

Texas Instruments

PMP4440 Test Procedure

China Power Reference Design

REV A

17/7/2014

1 GENERAL

1.1 PURPOSE

To provide detailed data for evaluating and verifying the PMP4440.

1.2 REFERENCE DOCUMENTATION

Schematic: PMP4440SCH_RevA
Assembly: PMP4440_PCB_RevA
BOM

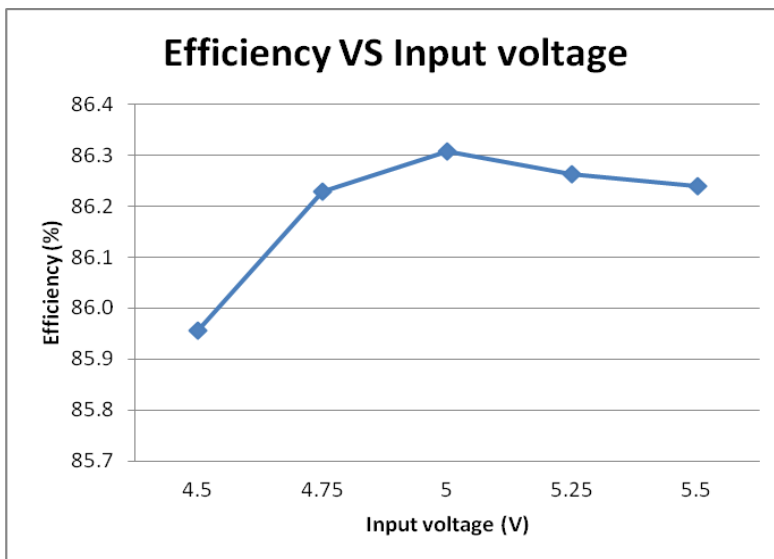
1.3 TEST EQUIPMENTS

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

2 INPUT CHARACTERISTICS

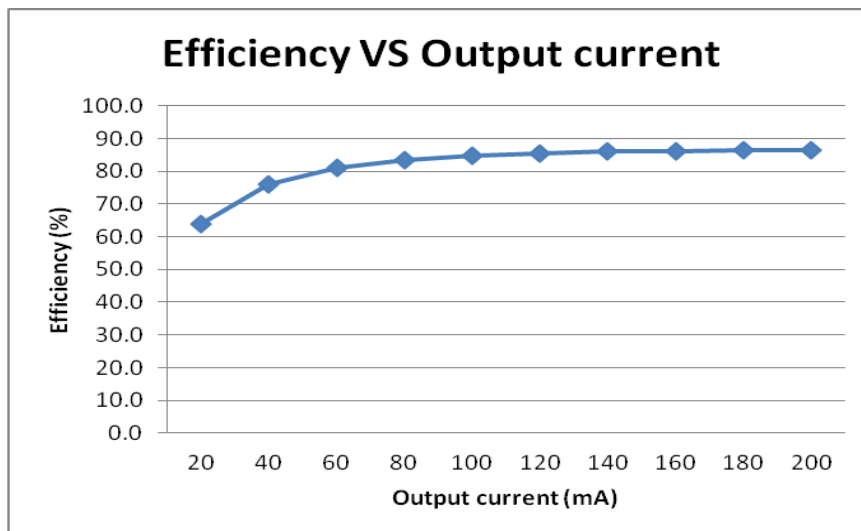
2.1 Full load Efficiency

Vin (V)	Iin (mA)	Vo (V)	Io (mA)	Effi.(%)
4.50	250.1	4.84	200	86.0
4.76	237.4	4.87	200	86.2
5.01	226.5	4.89	200	86.3
5.26	216.6	4.91	200	86.3
5.49	208.1	4.93	200	86.2



2.2 Efficiency versus output current

Io (mA)	Vin (V)	Iin (mA)	Vo (V)	Effi.(%)
20	5.06	32.3	5.21	63.8
40	5.06	53.4	5.14	76.2
60	5.05	74.8	5.10	81.0
80	5.04	96.4	5.06	83.3
100	5.04	117.9	5.03	84.6
120	5.03	139.7	5.00	85.4
140	5.02	161.3	4.98	86.0
160	5.02	183.6	4.95	86.0
180	5.00	205.2	4.92	86.3
200	5.01	226.5	4.89	86.3



