

## Design PMP4489 Test Results

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### 1 GENERAL

#### 1.1 PURPOSE

The PMP4489 is designed for evaluating USB PD 36W adapter using the secondary-side regulation UCC28740 and USB C PD recognition protocol TPS25740. The test report presents the standby power, efficiency and related electrical performance.

#### 1.2 REFERENCE DOCUMENTATION

Schematic: PMP4489E1(001)\_Sch.PDF

PCB: GerberNCdrills.zip

BOM: PMP4489E1(001)\_TI-BOM.PDF

#### 1.3 TEST EQUIPMENTS

Multi-meter (current): Fluke 287C\*2

Multi-meter (voltage): Agilent 34401A

AC Source: Chroma 61503

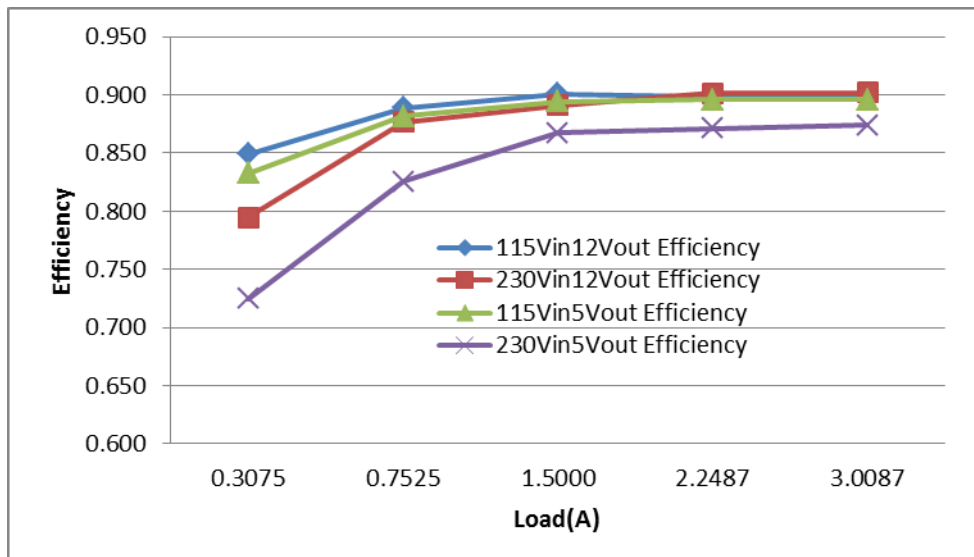
E-Load: Chroma 63101 module

## 2 Performance data and waveform

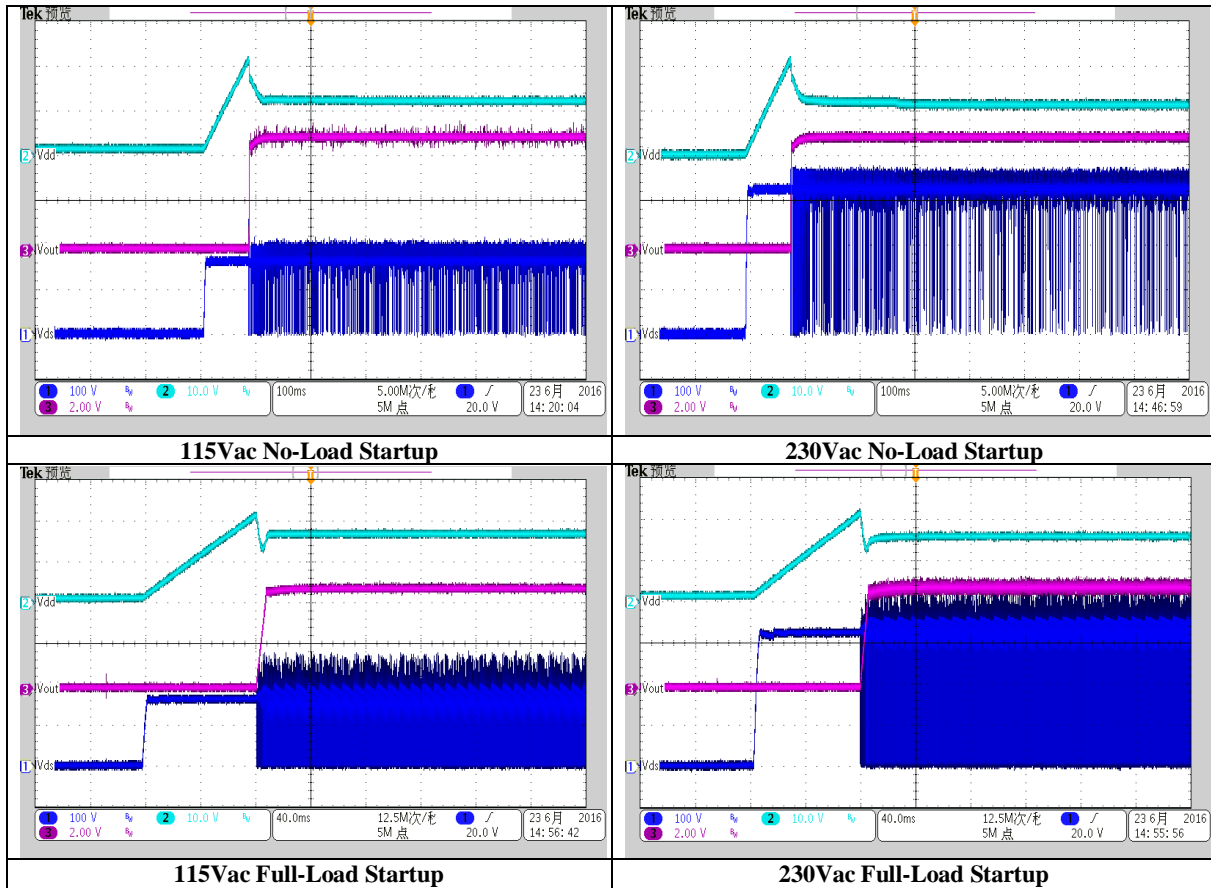
### 2.1 EFFICIENCY

Input Voltage(V)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Efficiency	Average Efficiency
115	0.02		0			0.892
	1.867	5.0537	0.3075	1.554013	0.832358	
	4.313	5.0534	0.7525	3.802684	0.881679	
	8.48	5.0527	1.5012	7.585113	0.894471	
