Test Data
For PMP10651
05/07/2015

Contents

1. Design Specifications

Vin Minimum	**9VDC**
Vin Maximum	**15VDC**
Vout1	**-12VDC**
Iout 1	**0.5A**
Vout2	**+12VDC**
Iout 2	**0.5A**
Vout3	**5V**
Iout 3	**0.400mA**
Vout4	**3.3V**
Iout4	**0.150mA**
Approximate Switching Frequency	**>1.5MHz**

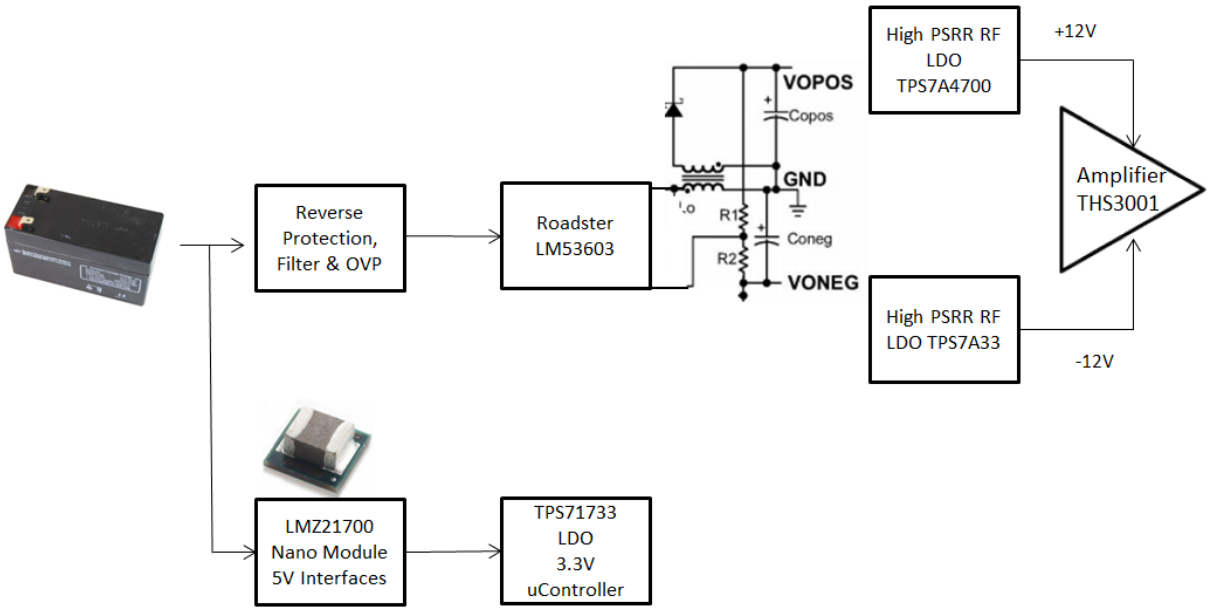
PSRR from input to each output >70db at all the frequency (Iarmar)

Absolutely noise free from 50 KHz to 500 KHz, same goes for 10MHz, 20MHz, 30MHz and 40MHz

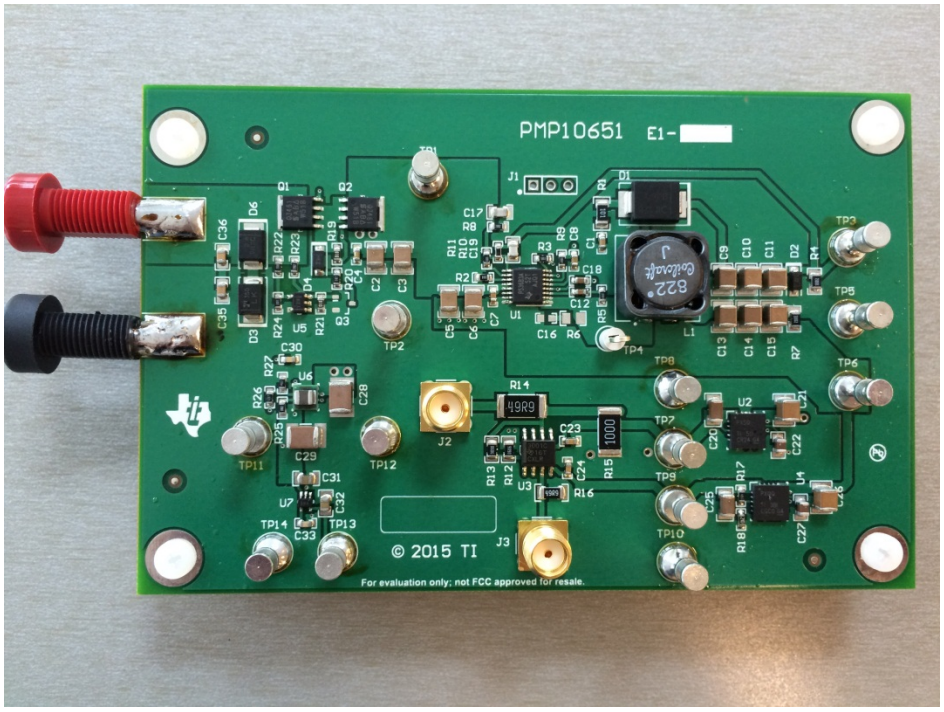
2. Circuit Description and PCB details

PMP10651 is a low noise, multi-output SMPS design where LM53603 is used in Inverting Buck-Boost Fly buck topology to generate positive and negative supply needed in multiple noise sensitive applications such as powering High Speed Video Amplifier, RF amplifier, Precision Low noise amplifier etc. The design accepts an input voltage of 7Vin to 15 Vin DC (from 12V Lead Acid Battery) and provides outputs of +12V@500mA, -12v@500mA, 5V @400mA and 3.3V@150mA. It features a small size and is an inexpensive and more efficient solution to using Flyback or Pushpull converters

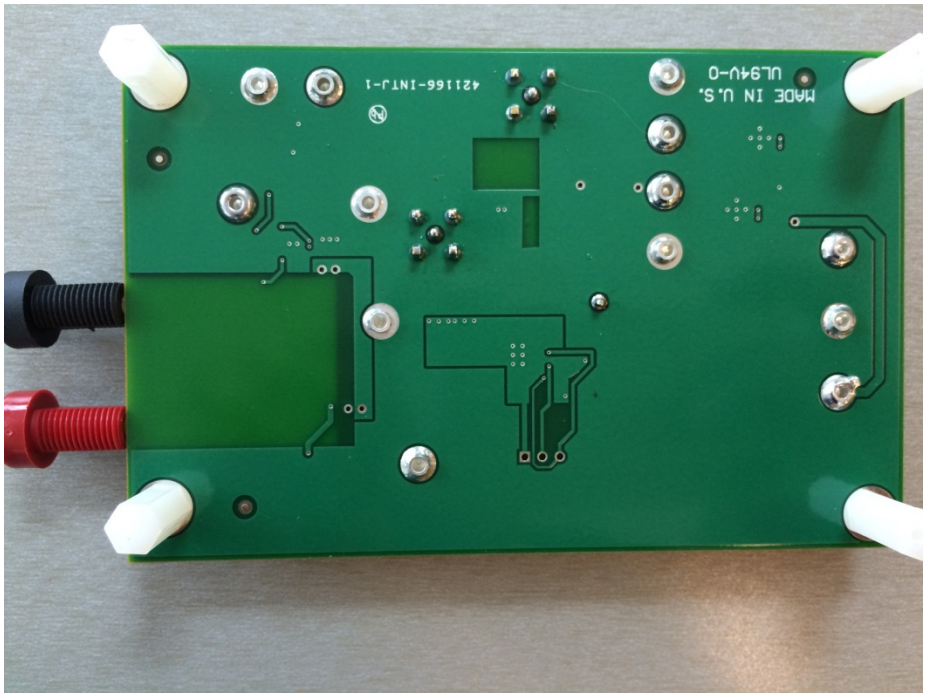
3. PMP10651 Block Diagram –Application in Noise Sensitive Dual Supply Applications



4. PMP10651 Board Photos

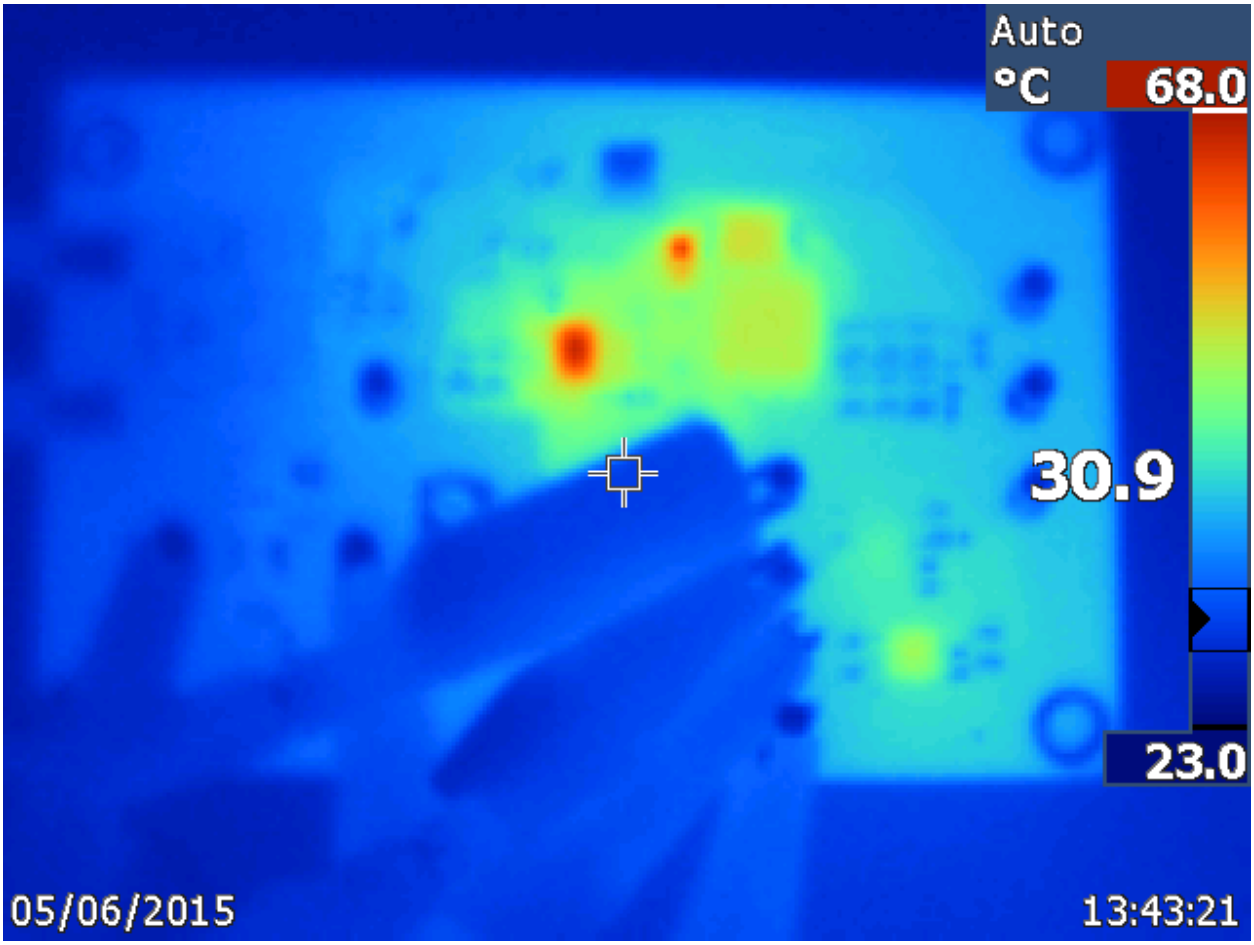


Board Photo (Top)



