

PMP4257 Test Results

1 Startup

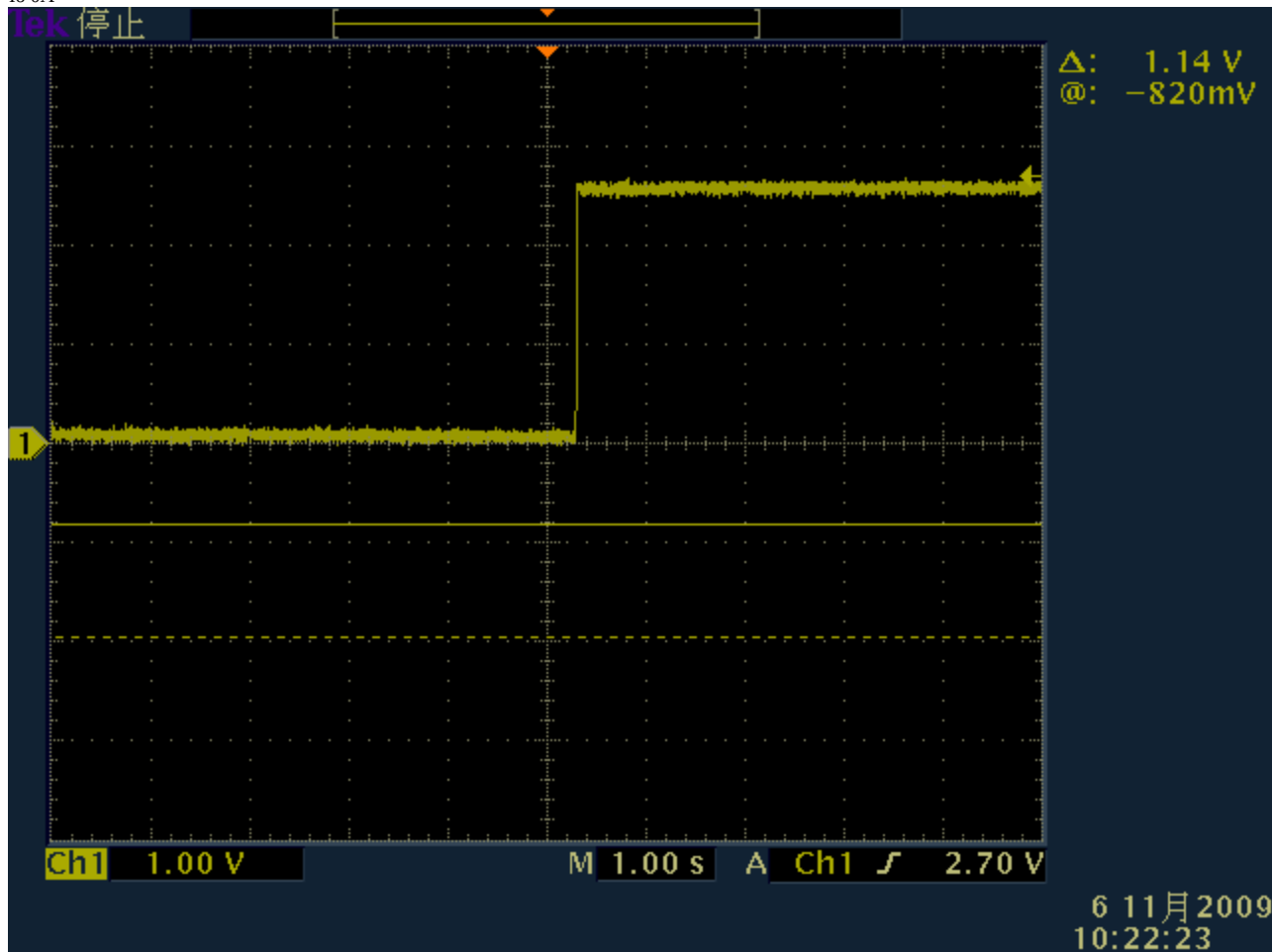
The startup waveform is shown in the figure below.

When the output voltage set as below

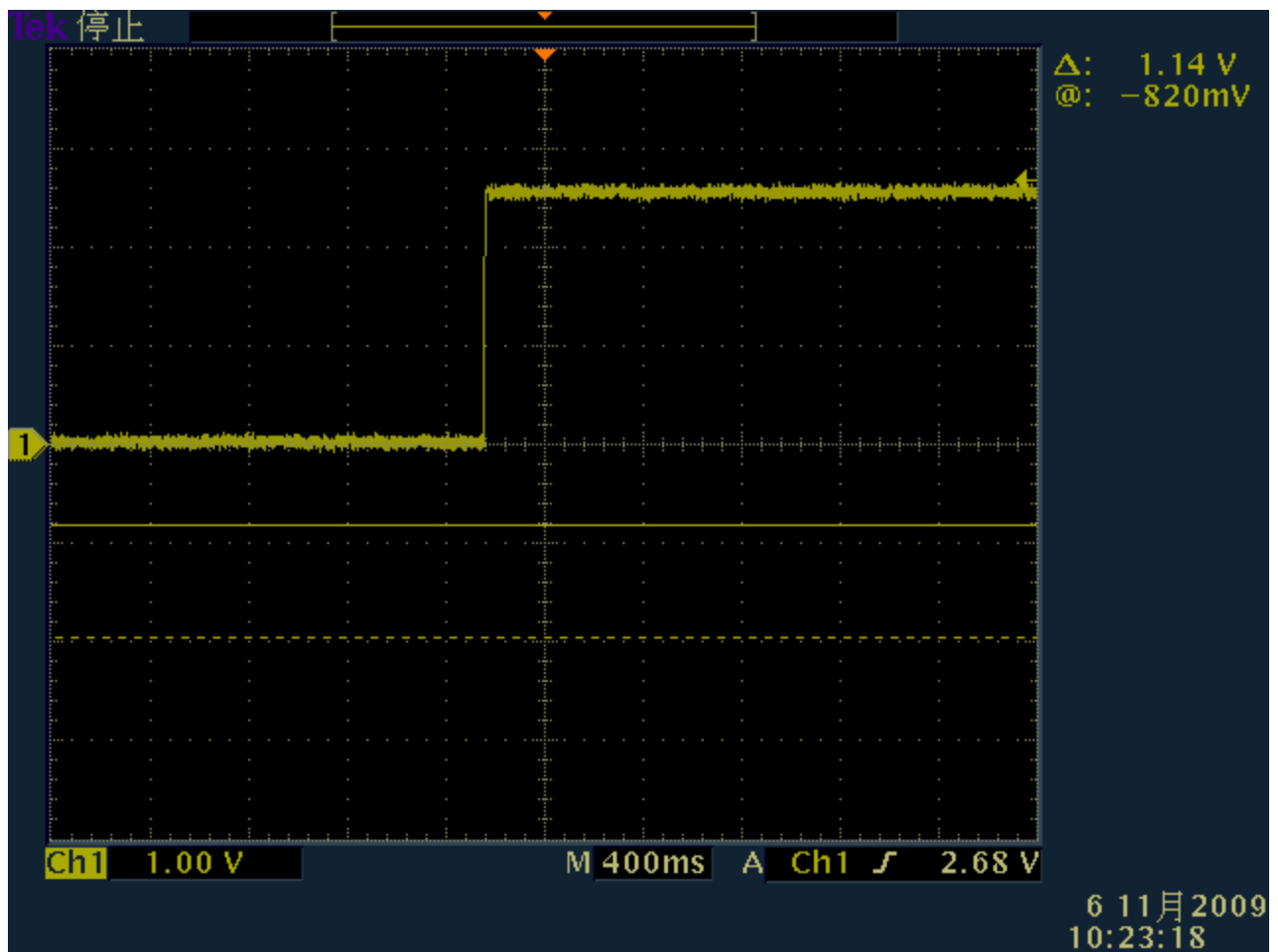
(1) 2.5

Vin 3

Io 0A

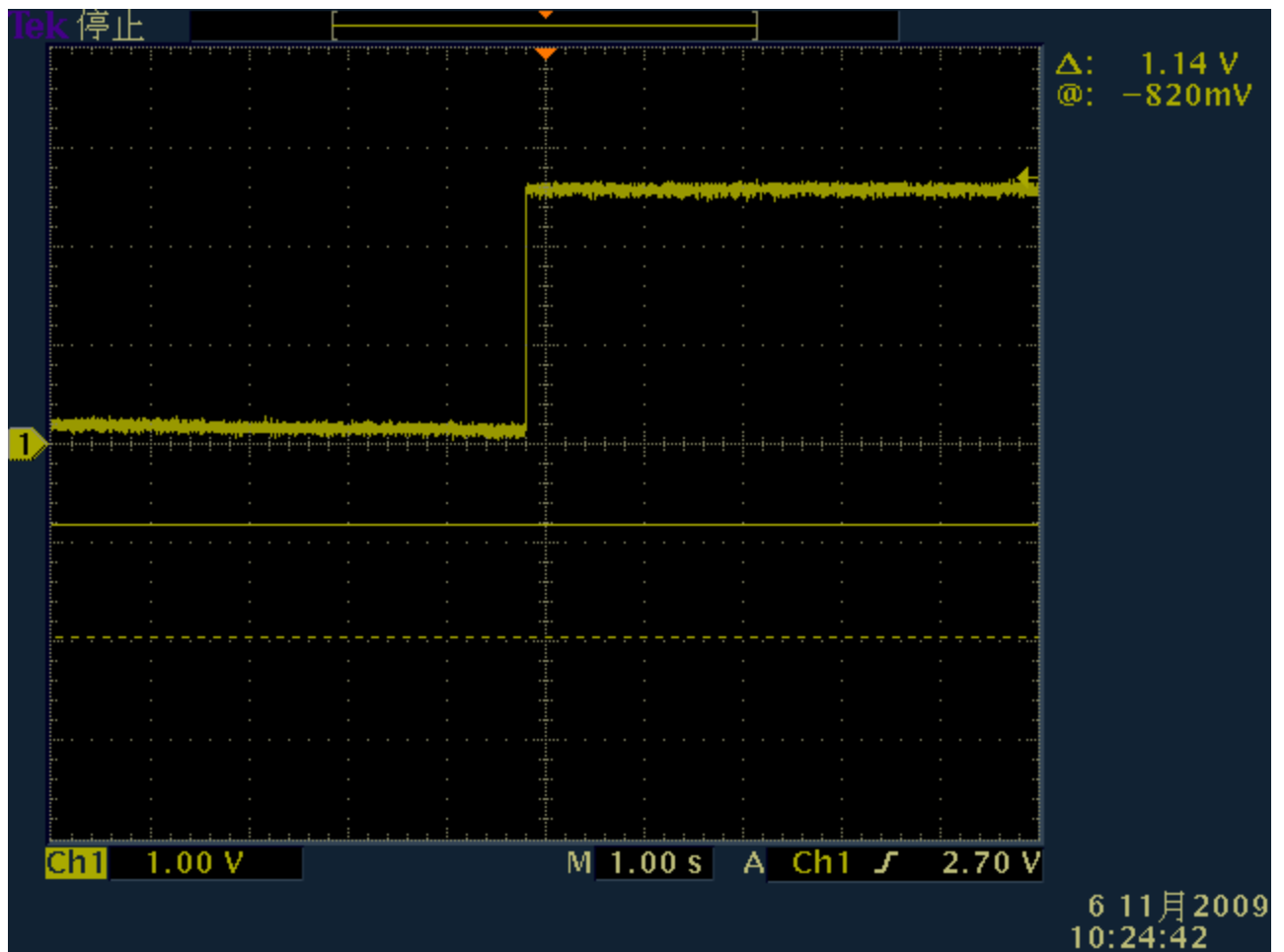


Io 4A



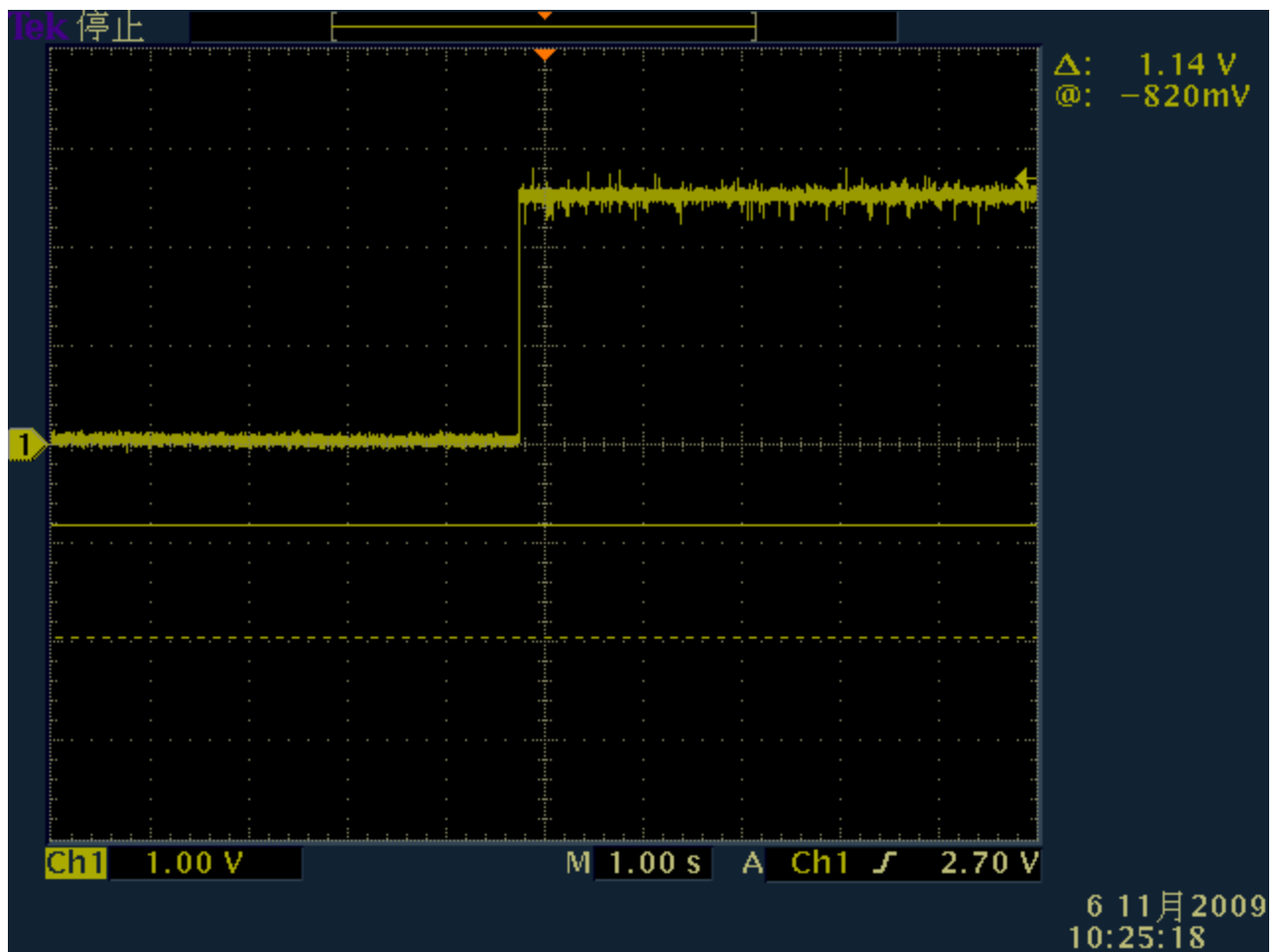
Vin7

Io 0A



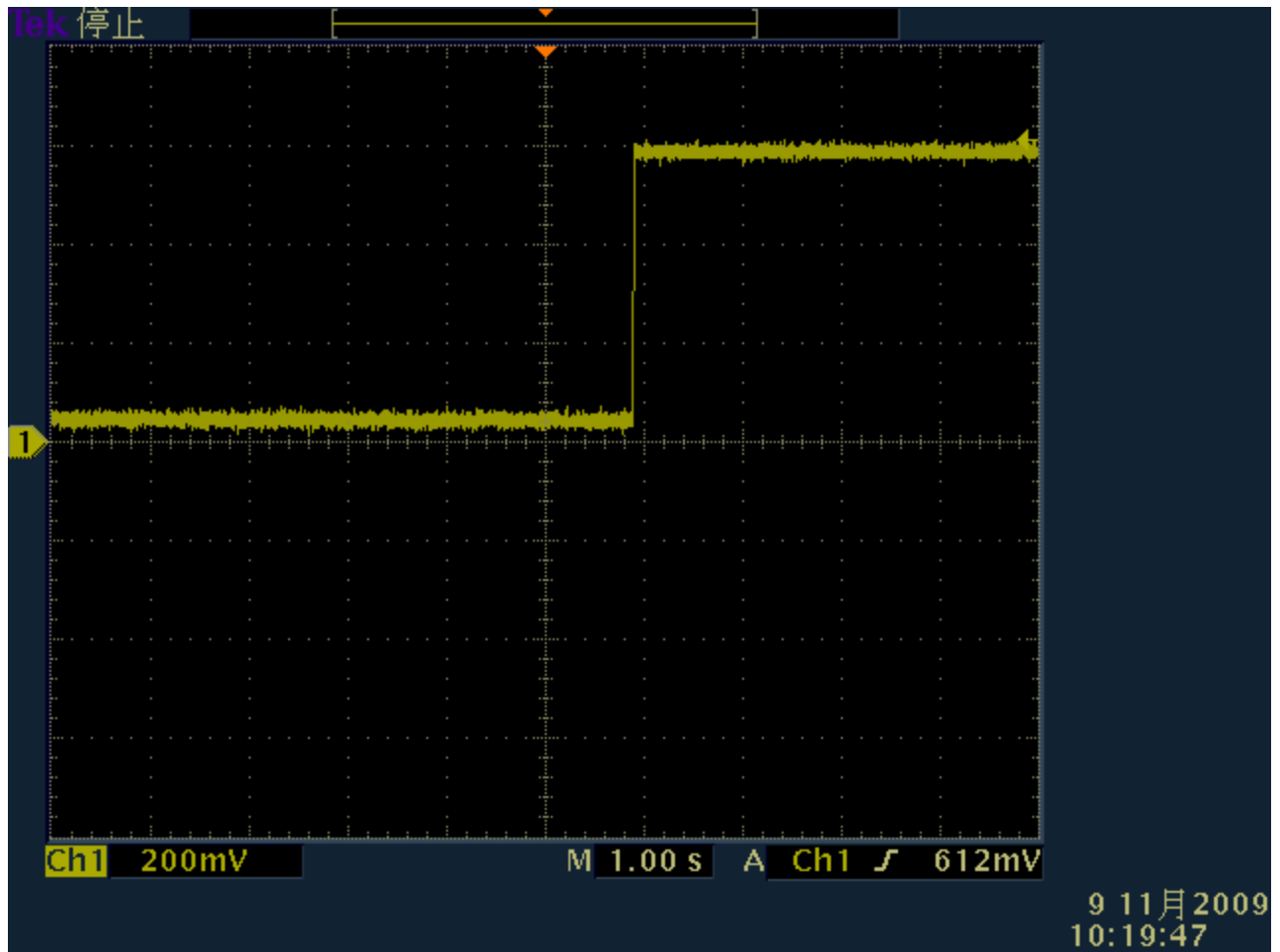
Io 10A

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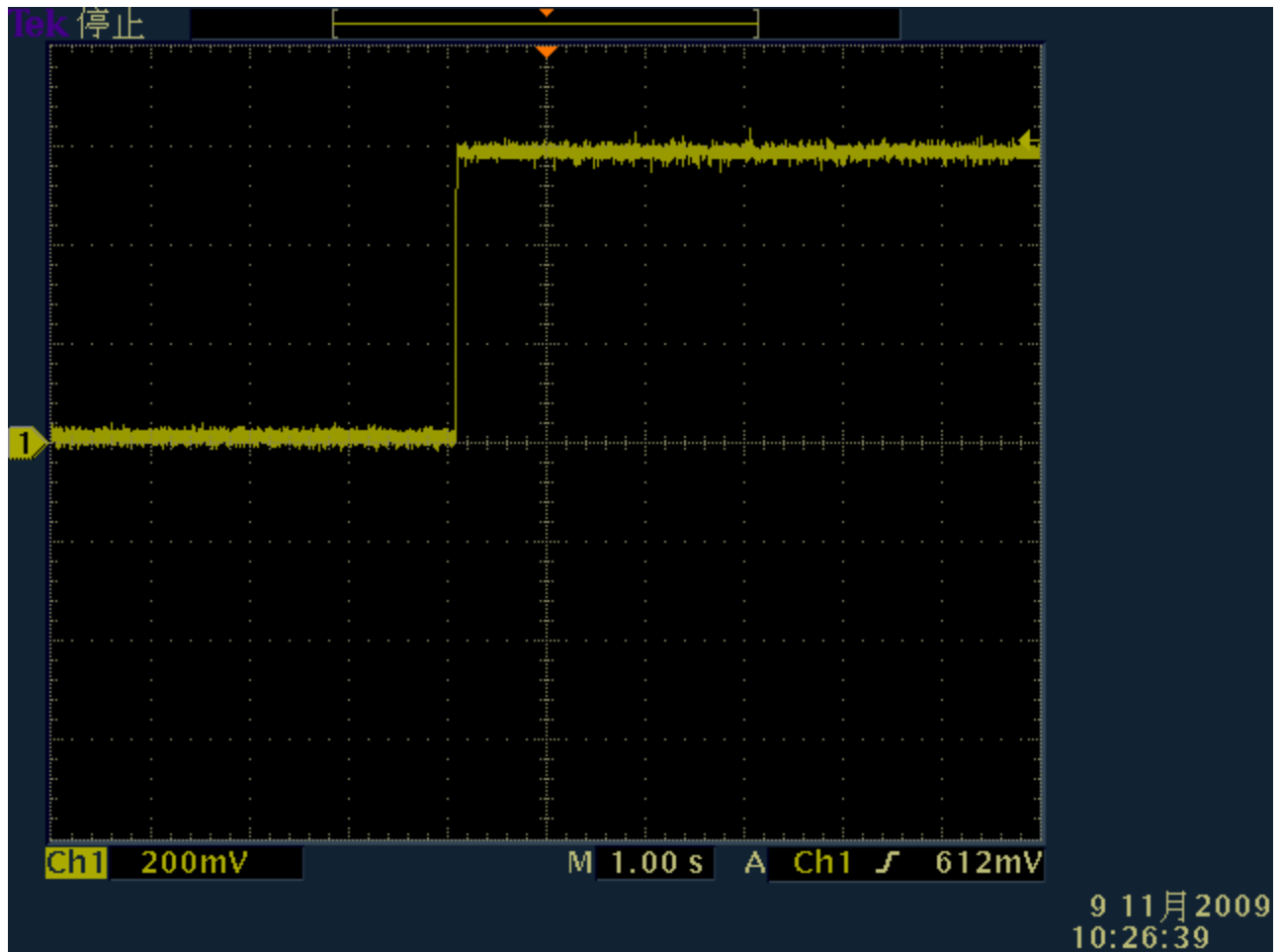
(2) 0.6