	12.68	5.0517	2.2487	11.35976	0.89588	
	16.96	5.0507	3.0087	15.19604	0.895993	
Input Voltage(V)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Efficiency	
230	0.044		0			0.859
	2.144	5.052	0.3075	1.55349	0.724576	
	4.604	5.0515	0.7525	3.801254	0.825642	
	8.74	5.0505	1.5012	7.581811	0.867484	
	13.03	5.0488	2.2487	11.35324	0.871315	
	17.38	5.0469	3.0087	15.18461	0.873683	

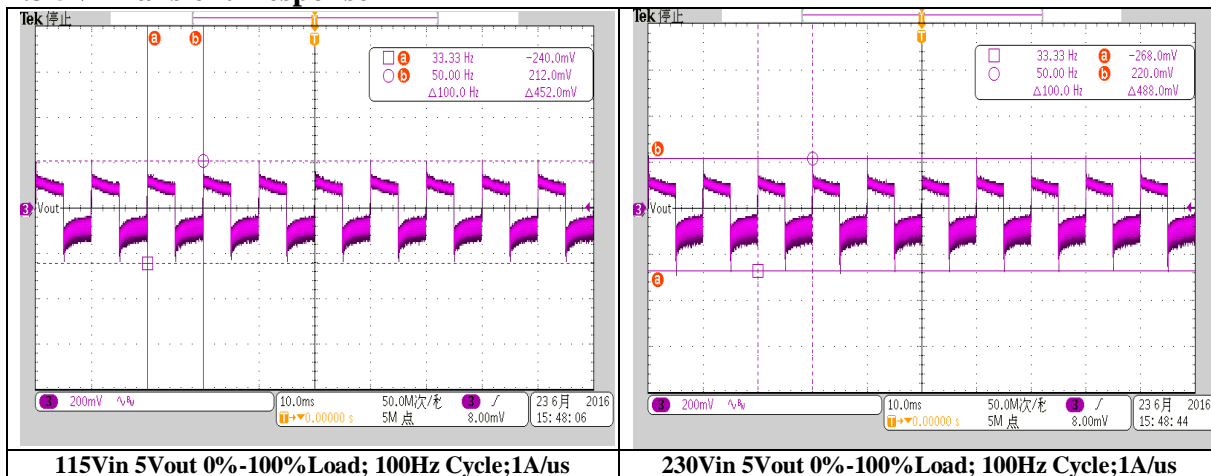
Input Voltage(V)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Efficiency	Average Efficiency
115	0.08		0.0000			0.897
	4.444	12.271	0.3075	3.77	0.849	
	10.39	12.270	0.7525	9.23	0.889	
	20.43	12.269	1.5000	18.40	0.901	
	30.69	12.266	2.2487	27.58	0.899	
	41.03	12.262	3.0087	36.89	0.899	
Input Voltage(V)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Efficiency	
230	0.112	12.274	0.0000			0.893
	4.747	12.269	0.3075	3.77	0.795	
	10.53	12.267	0.7525	9.23	0.877	
	20.65	12.263	1.5000	18.39	0.891	
	30.58	12.258	2.2487	27.56	0.901	
	40.87	12.252	3.0087	36.86	0.902	



