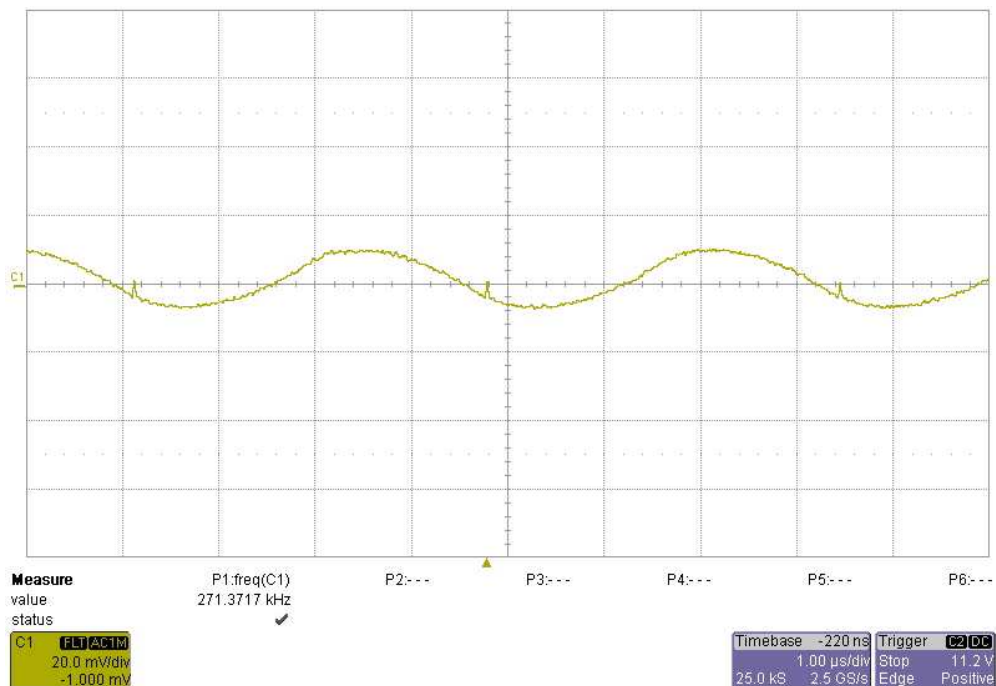
3 Load Regulation

The load regulation of the output is shown in the graph below.



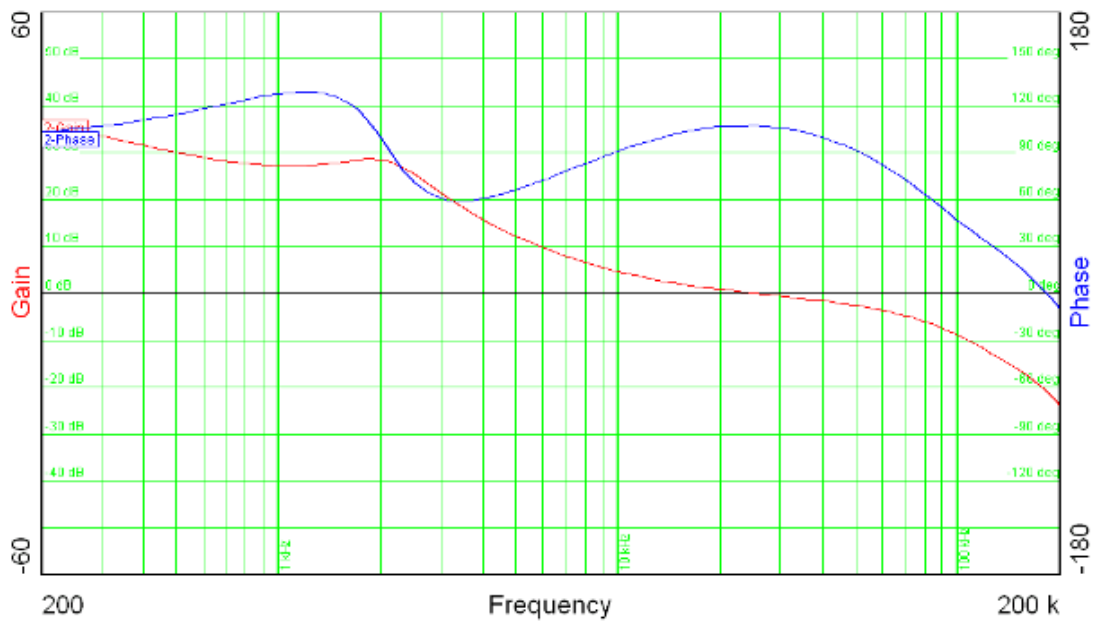
4 Output Ripple Voltage

The output ripple voltage is shown in the figure below. The image was taken with a 1 A load. 20 mV/div Vertical and 1 μ S/div Horizontal.