Board Photo (Bottom)

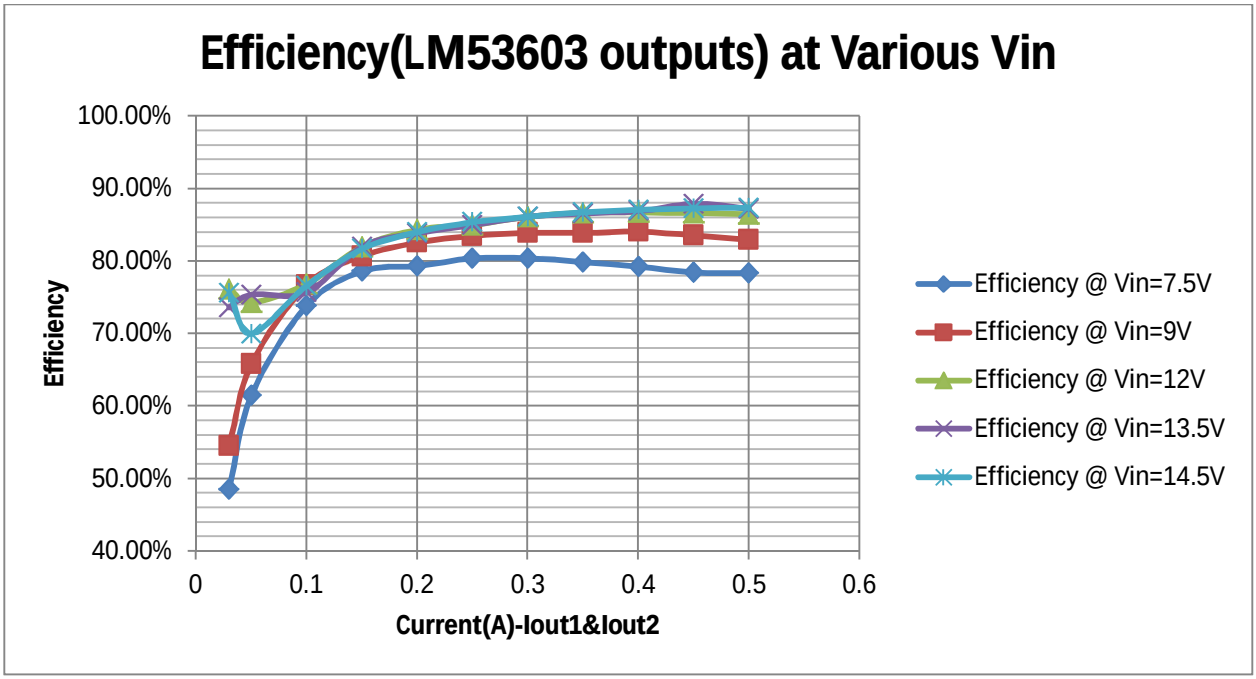
5. Thermal Data



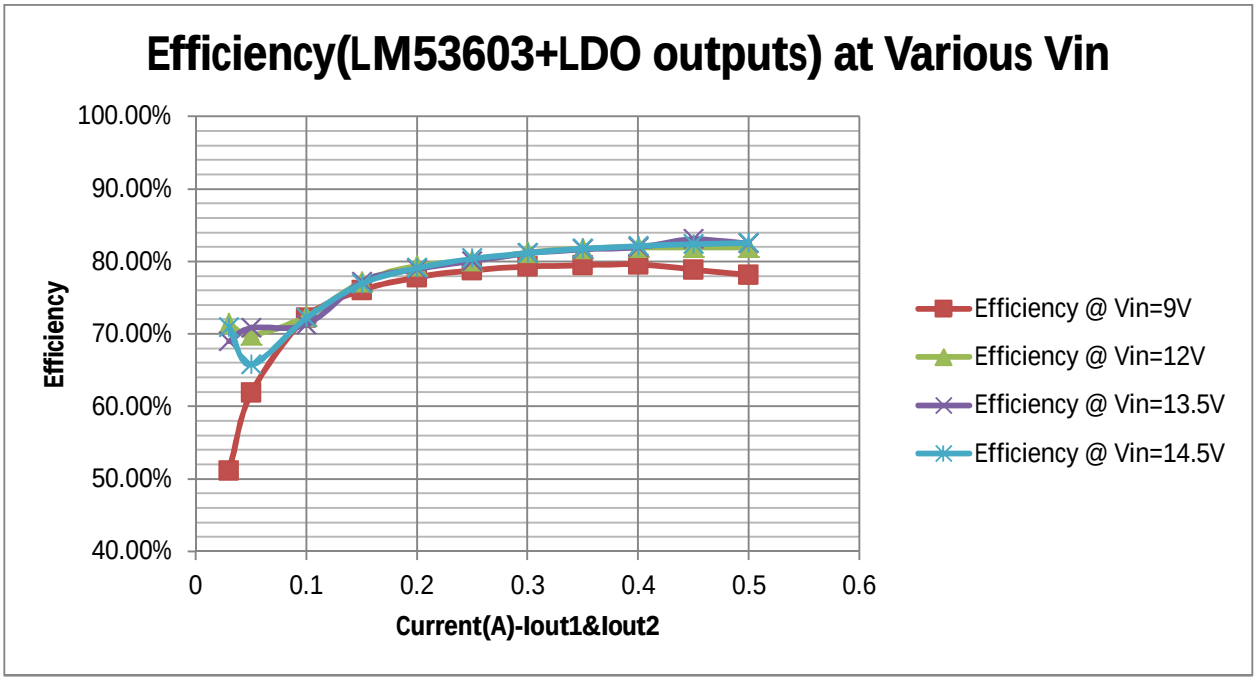
IR thermal image taken at steady state with 12 Vin and at full loaded output (no airflow)

6. Efficiency

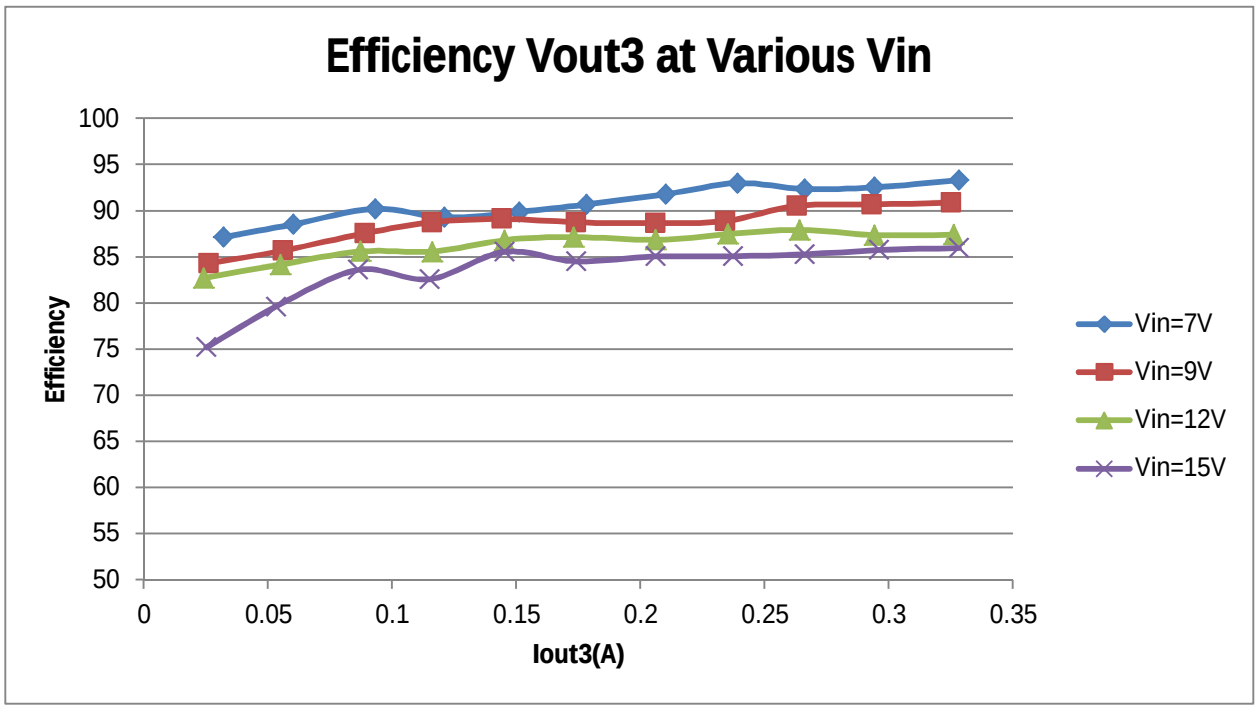
6.1 Efficiency Chart- LM53603 +12V/-12V @500mA outputs