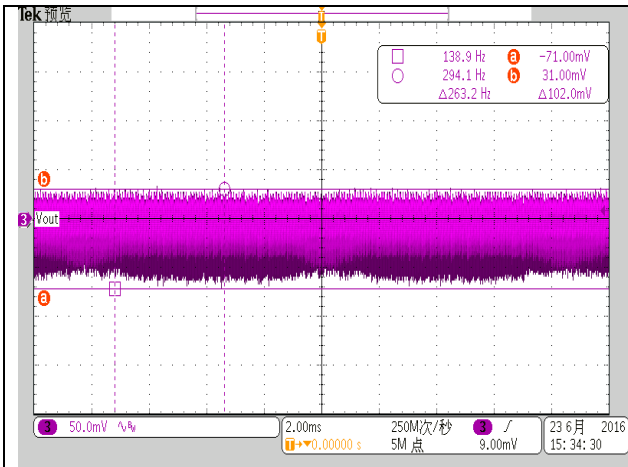
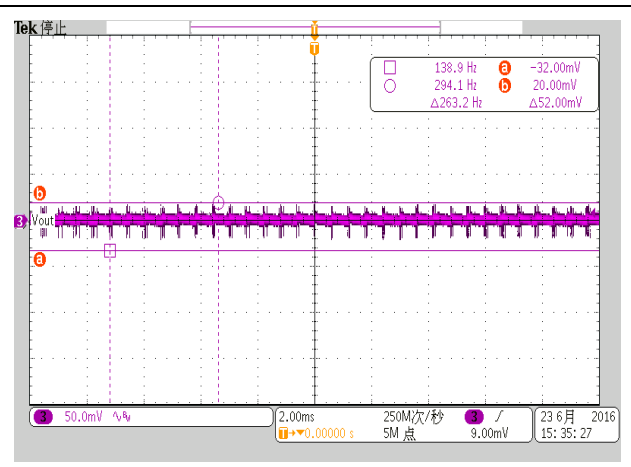
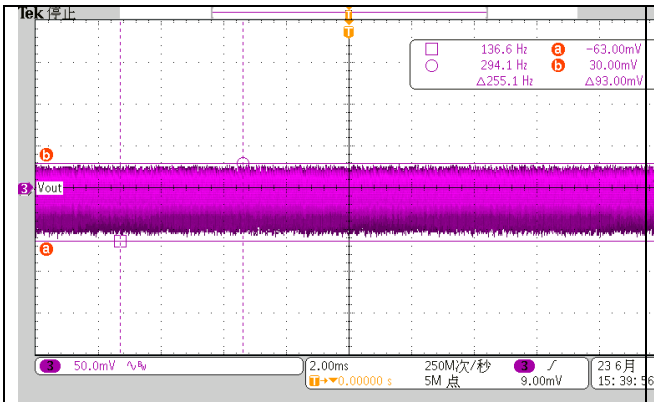
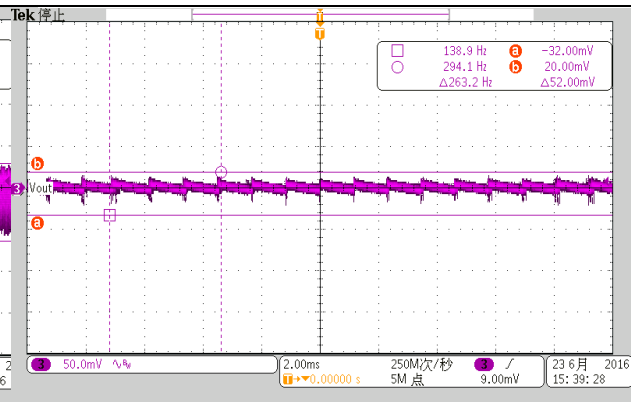
## 2.2 Start Up