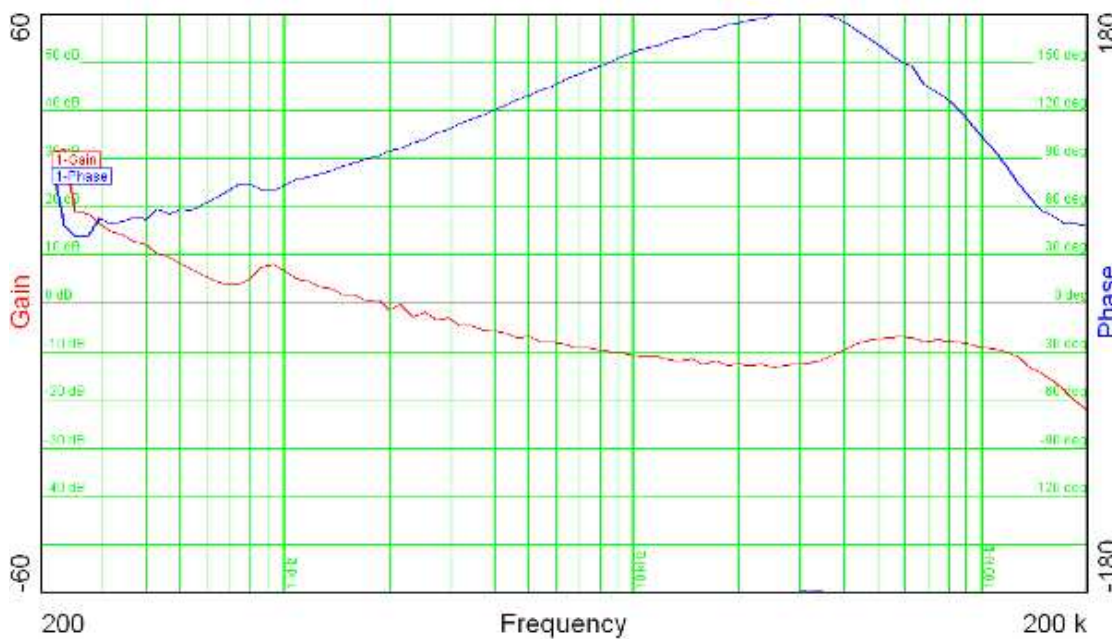


5 Control Loop Frequency Response

The figures below shows the loop response with a 24V input, 12V output at 1A load.



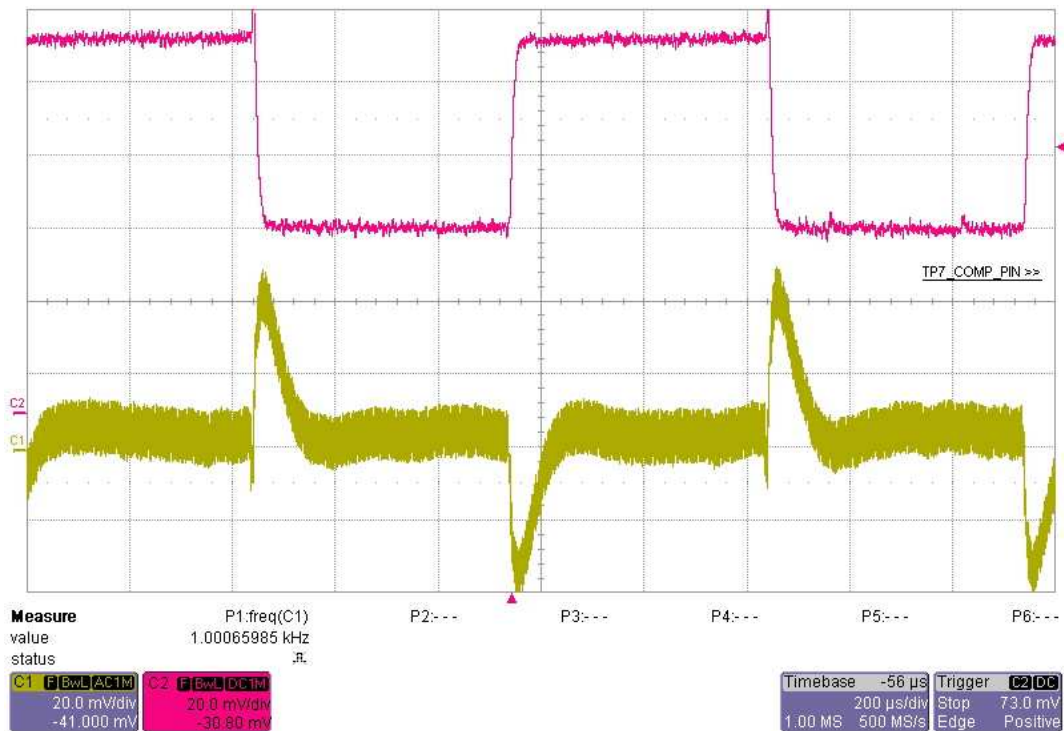
The next figure shows the bode plot with a 24V input, 12V output at 180mA (discontinuous conduction mode).



