

PMP40328 Test Results

1 General

1.1 PURPOSE

The PMP40328 is a maximum 9V5A reference design solution for high frequency high density adapter applications. The solution implements Active Clamp Flyback controller UCC28780 and secondary rectifier UCC24612-2, enable high frequency and high efficiency. Integrated input UVLO, and output OVP, OCP improves the power system reliability. The design is achieved in a compact form factor (52mm X 31mm X 31mm).

TEST EQUIPMENTS

Multi-meter: Fluke Multimeter 287C, Agilent 34401A, Fluke 8845A
DC Source: TDK-Lambda, DC Load: Chroma 63103A
Ambient Temperature at 25DegC

1.2 TEST Setup Photos



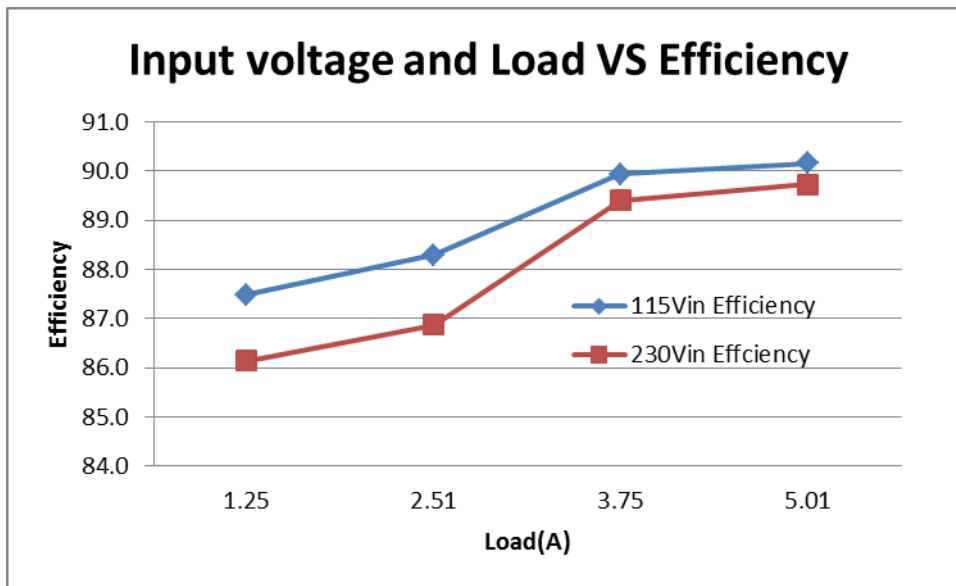
2 INPUT & Output CHARACTERISTICS

2.1: Efficiency Data VS Output

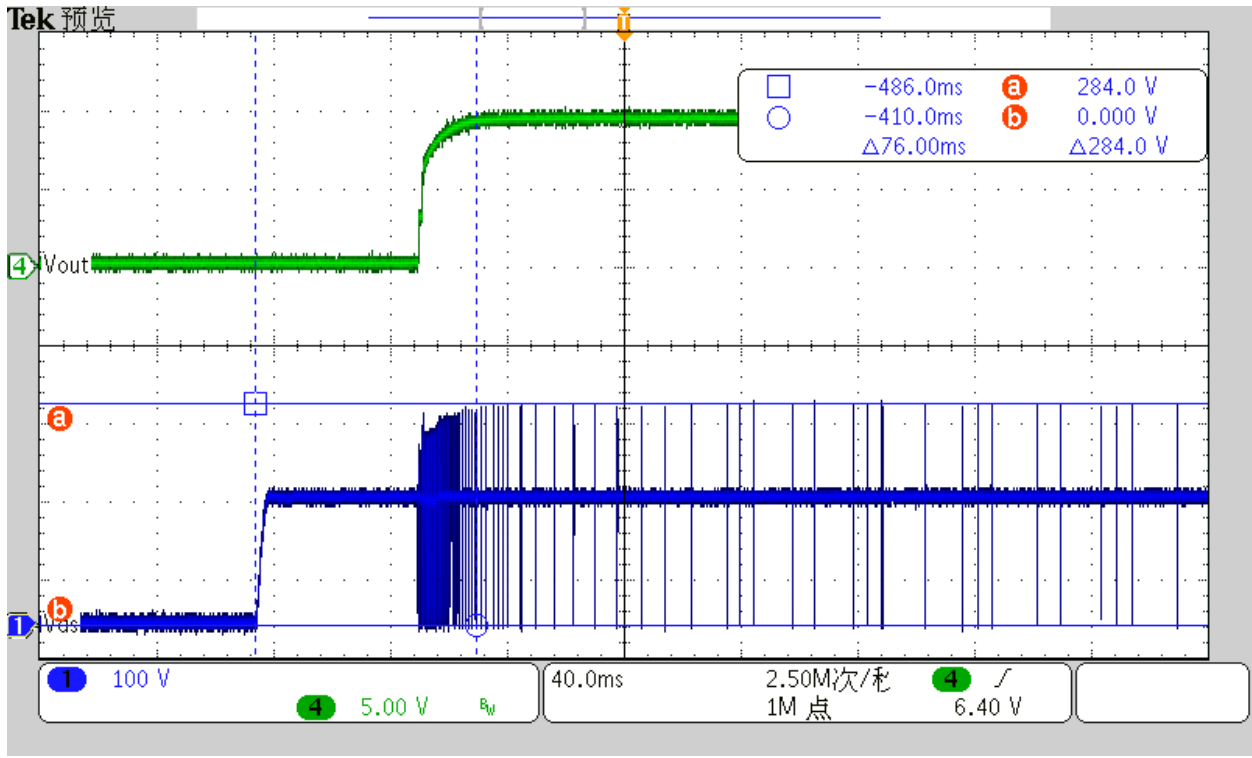
Note: The efficiency is measured from input(TP1,TP2) to output capacitor C11