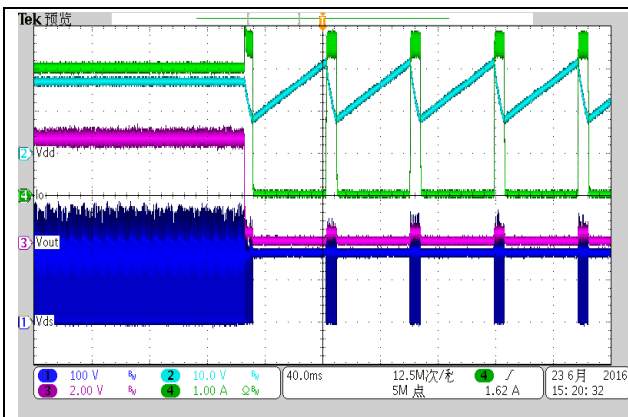
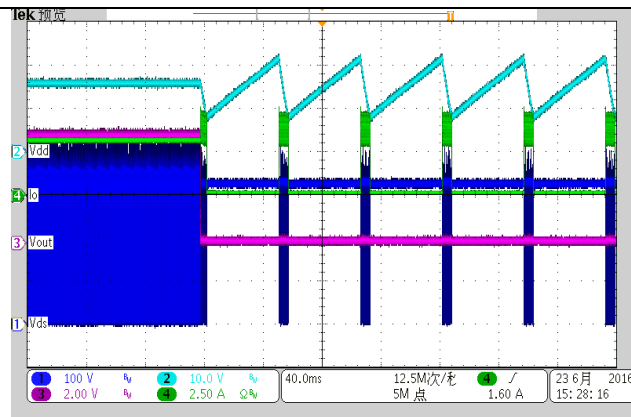
### 2.3 5V Transient Response



