Texas Instruments

PMP4472 Test Procedure

Asia Power Design Service

REV A

5/21/2015

1 GENERAL

1.1 PURPOSE

To provide detailed data for evaluating and verifying the PMP44472

1.2 REFERENCE DOCUMENTATION

Schematic PMP4472_SCH.PDF
Assembly PMP4472_PCB.PDF
BOM

1.3 TEST EQUIPMENTS

Power-meter: YOKOGAWA WT210
Multi-meter(current): Fluke 8845A
Multi-meter(voltage): Fluke 187
AC Source: Chroma 61530
Electronic load: Chroma 63105A module

2 INPUT CHARACTERISTICS

2.1 EFFICIENCY DATA

198Vac

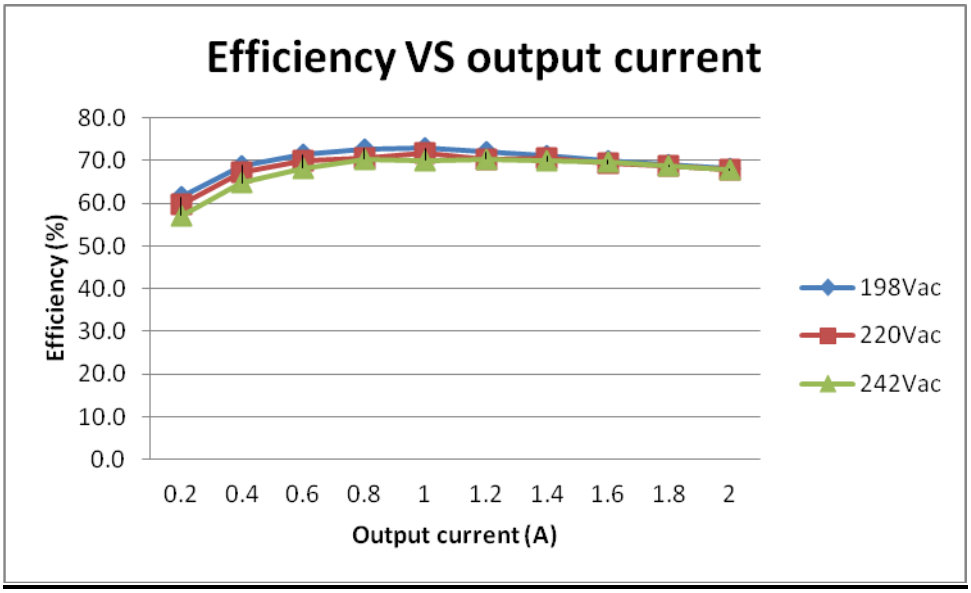
Pin(W)	Io(A)	Vo(V)	Eff.(%)
1.05	0.196	3.291	61.4
1.86	0.39	3.286	68.9
2.76	0.6	3.285	71.4
3.59	0.795	3.284	72.7
4.5	1	3.283	73.0
5.47	1.2	3.282	72.0
6.46	1.4	3.281	71.1
7.44	1.588	3.28	70.0
8.55	1.8	3.279	69.0
9.6	1.993	3.277	68.0

220Vac

Pin(W)	Io(A)	Vo(V)	Eff.(%)
1.08	0.196	3.291	59.7
1.91	0.39	3.288	67.1
2.82	0.6	3.288	70.0
3.72	0.8	3.287	70.7
4.58	1	3.285	71.7
5.6	1.2	3.284	70.4
6.5	1.4	3.282	70.7
7.57	1.6	3.281	69.3
8.6	1.8	3.28	68.7
9.67	2	3.277	67.8