Vin(V)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Efficiency	Average efficiency
115	0.053	8.996	0.00			
115	12.8	8.994	1.25	11.20	87.4807	88.96
115	25.49	8.984	2.51	22.50	88.2892	
115	37.45	8.983	3.75	33.68	89.9283	
115	49.74	8.951	5.01	44.84	90.1578	

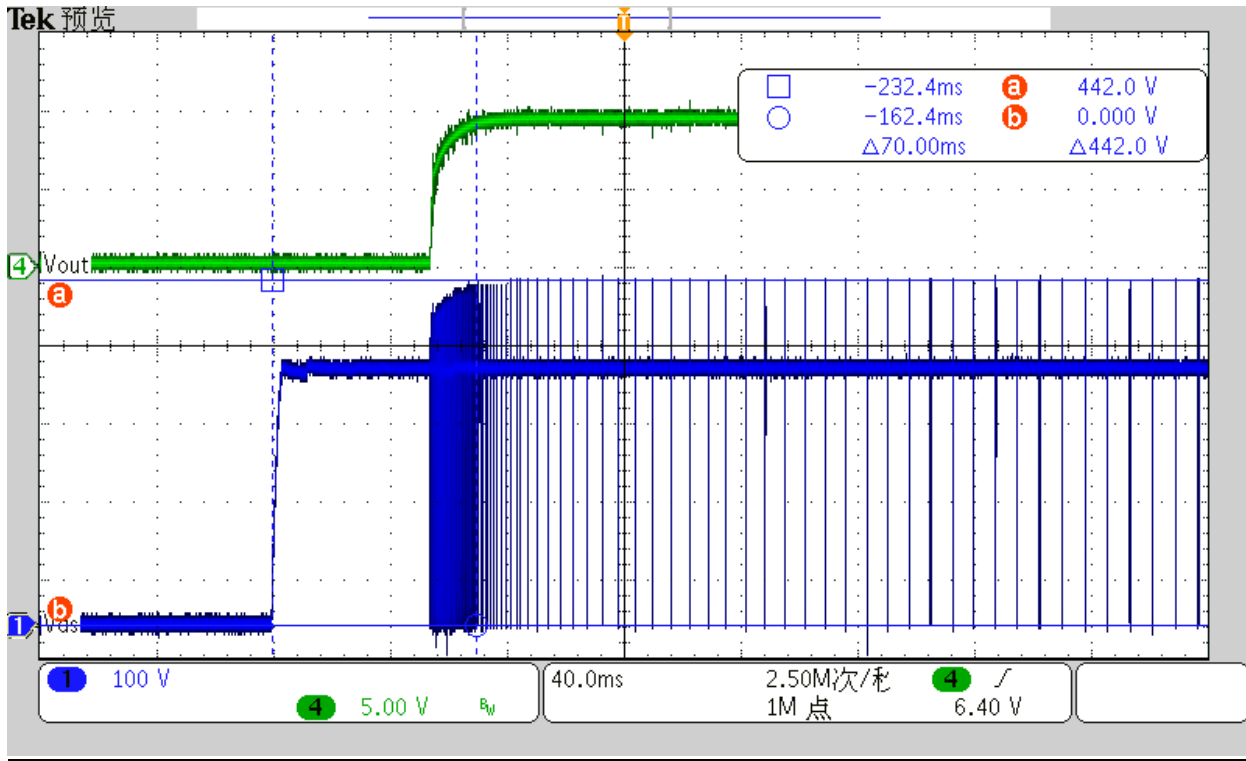
Vin(V)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Efficiency	Average efficiency
230	0.098	8.996	0.00			
230	13.05	8.993	1.25	11.24	86.1398	88.03
230	25.92	8.988	2.51	22.51	86.8632	
230	37.66	8.983	3.75	33.67	89.4030	
230	50.15	8.981	5.01	44.99	89.7205	