V_{in} 3I_o 0A



Io 10A
Vin7
Io 0A

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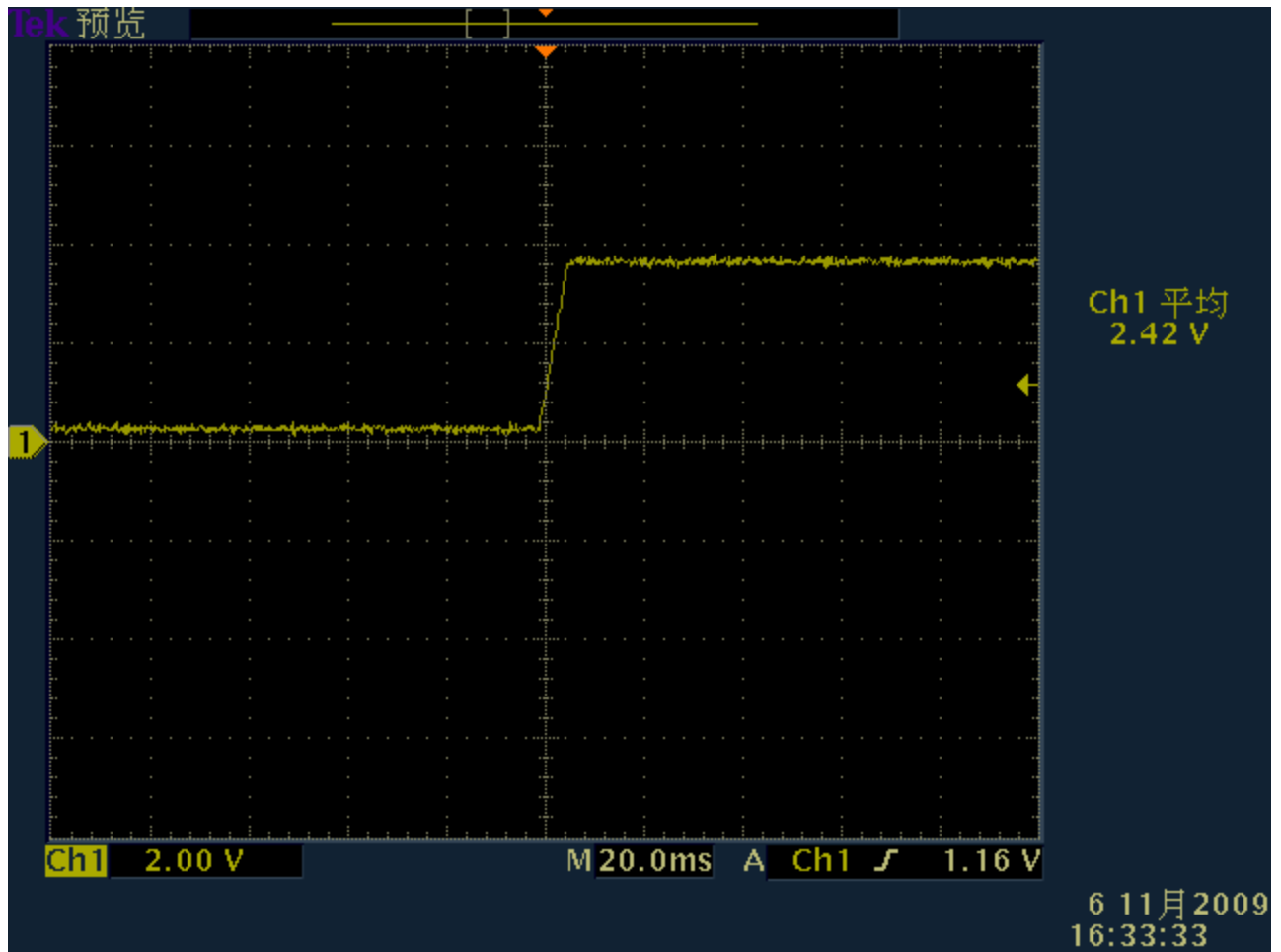
Io 10A

(3)3.63

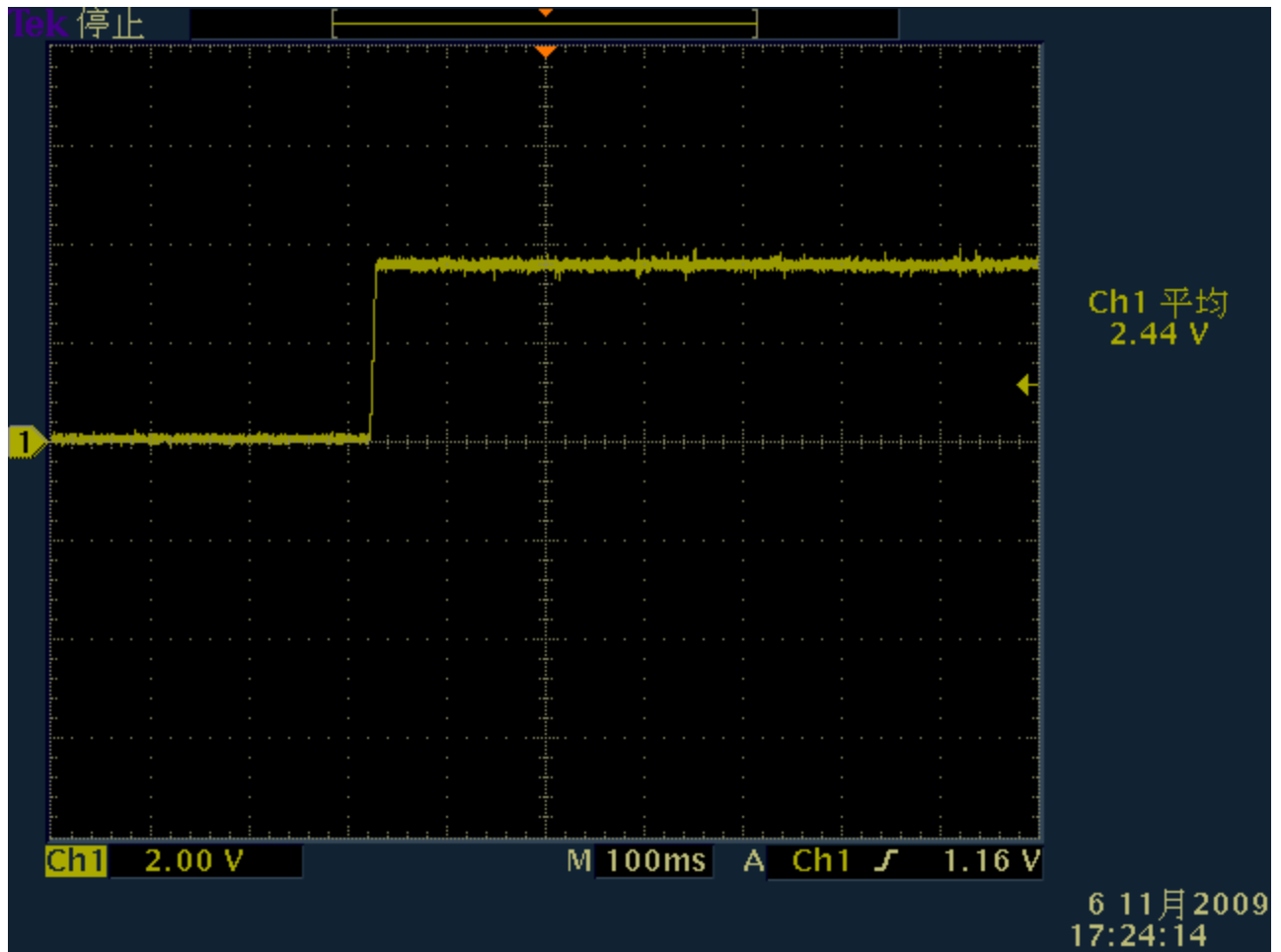
Vin 6

Io 0A

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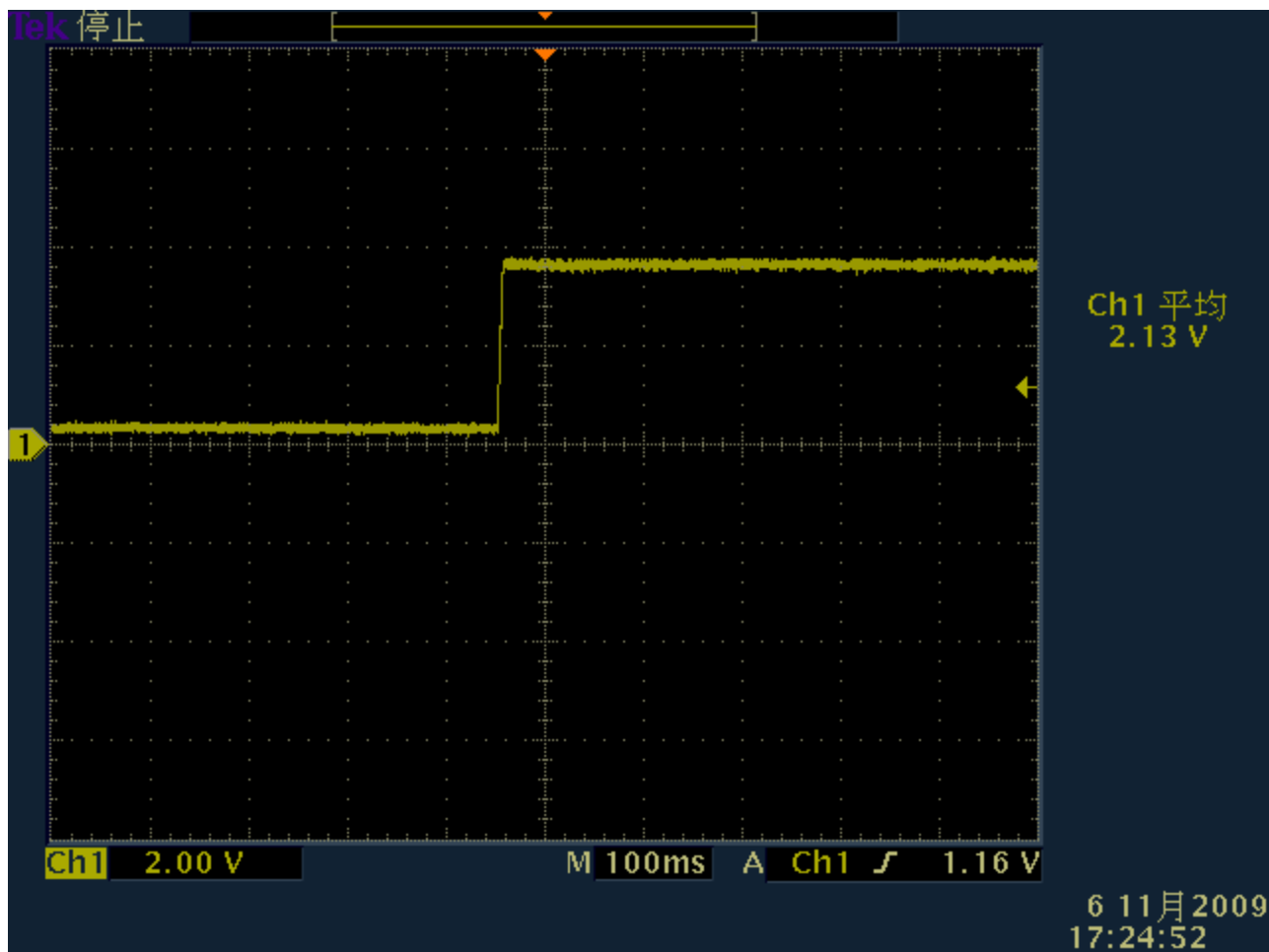


Io 10A



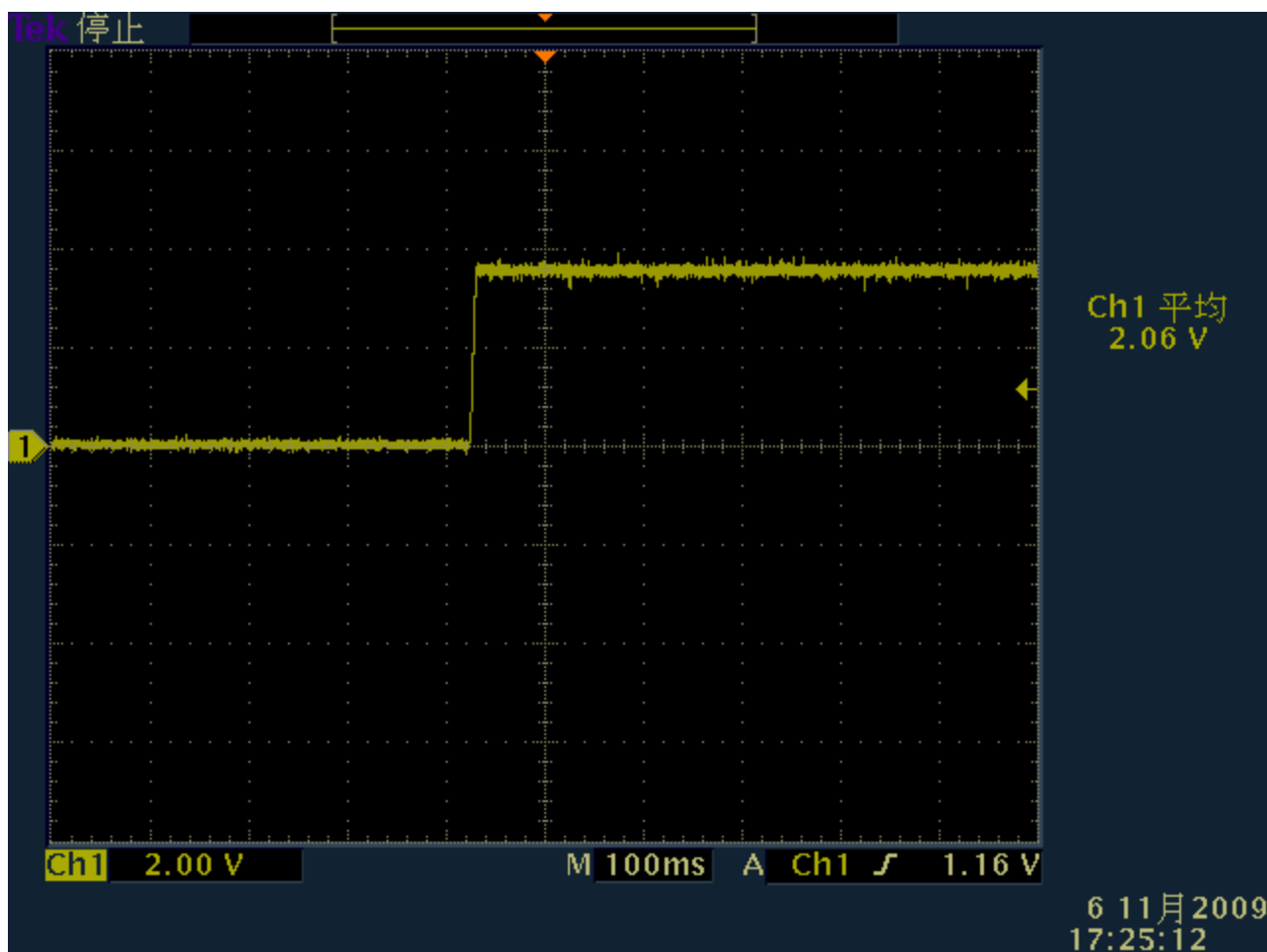
Vin7

Io 0A



Io 10A

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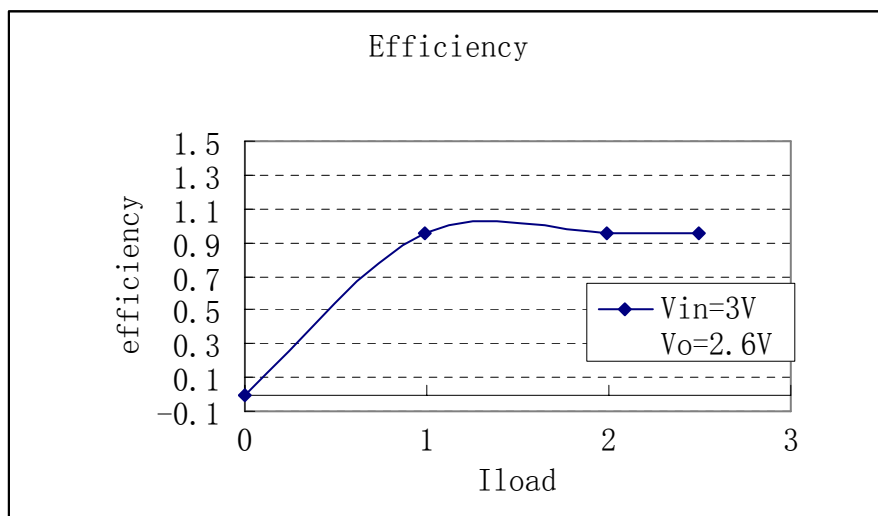
2 Efficiency

(1) 2.5

Vin 3

Vin	Iin	Vo	Io	Pin	Po	Efficiency
3.033	0.01163	2.592	0.000	0.035	0	0
2.970	0.899	2.589	0.990	2.669	2.56	0.95916
2.962	1.811	2.587	1.985	5.365	5.13	0.95619
2.926	2.310	2.586	2.493	6.759	6.45	0.95428

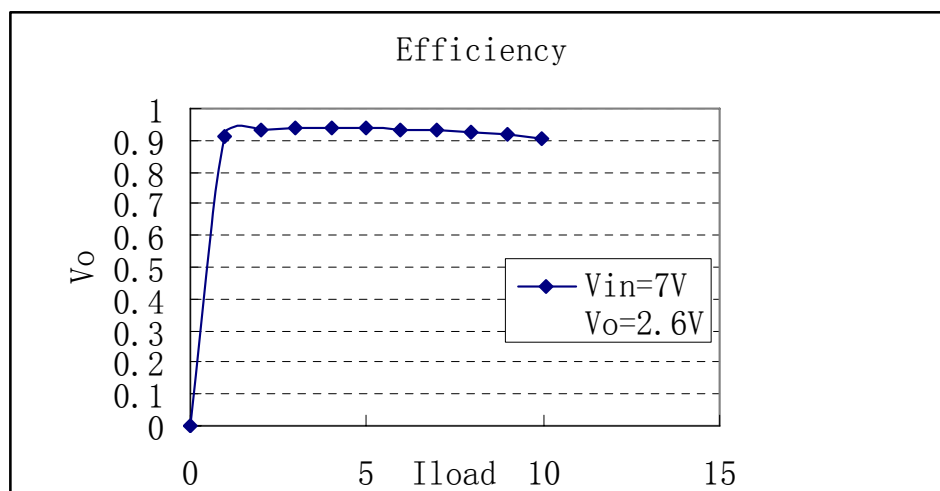
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Vin7