3 OUTPUT CHARACTERISTICS

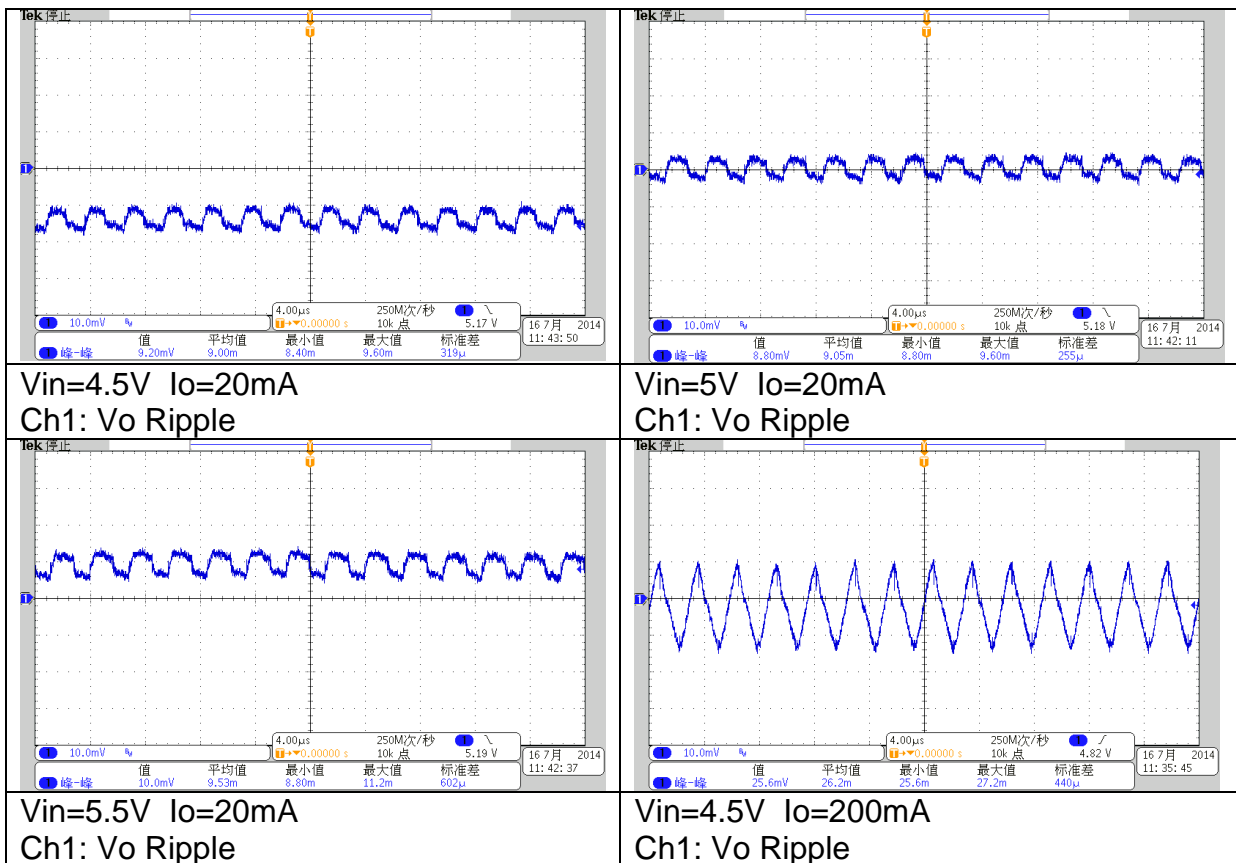
3.1 Line and load Regulation (Io:100%=200mA)

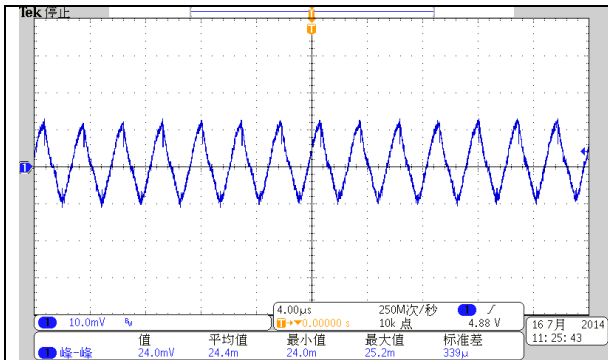
Vin (V)	Io=10%	Io=30%	Io=50%	Io=70%	Io=100%
	Vo (V)				
4.5	5.20	5.08	5.01	4.94	4.84
5.0	5.21	5.10	5.03	4.98	4.89
5.5	5.21	5.10	5.04	4.99	4.93