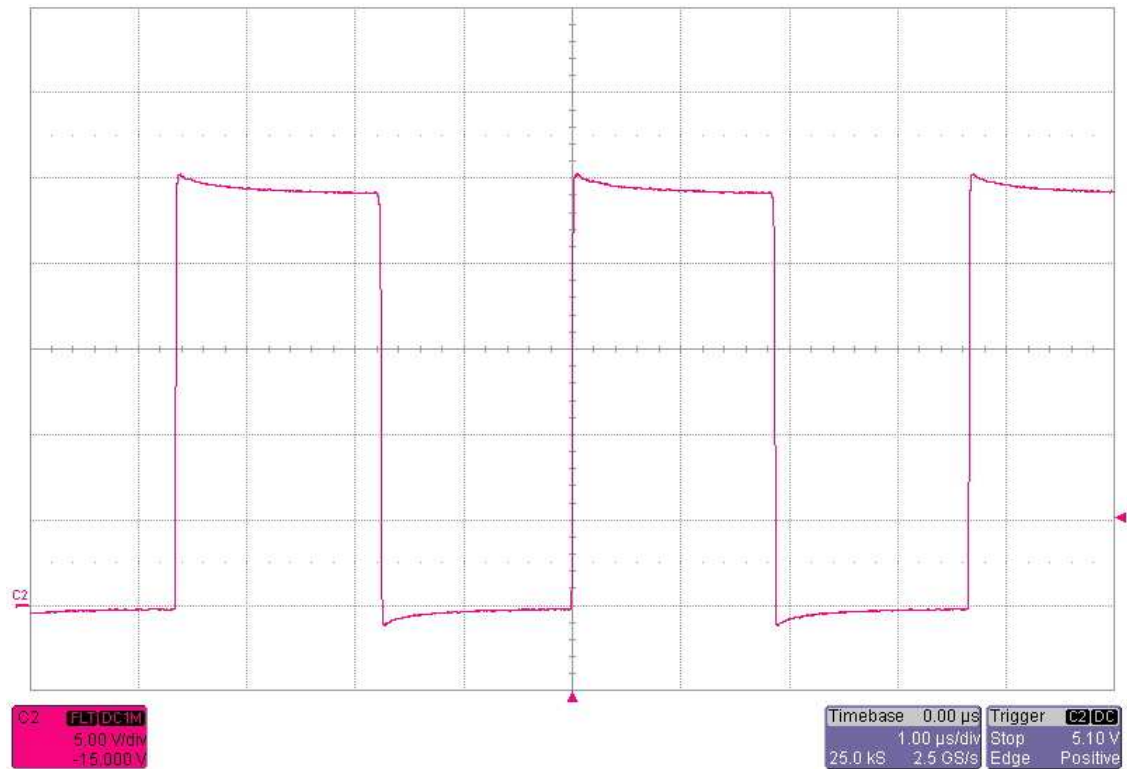
6 Load Transients

The figures below show the response to load transients. The input voltage was set to 24V. The load is switching from 0.5 A to 1.0 A.

Channel 1: Vout (AC coupled), channel 2: Load current



7 Switch Node Waveform



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