Texas Instruments

PMP4461 Test Procedure

China Power Reference Design

REV A

31/3/2015

1 GENERAL

1.1 PURPOSE

To provide detailed data for evaluating and verifying the PMP4461.

1.2 REFERENCE DOCUMENTATION

Schematic: PMP4461_SCH_RevA
Assembly: PMP4461_PCB_RevA
BOM

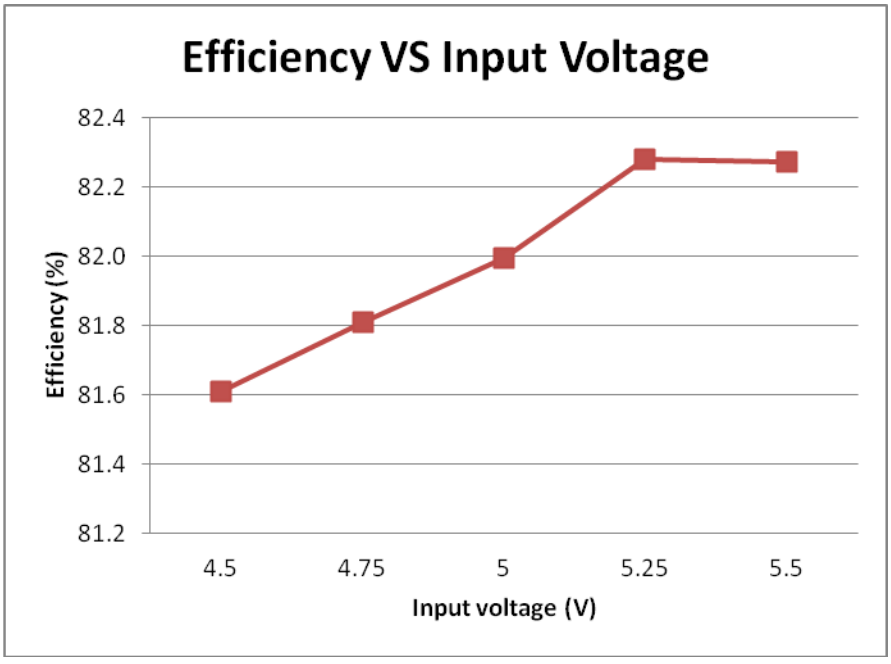
1.3 TEST EQUIPMENTS

Multi-meter(voltage): Fluke 287
DC Source: TDK-Lambda GEN100-33
Load: Chroma 63110A module

2 INPUT CHARACTERISTICS

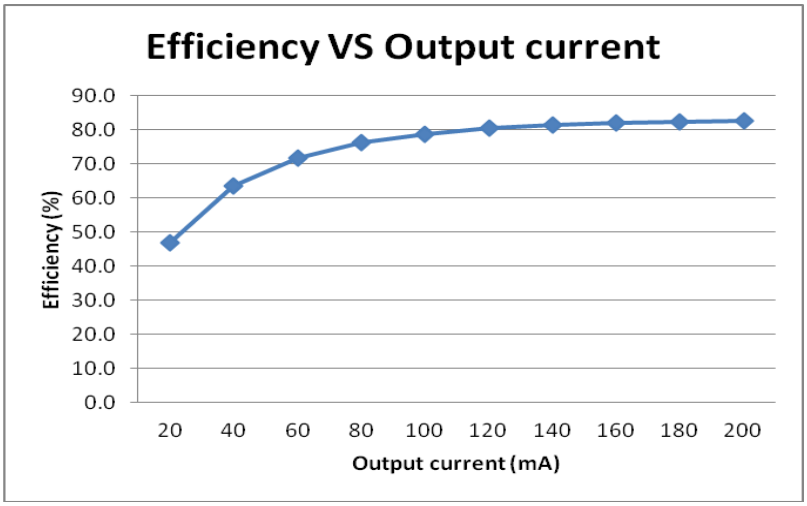
2.1 Full load Efficiency

Vin (V)	Iin (mA)	Vo (V)	Io (mA)	Effi.(%)
4.49	254.5	4.665	199.9	81.6
4.76	242.6	4.726	199.9	81.8
5.00	231.9	4.756	199.9	82.0
5.25	219.9	4.752	199.9	82.3
5.50	210.9	4.774	199.9	82.3