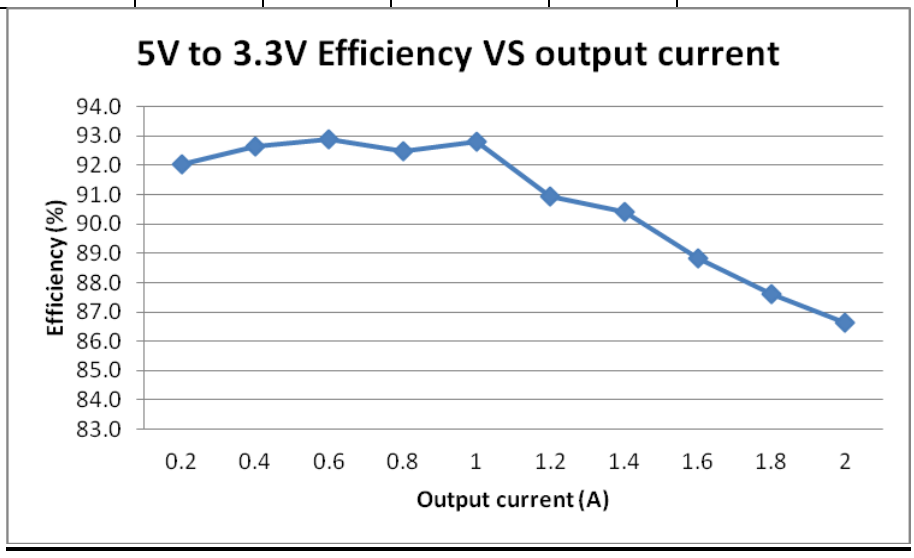
242Vac

Pin(W)	Io(A)	Vo(V)	Eff.(%)
1.13	0.196	3.29	57.1
1.98	0.39	3.286	64.7
2.89	0.6	3.285	68.2
3.71	0.795	3.284	70.4
4.64	0.99	3.283	70.0
5.6	1.2	3.282	70.3
6.54	1.393	3.281	69.9
7.49	1.588	3.28	69.5
8.59	1.798	3.279	68.6
9.63	1.993	3.277	67.8



5V to 3.3V efficiency

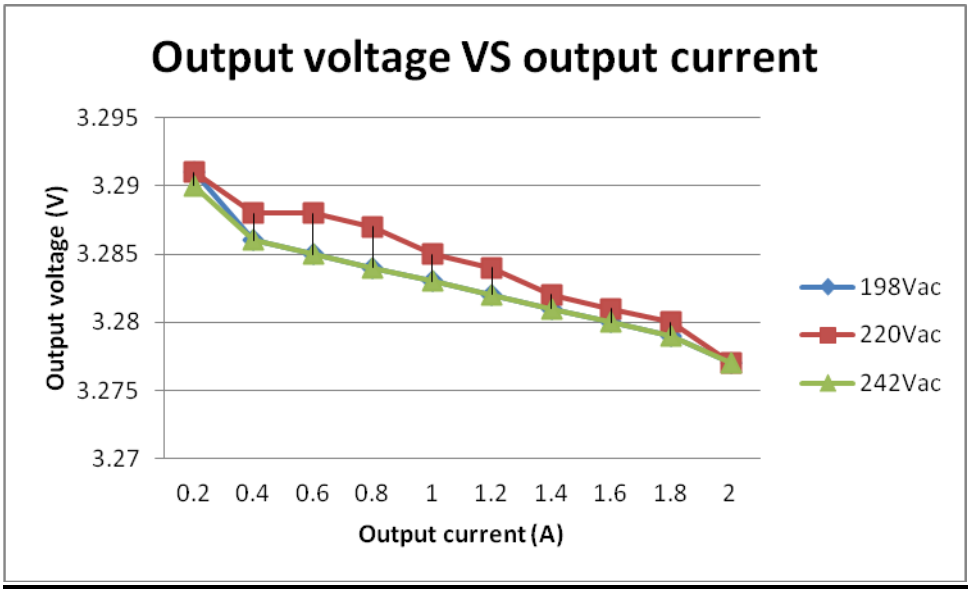
Vin (V)	Iin (A)	Vo (V)	Io (A)	Eff.(%)
5.01	0.14	3.293	0.196	92.0
5.088	0.272	3.288	0.39	92.7
5.078	0.418	3.286	0.6	92.9
5.067	0.556	3.285	0.793	92.5
5.055	0.7	3.284	1	92.8
5.043	0.859	3.283	1.2	90.9
5.031	1.01	3.282	1.4	90.4
5.017	1.169	3.28	1.588	88.8
5	1.346	3.279	1.798	87.6
4.989	1.517	3.278	2	86.6