Vin	Iin	Vo	Io	Pin	Po	Efficiency
7.012	0.029	2.590	0	0.203	0	0
6.984	0.401	2.585	0.990	2.799	2.56	0.91461
6.961	0.785	2.581	1.985	5.479	5.12	0.93448
6.928	1.180	2.576	2.989	8.173	7.70	0.94213
6.905	1.575	2.571	3.983	10.874	10.24	0.94170
6.874	1.982	2.565	4.985	13.625	12.79	0.93872
6.845	2.393	2.561	5.979	16.377	15.31	0.93485
6.813	2.816	2.555	6.984	19.188	17.85	0.93027
6.779	3.248	2.550	7.978	22.03	20.34	0.92329
6.747	3.694	2.544	8.980	24.94	22.85	0.91620
6.720	4.158	2.538	9.974	27.90	25.31	0.90717

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(2) 0.6

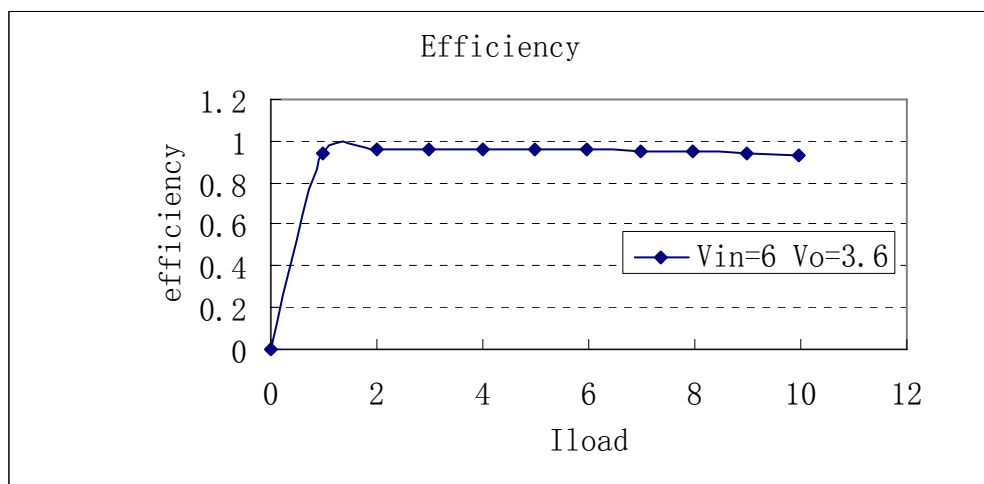
 V_{in} 3 V_{in} 7

(3) 3.63

 V_{in} 6

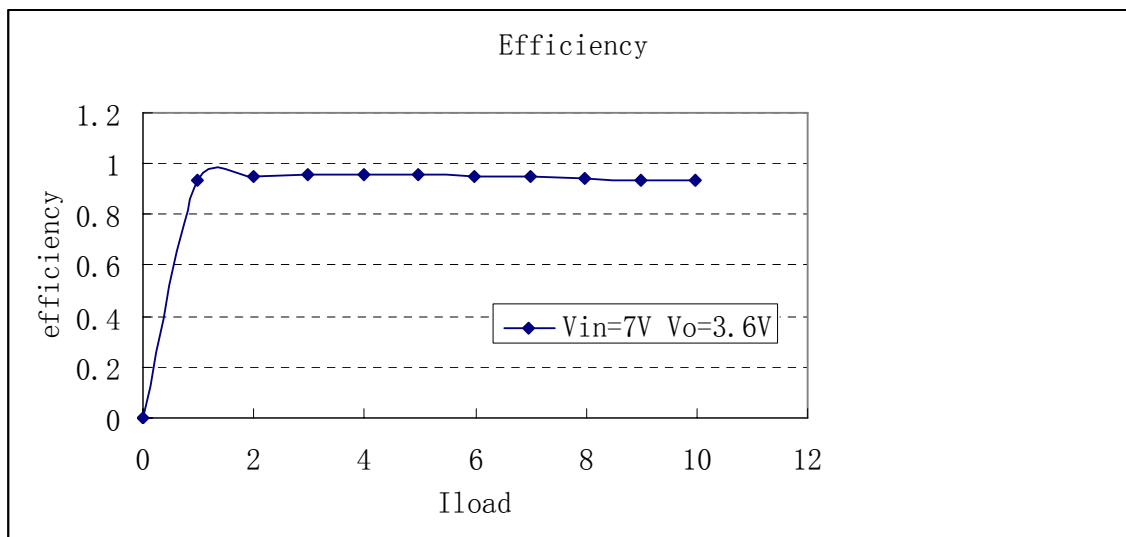
V_{in}	I_{in}	V_o	I_o	P_{in}	P_o	Efficiency
6.087	0.027	3.670	0	0.167	0	0
5.994	0.640	3.665	0.990	3.839	3.63	0.94556
5.893	1.285	3.659	1.984	7.574	7.26	0.95854
5.790	1.960	3.654	2.989	11.353	10.92	0.96186
5.720	2.631	3.649	3.983	15.112	14.53	0.96149
5.660	3.342	3.643	4.984	18.937	18.16	0.95900
5.613	4.045	3.639	5.978	22.78	21.76	0.95522
5.547	4.779	3.635	6.983	26.69	25.38	0.95092
5.500	5.535	3.630	7.977	30.60	28.95	0.94608
5.433	6.360	3.625	8.978	34.61	32.54	0.94020
5.380	7.154	3.620	9.972	38.62	36.09	0.93449

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Vin7

Vin	Iin	Vo	Io	Pin	Po	Efficiency
7.084	0.031	3.670	0	0.223	0	0
7.019	0.553	3.664	0.990	3.883	3.63	0.93484
6.967	1.096	3.659	1.984	7.635	7.26	0.95088
6.917	1.651	3.653	2.988	11.422	10.92	0.95605
6.864	2.199	3.647	3.982	15.181	14.52	0.95646
6.805	2.791	3.640	4.984	18.997	18.15	0.95541
6.746	3.376	3.635	5.978	22.81	21.73	0.95265
6.690	3.996	3.629	6.983	26.73	25.34	0.94800
6.627	4.620	3.623	7.976	30.63	28.89	0.94319
6.561	5.274	3.617	8.978	34.61	32.47	0.93817
6.494	5.938	3.610	9.972	38.57	35.99	0.93311



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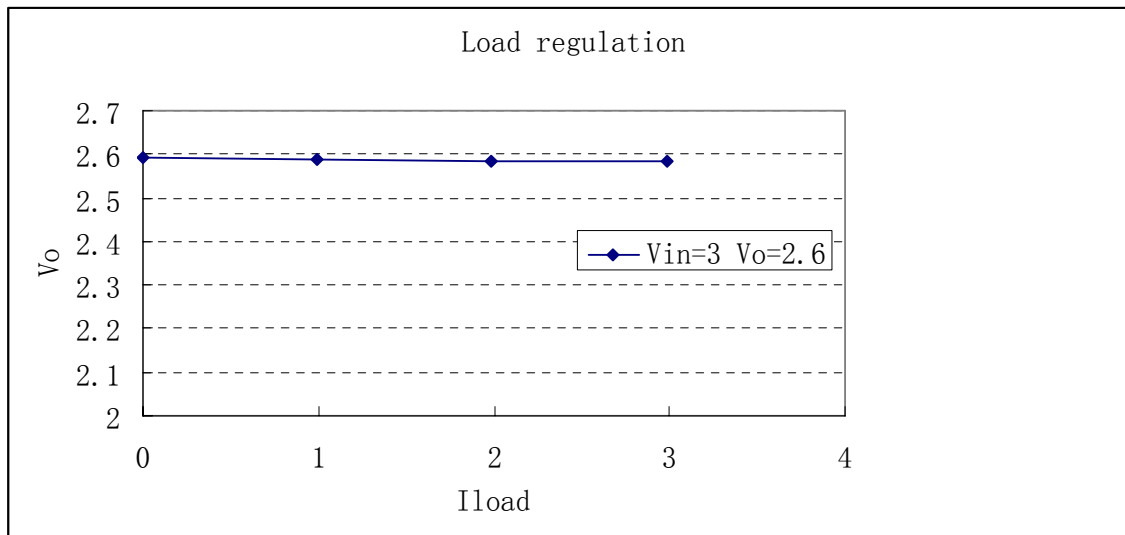
3 Load Regulation

The output voltage is set as below

(1) 2.5

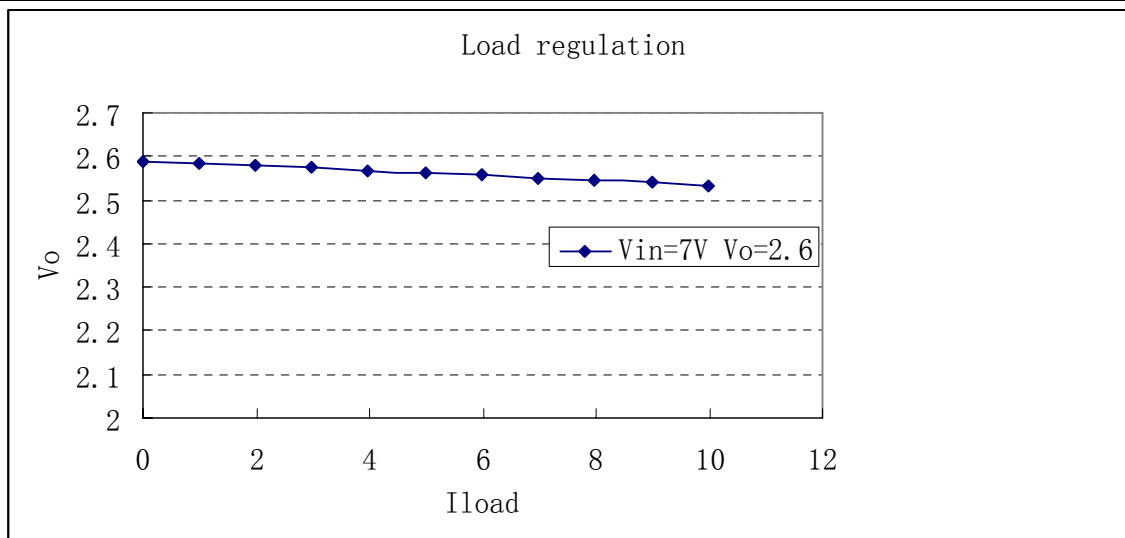
Vin 3

I _o	0.000	0.991	1.985	2.989						
V _o	2.591	2.588	2.585	2.585						



Vin7

I _o	0.000	0.991	1.984	2.989	3.983	4.986	5.979	6.984	7.978	8.980	9.973
V _o	2.589	2.584	2.579	2.574	2.568	2.562	2.557	2.551	2.546	2.540	2.534



(2) 0.6

Vin 3

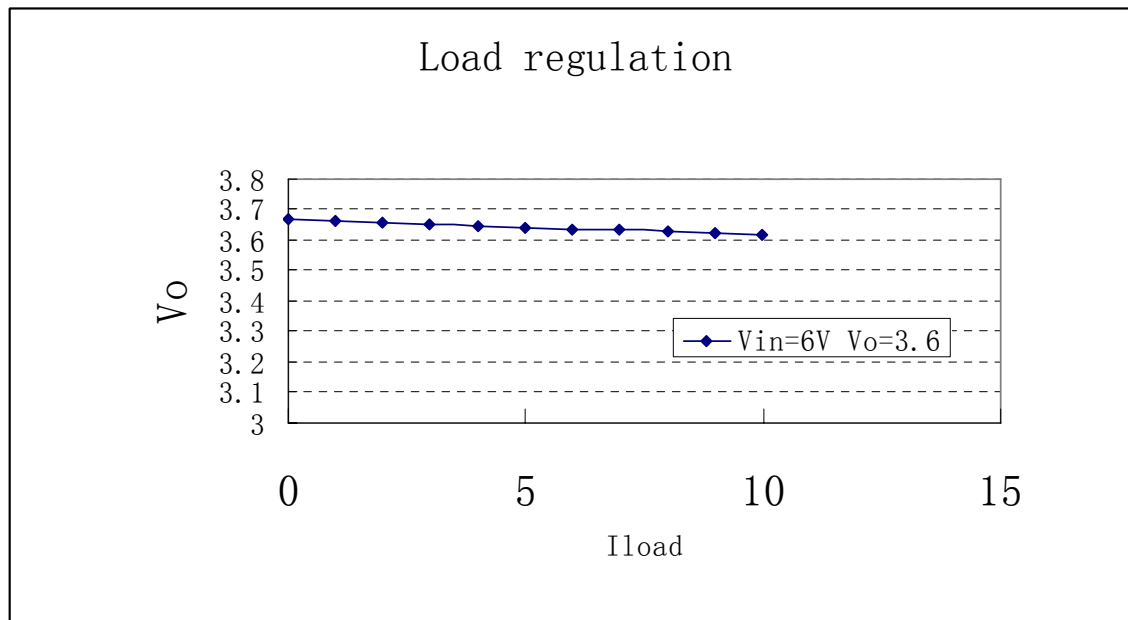
Vin7

(3) 3.63

Vin 6

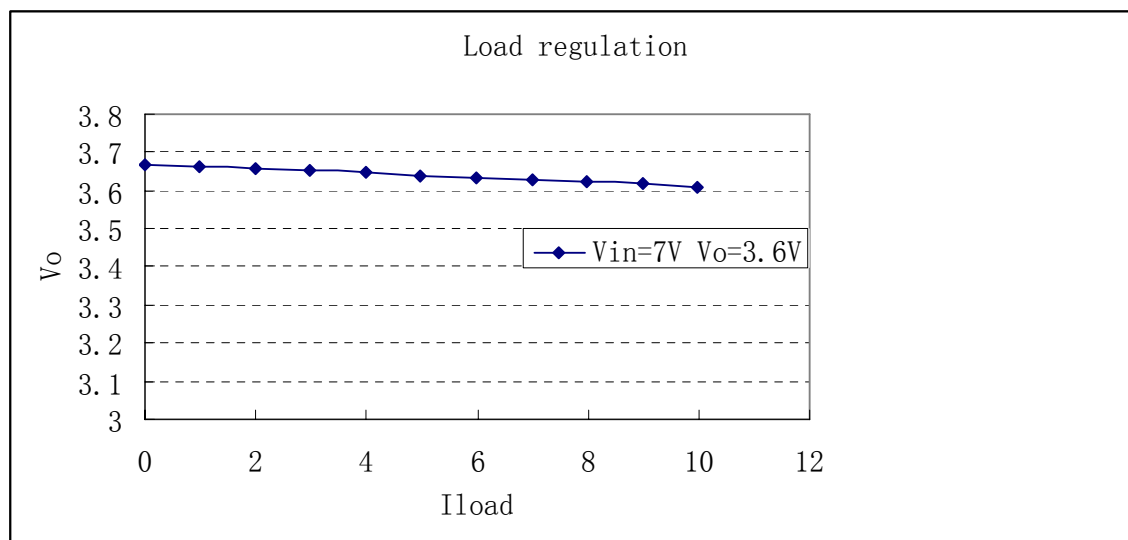
PMP4257 Test Results

I _o	0.000	0.990	1.984	2.988	3.983	4.985	5.978	6.983	7.977	8.979	9.972
V _o	3.670	3.665	3.659	3.653	3.647	3.642	3.637	3.632	3.627	3.623	3.617



Vin7

I _o	0.000	0.990	1.984	2.988	3.982	4.984	5.978	6.983	7.976	8.978	9.971
V _o	3.669	3.664	3.658	3.652	3.646	3.640	3.634	3.628	3.623	3.617	3.609

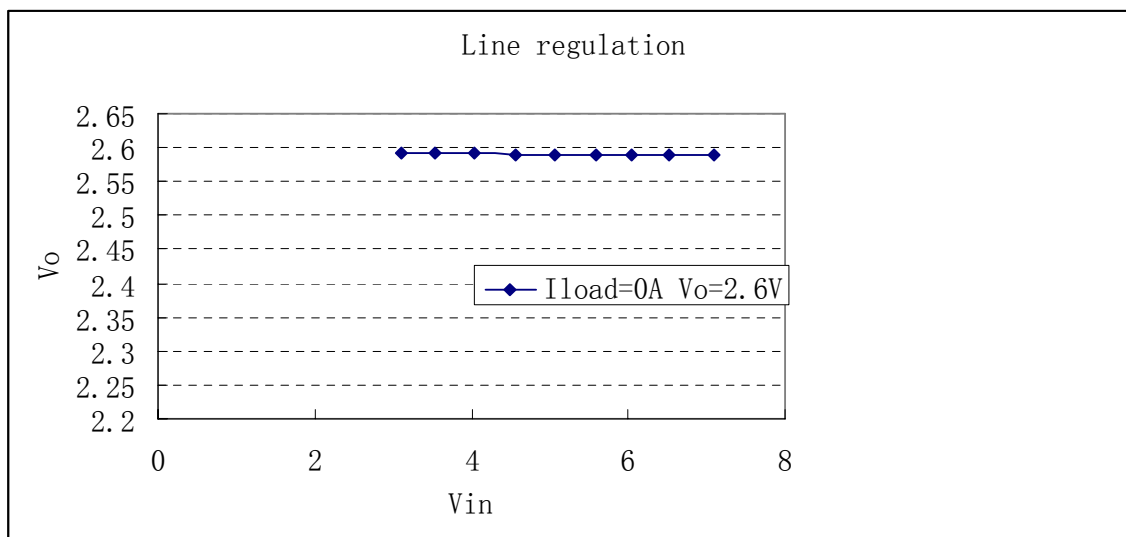


4 line regulation

(1) 2.5
I_{out} 0A

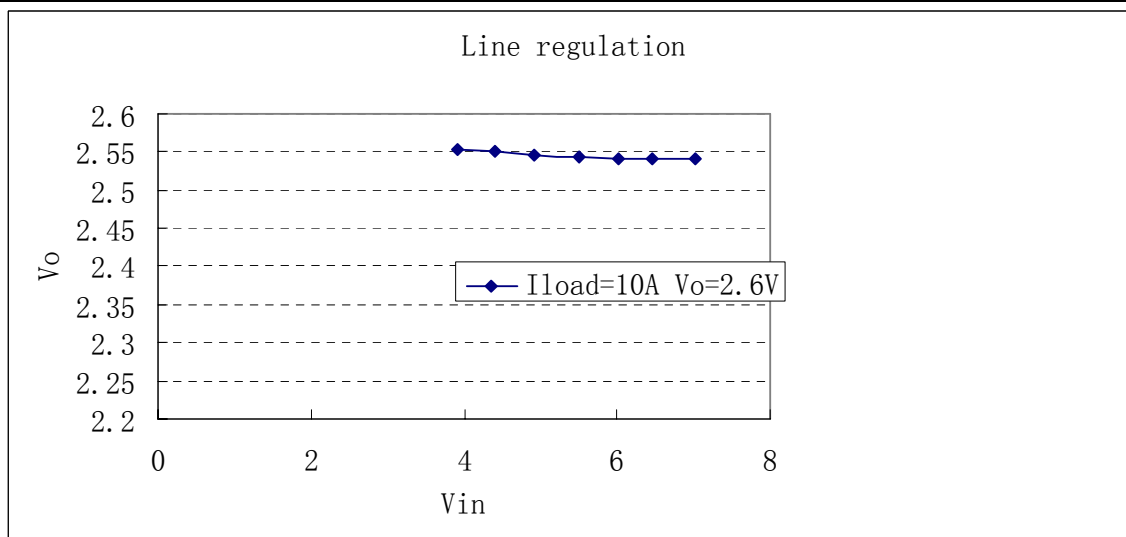
V _{in}	3.116	3.538	4.043	4.558	5.054	5.592	6.045	6.525	7.090
V _o	2.592	2.591	2.591	2.590	2.590	2.590	2.590	2.590	2.590

PMP4257 Test Results



Iout 10As

Vin			3.915	4.407	4.928	5.501	6.013	6.455	7.032
Vo			2.554	2.550	2.546	2.543	2.541	2.541	2.541

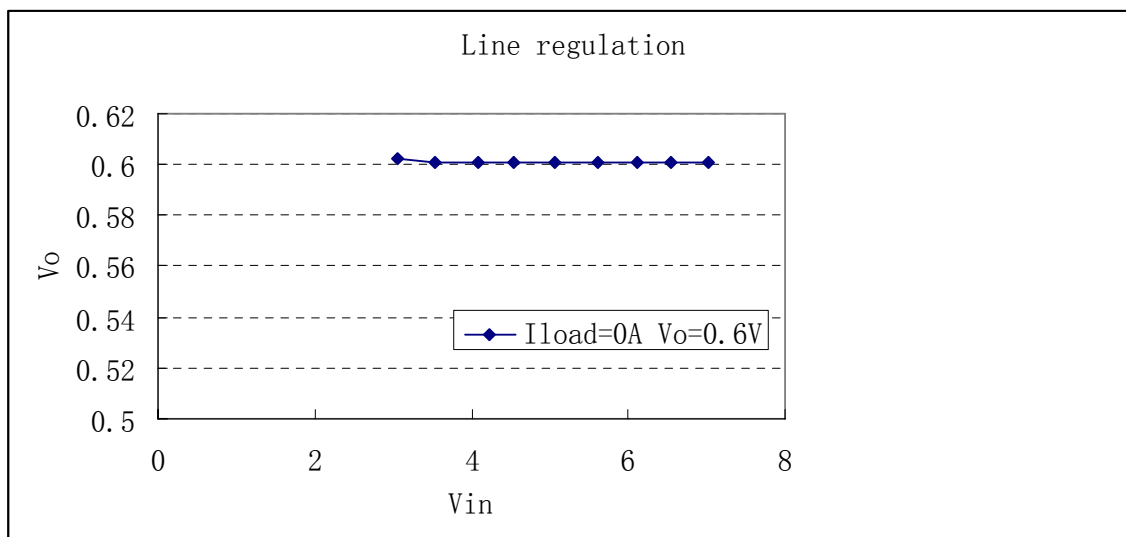


(2) 0.6

Iout 0A

Vin	3.049	3.543	4.092	4.544	5.057	5.622	6.122	6.547	7.016
Vo	0.602	0.601	0.601	0.601	0.601	0.601	0.601	0.601	0.601