6.2 Efficiency Chart- (LM53603+LDO) +12V/-12V @500mA outputs



6.3 Efficiency Data – Nano Module LMZ21700



6.4 Efficiency Data

6.4.1 Efficiency Data-LM53603 outputs

Vin(V)	Iin(A)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Pin(W)	Pout(W)	Efficiency(%)	Variation Vout2	Variation Vout1
12.2	0.083	13.121	0.03	12.593	0.03	1.0126	0.77142	76.18%	0.74%	0.16%
12.59	0.137	13.032	0.05	12.6	0.05	1.72483	1.2816	74.30%	0.80%	-0.52%
12.514	0.266	13.057	0.1	12.515	0.1	3.328724	2.5572	76.82%	0.12%	-0.33%
12.454	0.376	13.052	0.15	12.533	0.15	4.682704	3.83775	81.96%	0.26%	-0.37%
12.387	0.49	13.049	0.2	12.541	0.2	6.06963	5.118	84.32%	0.33%	-0.39%
12.318	0.611	13.051	0.25	12.534	0.25	7.526298	6.39625	84.99%	0.27%	-0.37%
12.248	0.727	13.057	0.3	12.512	0.3	8.904296	7.6707	86.15%	0.10%	-0.33%
12.177	0.847	13.067	0.35	12.475	0.35	10.31392	8.9397	86.68%	-0.20%	-0.25%
12.104	0.972	13.08	0.4	12.43	0.4	11.76509	10.204	86.73%	-0.56%	-0.15%
12.028	1.1	13.095	0.45	12.377	0.45	13.2308	11.4624	86.63%	-0.98%	-0.04%

11.95	1.23	13.111	0.5	12.319	0.5	14.6985	12.715	86.51%	-1.45%	0.08%

Vin(V)	Iin(A)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Pin(W)	Pout(W)	Efficiency(%)	Variation Vout2	Variation Vout1
14.569	0.07	13.115	0.03	12.588	0.03	1.01983	0.77109	75.61%	0.70%	0.11%
14.893	0.123	13.045	0.05	12.596	0.05	1.831839	1.28205	69.99%	0.77%	-0.42%
14.833	0.225	13.059	0.1	12.512	0.1	3.337425	2.5571	76.62%	0.10%	-0.31%
14.779	0.318	13.052	0.15	12.536	0.15	4.699722	3.8382	81.67%	0.29%	-0.37%
14.723	0.414	13.047	0.2	12.55	0.2	6.095322	5.1194	83.99%	0.40%	-0.40%
14.666	0.511	13.046	0.25	12.55	0.25	7.494326	6.399	85.38%	0.40%	-0.41%
14.608	0.61	13.05	0.3	12.539	0.3	8.91088	7.6767	86.15%	0.31%	-0.38%
14.55	0.709	13.055	0.35	12.518	0.35	10.31595	8.95055	86.76%	0.14%	-0.34%
14.491	0.81	13.062	0.4	12.49	0.4	11.73771	10.2208	87.08%	-0.08%	-0.29%
14.43	0.912	13.073	0.45	12.456	0.45	13.16016	11.48805	87.29%	-0.35%	-0.21%
14.369	1.0158	13.083	0.5	12.419	0.5	14.59603	12.751	87.36%	-0.65%	-0.13%

Vin(V)	Iin(A)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Pin(W)	Pout(W)	Efficiency(%)	Variation Vout2	Variation Vout1
13.435	0.078	13.116	0.03	12.599	0.03	1.04793	0.77145	73.62%	0.79%	0.12%
13.605	0.125	13.032	0.05	12.609	0.05	1.700625	1.28205	75.39%	0.87%	-0.52%
13.629	0.248	13.056	0.1	12.52	0.1	3.379992	2.5576	75.67%	0.16%	-0.34%
13.572	0.345	13.049	0.15	12.543	0.15	4.68234	3.8388	81.98%	0.34%	-0.39%
13.509	0.452	13.046	0.2	12.552	0.2	6.106068	5.1196	83.84%	0.42%	-0.41%
13.466	0.559	13.046	0.25	12.547	0.25	7.527494	6.39825	85.00%	0.38%	-0.41%
13.588	0.656	13.05	0.3	12.533	0.3	8.913728	7.6749	86.10%	0.26%	-0.38%
13.628	0.758	13.056	0.35	12.503	0.35	10.33002	8.94565	86.60%	0.02%	-0.34%
13.563	0.867	13.067	0.4	12.475	0.4	11.75912	10.2168	86.88%	-0.20%	-0.25%
13.604	0.96	13.077	0.45	12.438	0.45	13.05984	11.48175	87.92%	-0.50%	-0.18%
13.53	1.08	13.089	0.5	12.399	0.5	14.6124	12.744	87.21%	-0.81%	-0.08%

Vin(V)	Iin(A)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Pin(W)	Pout(W)	Efficiency(%)	Variation Vout2	Variation Vout1
9.487	0.149	13.005	0.03	12.683	0.03	1.413563	0.77064	54.52%	1.46%	-0.73%
9.454	0.206	13.033	0.05	12.593	0.05	1.947524	1.2813	65.79%	0.74%	-0.51%

9.367	0.356	13.061	0.1	12.507	0.1	3.334652	2.5568	76.67%	0.06%	-0.30%
9.27	0.513	13.055	0.15	12.523	0.15	4.75551	3.8367	80.68%	0.18%	-0.34%
9.178	0.675	13.055	0.2	12.517	0.2	6.19515	5.1144	82.55%	0.14%	-0.34%
9.07	0.843	13.067	0.25	12.476	0.25	7.64601	6.38575	83.52%	-0.19%	-0.25%
9.19	0.992	13.084	0.3	12.418	0.3	9.11648	7.6506	83.92%	-0.66%	-0.12%
9.08	1.169	13.108	0.35	12.333	0.35	10.61452	8.90435	83.89%	-1.34%	0.06%
9.3	1.299	13.127	0.4	12.266	0.4	12.0807	10.1572	84.08%	-1.87%	0.21%
9.196	1.483	13.157	0.45	12.162	0.45	13.63767	11.39355	83.54%	-2.70%	0.44%
9.08	1.675	13.192	0.5	12.045	0.5	15.209	12.6185	82.97%	-3.64%	0.70%

6.4.2 Efficiency Data-LM53603 + LDO Efficiency Data

Vin(V)	Iin(A)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Pin(W)	Pout(W)	Efficiency(%)
12.2	0.083	12.026	0.03	12.085	0.03	1.0126	0.72333	71.43%
12.59	0.137	12.026	0.05	12.085	0.05	1.72483	1.20555	69.89%
12.514	0.266	12.026	0.1	12.085	0.1	3.328724	2.4111	72.43%
12.454	0.376	12.026	0.15	12.085	0.15	4.682704	3.61665	77.23%
12.387	0.49	12.026	0.2	12.085	0.2	6.06963	4.8222	79.45%
12.318	0.611	12.026	0.25	12.085	0.25	7.526298	6.02775	80.09%
12.248	0.727	12.026	0.3	12.085	0.3	8.904296	7.2333	81.23%
12.177	0.847	12.026	0.35	12.085	0.35	10.31392	8.43885	81.82%
12.104	0.972	12.026	0.4	12.085	0.4	11.76509	9.6444	81.97%
12.028	1.1	12.026	0.45	12.085	0.45	13.2308	10.84995	82.01%
11.95	1.23	12.026	0.5	12.085	0.5	14.6985	12.0555	82.02%

Vin(V)	Iin(A)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Pin(W)	Pout(W)	Efficiency(%)
9.487	0.149	12.026	0.03	12.085	0.03	1.413563	0.72333	51.17%
9.454	0.206	12.026	0.05	12.085	0.05	1.947524	1.20555	61.90%
9.367	0.356	12.026	0.1	12.085	0.1	3.334652	2.4111	72.30%
9.27	0.513	12.026	0.15	12.085	0.15	4.75551	3.61665	76.05%
9.178	0.675	12.026	0.2	12.085	0.2	6.19515	4.8222	77.84%
9.07	0.843	12.026	0.25	12.085	0.25	7.64601	6.02775	78.84%
9.19	0.992	12.026	0.3	12.085	0.3	9.11648	7.2333	79.34%
9.08	1.169	12.026	0.35	12.085	0.35	10.61452	8.43885	79.50%
9.3	1.299	12.026	0.4	12.022	0.4	12.0807	9.6192	79.62%
9.196	1.483	12.026	0.45	11.891	0.45	13.63767	10.76265	78.92%

9.08	1.675	12.026	0.5	11.745	0.5	15.209	11.8855	78.15%

Vin(V)	Iin(A)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Pin(W)	Pout(W)	Efficiency(%)
14.569	0.07	12.026	0.03	12.085	0.03	1.01983	0.72333	70.93%
14.893	0.123	12.026	0.05	12.085	0.05	1.831839	1.20555	65.81%
14.833	0.225	12.026	0.1	12.085	0.1	3.337425	2.4111	72.24%
14.779	0.318	12.026	0.15	12.085	0.15	4.699722	3.61665	76.95%
14.723	0.414	12.026	0.2	12.085	0.2	6.095322	4.8222	79.11%
14.666	0.511	12.026	0.25	12.085	0.25	7.494326	6.02775	80.43%
14.608	0.61	12.026	0.3	12.085	0.3	8.91088	7.2333	81.17%
14.55	0.709	12.026	0.35	12.085	0.35	10.31595	8.43885	81.80%
14.491	0.81	12.026	0.4	12.085	0.4	11.73771	9.6444	82.17%
14.43	0.912	12.026	0.45	12.085	0.45	13.16016	10.84995	82.45%
14.369	1.0158	12.026	0.5	12.085	0.5	14.59603	12.0555	82.59%

Vin(V)	Iin(A)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Pin(W)	Pout(W)	Efficiency(%)
13.435	0.078	12.026	0.03	12.085	0.03	1.04793	0.72333	69.02%
13.605	0.125	12.026	0.05	12.085	0.05	1.700625	1.20555	70.89%
13.629	0.248	12.026	0.1	12.085	0.1	3.379992	2.4111	71.33%
13.572	0.345	12.026	0.15	12.085	0.15	4.68234	3.61665	77.24%
13.509	0.452	12.026	0.2	12.085	0.2	6.106068	4.8222	78.97%
13.466	0.559	12.026	0.25	12.085	0.25	7.527494	6.02775	80.08%
13.588	0.656	12.026	0.3	12.085	0.3	8.913728	7.2333	81.15%
13.628	0.758	12.026	0.35	12.085	0.35	10.33002	8.43885	81.69%
13.563	0.867	12.026	0.4	12.085	0.4	11.75912	9.6444	82.02%
13.604	0.96	12.026	0.45	12.085	0.45	13.05984	10.84995	83.08%
13.53	1.08	12.026	0.5	12.085	0.5	14.6124	12.0555	82.50%