2.2 INPUT CURRENT

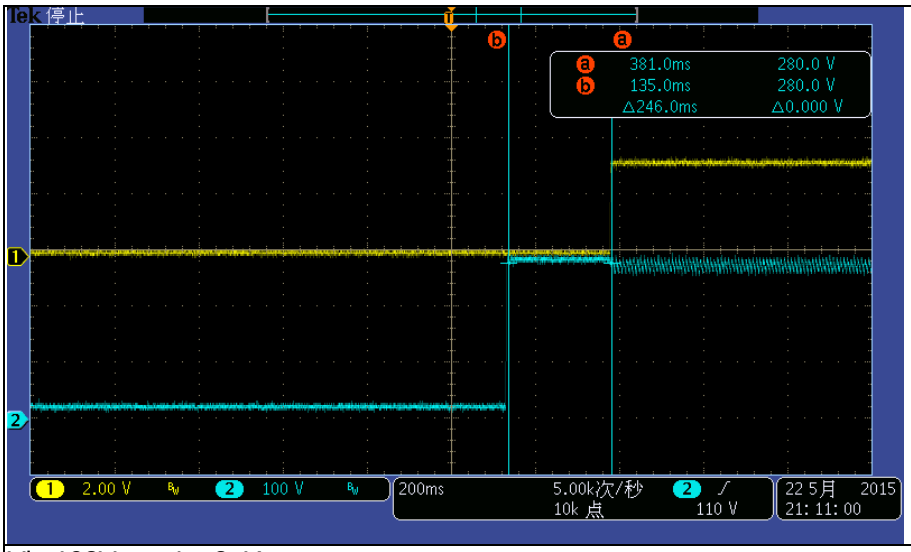
Vin(Vac)	Freq(Hz)	Iin(Arms)	Pass/Fail
198	60	**0.08**	

2.3 Line and load regulation

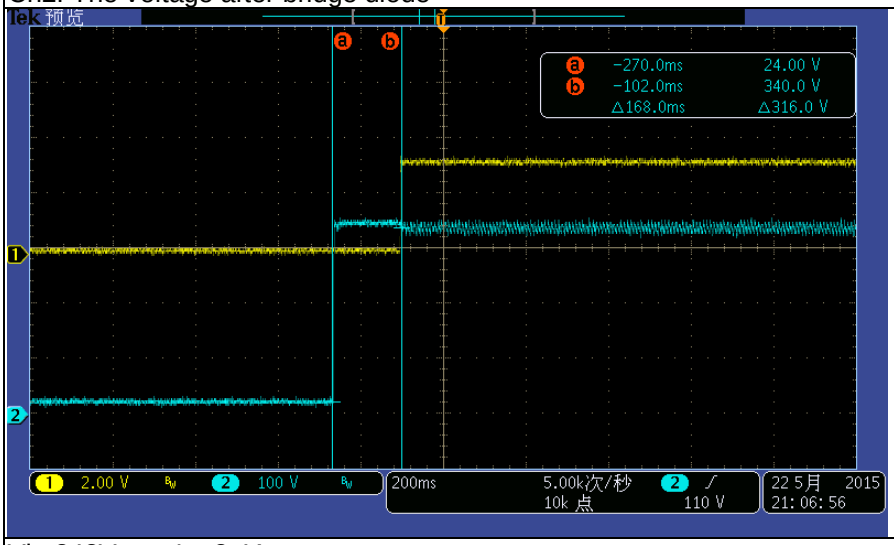


2.4 STARTUP TIME

Input voltage	Output current	Startup time	Pass/Fail
198Vac	2.4A	**246mS**	
242Vac	2.4A	**168mS**	