PMP4257 Test Results

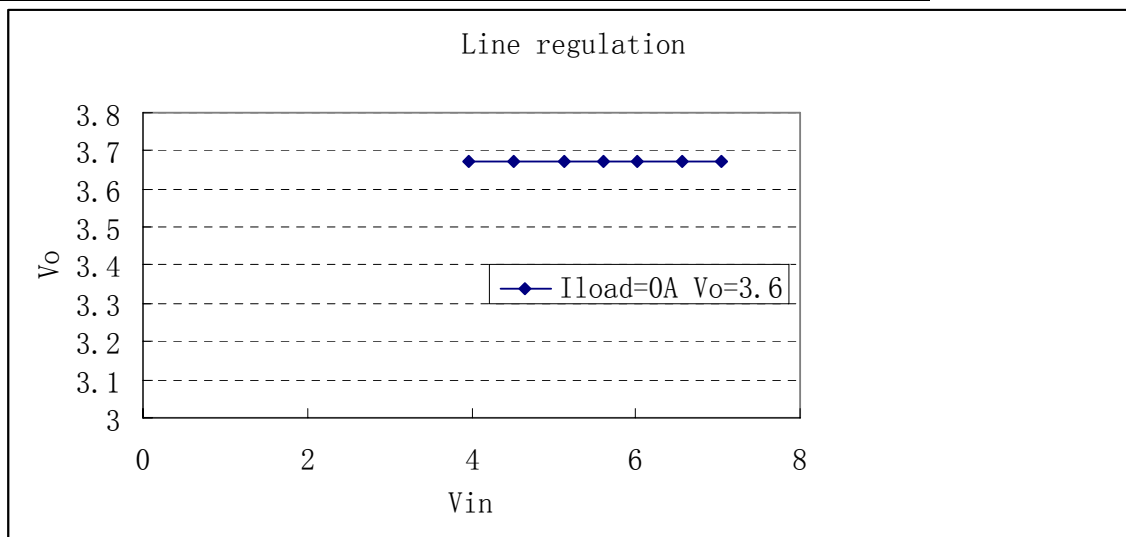


Iout 10A

(3)3.63

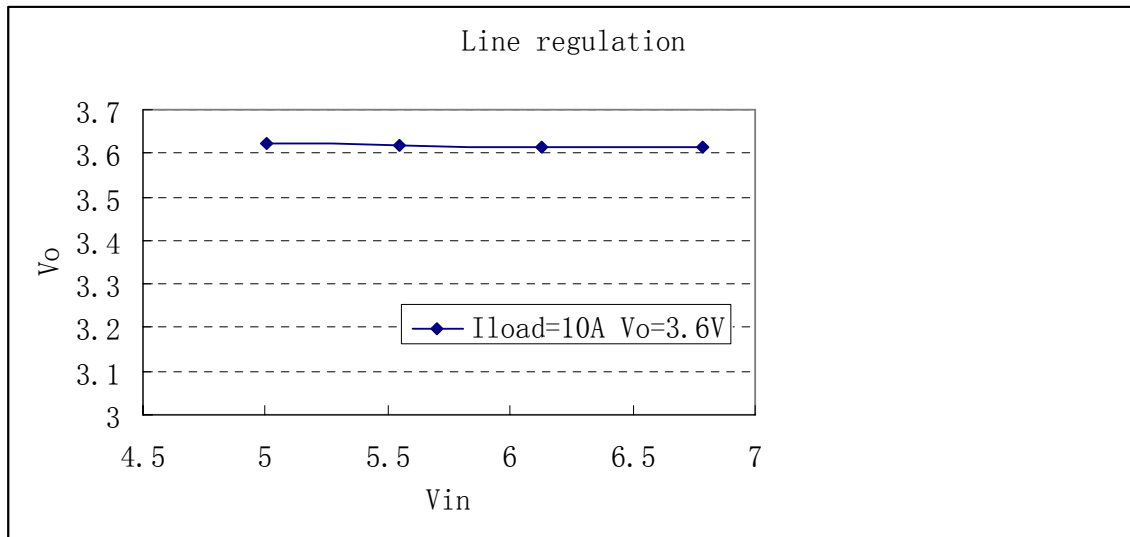
Iout 0A

Vin	3.966	4.524	5.136	5.603	6.008	6.568	7.047
Vo	3.671	3.671	3.671	3.670	3.670	3.670	3.670



Iout 10A

Vin						5.001	5.551	6.125	6.785
Vo						3.622	3.617	3.612	3.612



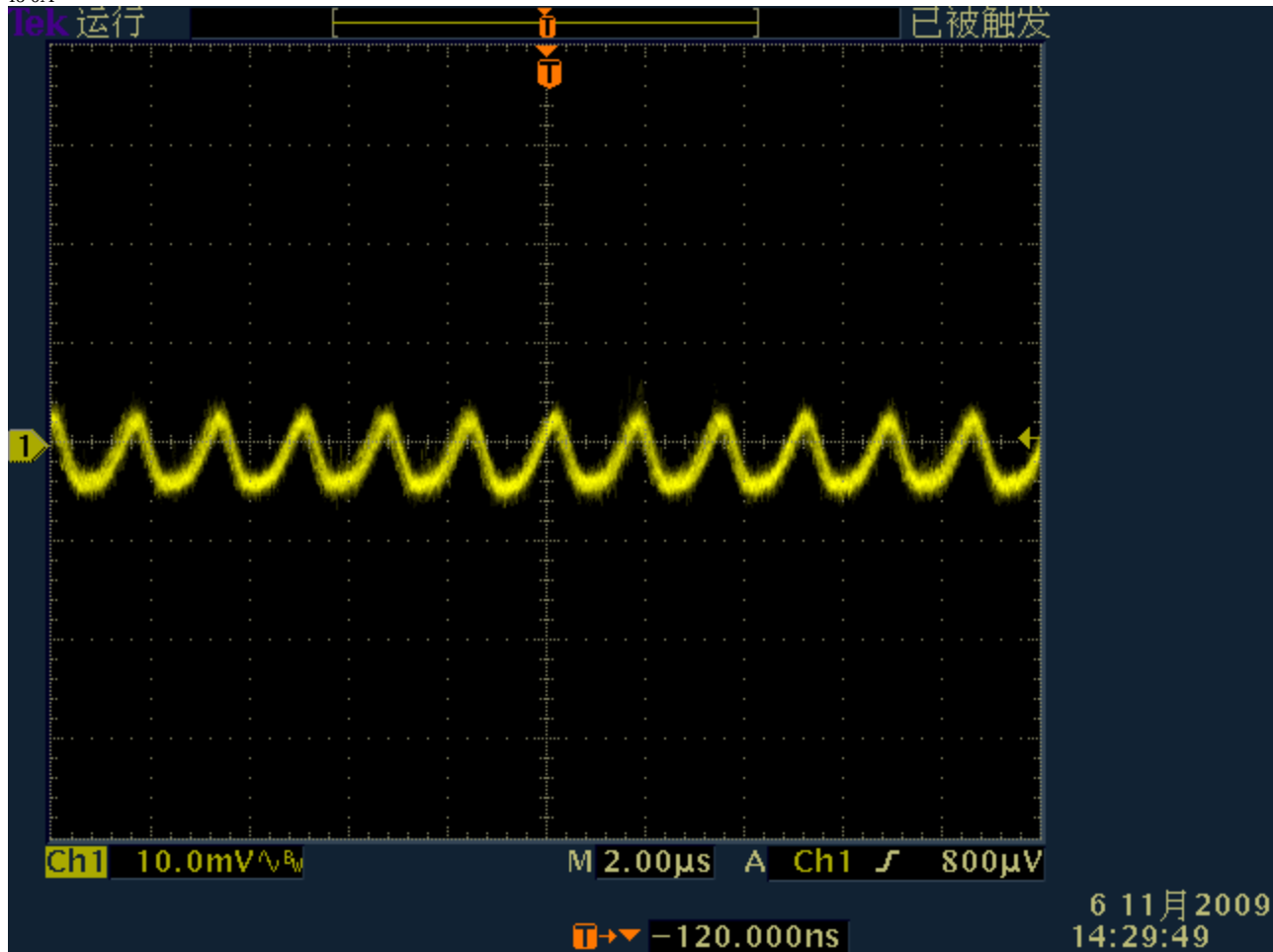
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5 Output Ripple voltage