2.2 Efficiency versus output current

Io (mA)	Vin (V)	Iin (mA)	Vo (V)	Effi.(%)
20	5.000	45.5	5.320	46.8
40	4.994	65.2	5.180	63.6
60	4.988	85.3	5.091	71.8
80	4.982	105.8	5.018	76.2
100	4.976	126.5	4.956	78.7
120	4.970	147.1	4.900	80.4
140	4.964	168.0	4.850	81.4
160	4.958	188.9	4.799	82.0
180	4.952	209.6	4.754	82.4
200	4.946	230.6	4.711	82.6



3 OUTPUT CHARACTERISTICS

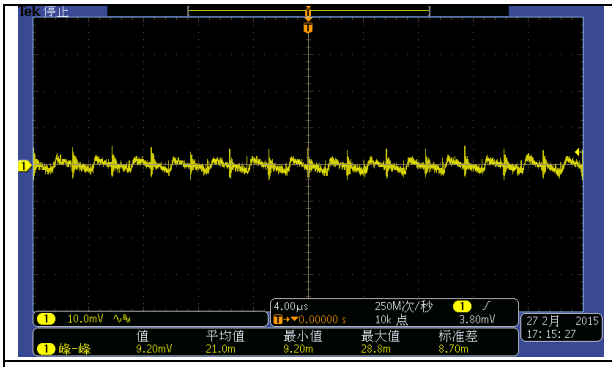
3.1 Line and load Regulation (Io:100%=200mA)

Vin (V)	Io=10%	Io=30%	Io=50%	Io=70%	Io=100%
	Vo (V)				
4.5	5.292	5.051	4.908	4.794	4.652
5.0	5.327	5.096	4.961	4.853	4.718
5.5	5.343	5.119	4.989	4.886	4.757

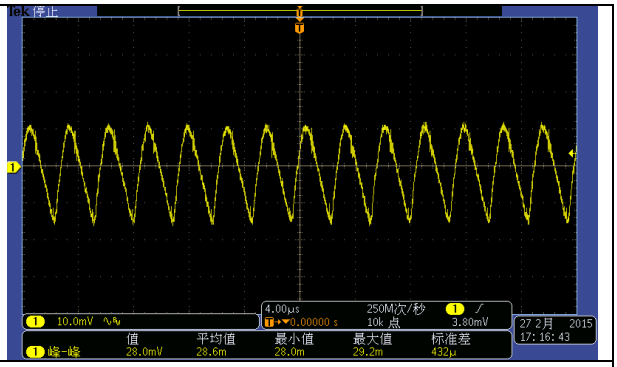
Line Regulation Ratio: ±1.2%; and Load Regulation Ratio: ±7.1%

3.2 Ripple and noise

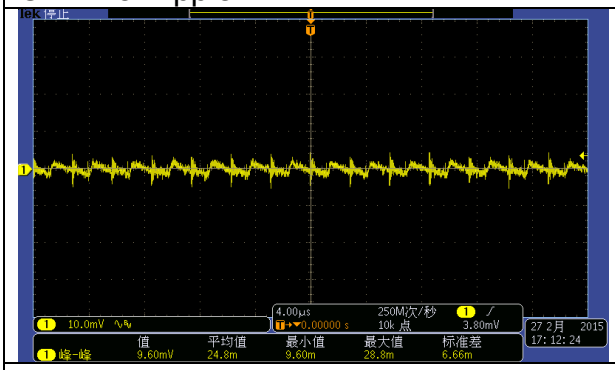
Vin (V)	Io=20mA	Io=200mA
	Vo_pp (mV)	Vo_pp (mV)
4.5	9.2	28
5.0	9.6	27.6
5.5	10.8	26.8