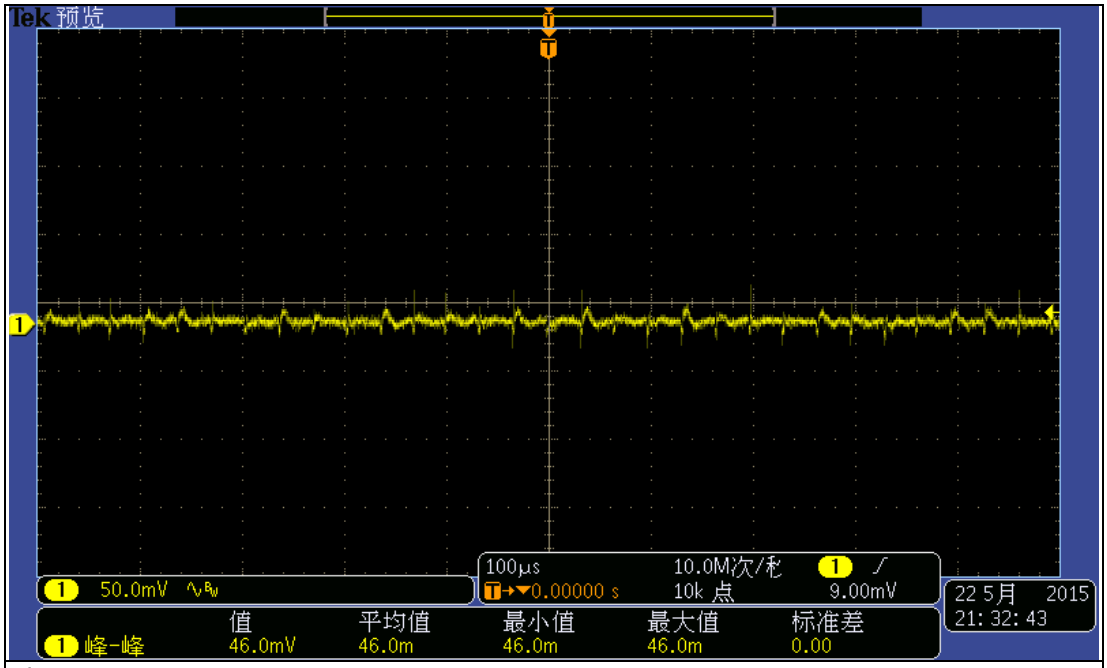
Vin:198Vac Io: 2.4A
Ch1: Output voltage
Ch2: The voltage after bridge diode