(1) 2.5

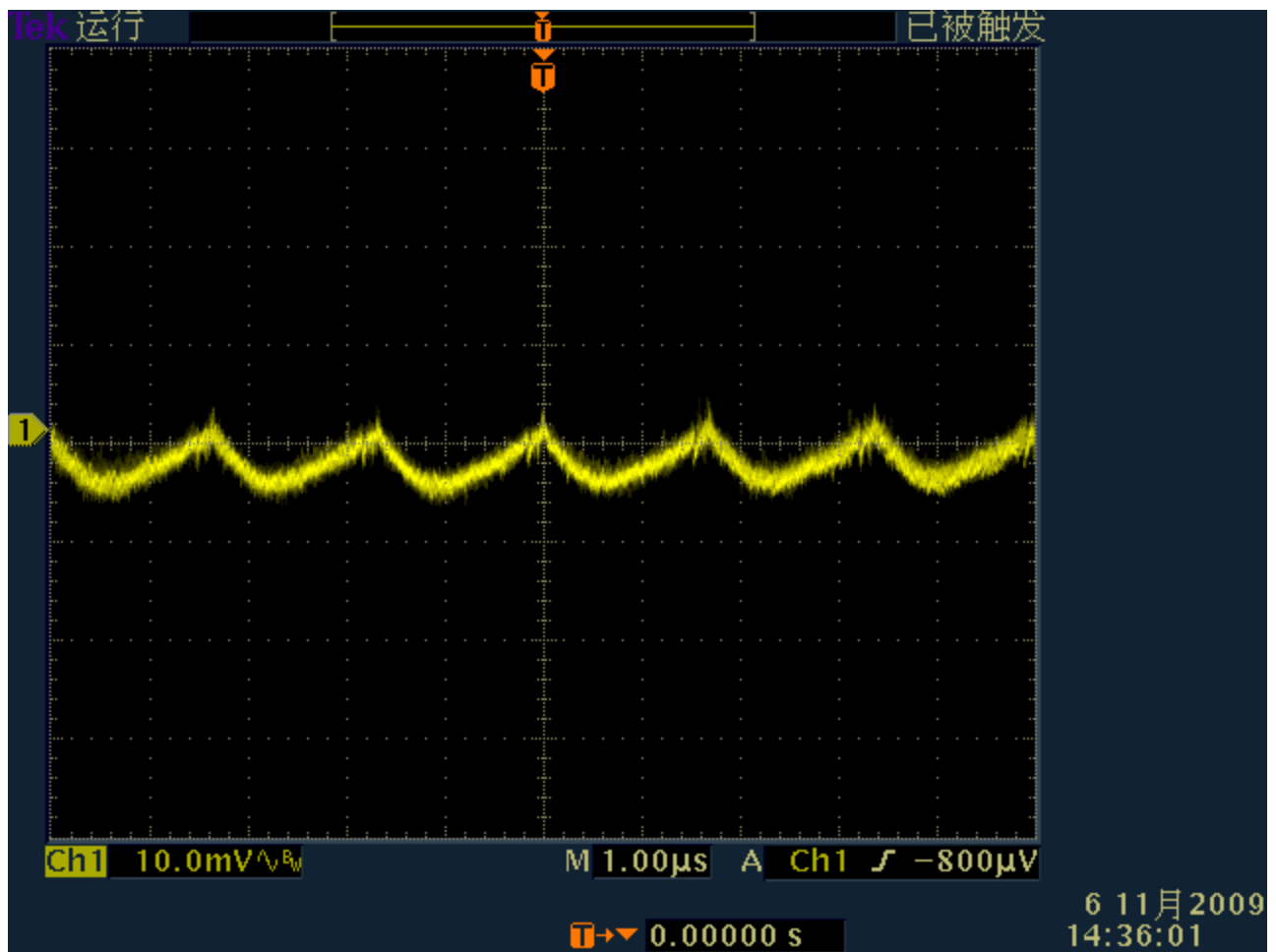
Vin 3

Io 0A

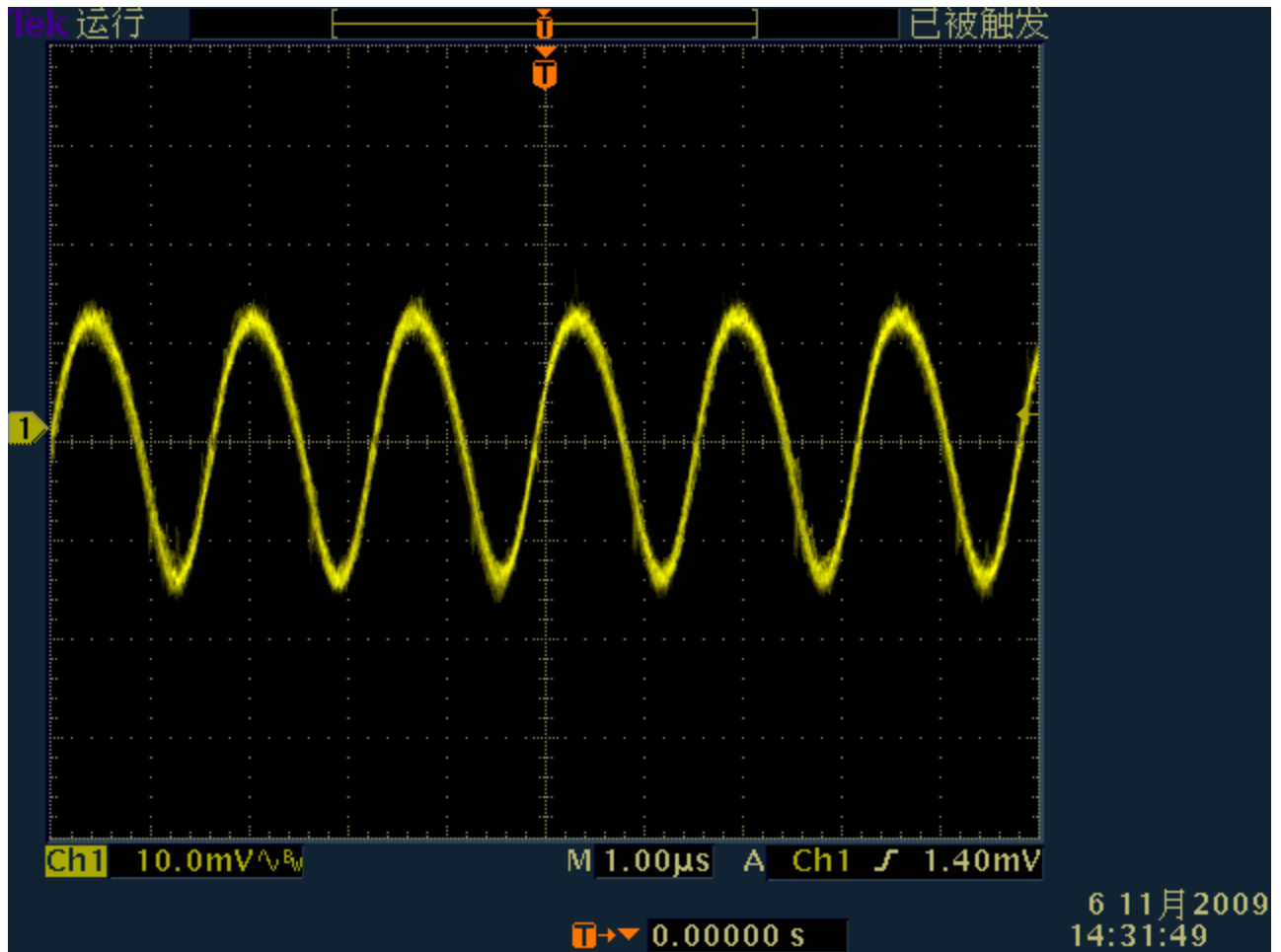


Io 3.5A

PMP4257 Test Results

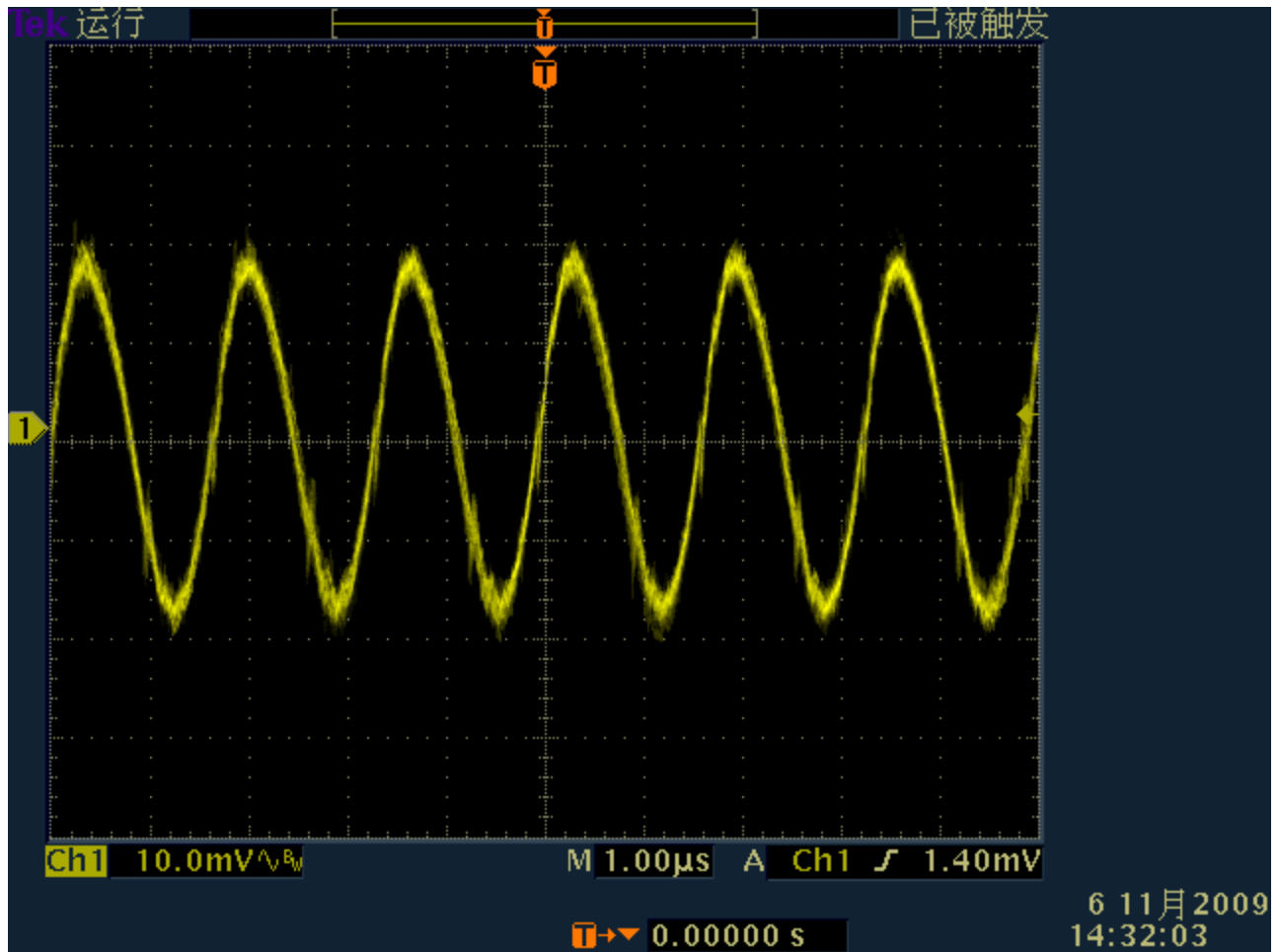


Vin7
Io 0A



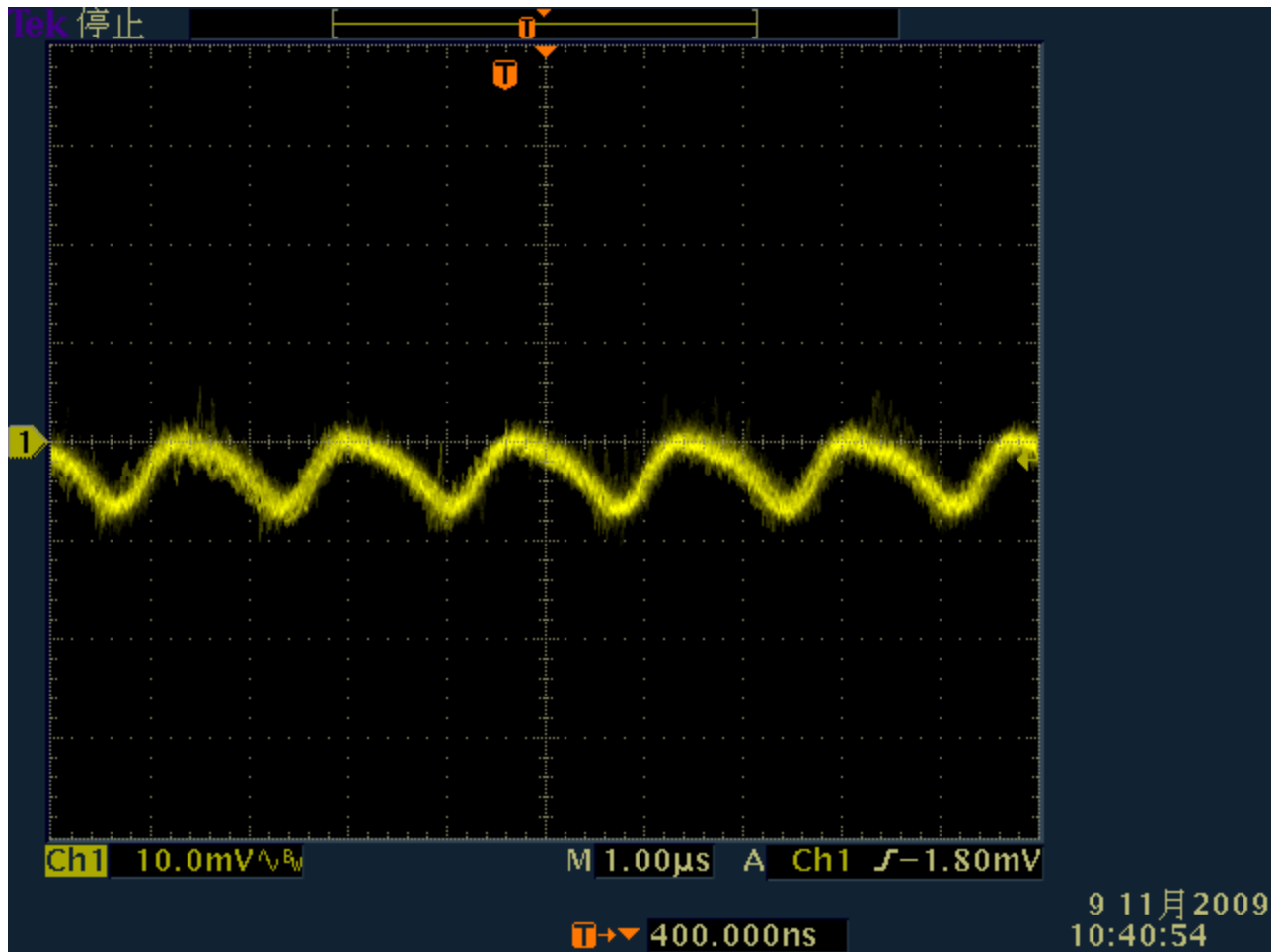
Io 10A

PMP4257 Test Results



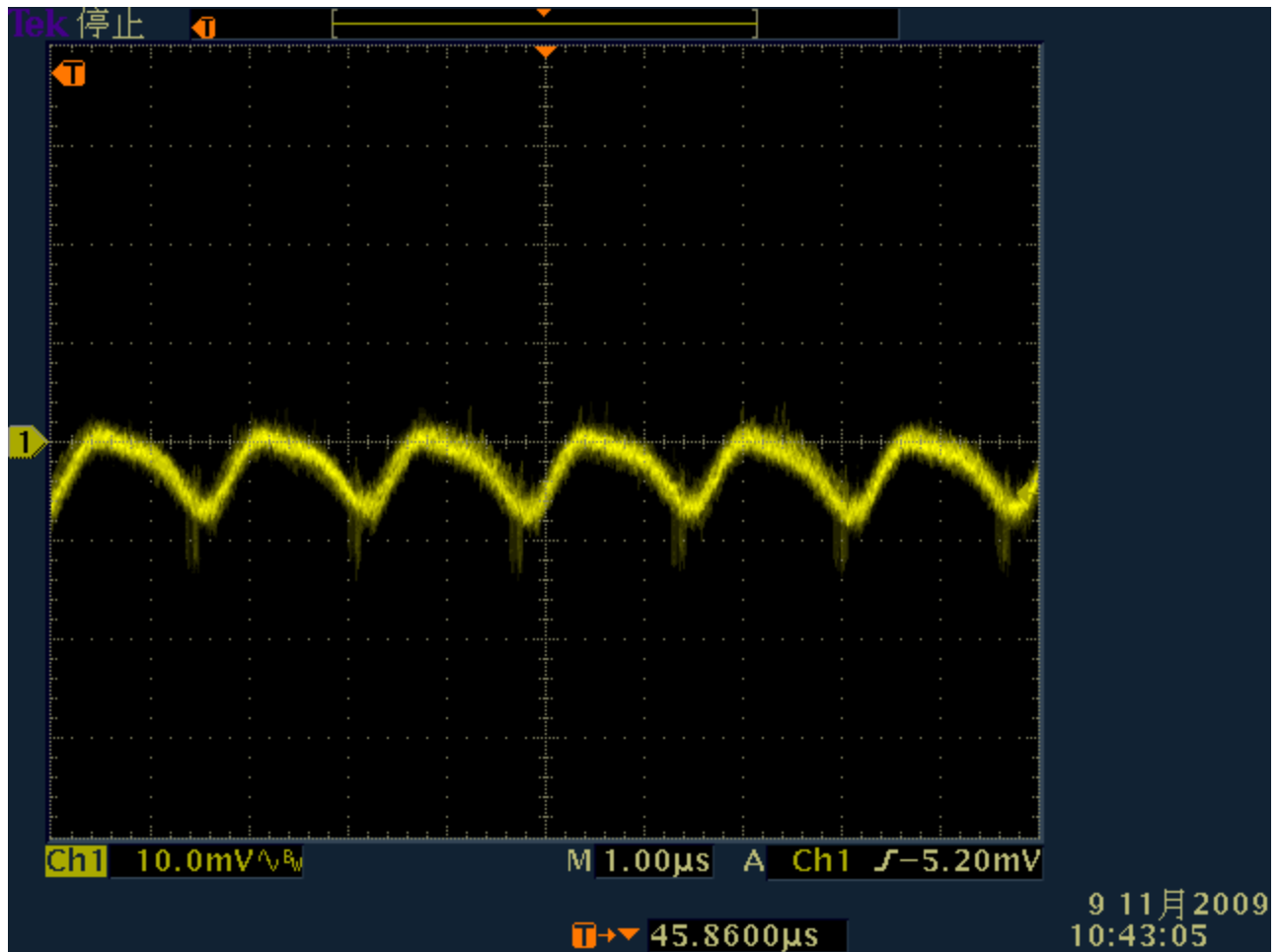
(2) 0.6

V_{in} 3I_o 0A

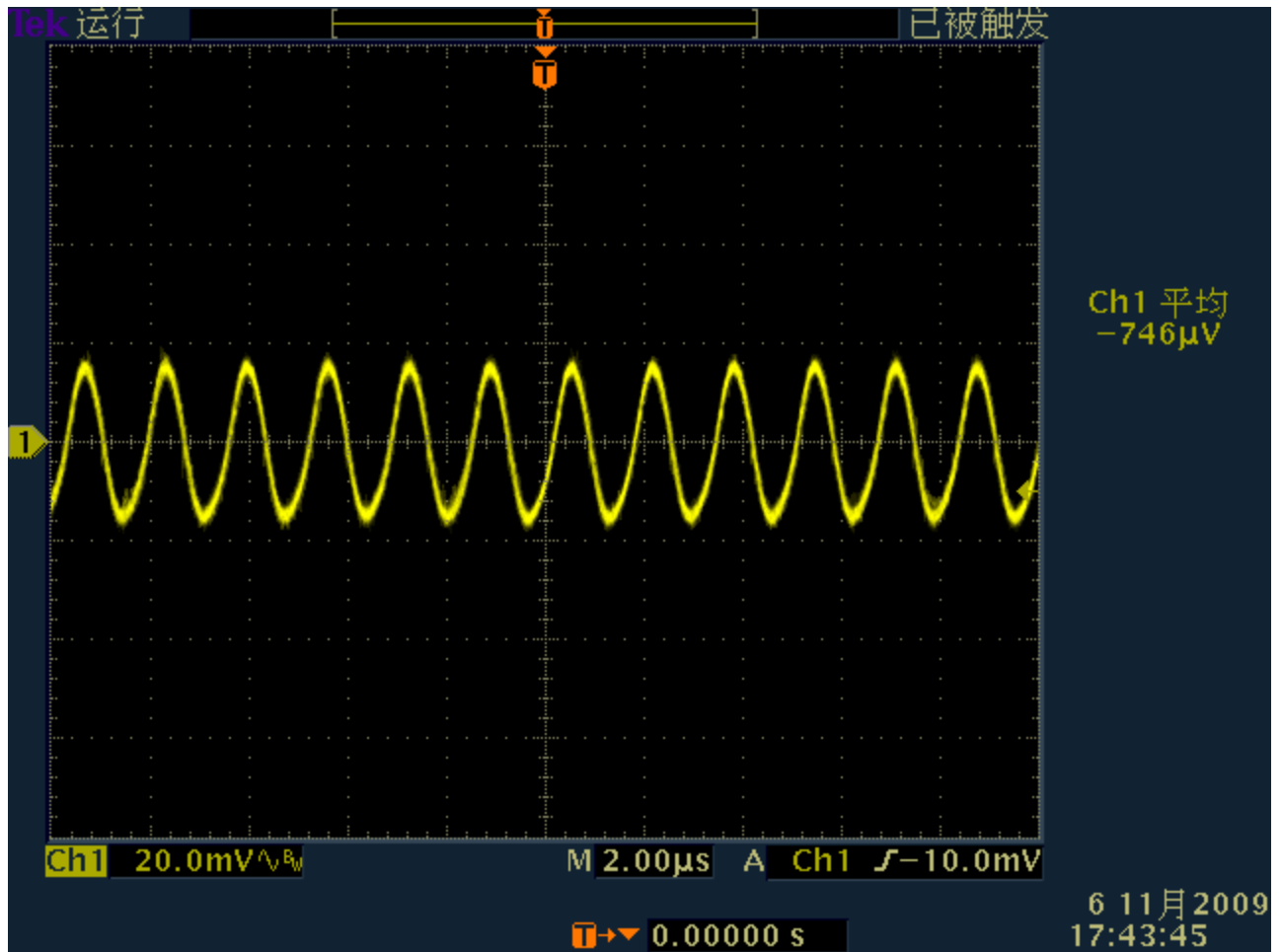


Io 10A
Vin7
Io 0A

PMP4257 Test Results

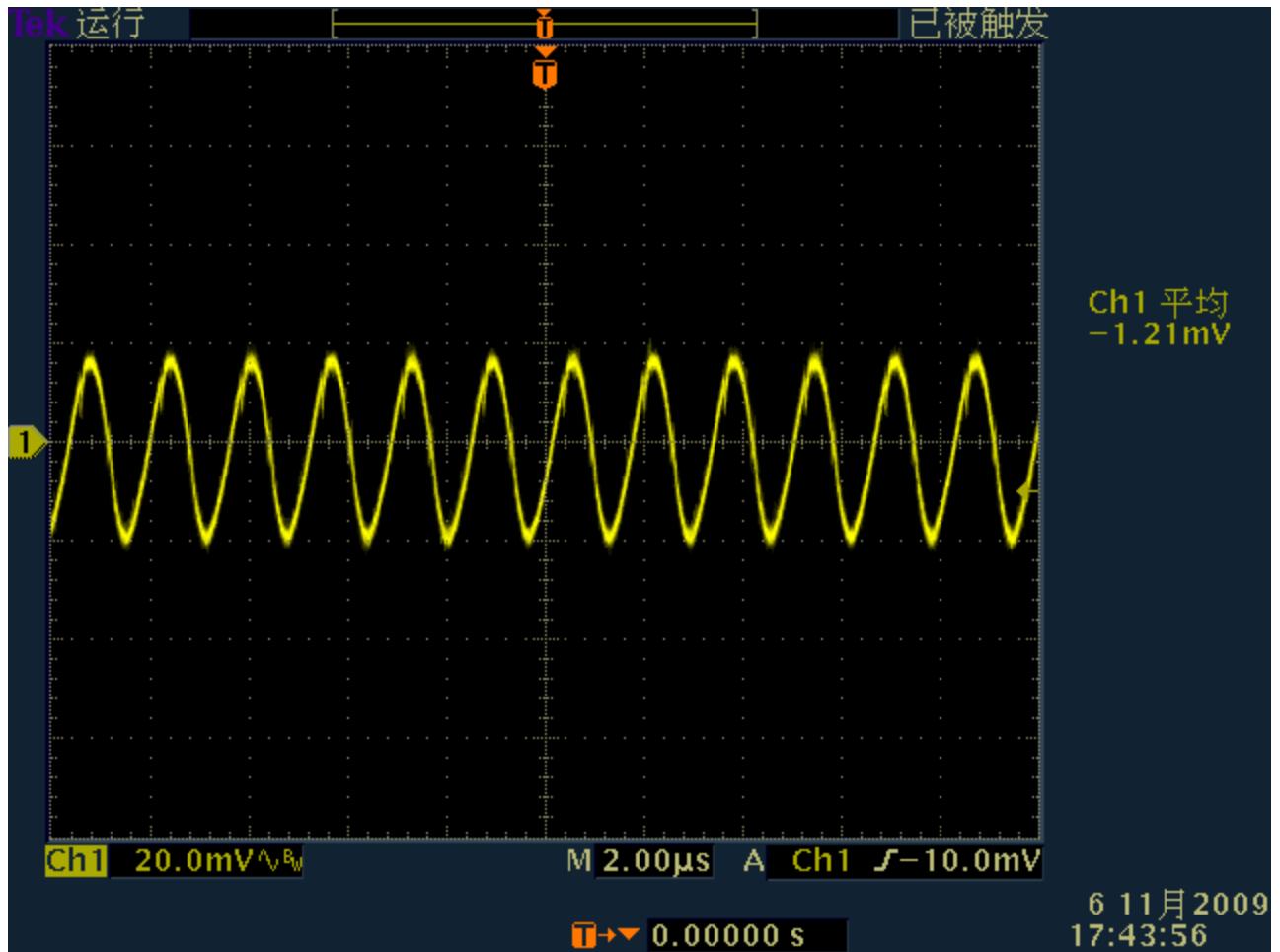


I_o 10A
(3)3.63
V_{in} 6
I_o 0A