6.4.3 Efficiency Data-LM21700 Efficiency Data

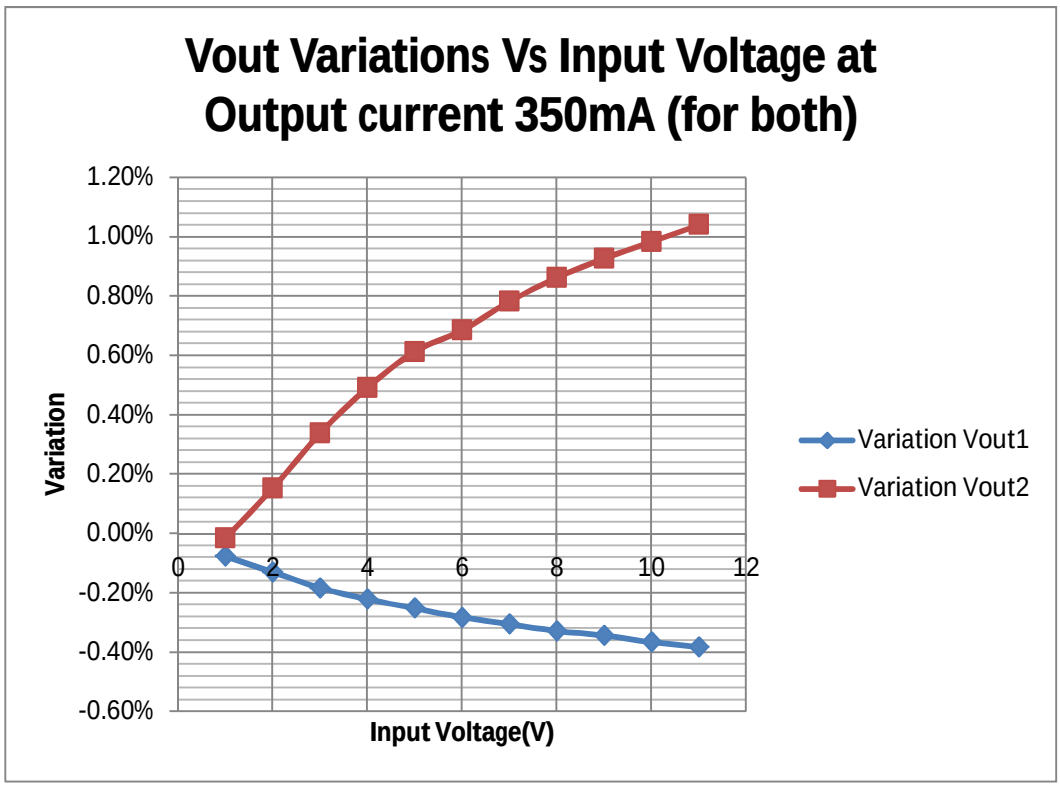
Vin(V)	Iin(A)	Vout3(V)	Iout3(A)	Efficiency(%)
==========				
7.004	0.002	4.963	0.002	70.86
7.004	0.026	4.961	0.032	87.177
7.004	0.048	4.961	0.06	88.539
7.004	0.073	4.961	0.093	90.237
7.004	0.096	4.961	0.121	89.277
7.004	0.119	4.961	0.151	89.878

7.004	0.139	4.961	0.178	90.704
7.004	0.162	4.961	0.21	91.818
7.004	0.182	4.961	0.239	93.014
7.004	0.204	4.961	0.266	92.358
7.004	0.225	4.961	0.294	92.552
7.004	0.249	4.961	0.328	93.303
Vin(V)	Iin(A)	Vout3(V)	Iout3(A)	Efficiency(%)
9.002	0.001	4.963	0	0
9.002	0.001	4.963	0	0
9.002	0.001	4.963	0	0
9.002	0.017	4.962	0.026	84.303
9.002	0.036	4.96	0.056	85.709
9.002	0.056	4.96	0.089	87.568
9.002	0.072	4.96	0.116	88.77
9.002	0.089	4.96	0.144	89.149
9.002	0.108	4.96	0.174	88.77
9.002	0.128	4.96	0.206	88.675
9.002	0.145	4.959	0.234	88.9
9.002	0.16	4.96	0.263	90.569
9.002	0.178	4.96	0.293	90.696
9.002	0.197	4.96	0.325	90.899
Vin(V)	Iin(A)	Vout3(V)	Iout3(A)	Efficiency(%)
12.002	0.001	4.964	0	0
12.002	0.001	4.964	0	0
12.002	0.001	4.964	0	0
12.002	0.012	4.965	0.024	82.736
12.002	0.027	4.96	0.055	84.184
12.002	0.042	4.96	0.087	85.605
12.002	0.056	4.959	0.116	85.588
12.002	0.069	4.959	0.145	86.828
12.002	0.082	4.959	0.173	87.171

12.002	0.098	4.959	0.206	86.852
12.002	0.111	4.959	0.235	87.475
12.002	0.124	4.958	0.264	87.95
12.002	0.139	4.958	0.294	87.375
12.002	0.154	4.957	0.326	87.43
Vin(V)	Iin(A)	Vout3(V)	Iout3(A)	Efficiency(%)
15.008	0.001	4.964	0	0
15.008	0.001	4.964	0	0
15.008	0.001	4.964	0	0
15.008	0.011	4.966	0.025	75.202
15.008	0.022	4.96	0.053	79.618
15.008	0.034	4.96	0.086	83.595
15.008	0.046	4.959	0.115	82.606
15.008	0.056	4.959	0.145	85.556
15.007	0.068	4.958	0.174	84.538
15.007	0.08	4.958	0.206	85.073
15.008	0.092	4.958	0.237	85.103
15.008	0.103	4.957	0.266	85.298
15.008	0.114	4.957	0.296	85.76
15.008	0.126	4.956	0.328	85.963

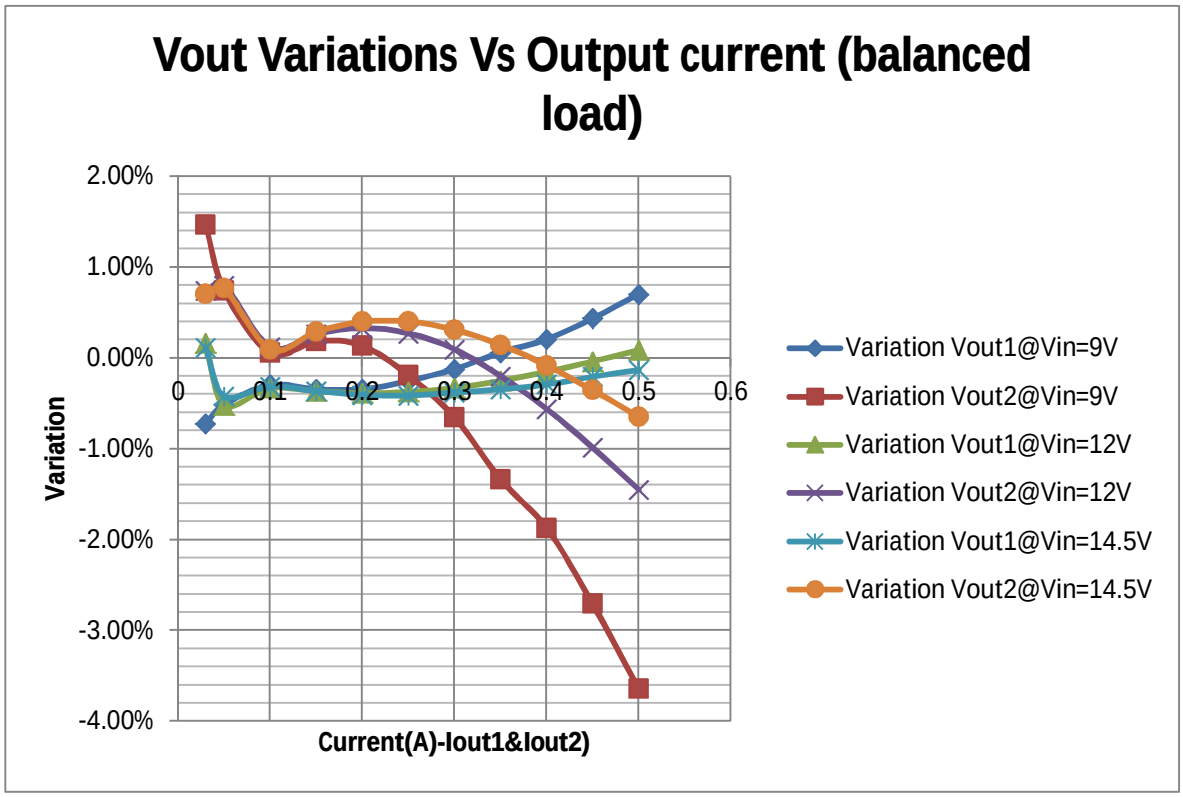
7. Cross Regulation

7.1 Vin Sweep Response



Vin(V)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Variation Vout2	Variation Vout1
10V	13.09	0.35	12.398	0.35	-0.02%	-0.08%
10.5	13.083	0.35	12.419	0.35	0.15%	-0.13%
11	13.076	0.35	12.442	0.35	0.34%	-0.18%
11.5	13.071	0.35	12.461	0.35	0.49%	-0.22%
12	13.067	0.35	12.476	0.35	0.61%	-0.25%
12.5	13.063	0.35	12.485	0.35	0.69%	-0.28%
13	13.06	0.35	12.497	0.35	0.78%	-0.31%
13.5	13.057	0.35	12.507	0.35	0.86%	-0.33%
14	13.055	0.35	12.515	0.35	0.93%	-0.34%
14.5	13.052	0.35	12.522	0.35	0.98%	-0.37%
15	13.05	0.35	12.529	0.35	1.04%	-0.38%