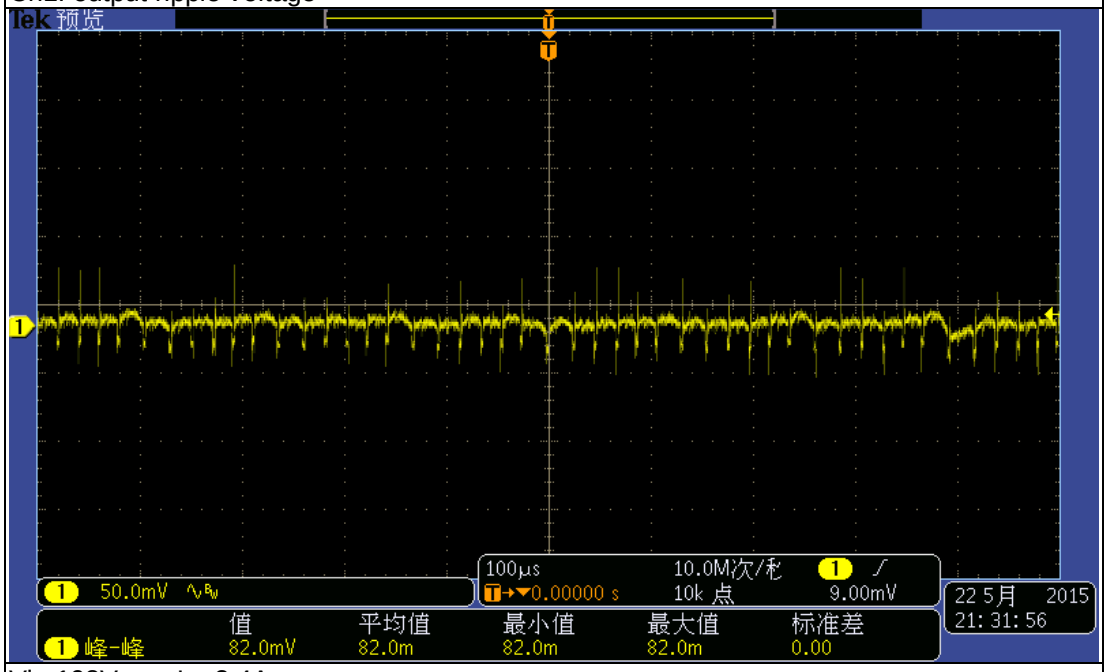
Vin:242Vac Io: 2.4A
Ch1: Output voltage
Ch2: The voltage after bridge diode

2.5 RIPPLE VOLTAGE

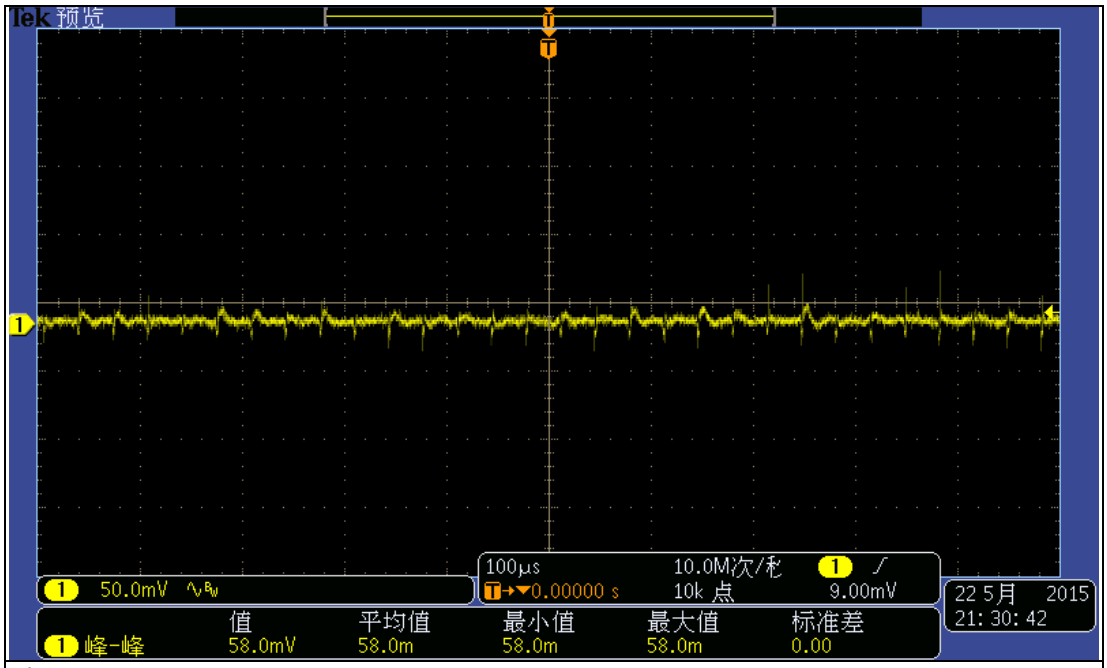
Input voltage	Output current	Ripple voltage	Pass/Fail
198Vac	1.2A	**46mV**	
198Vac	2.4A	**82mV**	
220Vac	1.2A	**58mV**	
220Vac	2.4A	**92mV**	
242Vac	1.2A	**62mV**	
242Vac	2.4A	**96mV**	