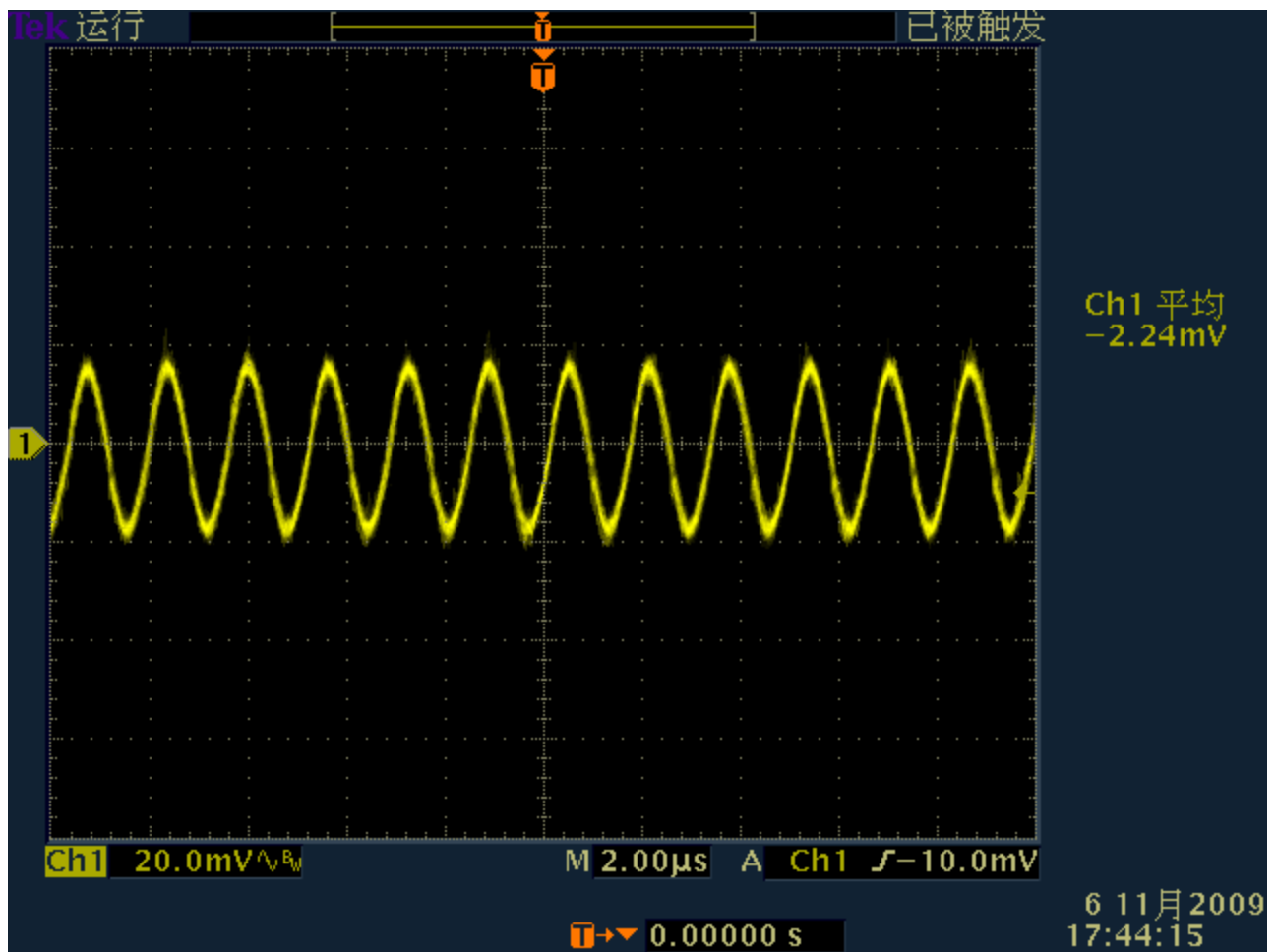


Io 10A

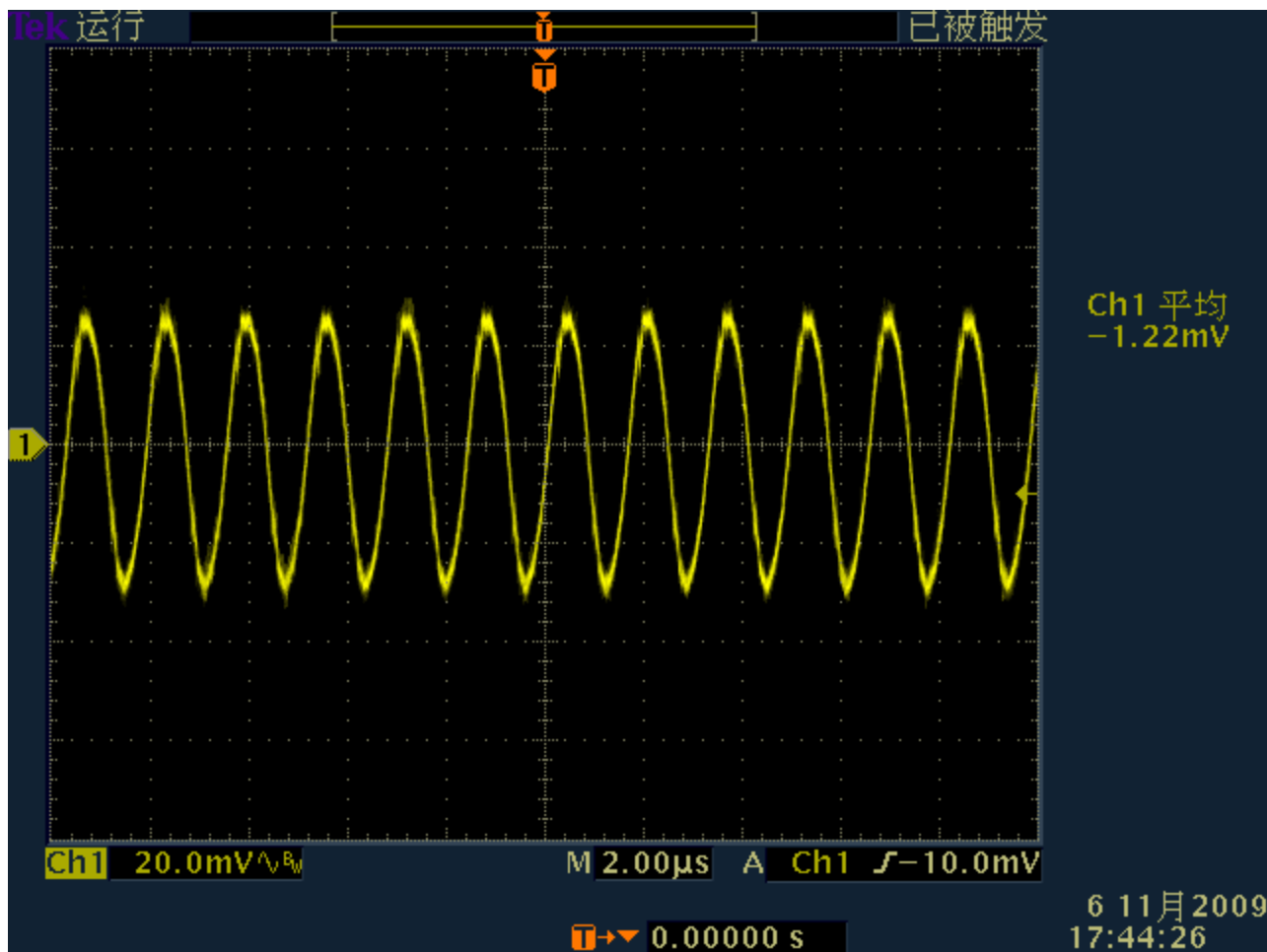
PMP4257 Test Results



Vin7
Io 0A



Io 10A

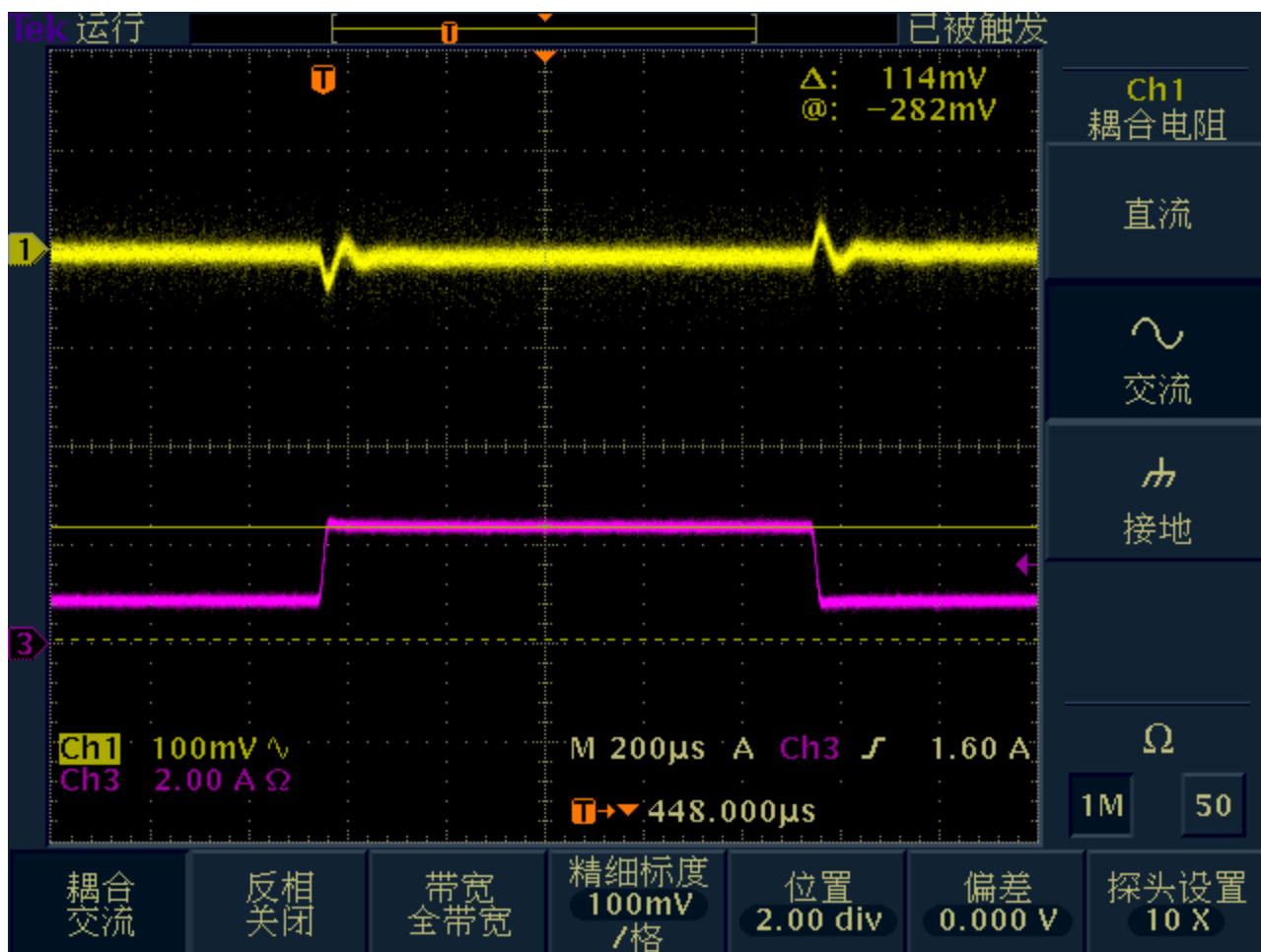


6 Load Transients

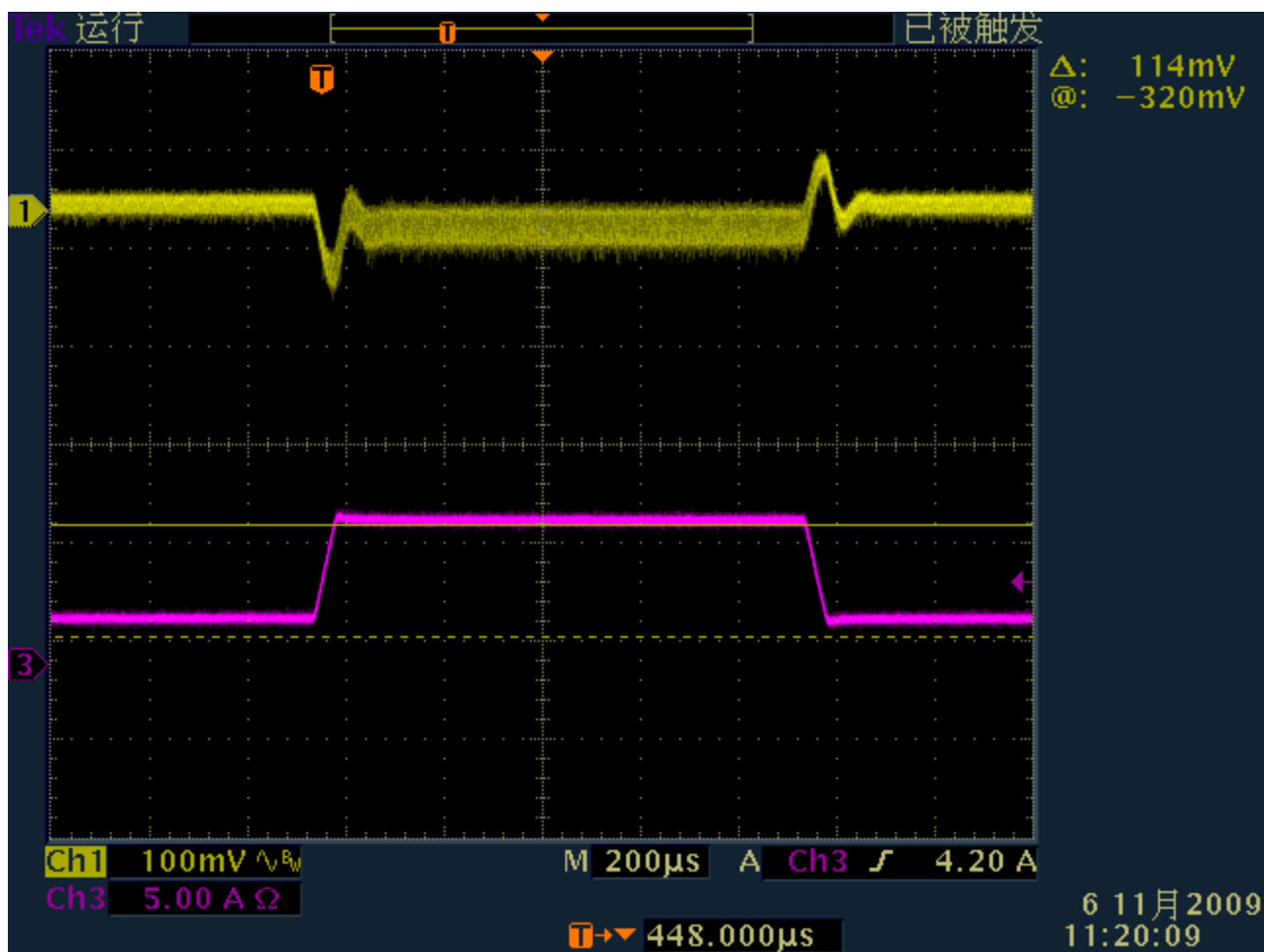
The figures below show the output response a 2.5 to 7.5A amp load step (96mA/us), output voltage is set as below

- (1) 2.5
- Vin 3
- 0.5A~2.5A

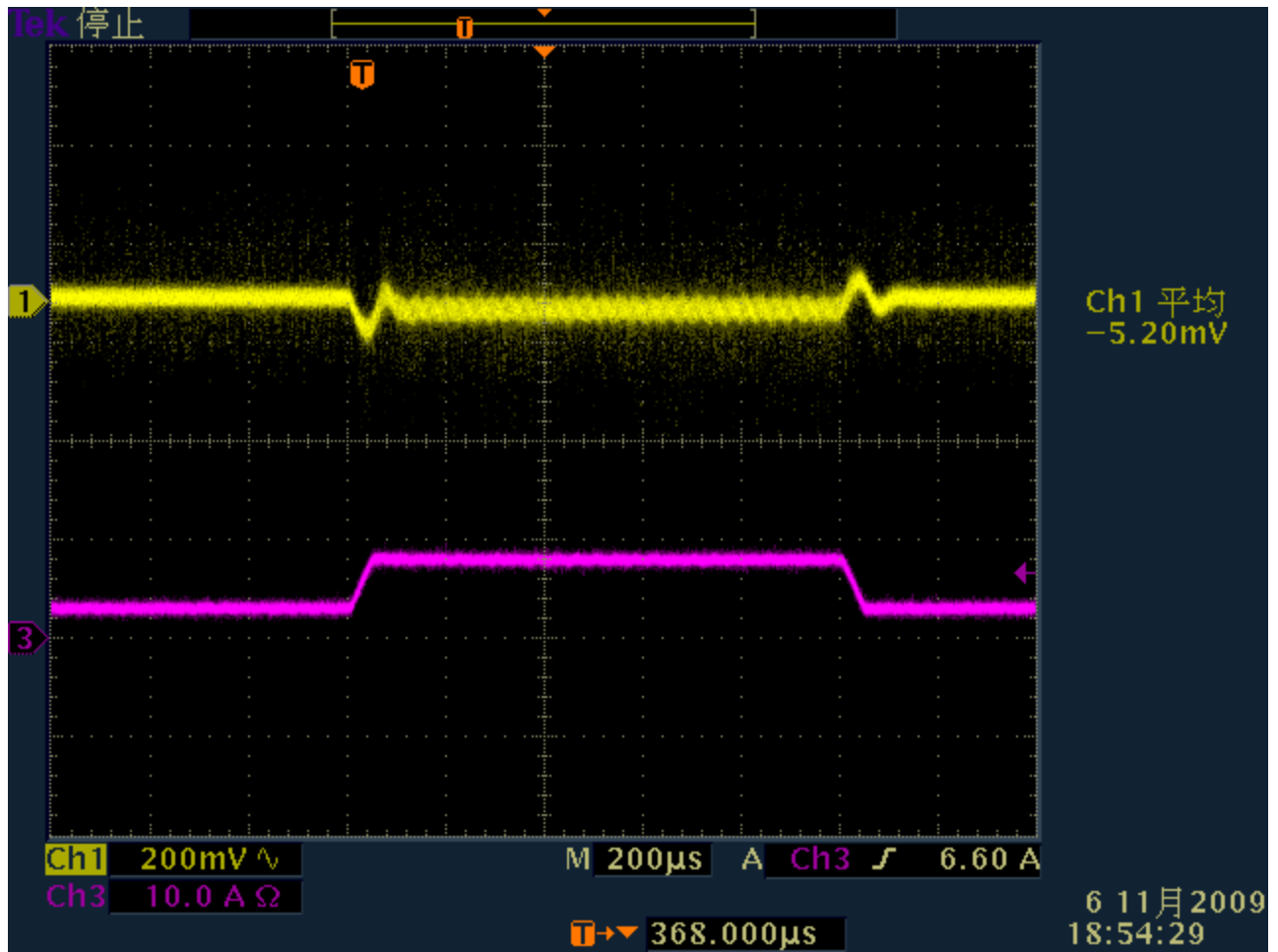
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Vin 7
2.5A~7.5A

