



**Texas Instruments**

**PMP4467 Test Procedure**

**China Power Reference Design**

**REV A**

**13/5/2015**

# 1 GENERAL

## 1.1 PURPOSE

To provide detailed data for evaluating and verifying the EVM.

## 1.2 REFERENCE DOCUMENTATION

Schematic: PMP4467\_SCH\_RevA

Assembly: PMP4467\_PCB\_RevA

BOM

## 1.3 TEST EQUIPMENTS

Multi-meter(voltage): Fluke 287

Multi-meter(current): Fluke 287

DC Source: TDK-Lambda GEN100-33

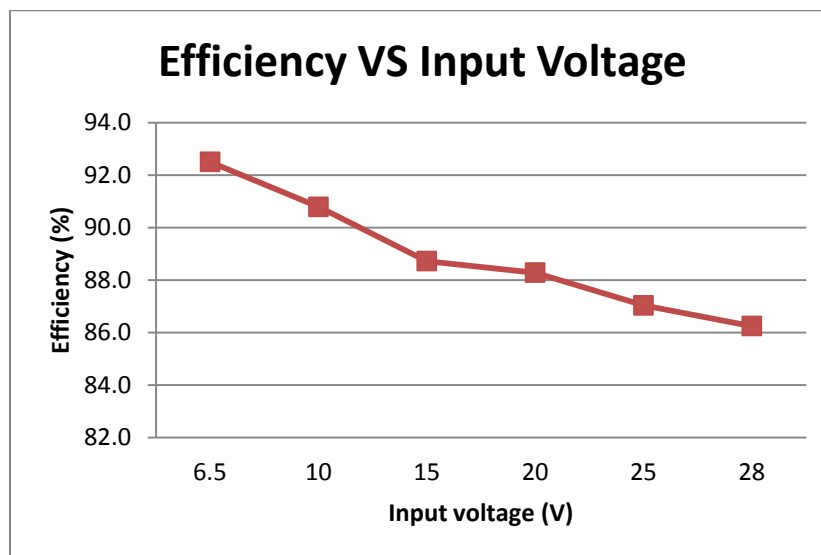
Load: Chroma 63110A module

Oscilloscope: Tek DPO3054

# 2 INPUT CHARACTERISTICS

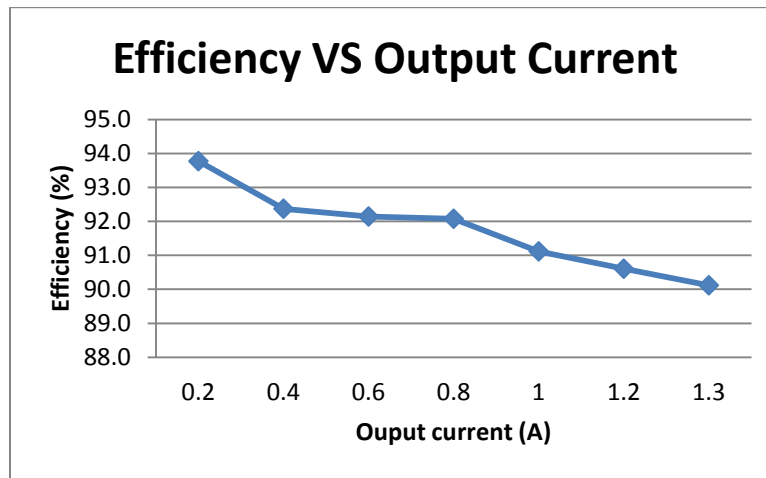
## 2.1 Full load Efficiency

| Vin(V) | Iin(mA) | Vo(V)  | Io(A) | Effi.(%) |
|--------|---------|--------|-------|----------|
| 6.57   | 1080.0  | 5.0489 | 1.3   | 92.5     |
| 10.00  | 723.0   | 5.0491 | 1.3   | 90.8     |
| 15.09  | 490.3   | 5.0495 | 1.3   | 88.7     |
| 20.00  | 371.8   | 5.0499 | 1.3   | 88.3     |
| 24.98  | 302.0   | 5.0507 | 1.3   | 87.0     |
| 27.98  | 272.1   | 5.0512 | 1.3   | 86.3     |



## 2.2 Efficiency versus output current

| Vin (V) | Iin(mA) | Vo(V)  | Io(A) | Effi.(%) |
|---------|---------|--------|-------|----------|
| 12.10   | 88.92   | 5.0445 | 0.200 | 93.8     |
| 12.07   | 176.53  | 5.0482 | 0.390 | 92.4     |
| 12.06   | 271.9   | 5.037  | 0.600 | 92.1     |
| 12.06   | 361.4   | 5.0479 | 0.795 | 92.1     |
| 11.98   | 456.4   | 5.0305 | 0.990 | 91.1     |
| 12.00   | 556.3   | 5.0483 | 1.198 | 90.6     |
| 12.06   | 605.2   | 5.0487 | 1.303 | 90.1     |