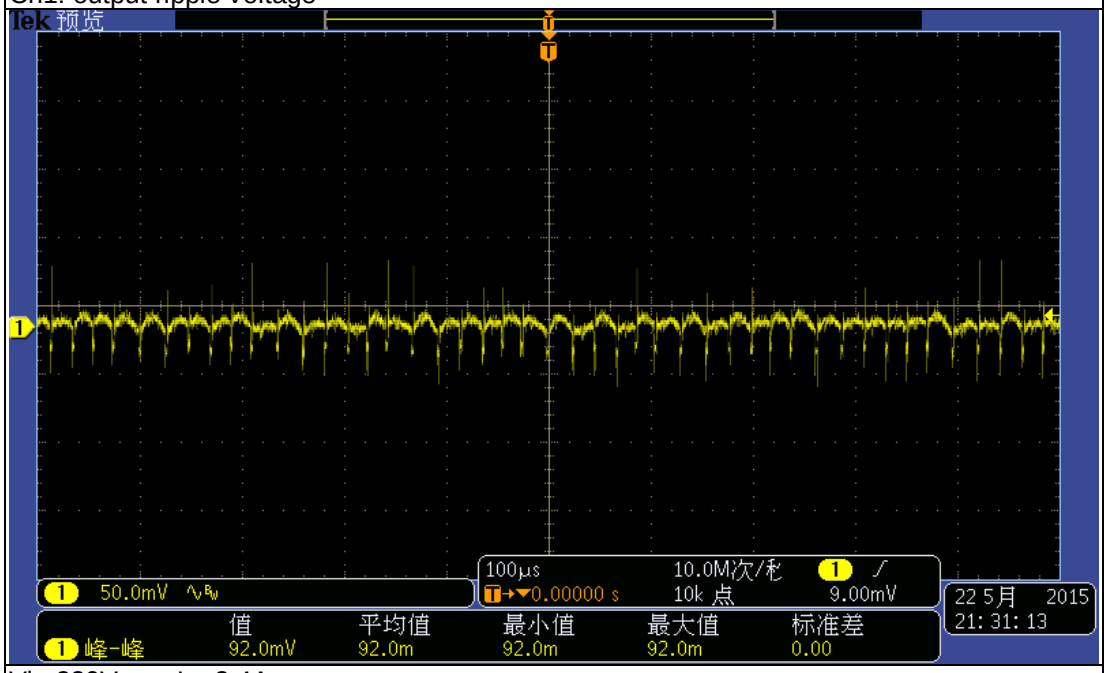
Vin:198Vac Io: 1.2A
Ch1: output ripple voltage