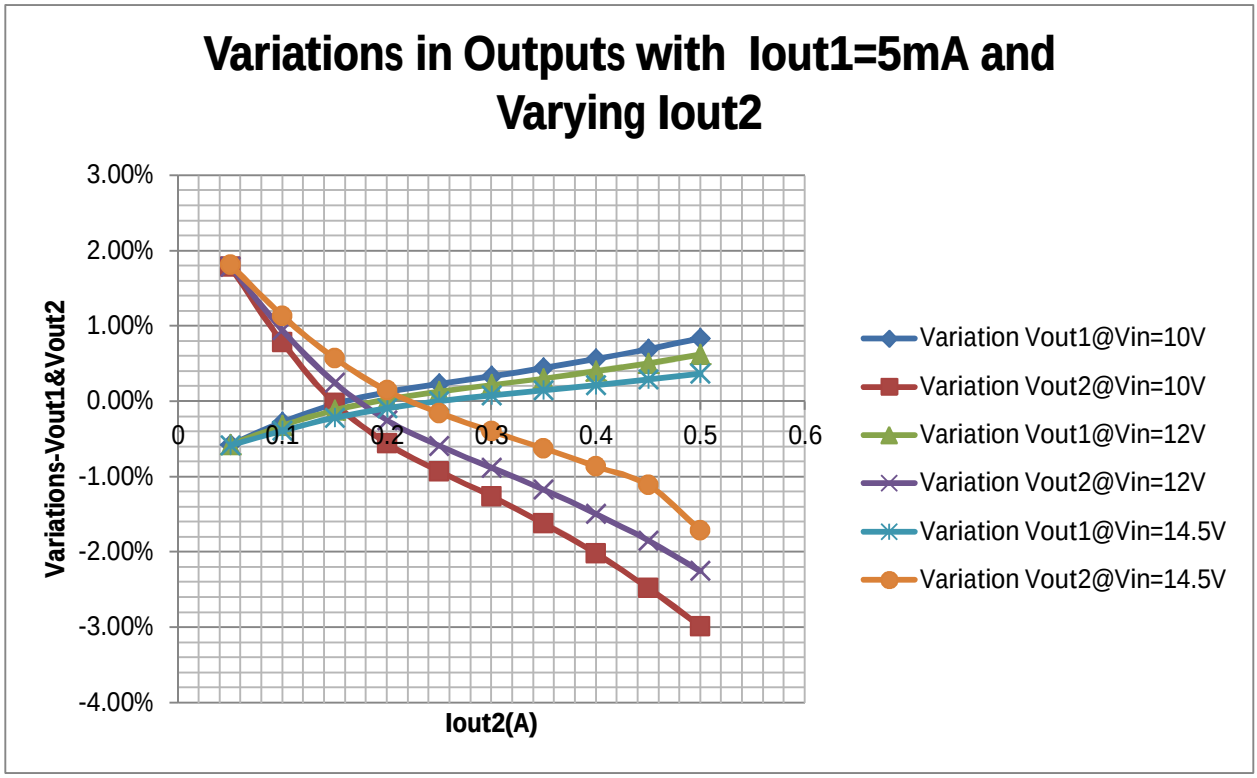
7.2 Output Load Sweep Response



Variations Data can be accesses in LM53603 Efficiency Sections

7.3 Outputs Variation-One output Load Sweep with other at Zero/minimal load

7.3.1 Variations in Outputs with Iout1=5mA and Varying Iout2

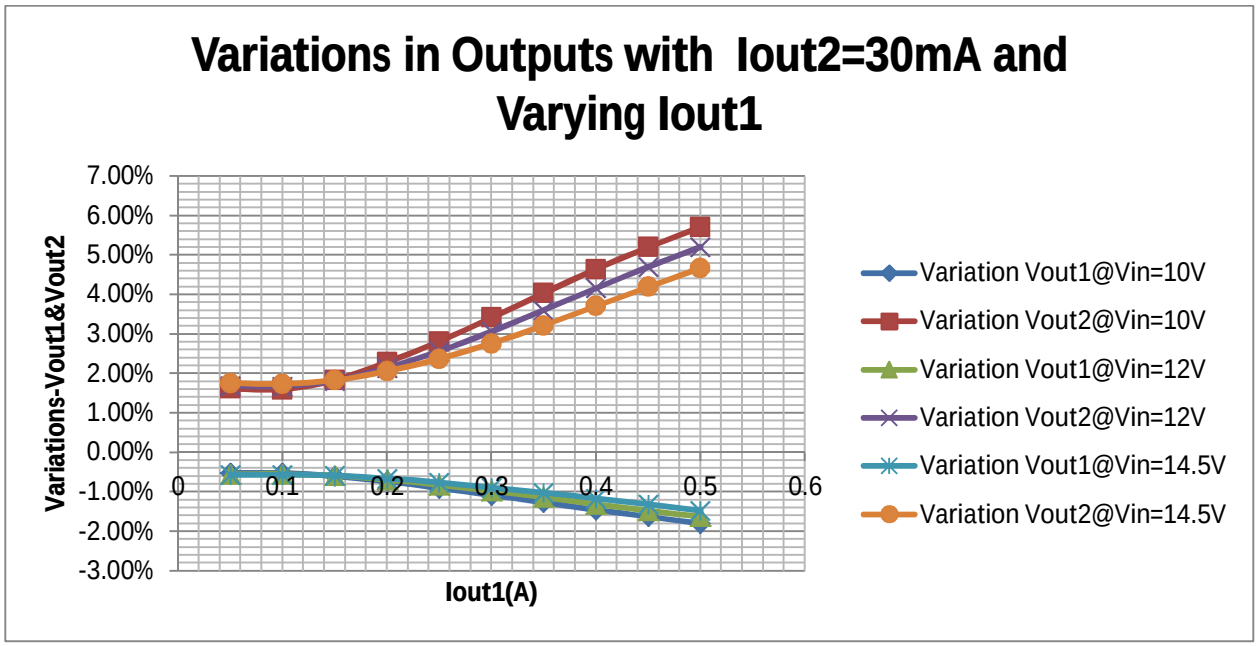


Vin(V)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Variation Vout2	Variation Vout1
10	13.21	0.005	12.03	0.5	-2.98%	0.84%
10	13.191	0.005	12.093	0.45	-2.48%	0.69%
10	13.174	0.005	12.15	0.4	-2.02%	0.56%
10	13.158	0.005	12.199	0.35	-1.62%	0.44%
10	13.144	0.005	12.244	0.3	-1.26%	0.34%
10	13.131	0.005	12.285	0.25	-0.93%	0.24%
10	13.116	0.005	12.331	0.2	-0.56%	0.12%
10	13.096	0.005	12.397	0.15	-0.02%	-0.03%
10	13.064	0.005	12.497	0.1	0.78%	-0.27%
10	13.025	0.005	12.622	0.05	1.79%	-0.57%

Vin(V)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Variation Vout2	Variation Vout1
12	13.182	0.005	12.121	0.5	-2.25%	0.63%
12	13.166	0.005	12.171	0.45	-1.85%	0.50%
12	13.153	0.005	12.215	0.4	-1.49%	0.40%
12	13.14	0.005	12.255	0.35	-1.17%	0.31%
12	13.129	0.005	12.291	0.3	-0.88%	0.22%
12	13.117	0.005	12.327	0.25	-0.59%	0.13%
12	13.104	0.005	12.369	0.2	-0.25%	0.03%
12	13.085	0.005	12.431	0.15	0.25%	-0.11%
12	13.058	0.005	12.517	0.1	0.94%	-0.32%
12	13.025	0.005	12.622	0.05	1.79%	-0.57%

Vin(V)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Variation Vout2	Variation Vout1
14.5	13.148	0.005	12.188	0.5	-1.71%	0.37%
14.5	13.138	0.005	12.262	0.45	-1.11%	0.29%
14.5	13.128	0.005	12.293	0.4	-0.86%	0.21%
14.5	13.119	0.005	12.323	0.35	-0.62%	0.15%
14.5	13.111	0.005	12.351	0.3	-0.40%	0.08%
14.5	13.101	0.005	12.381	0.25	-0.15%	0.01%
14.5	13.088	0.005	12.418	0.2	0.15%	-0.09%
14.5	13.072	0.005	12.471	0.15	0.57%	-0.21%
14.5	13.049	0.005	12.541	0.1	1.14%	-0.39%
14.5	13.024	0.005	12.625	0.05	1.81%	-0.58%

7.3.2 Variations in Outputs with Iout2=30mA and Varying Iout1



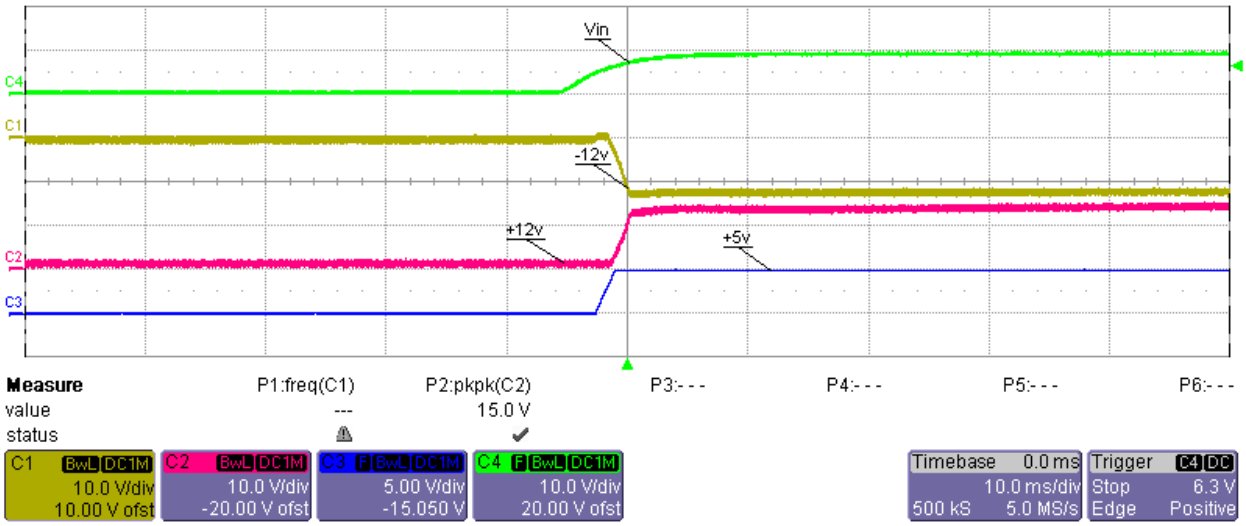
Vin(V)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Variation Vout2	Variation Vout1
10	12.865	0.5	13.108	0.03	5.71%	-1.79%
10	12.887	0.45	13.045	0.03	5.20%	-1.63%
10	12.909	0.4	12.976	0.03	4.65%	-1.46%
10	12.934	0.35	12.901	0.03	4.04%	-1.27%
10	12.959	0.3	12.824	0.03	3.42%	-1.08%
10	12.982	0.25	12.749	0.03	2.81%	-0.90%
10	13.004	0.2	12.684	0.03	2.29%	-0.73%
10	13.022	0.15	12.628	0.03	1.84%	-0.60%
10	13.032	0.1	12.598	0.03	1.60%	-0.52%
10	13.032	0.05	12.601	0.03	1.62%	-0.52%