2.2: Startup

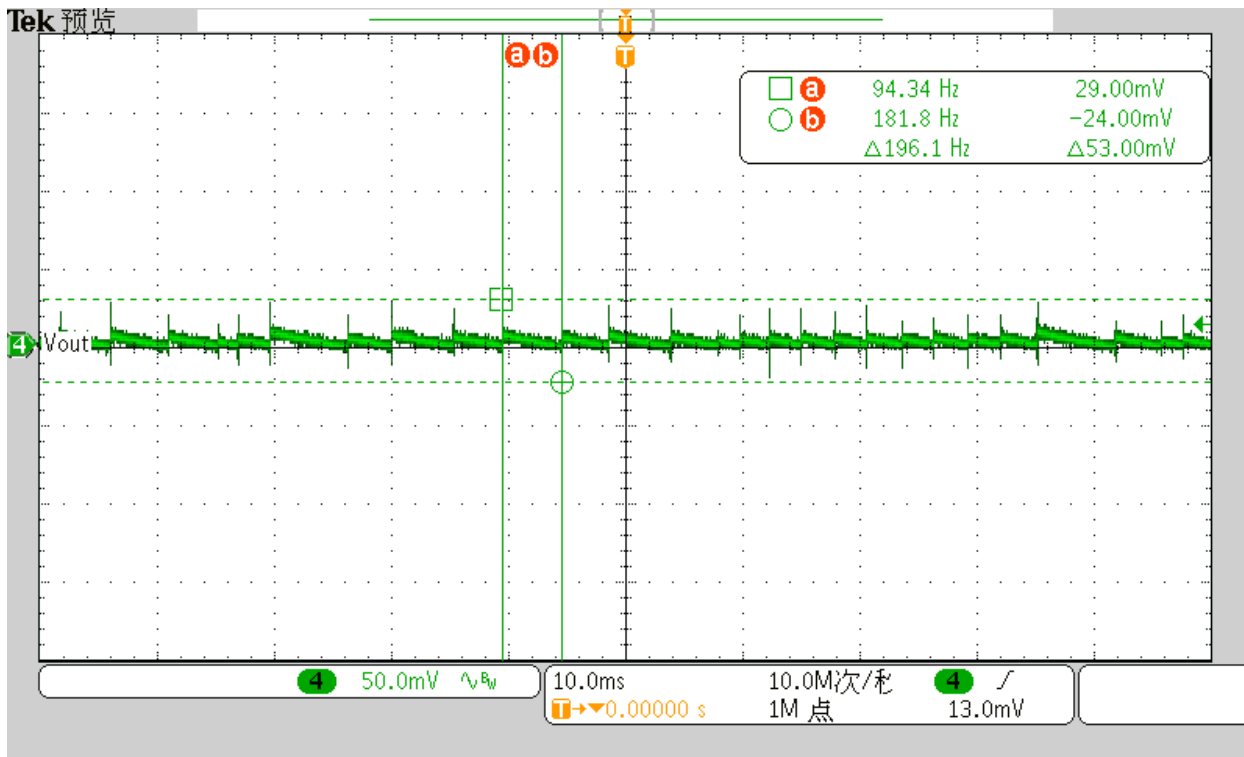


115Vin Startup with no load

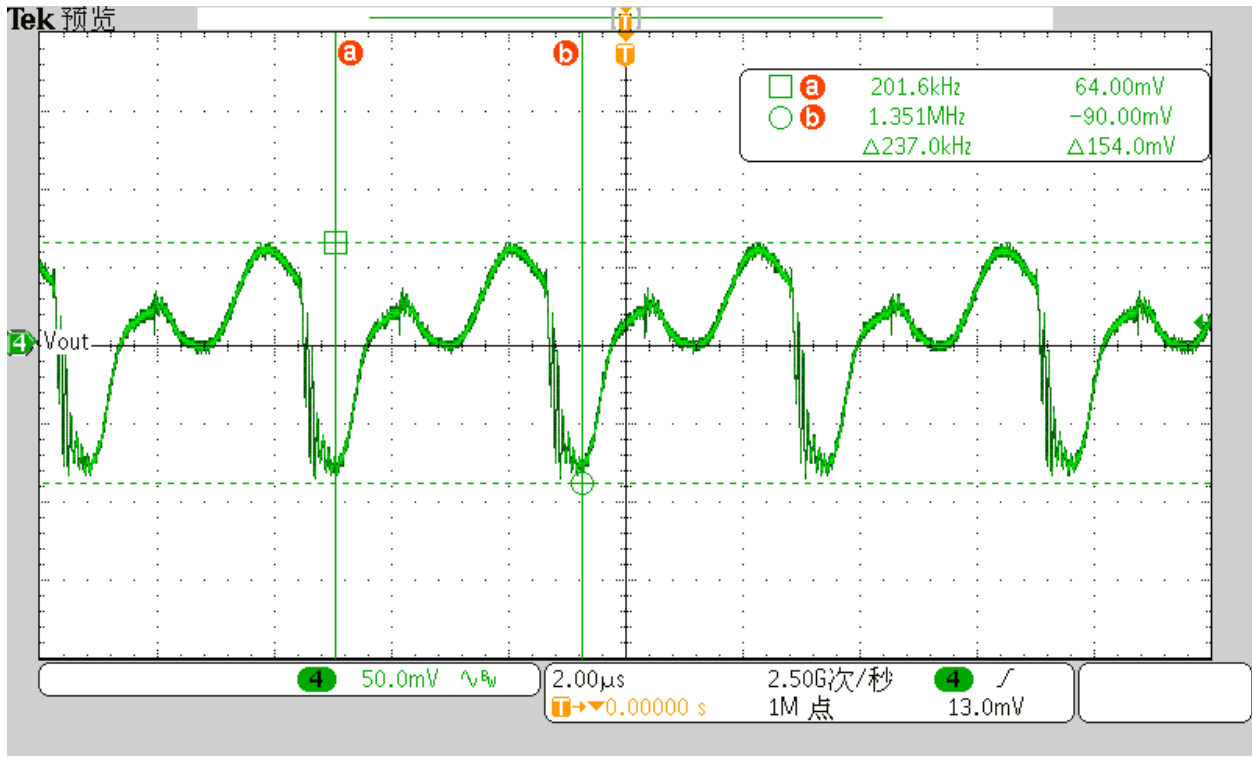