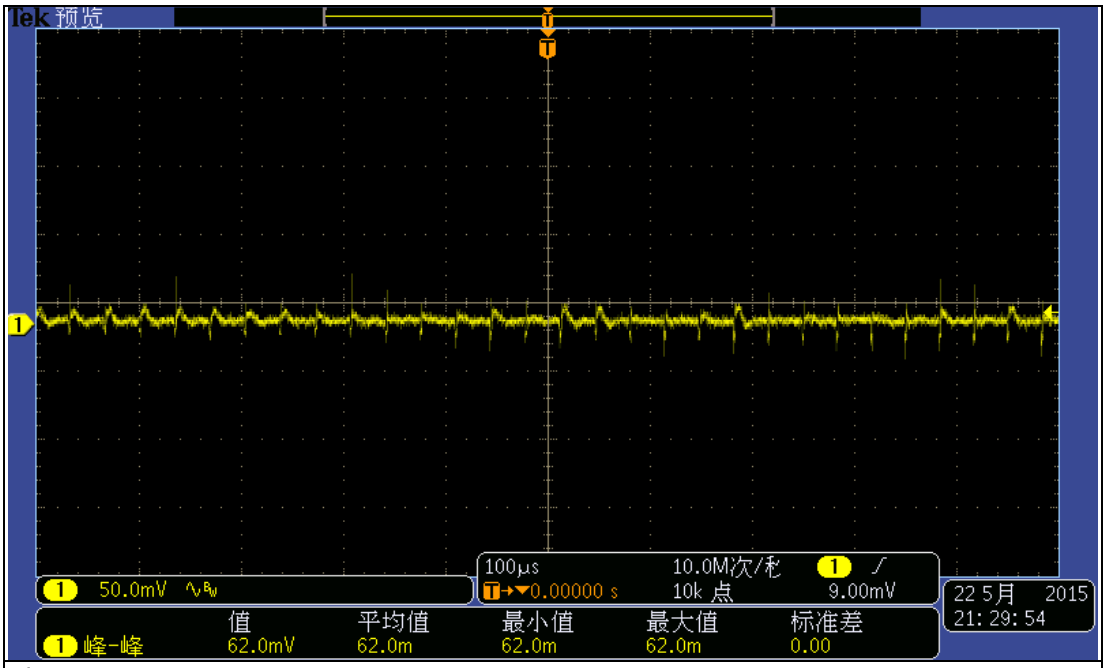
Vin:198Vac Io: 2.4A
Ch1: output ripple voltage



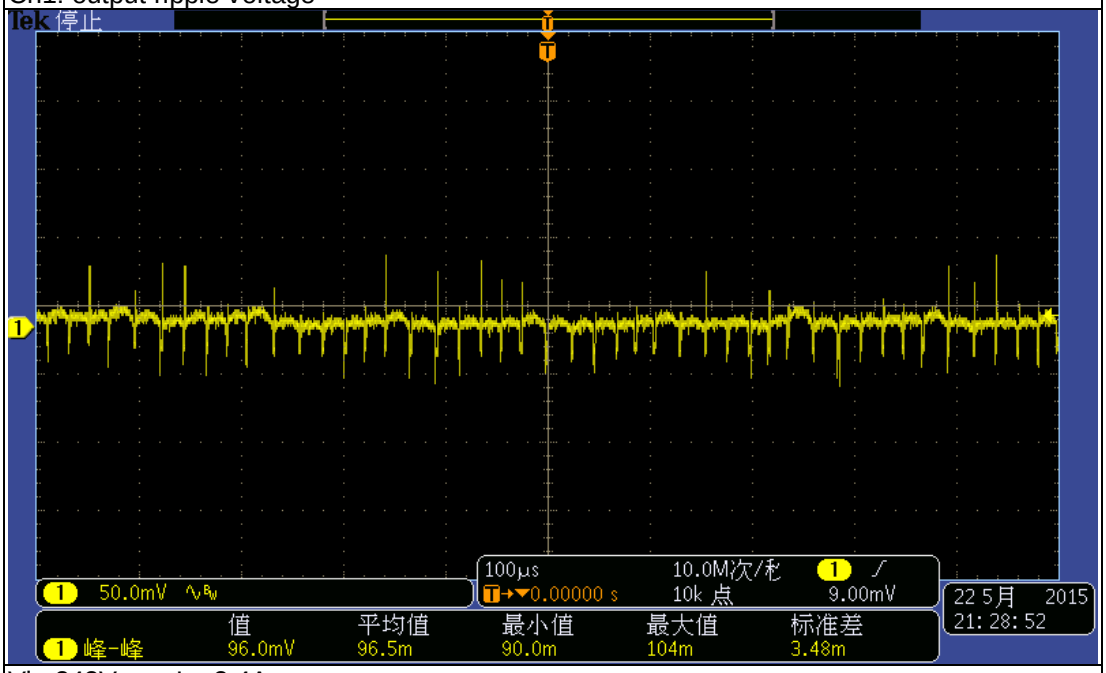
Vin:220Vac Io: 1.2A
Ch1: output ripple voltage