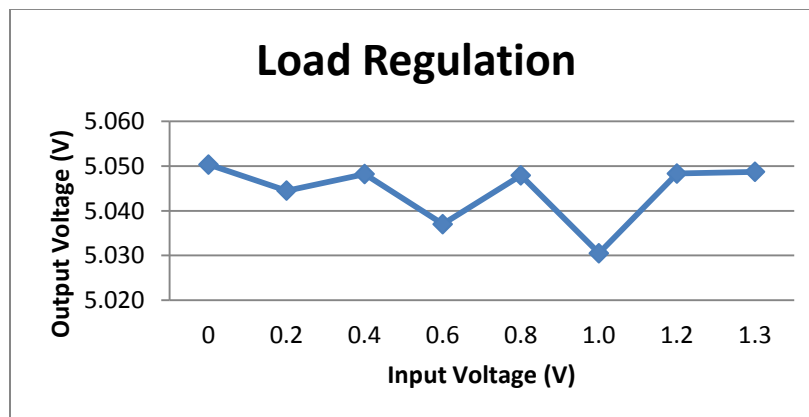


## 3 OUTPUT CHARACTERISTICS

### 3.1 Load Regulation

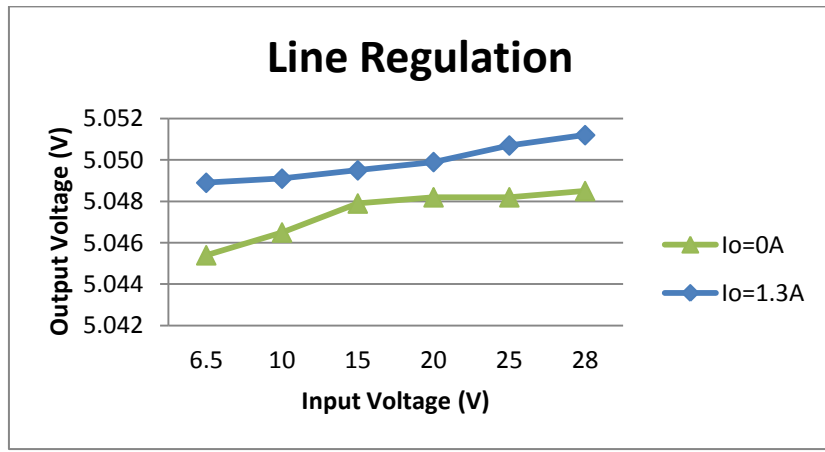
Vin=12V

| Io (A) | 0     | 0.2   | 0.4   | 0.6   | 0.8   | 1.0   | 1.2   | 1.3   |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|
| Vo (V) | 5.050 | 5.045 | 5.048 | 5.037 | 5.048 | 5.031 | 5.048 | 5.049 |



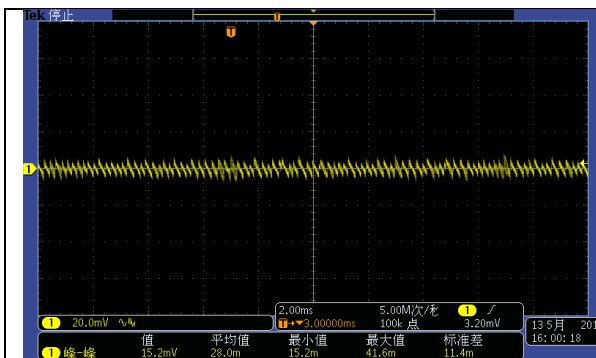
### 3.2 Line Regulation

| Vin (V) | Vo (V) |         |
|---------|--------|---------|
|         | Io=0A  | Io=1.3A |
| 6.5     | 5.045  | 5.049   |
| 10      | 5.047  | 5.049   |
| 15      | 5.048  | 5.050   |
| 20      | 5.048  | 5.050   |
| 25      | 5.048  | 5.051   |
| 28      | 5.049  | 5.051   |