230Vin Startup with Full load

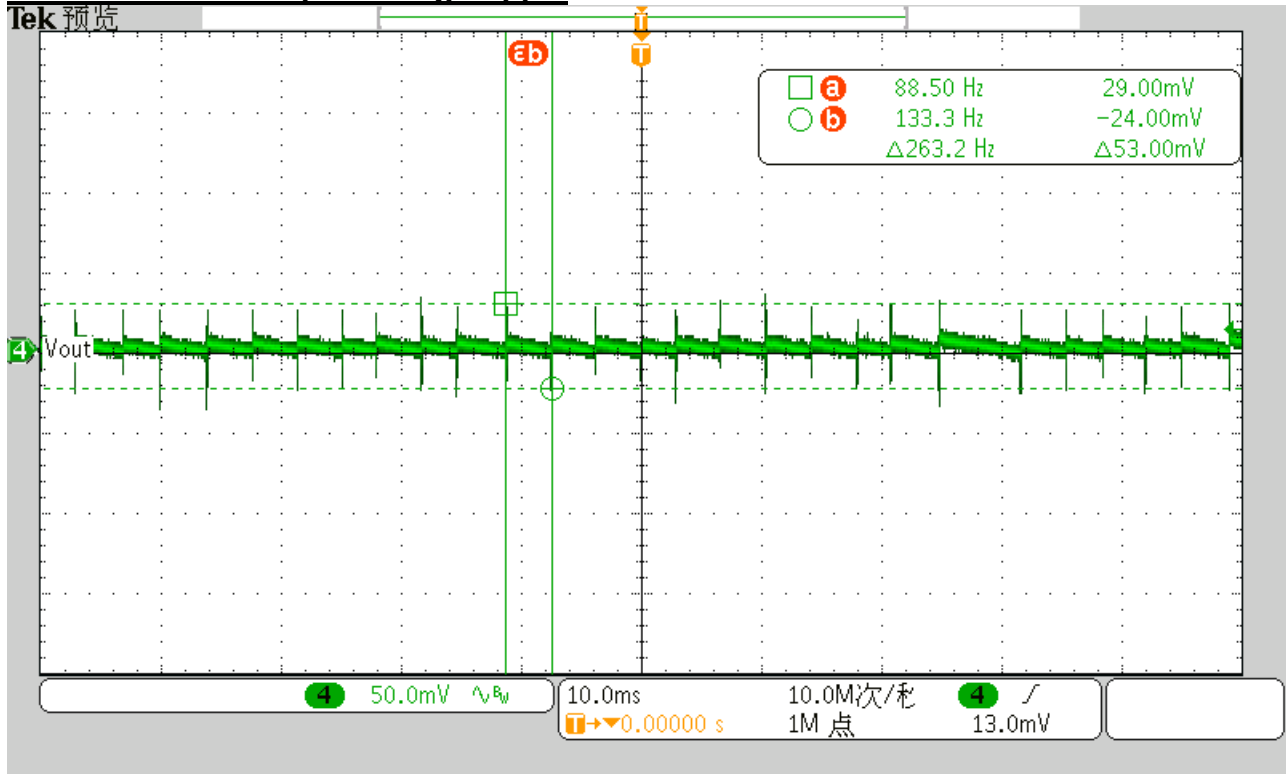
2.3: Output Voltage Ripple



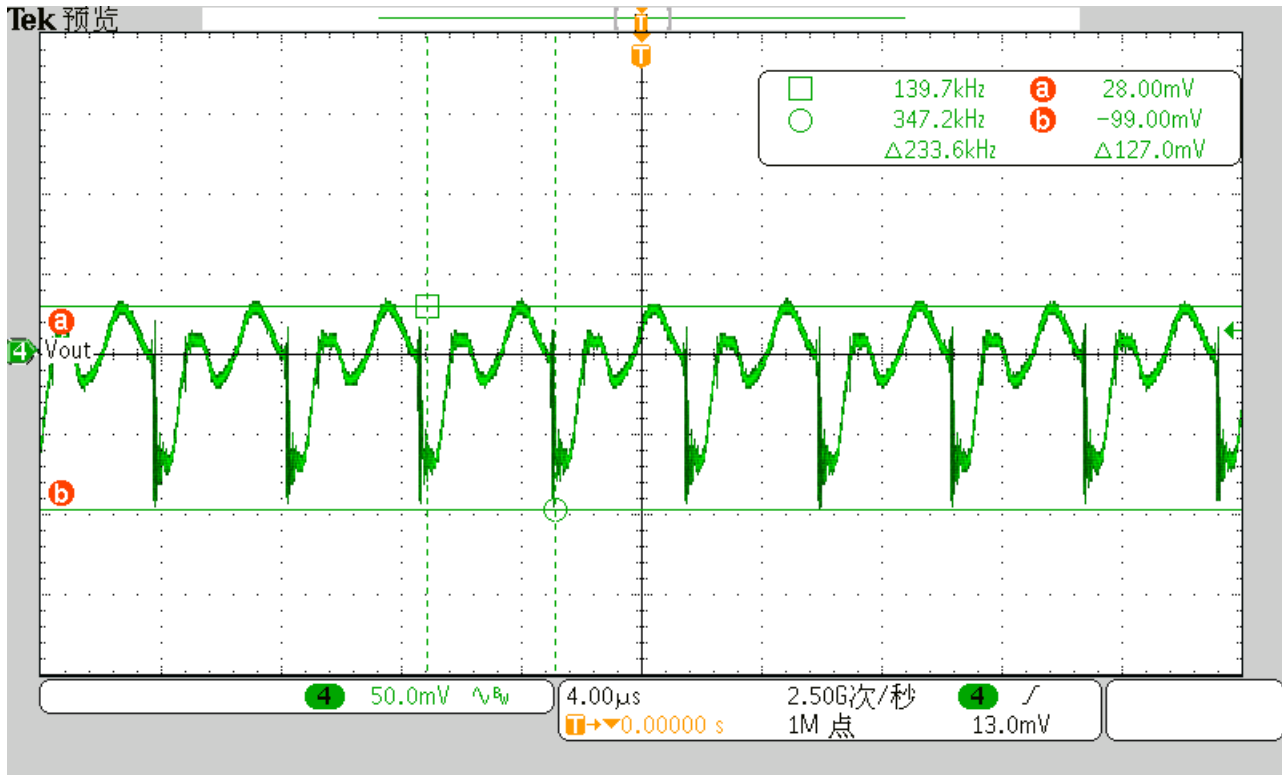