Vin:220Vac Io: 2.4A
Ch1: output ripple voltage

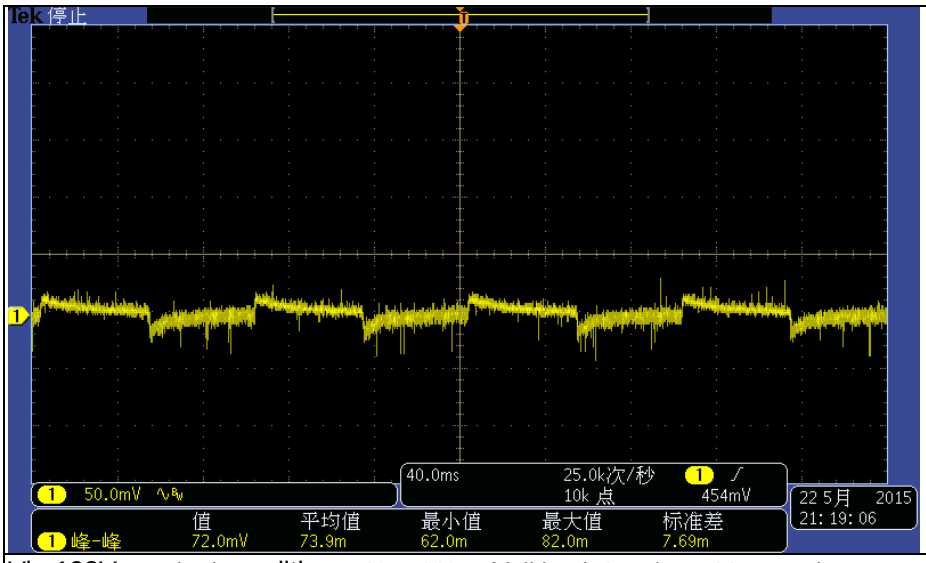


Vin:242Vac Io: 1.2A
Ch1: output ripple voltage

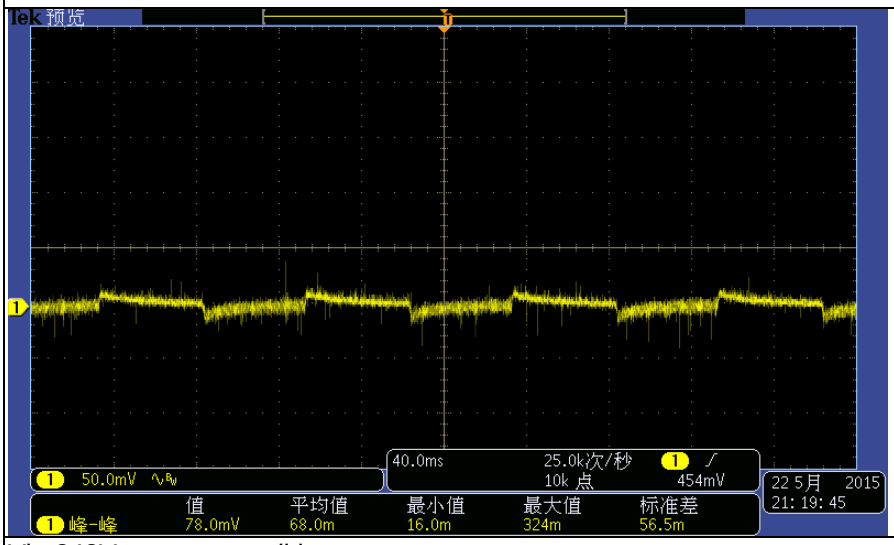


Vin:242Vac Io: 2.4A
Ch1: output ripple voltage

2.6 DYNAMIC RESPONSE



Vin:198Vac test condition: 50%-100% of full load, 0.1A/us, 100ms cycle
Ch1: output voltage



Vin:242Vac test condition: 50%-100% of full load, 0.1A/us, 100ms cycle
Ch1: output voltage

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