Vin(V)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Variation Vout2	Variation Vout1
12	12.887	0.5	13.046	0.03	5.21%	-1.63%
12	12.907	0.45	12.983	0.03	4.70%	-1.47%
12	12.929	0.4	12.916	0.03	4.16%	-1.31%
12	12.951	0.35	12.847	0.03	3.60%	-1.14%
12	12.973	0.3	12.78	0.03	3.06%	-0.97%
12	12.993	0.25	12.718	0.03	2.56%	-0.82%
12	13.01	0.2	12.666	0.03	2.15%	-0.69%
12	13.023	0.15	12.626	0.03	1.82%	-0.59%
12	13.029	0.1	12.608	0.03	1.68%	-0.54%
12	13.028	0.05	12.61	0.03	1.69%	-0.55%

Vin(V)	Vout1(V)	Iout1(A)	Vout2(V)	Iout2(A)	Variation Vout2	Variation Vout1
14.5	12.908	0.5	12.979	0.03	4.67%	-1.47%
14.5	12.928	0.45	12.92	0.03	4.19%	-1.31%
14.5	12.947	0.4	12.86	0.03	3.71%	-1.17%
14.5	12.967	0.35	12.799	0.03	3.22%	-1.02%
14.5	12.984	0.3	12.743	0.03	2.77%	-0.89%
14.5	13.001	0.25	12.694	0.03	2.37%	-0.76%
14.5	13.014	0.2	12.655	0.03	2.06%	-0.66%
14.5	13.023	0.15	12.627	0.03	1.83%	-0.59%
14.5	13.026	0.1	12.616	0.03	1.74%	-0.56%
14.5	13.026	0.05	12.618	0.03	1.76%	-0.56%

8 Waveforms

8.1 Startup



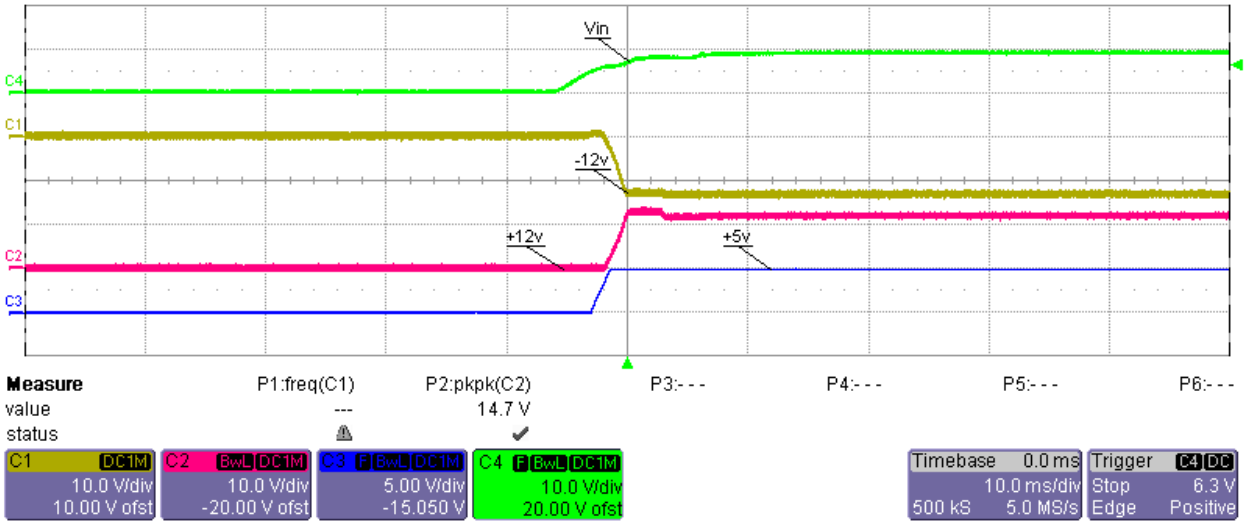
Startup into No Load at 9Vin

Ch4-Vin

Ch1-Vout 1

Ch2-Vout 2

Ch3-Vout 3



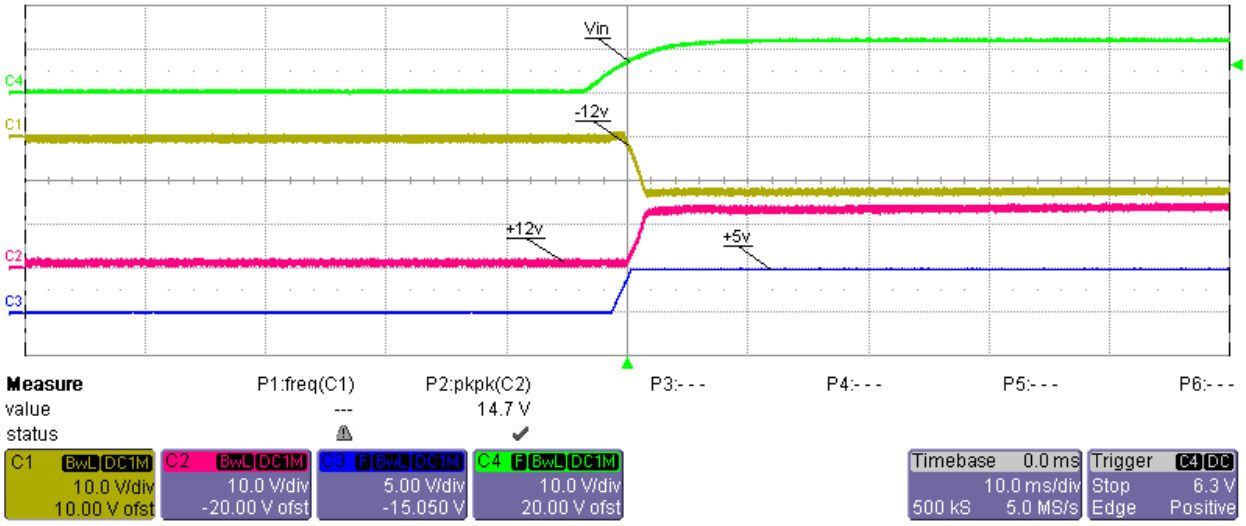
Startup into full Load (all the output was connected to full load) at 9 VIN

Ch4-Vin

Ch1-Vout 1

Ch2-Vout 2

Ch3-Vout 3



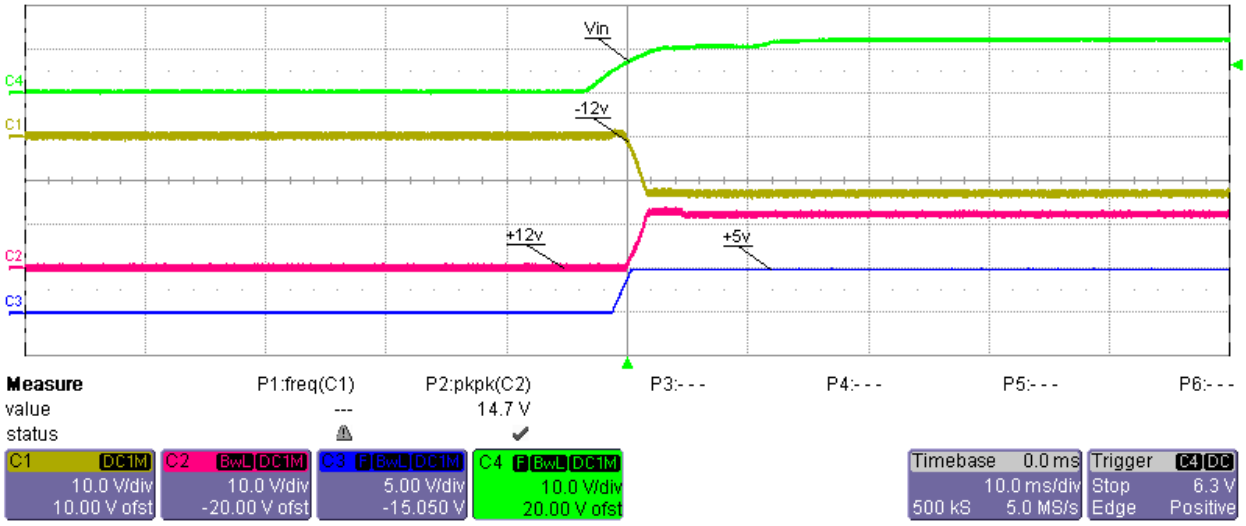
Startup into No Load at 12 Vin

Ch4-Vin

Ch1-Vout 1

Ch2-Vout 2

Ch3-Vout 3



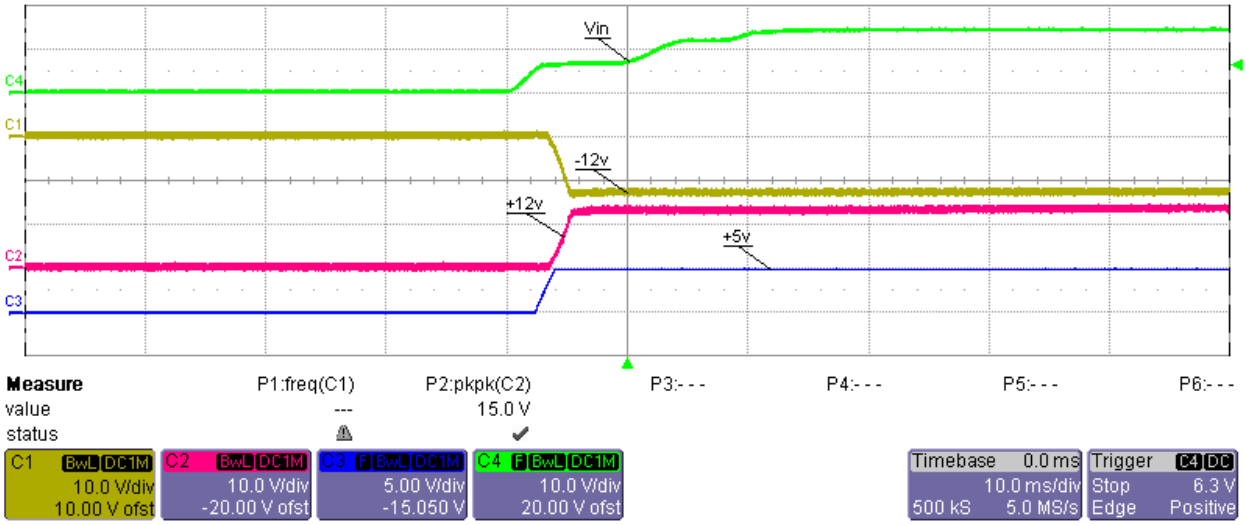
Startup into full Load (all the output was connected to full load) at 12 VIN