115Vin no load output voltage ripple



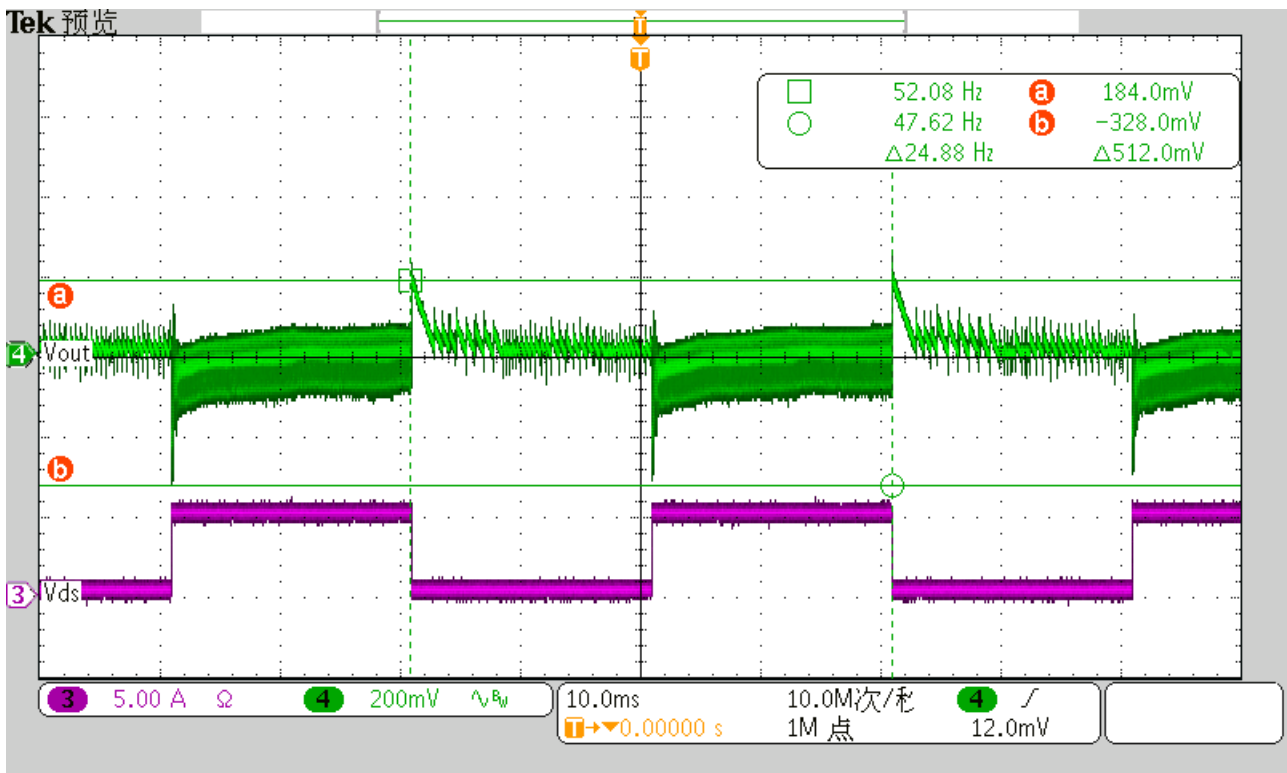
115Vin full load output voltage ripple



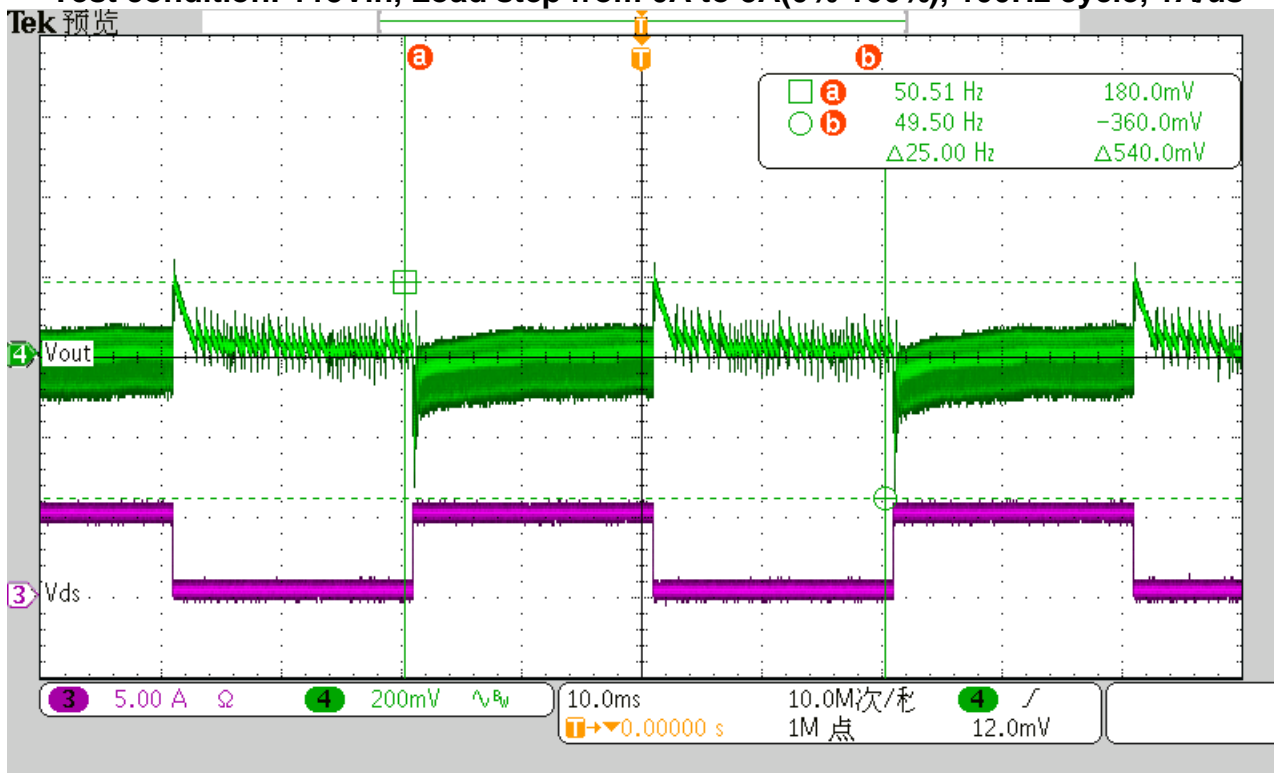