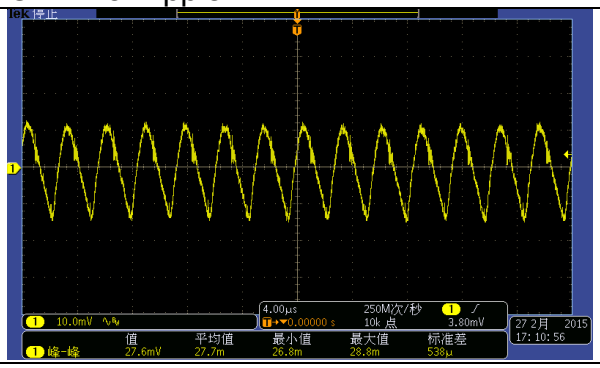
Vin=4.5V Io=20mA
Ch1: Vo Ripple



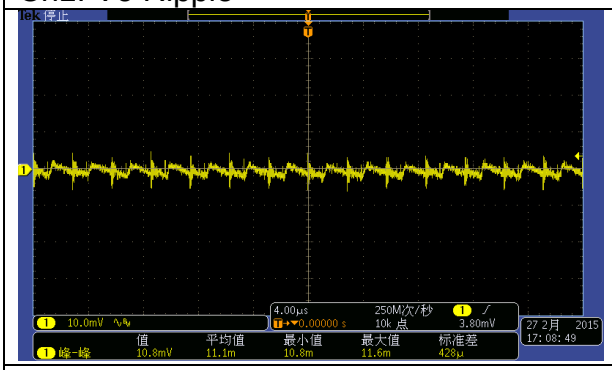
Vin=4.5V Io=200mA
Ch1: Vo Ripple



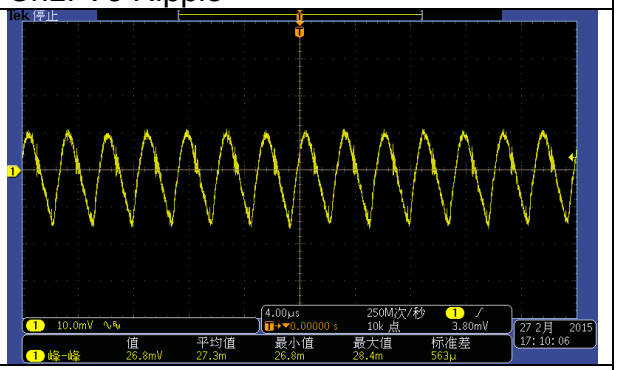
Vin=5V Io=20mA
Ch1: Vo Ripple



Vin=5V Io=200mA
Ch1: Vo Ripple

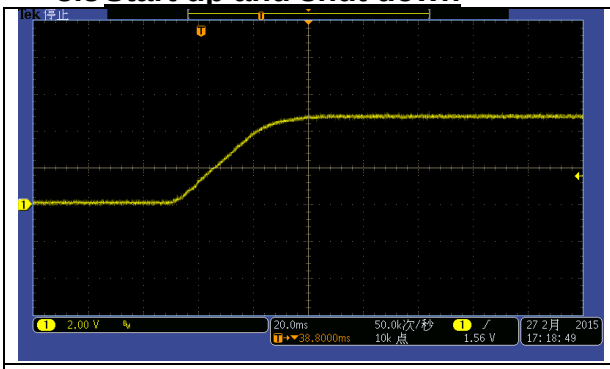
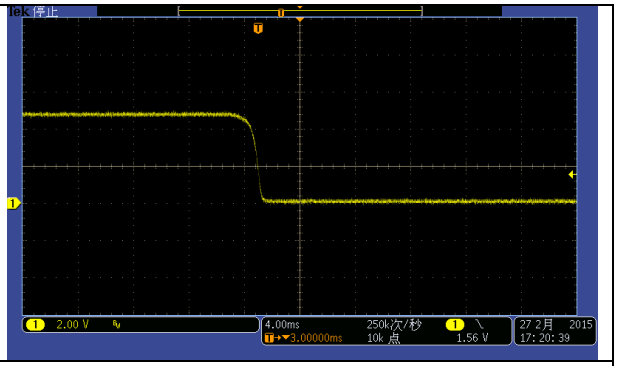


Vin=5.5V Io=20mA
Ch1: Vo Ripple

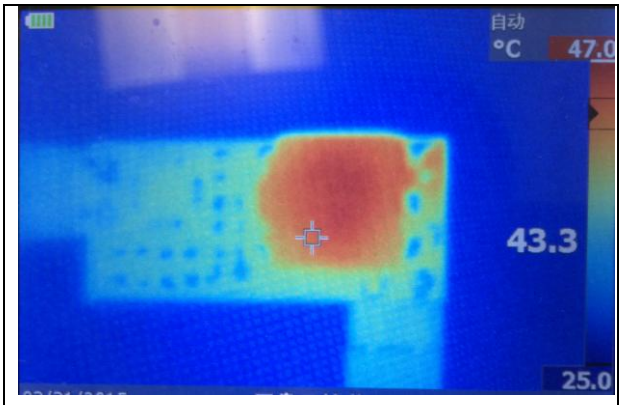


Vin=5.5V Io=200mA
Ch1: Vo Ripple

3.3 Start up and shut down

	
Vin=5V Io=200mA Ch1: Vo Start up	Vin=5V Io=200mA Ch1: Vo shut down

4. Thermal


Vin=5V Io=200mA Room ambient

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