Ch4-Vin

Ch1-Vout 1

Ch2-Vout 2

Ch3-Vout 3



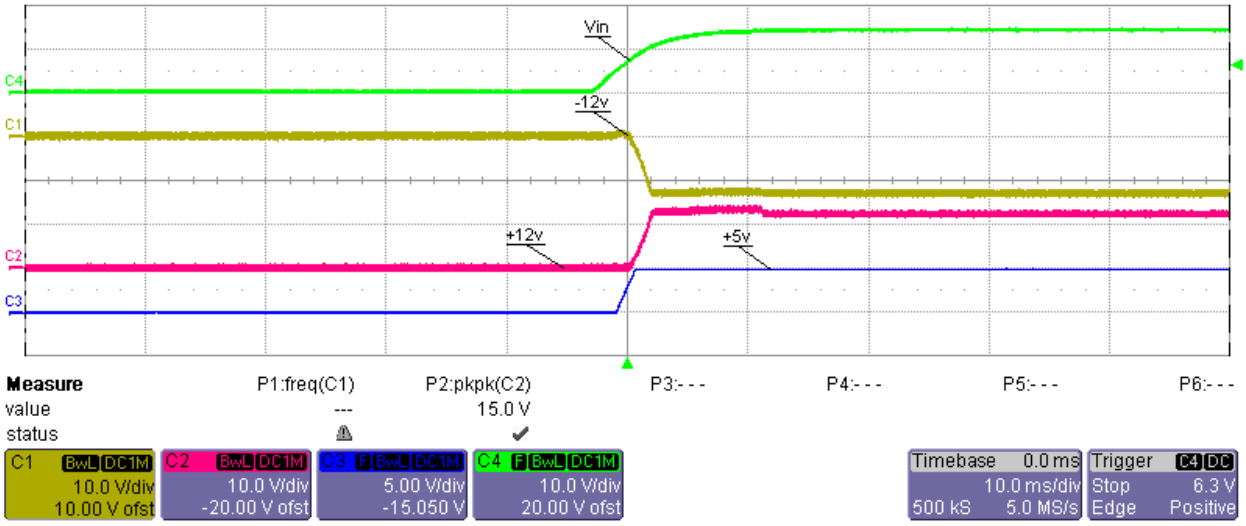
Startup into No Load at 14.5 Vin

Ch4-Vin

Ch1-Vout 1

Ch2-Vout 2

Ch3-Vout 3



Startup into full Load (all the output was connected to full load) at 14.5 VIN

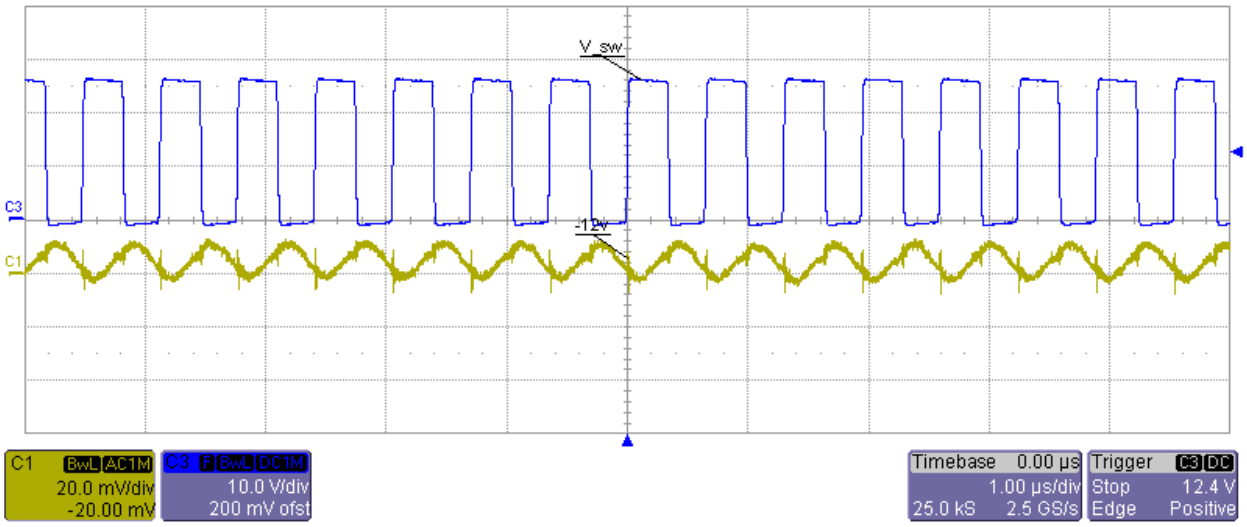
Ch4-Vin

Ch1-Vout 1

Ch2-Vout 2

Ch3-Vout 3

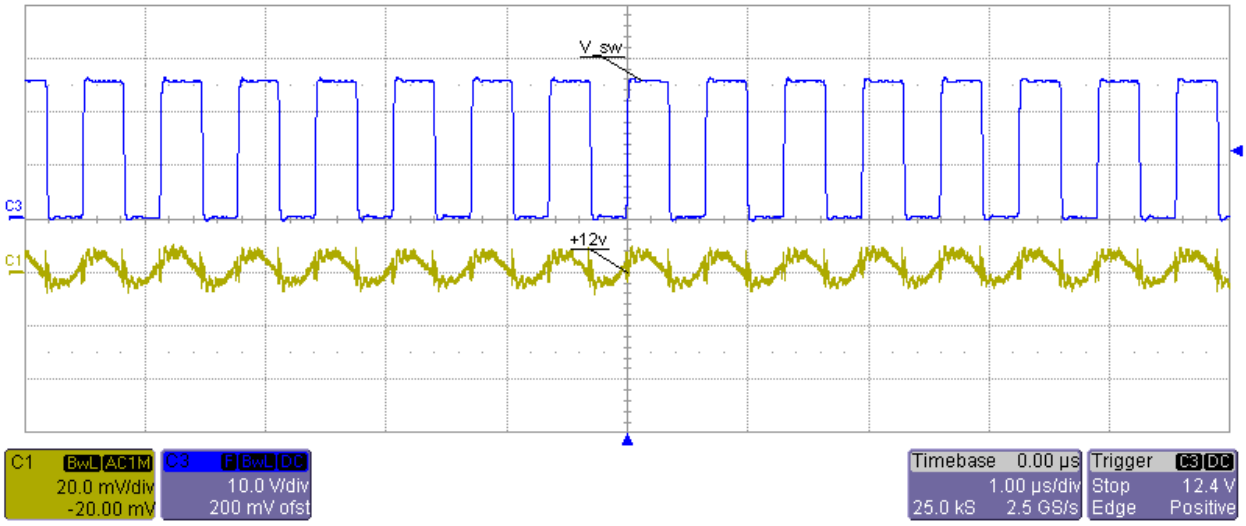
8.2 Output Voltage Ripple and Switch Node Voltage



Switch Node Voltage and Output Voltage Ripple at 12 Vin and Full Load on all the outputs (Vripple < 20mVp-p)(at LM53603 output)

Ch1v-Vout1 (AC Coupled) (-12V)

Ch3-Switching Waveform

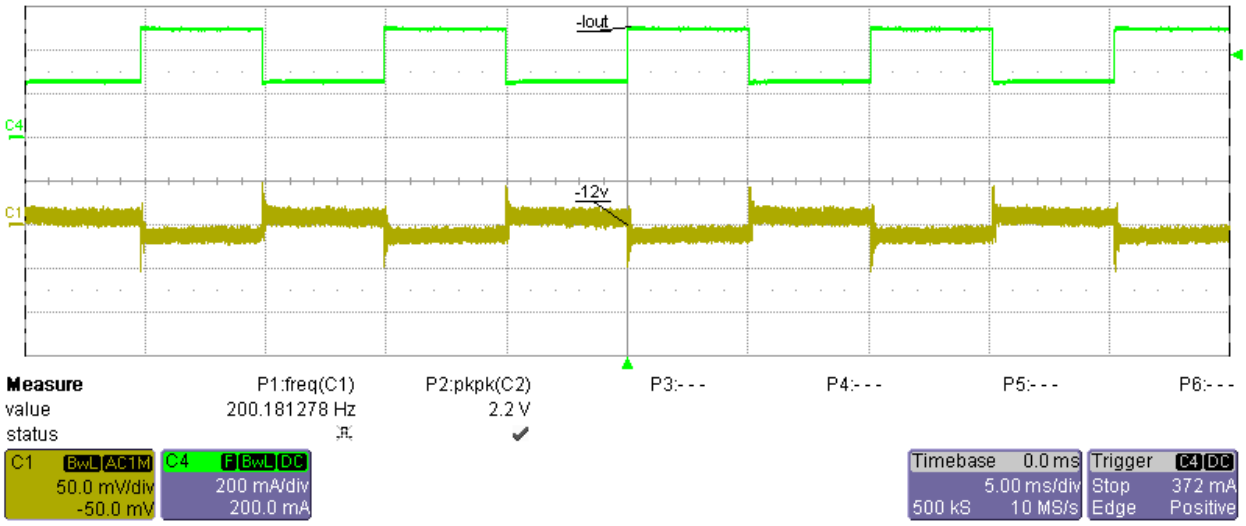


Switch Node Voltage and Output Voltage Ripple at 12 Vin and Full Load on all the outputs (Vripple < 20mVp-p)(at LM53603 output)

Ch1v-Vout2(AC Coupled) (+12V)

Ch3-Switching Waveform

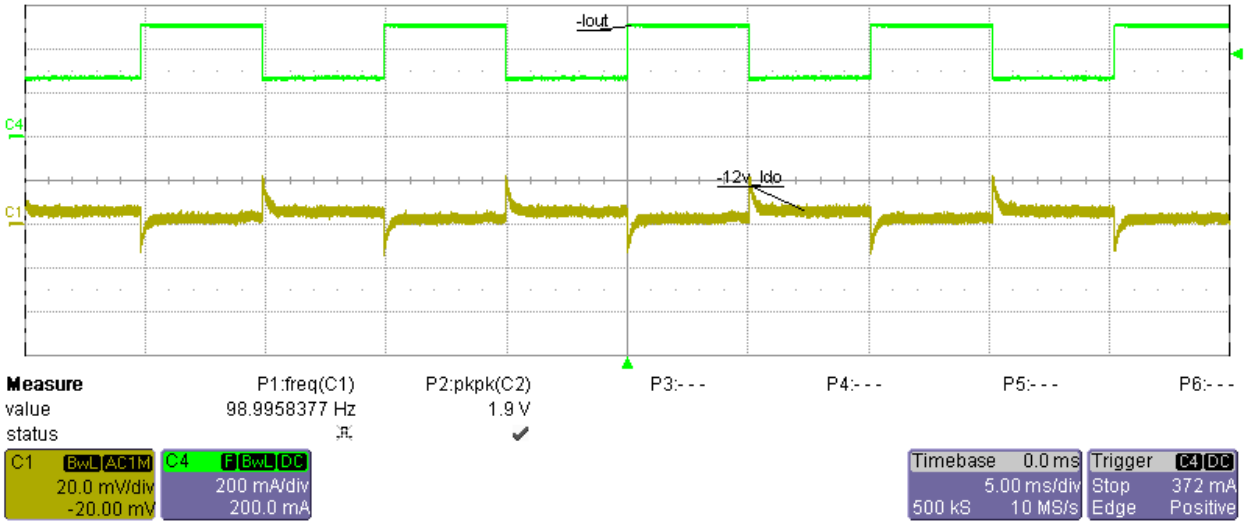
8.2 Load Transient response



Load Transient Response at 12 Vin and 50%-to-100% (250mA-to-500mA) Load Step on -12V Output Vout1 (at LM53603 output)