230Vin no load output voltage ripple



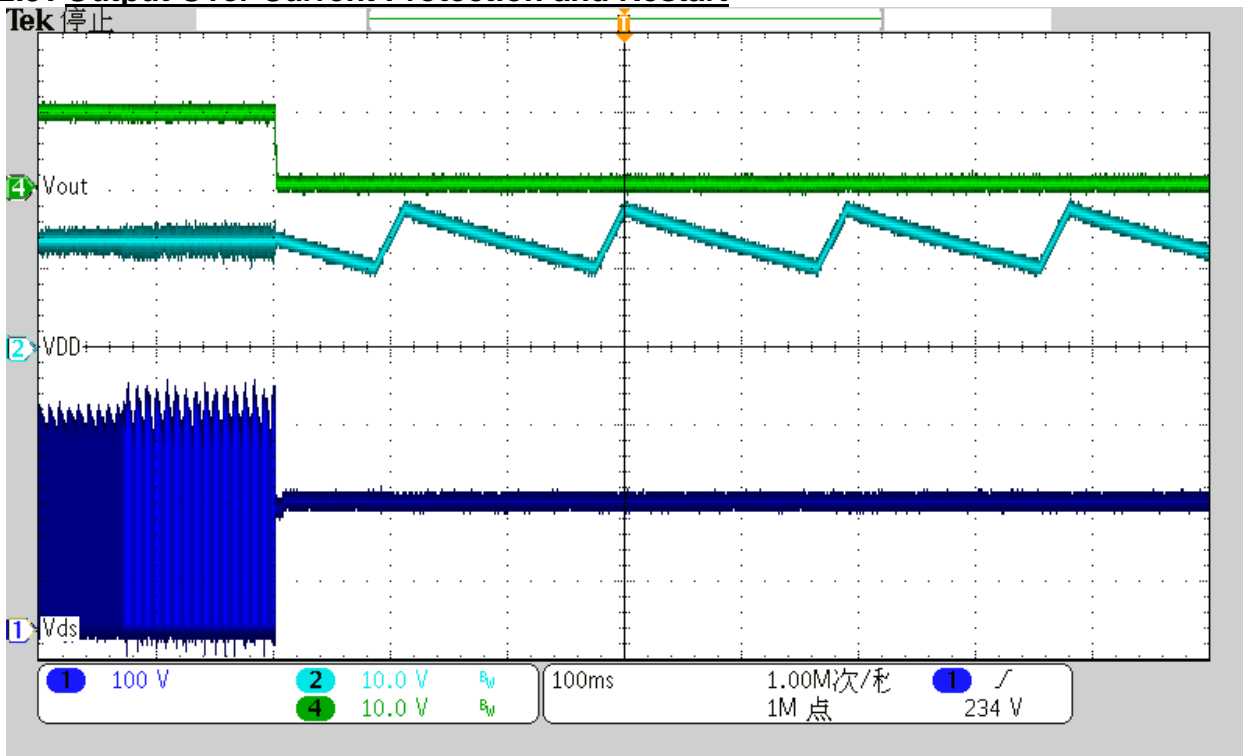
230Vin full load output voltage ripple