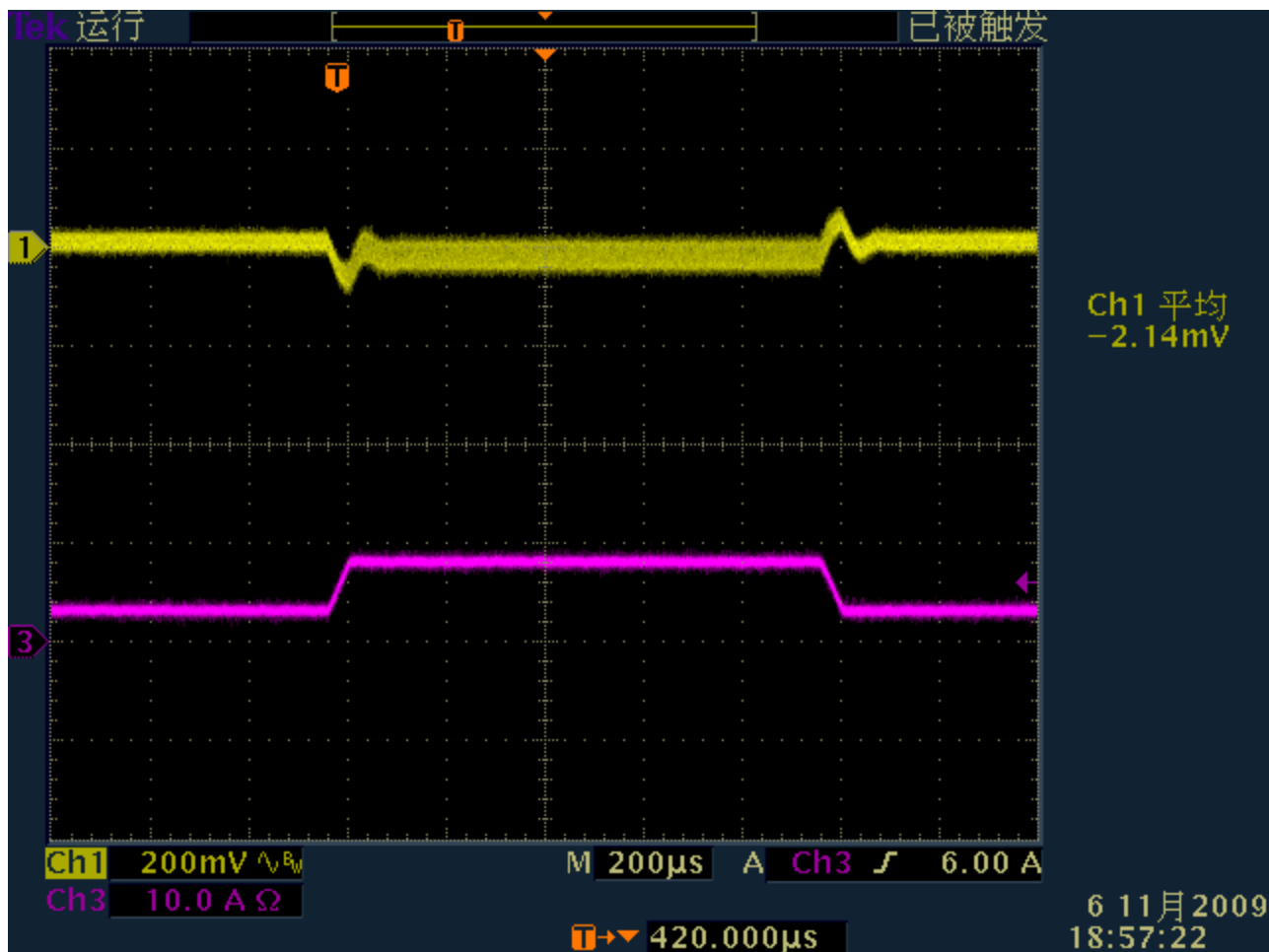


(2) 0.6
Vin 3
Vin 7
(3) 3.63
Vin 6



Vin7

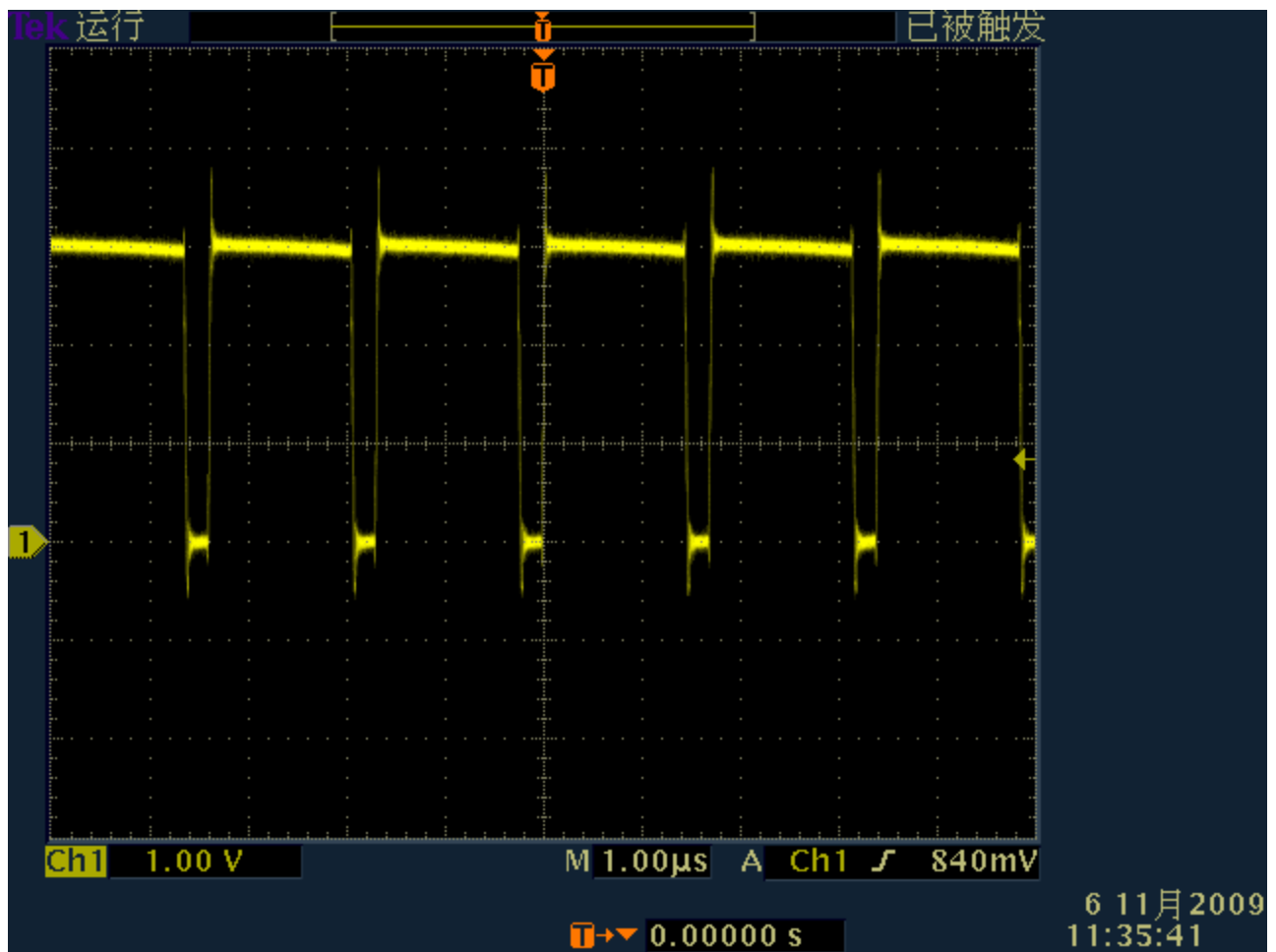
PMP4257 Test Results



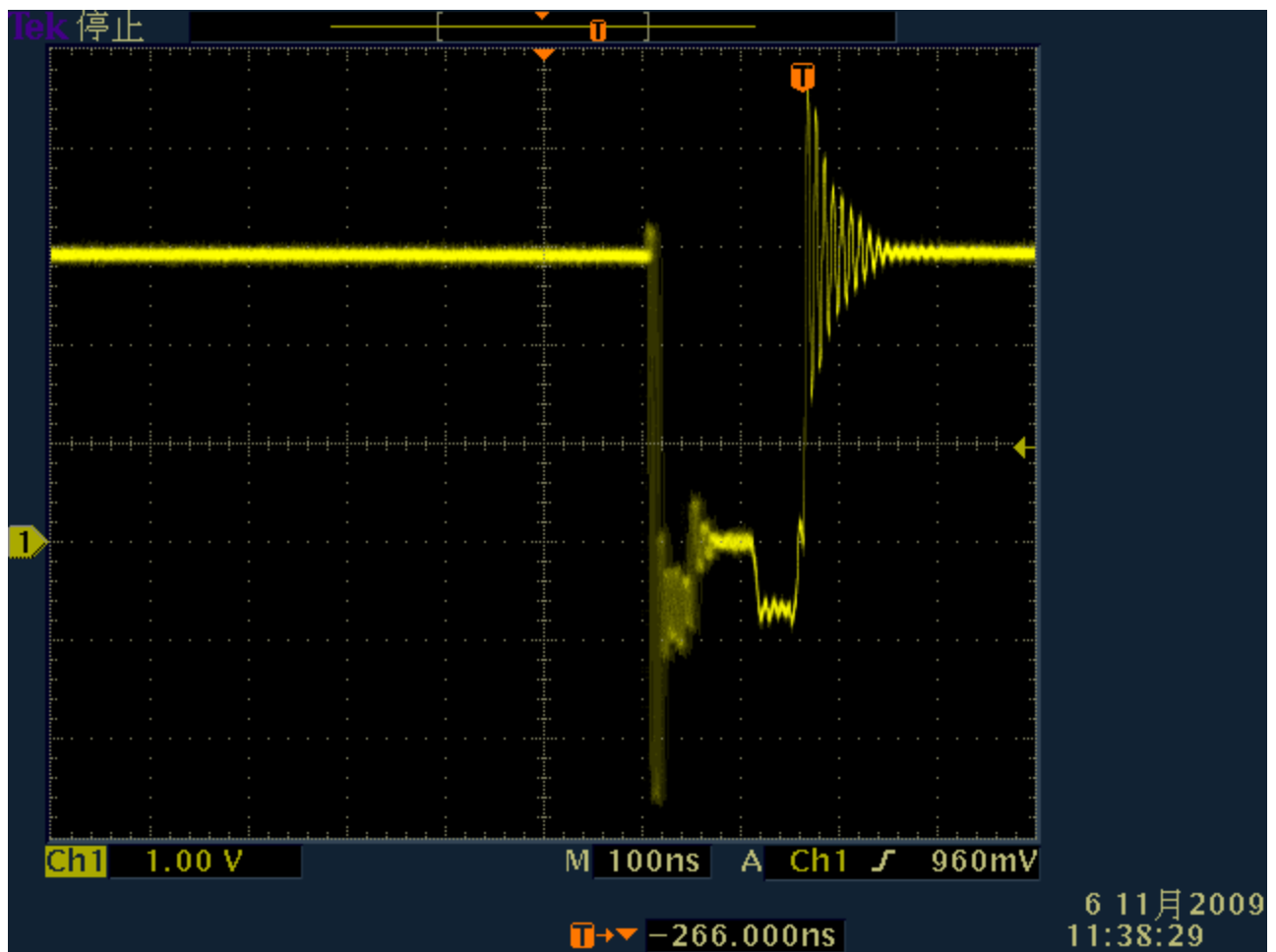
7 Switch Node Waveform

(1) 2.5

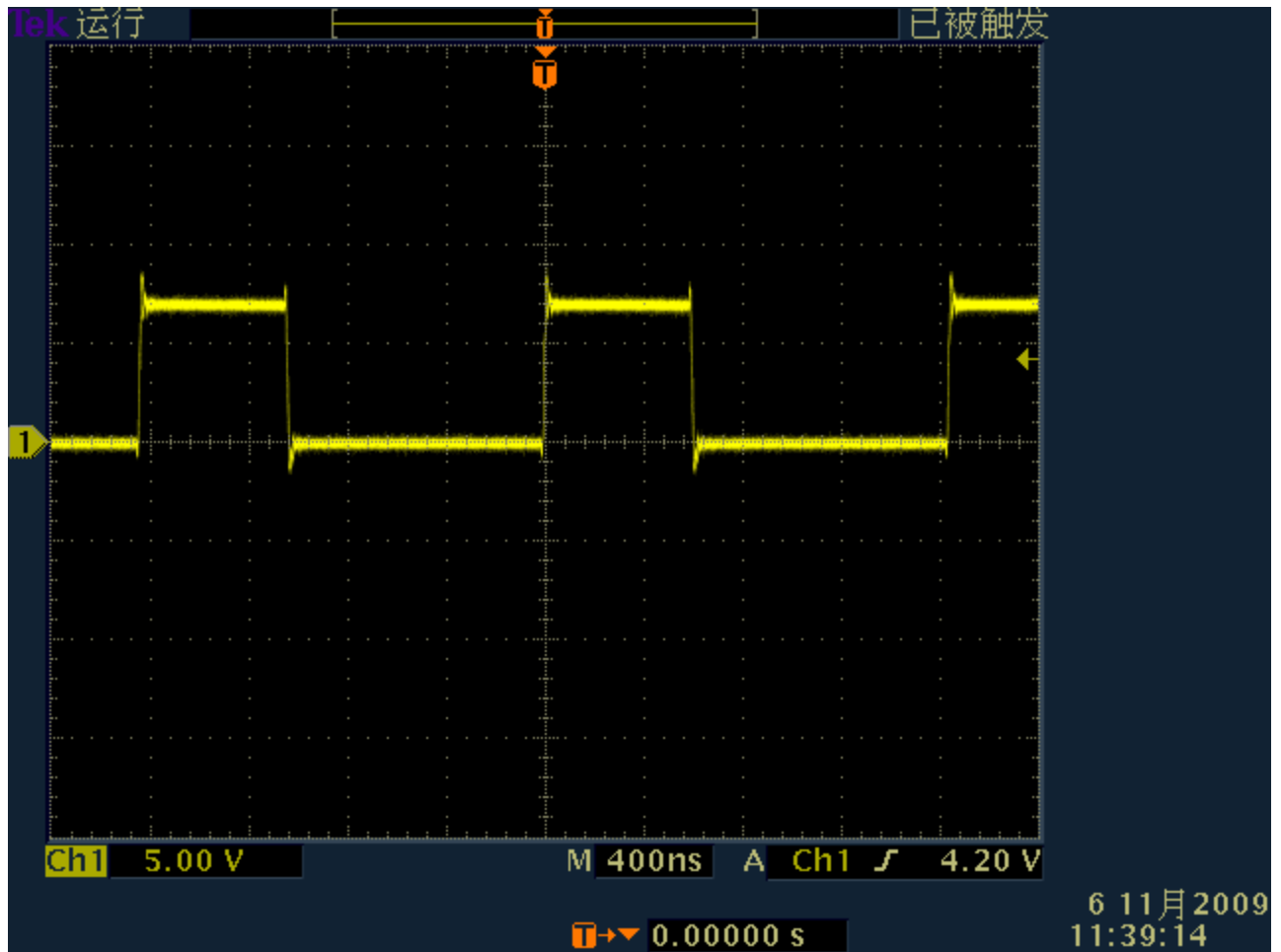
V_{in} 3I_o 0A



Io 4A

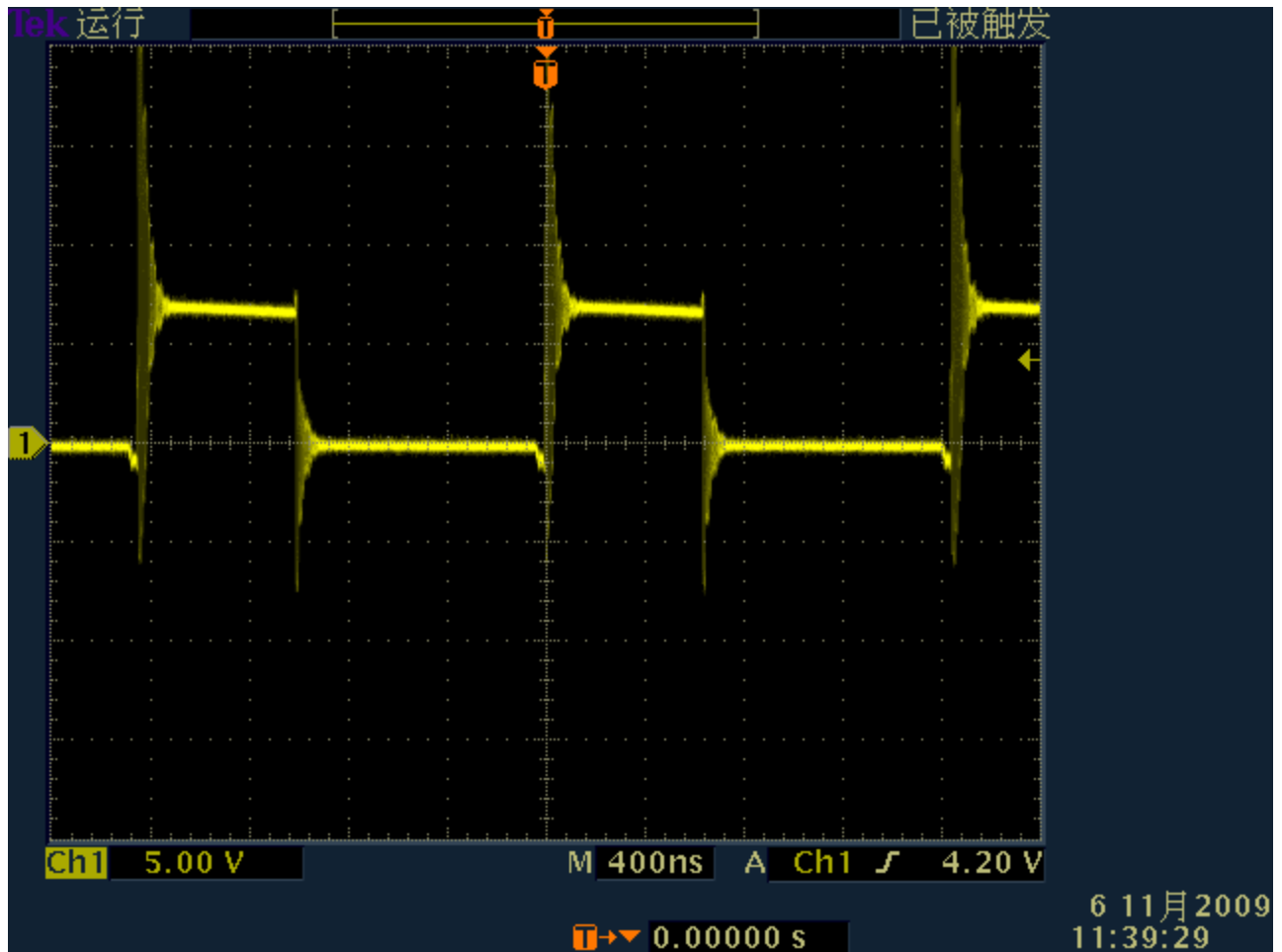


Vin7
Io 0A



Io 10A

PMP4257 Test Results



(2) 0.6

Vin 3

Io 0A

Io 10A

Vin 7

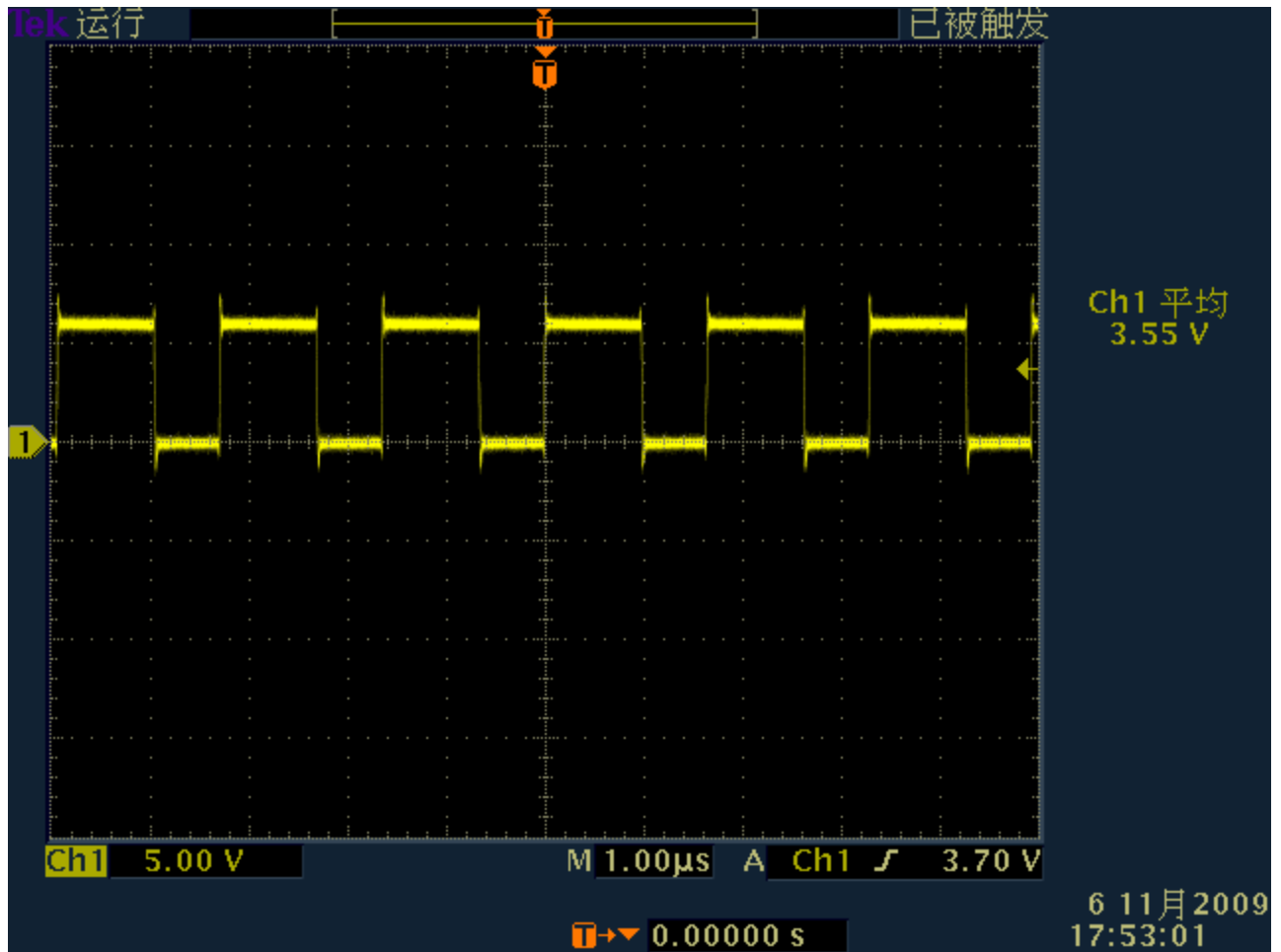
Io 0A

Io 10A

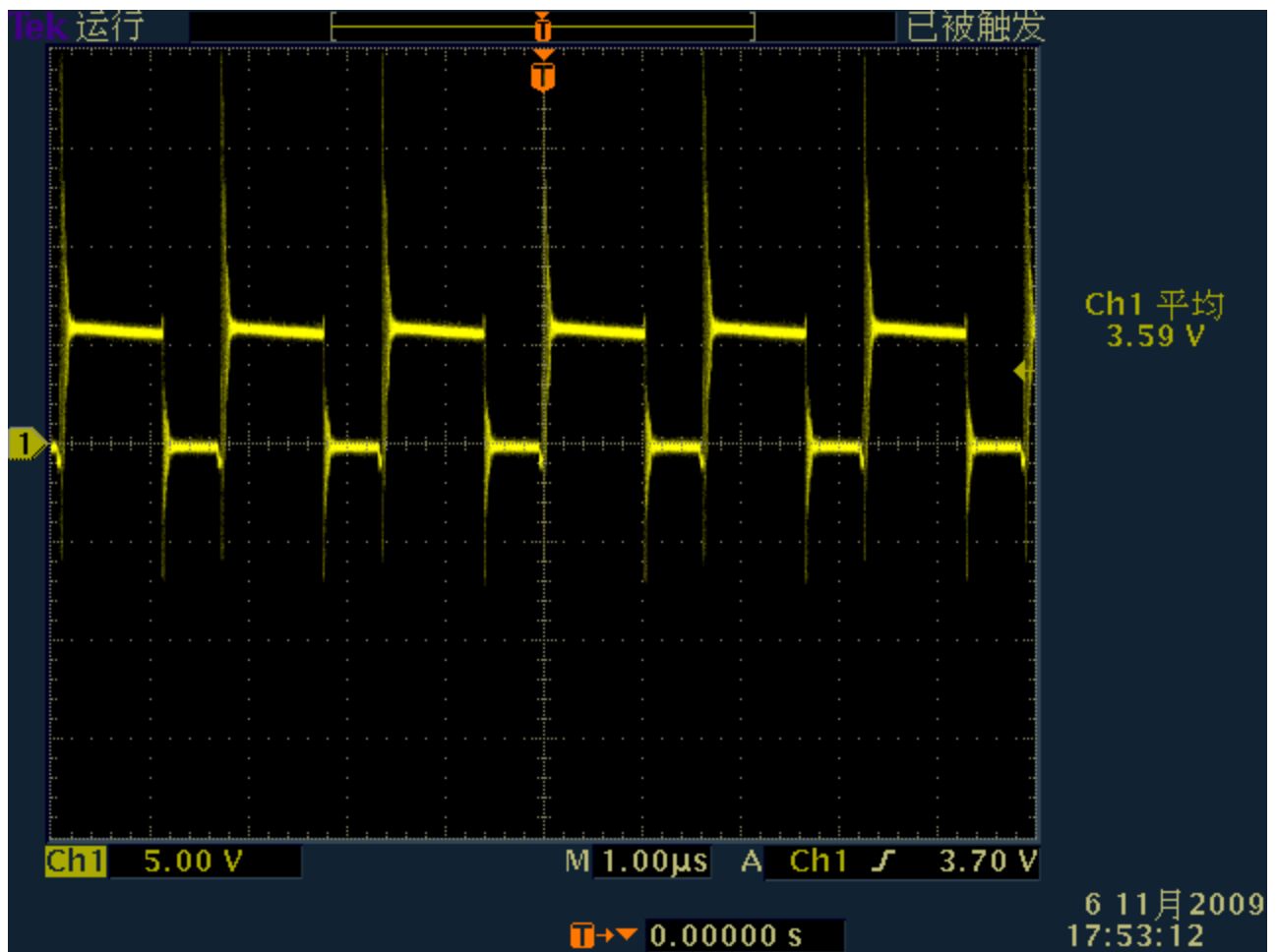
(3) 3.63

Vin 6

Io 0A

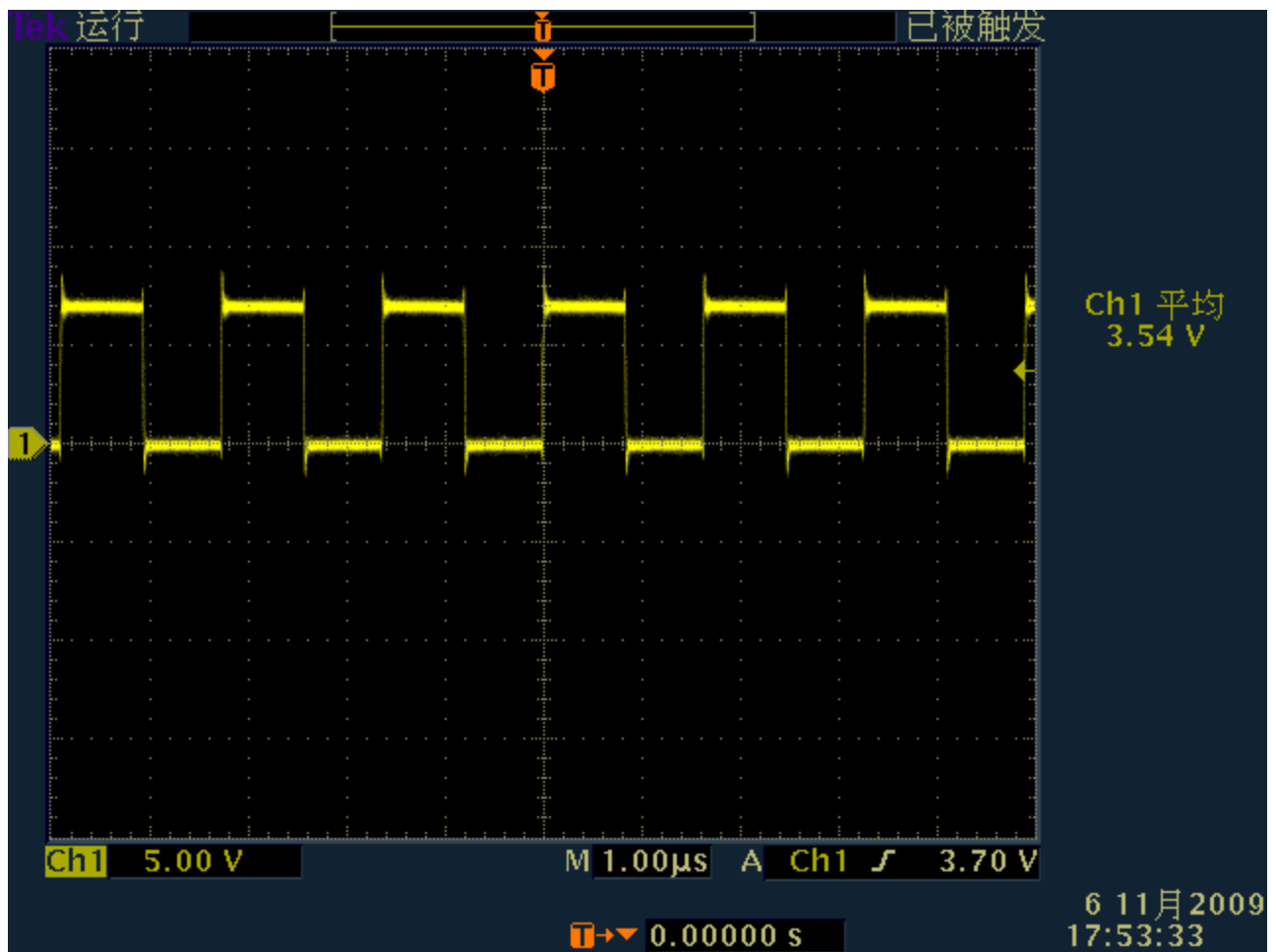


Io 10A

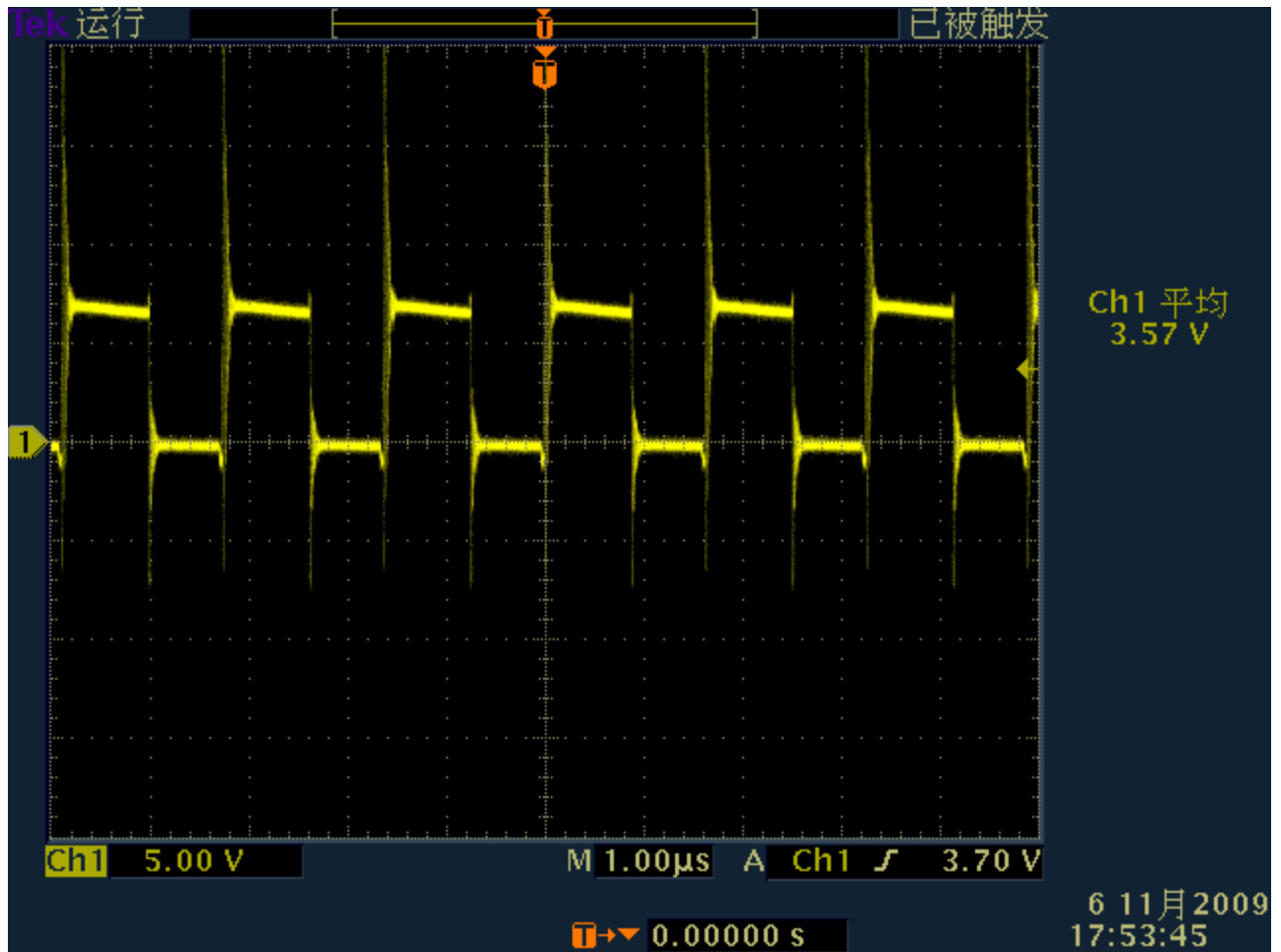


Vin7
Io 0A

PMP4257 Test Results



Io 10A



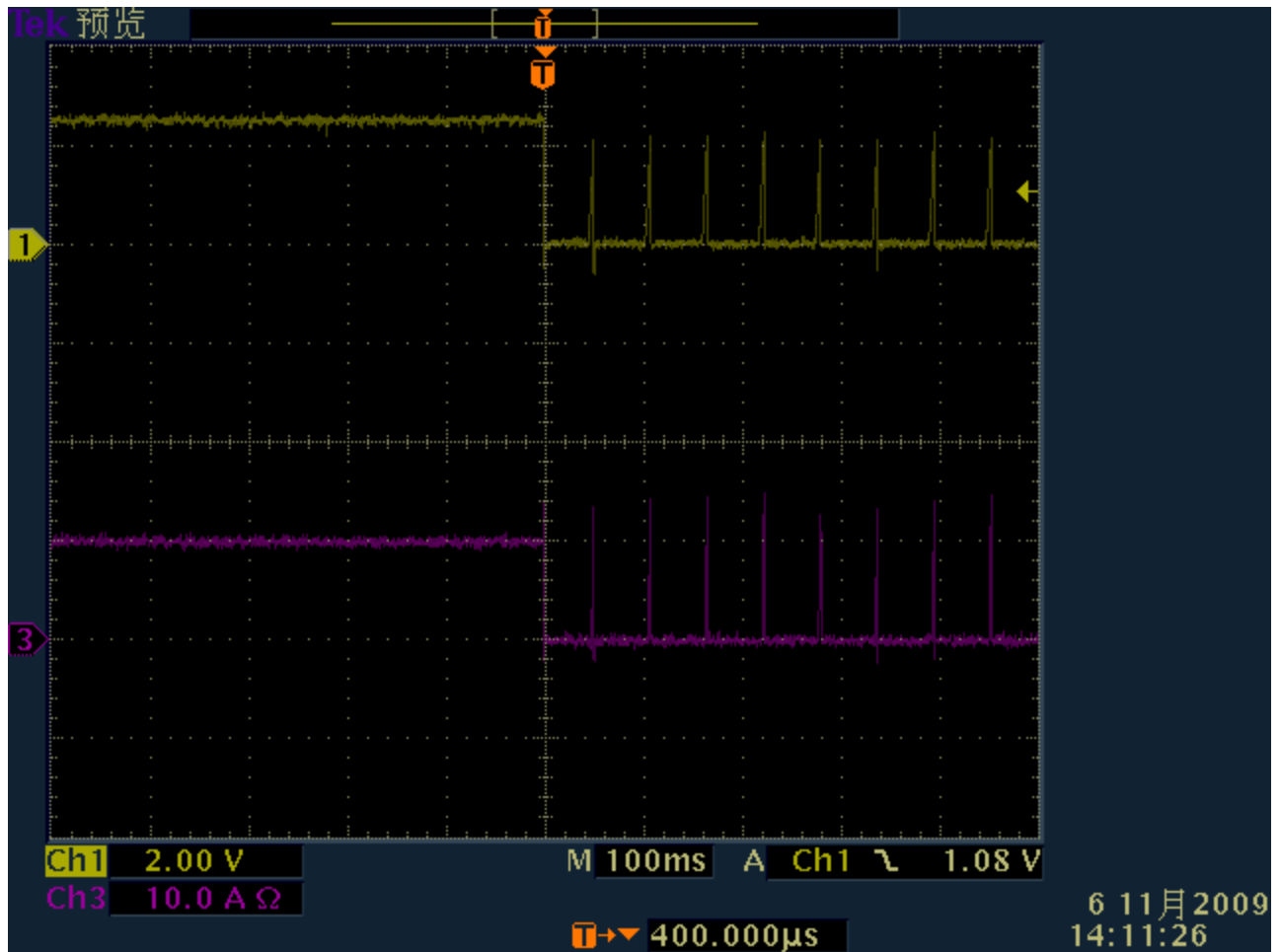
8 Over current character

(1) 2.5

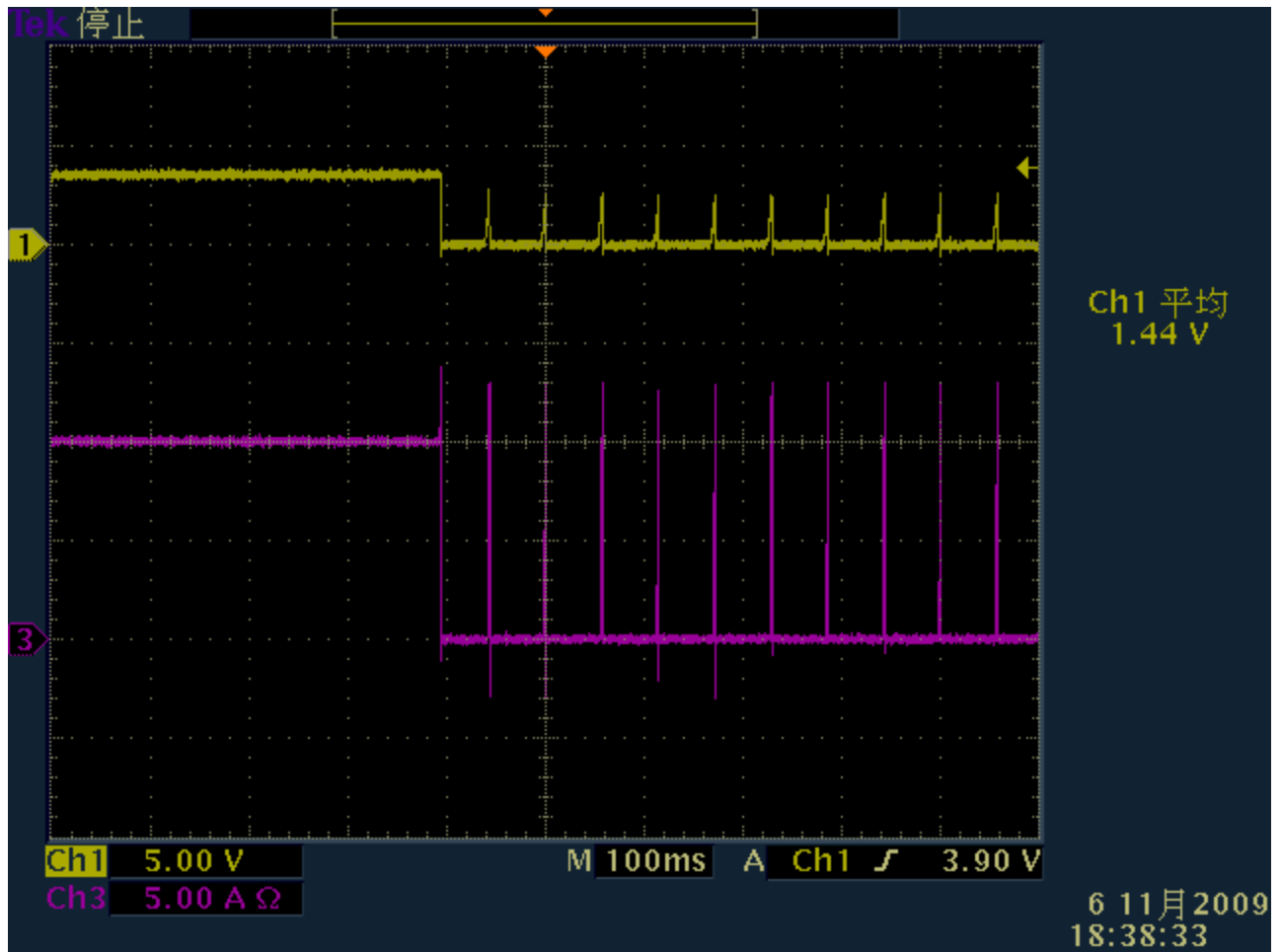
Vin 3

Vin7 16A保护,从10A到16A

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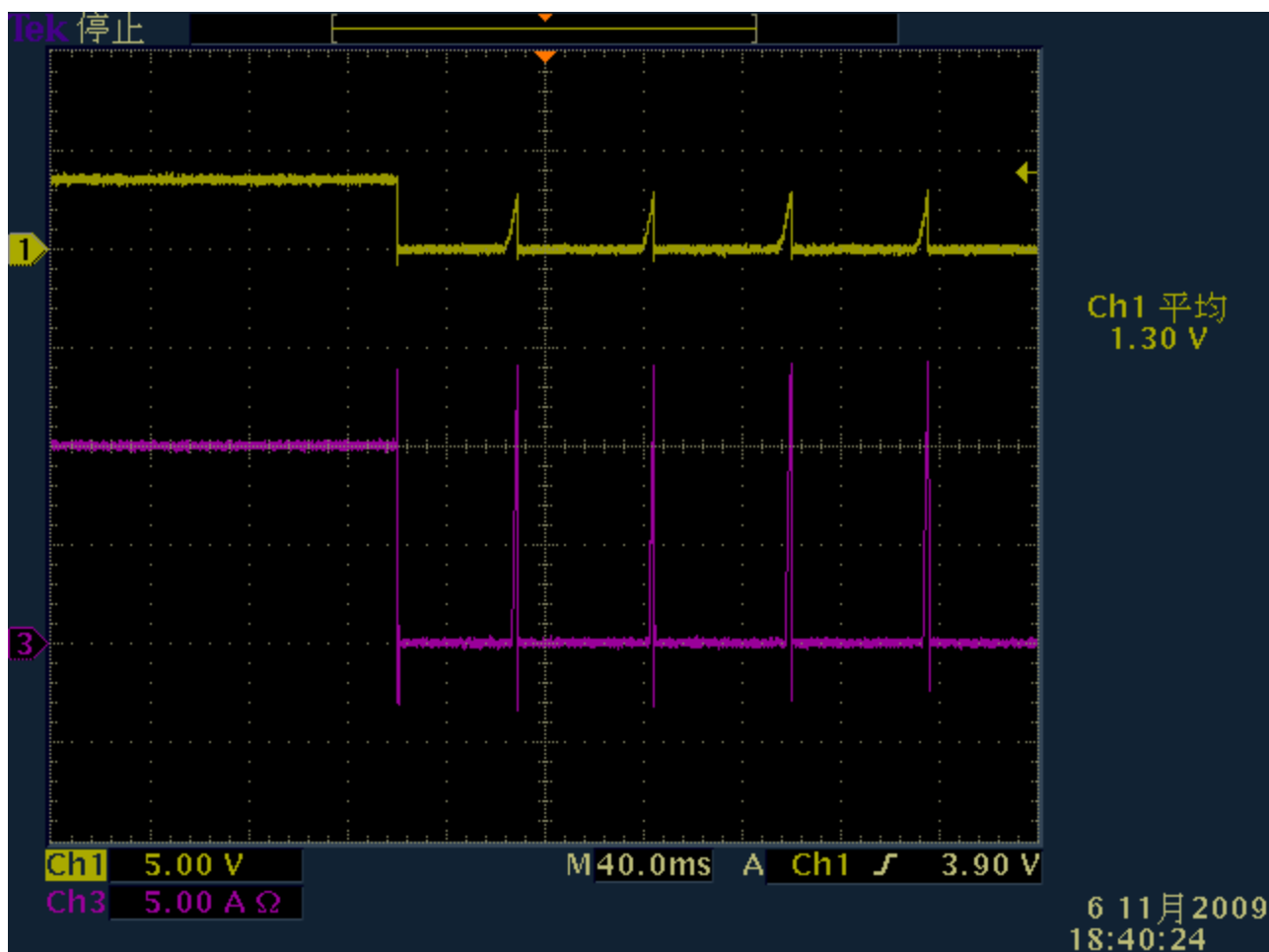


(2) 0.6
Vin 3
Vin7
(3) 3.63
Vin 6 10~14A保护



Vin7

PMP4257 Test Results



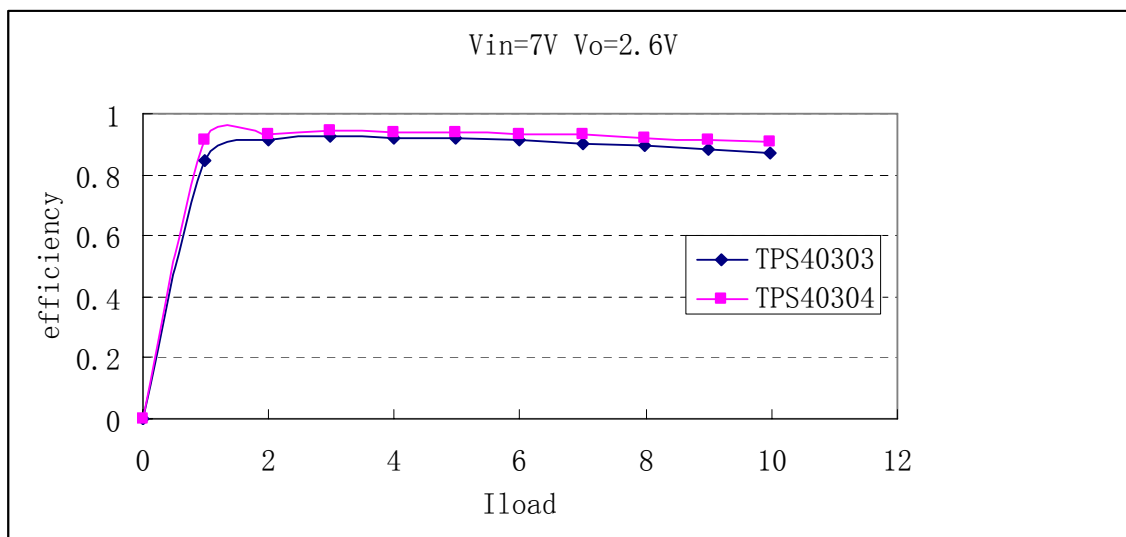
8 Efficiency Competed with 40303

$V_{in}=7$ $V_o=2.6$

40303

Vin	Iin	Vo	Io	Pin	Po	Efficiency
7.001	0.053	2.594	0	0.373	0	0