Ch1 – Vout1 (AC coupled)

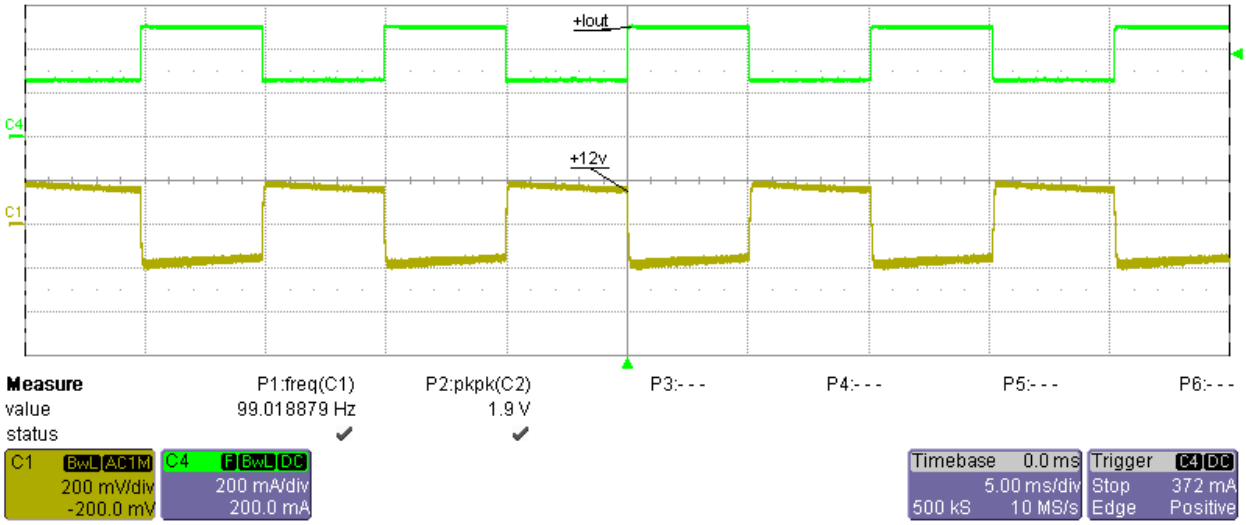
Ch4- Iout 1



Load Transient Response at 12 Vin and 50%-to-100% (250mA-to-500mA) Load Step on -12V Output Vout1 (at LDO output)

Ch1 – Vout1 (AC coupled)

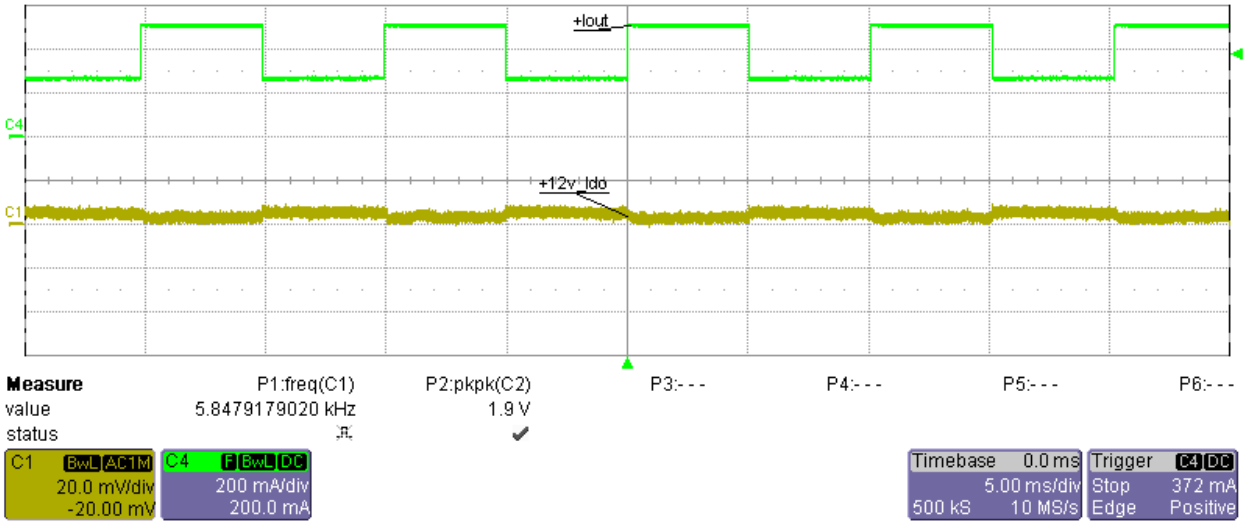
Ch4- Iout 1



Load Transient Response at 12 Vin and 50%-to-100% (250mA-to-500mA) Load Step on +12V Output Vout2 (at LM53603 output)

Ch1 – Vout2 (AC coupled)

Ch4- Iout 2

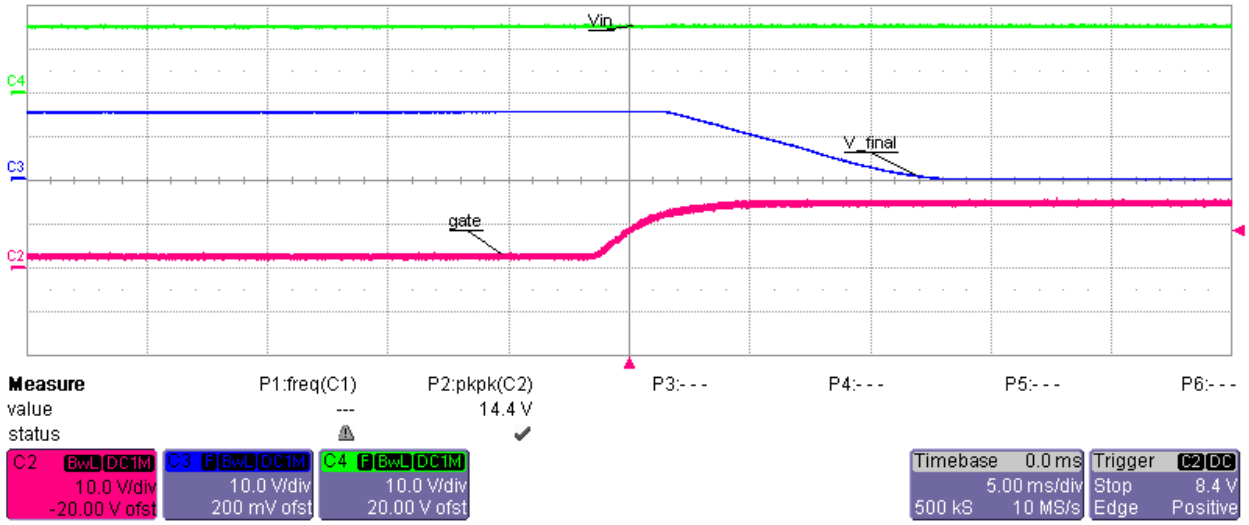


Load Transient Response at 12 Vin and 50%-to-100% (250mA-to-500mA) Load Step on +12V Output Vout2 (at LDO output)

Ch1 – Vout2 (AC coupled)

Ch4- Iout 2

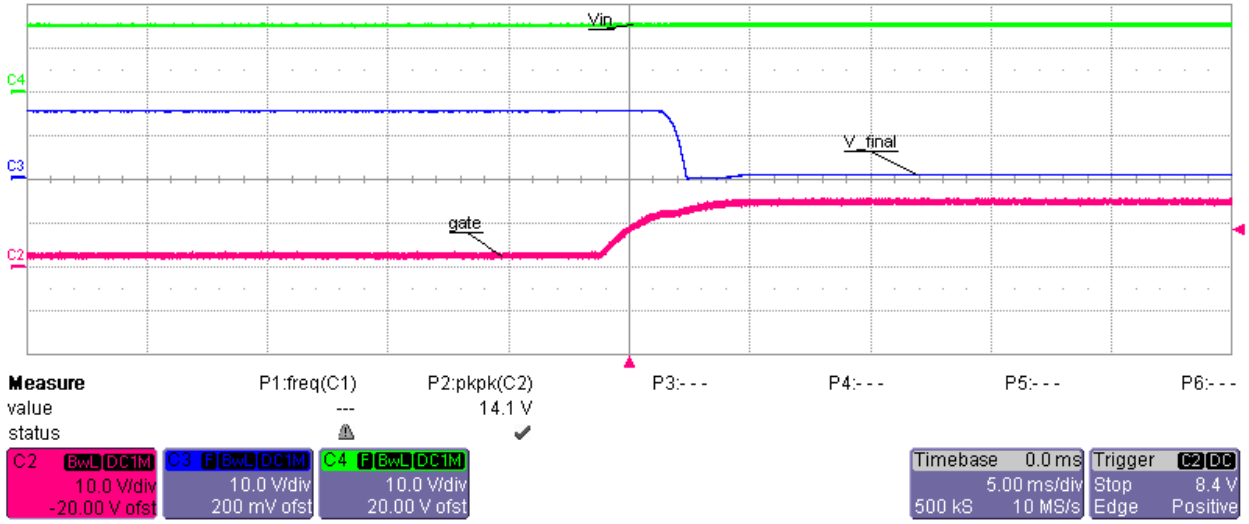
9 OVP Protection



No Load OVP

Ch3 – Node after PFETS

C2-Gate of PFET(reference to ground)



Full Load OVP

Ch3 – Node after PFETS

C2-Gate of PFET(reference to ground)

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