2.4: Dynamic Response



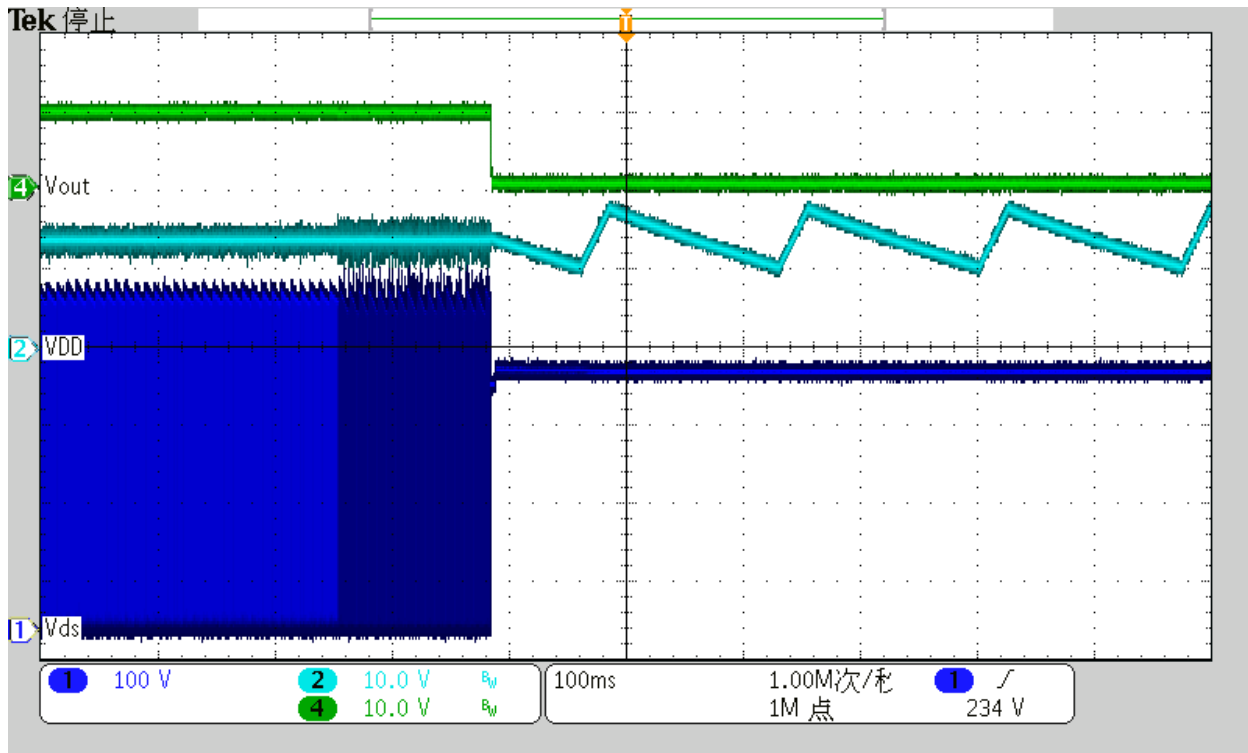
Test condition: 115Vin, Load step from 0A to 5A(0%-100%), 100Hz cycle, 1A/us