6.968	0.425	2.591	0.989	2.959	2.56	0.845157
6.939	0.809	2.586	1.983	5.609	5.13	0.914602
6.903	1.211	2.582	2.989	8.355	7.72	0.923998
6.876	1.619	2.578	3.983	11.131	10.27	0.922648
6.840	2.042	2.574	4.984	13.973	12.83	0.918200
6.804	2.476	2.569	5.978	16.841	15.36	0.91206
6.760	2.928	2.565	6.983	19.804	17.91	0.904363
6.723	3.392	2.560	7.977	22.82	20.42	0.894829
6.686	3.881	2.556	8.979	25.97	22.95	0.883712
6.648	4.387	2.551	9.972	29.20	25.43	0.87089

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With the R8 set as 22k ,trim resistor 3.6k. input voltage is 6V.

Vin	Iin	Vo	Io	Pin	Po	Efficiency
6.012	0.027	2.593	0.000	0.163	0	0
5.982	0.464	2.592	0.993	2.776	2.57	0.925793
5.954	0.917	2.588	1.992	5.461	5.16	0.944882
5.923	1.377	2.586	2.990	8.155	7.73	0.946805
5.891	1.846	2.583	3.99	10.88	10.31	0.947277
5.861	2.328	2.582	4.989	13.642	12.88	0.947602
6.046	2.712	2.566	5.986	16.41	15.359	0.935954
6.021	3.192	2.568	6.987	19.23	17.891	0.930369
5.995	3.679	2.557	7.981	22.09	20.40	0.923495
5.968	4.186	2.551	8.984	24.99	22.92	0.917167
5.940	4.701	2.546	9.984	27.95	25.41	0.909123

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