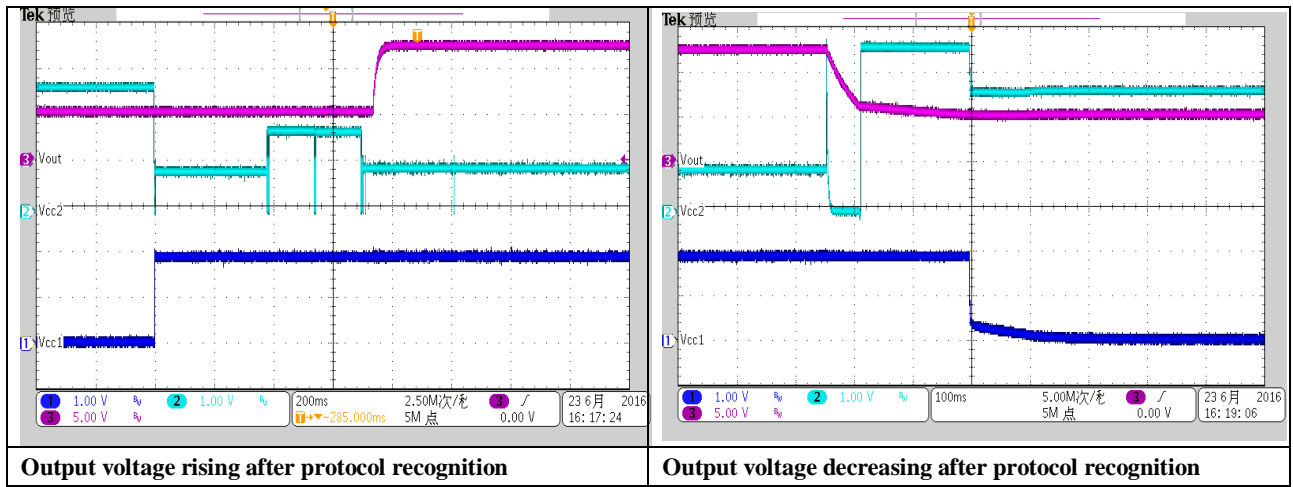
### 2.4 5V Output Voltage Ripple


**230Vac full load**

**230Vac n load**

**115Vac full load**

**115Vac no load**

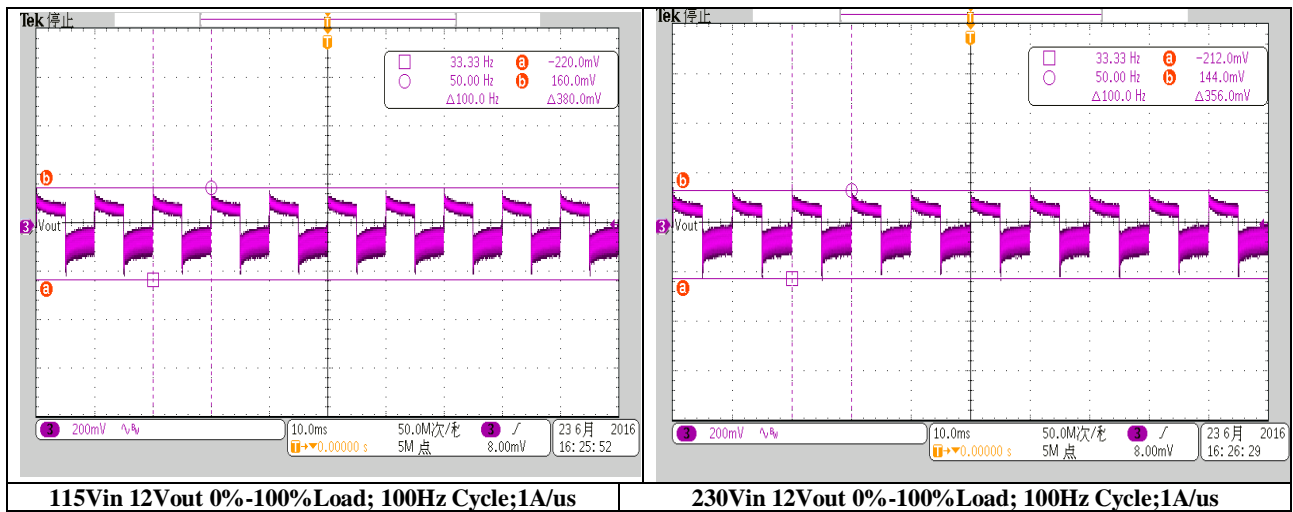
### 2.5 5V Output Short Circuit Protection