Test condition: 230Vin, Load step from 0A to 5A(0%-100%), 100Hz cycle, 1A/us
2.5: Output Over Current Protection and Restart

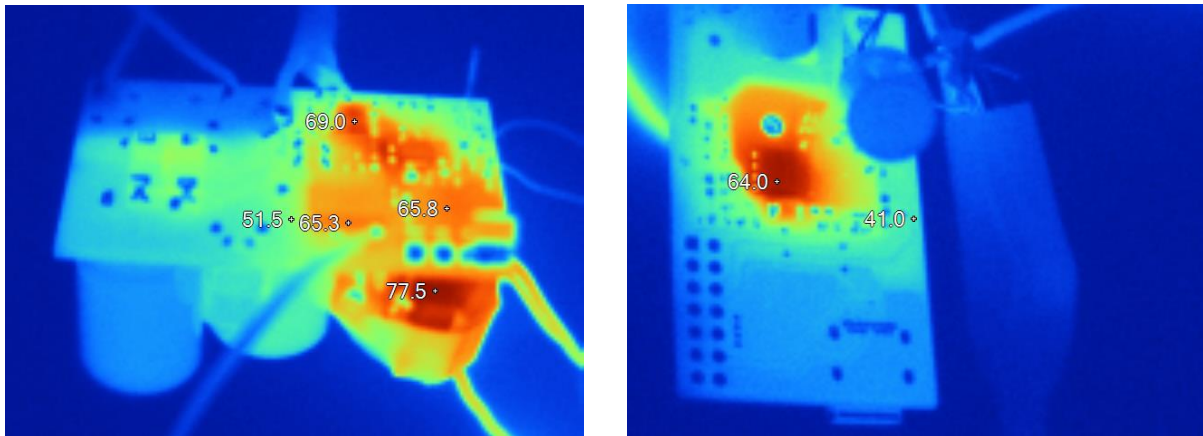


Vin=115Vac

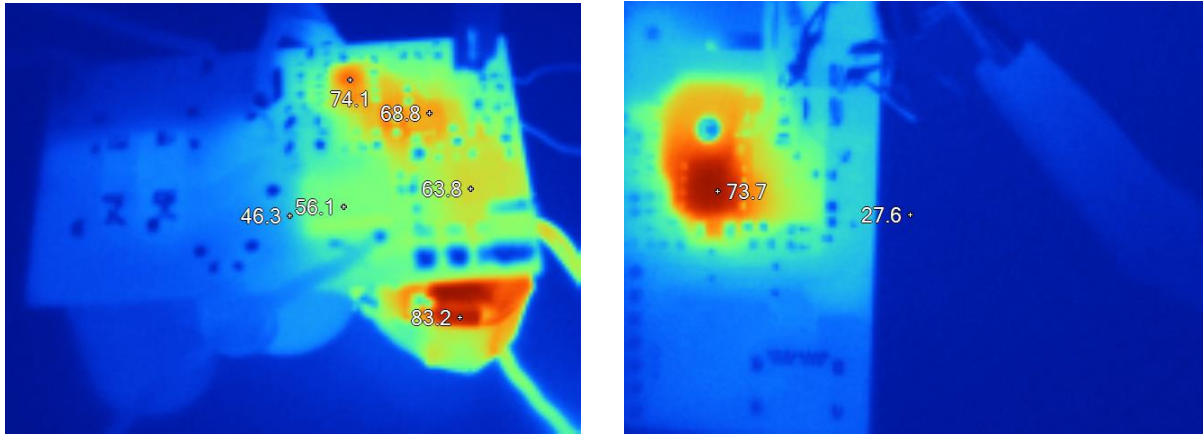


Vin=230Vac

2.6: Thermal image



115Vac Input, output is 9V/5A load (30 minutes) without fan cooling



230Vac Input, output is 9V/5A load (30 minutes) without fan cooling

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