Line Regulation Ratio: $\pm 0.9\%$; and Load Regulation Ratio: $\pm 3.6\%$

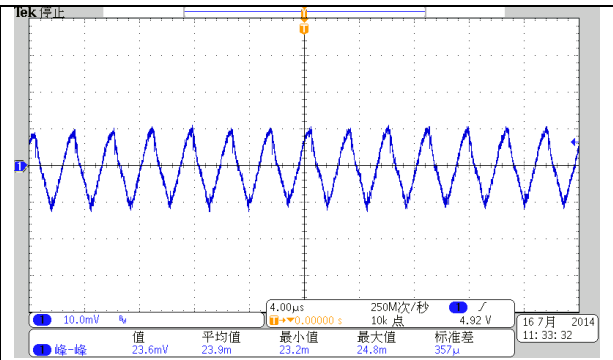
3.2 Ripple and noise

Vin (V)	Io=20mA	Io=200mA
	Vo (mV)	Vo (mV)
4.5	9.2	25.6
5.0	8.8	24.0
5.5	10.0	23.6



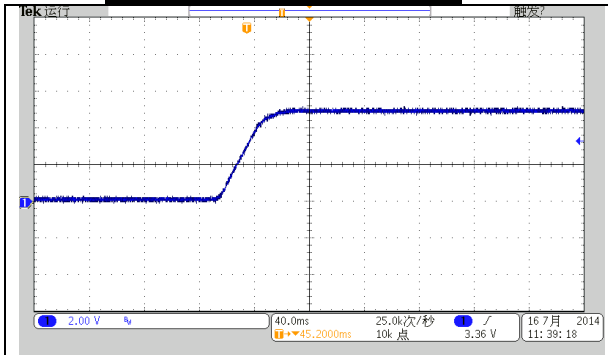


Vin=5V Io=200mA
Ch1: Vo Ripple

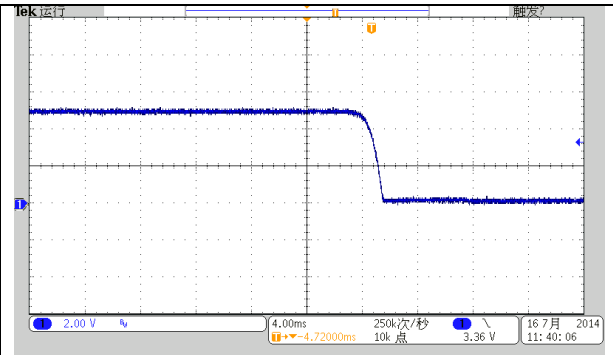


Vin=5.5V Io=20mA
Ch1: Vo Ripple

3.3 Start up and shut down

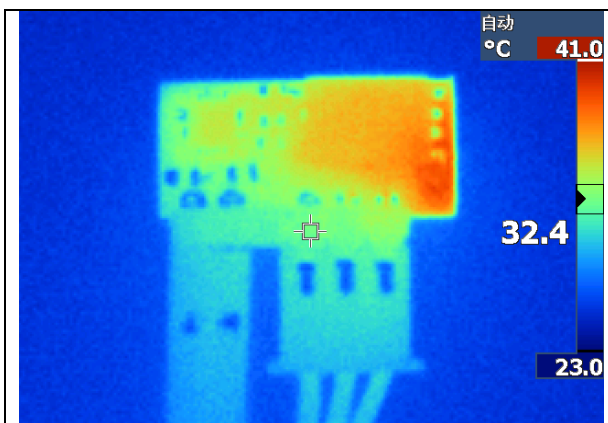


Vin=5V Io=200mA
Ch1: Vo Start up

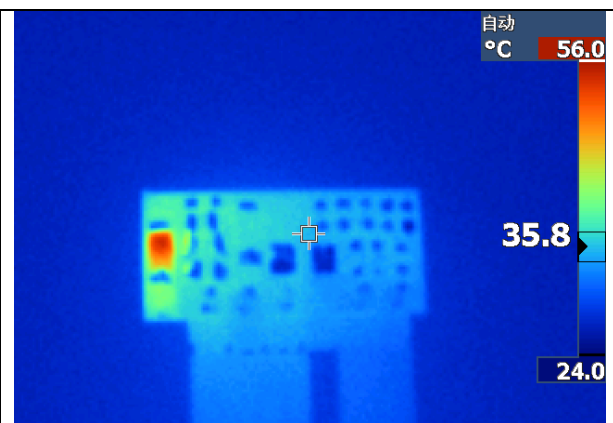


Vin=5V Io=200mA
Ch1: Vo shut down

4. Thermal



Vin=5V Io=200mA
Room ambient
Top View



Vin=5V Io=200mA
Room ambient
Bottom View

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