**115Vac full load to short circuit**

**230Vac full load to short circuit**

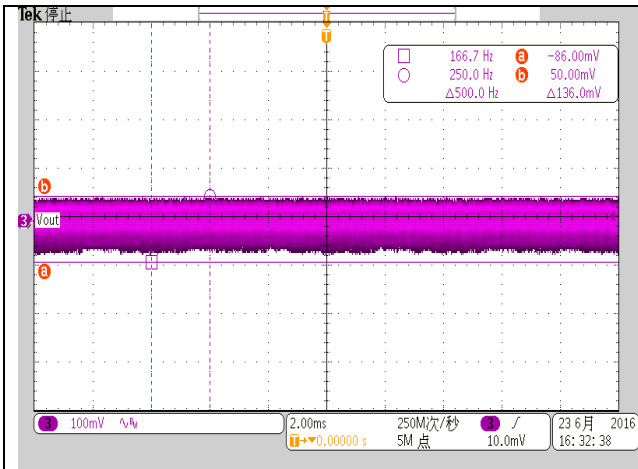
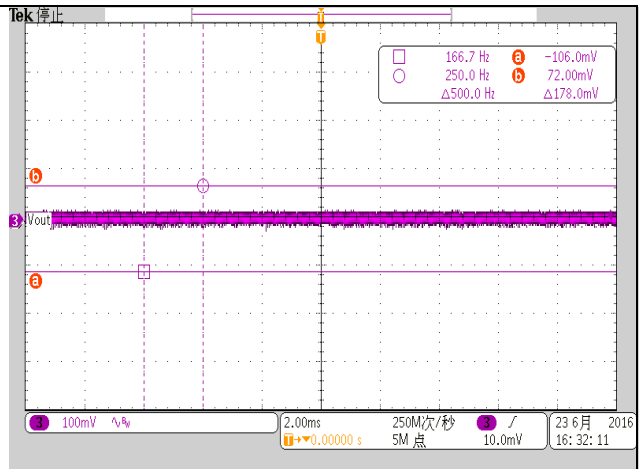
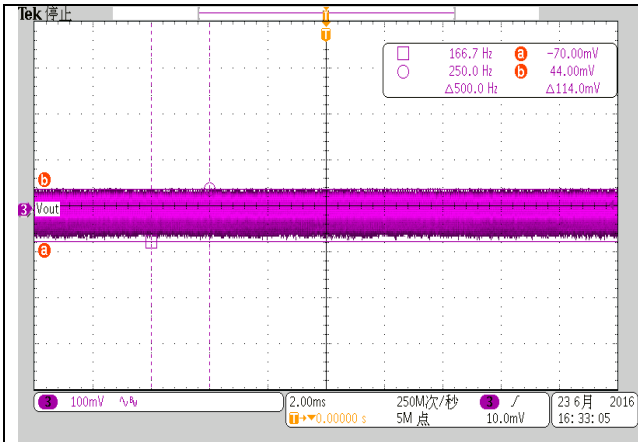
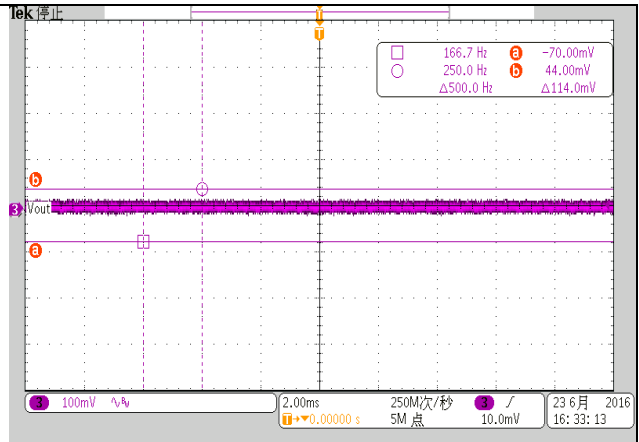
## 2.6 Protocol Process



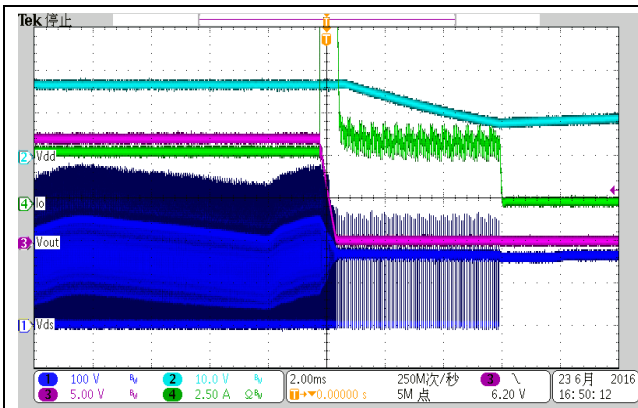
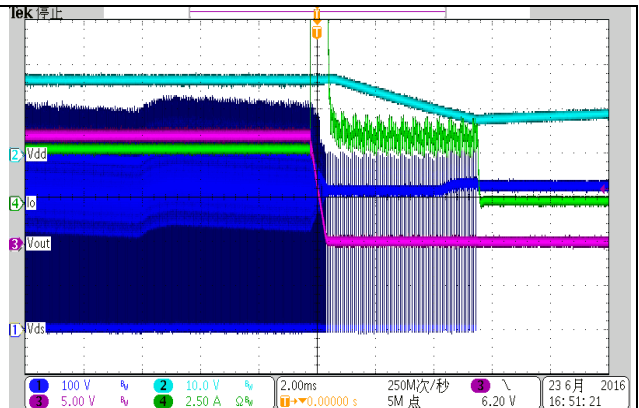
## 2.7 12V Transient Response



## 2.8 12V Output Voltage Ripple


**230Vac full load**

**230Vac no load**

**115Vac full load**

**115Vac no load**

## 2.9 12V output Short Circuit Protection


**115Vac full load to short circuit**

**230Vac full load to short circuit**

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