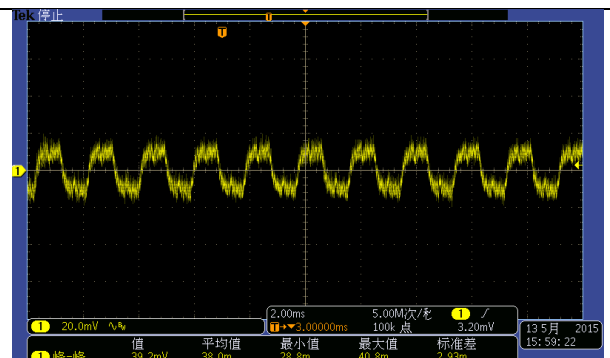


### 3.3 Ripple and noise

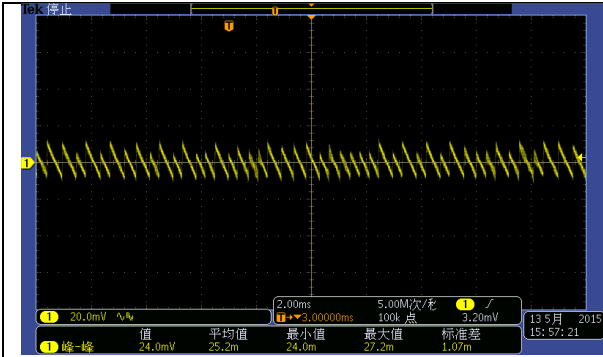
| Vin (V) | Io=0A      | Io=1.3A    |
|---------|------------|------------|
|         | Vo_pp (mV) | Vo_pp (mV) |
| 6.5     | 15.2       | 39.2       |
| 12      | 24.0       | 25.6       |
| 28      | 34.4       | 28.8       |



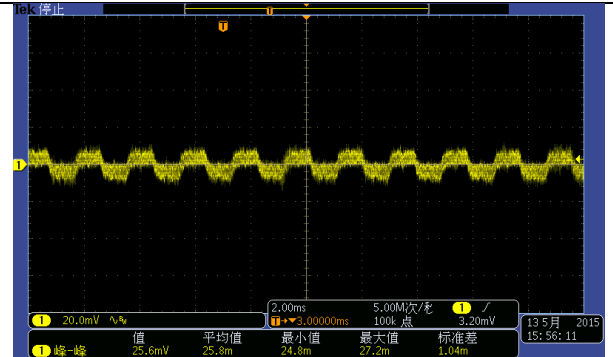
Vin=6.5V Io=0A  
Ch1: Vout Ripple



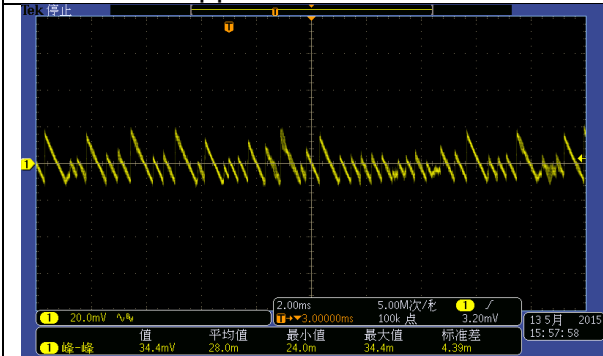
Vin=6.5V Io=1.3A  
Ch1: Vout Ripple



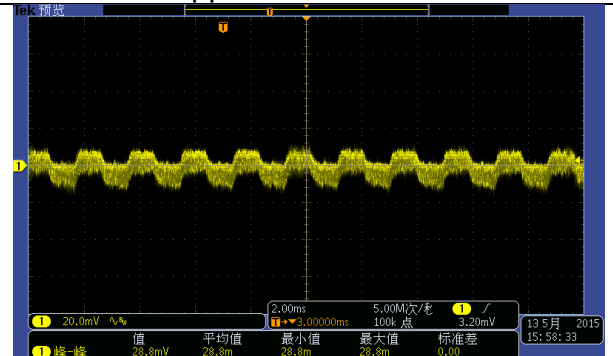
Vin=12V Io=0A  
Ch1: Vout Ripple



Vin=12V Io=1.3A  
Ch1: Vout Ripple

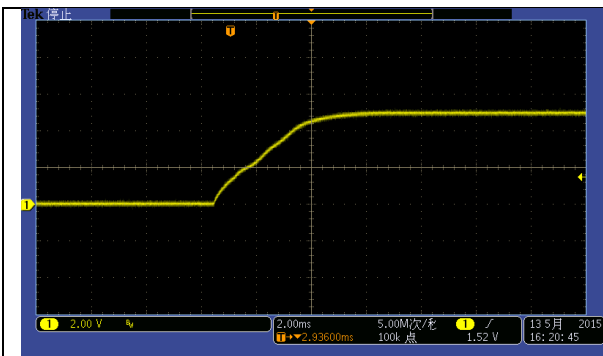


Vin=28V Io=0A  
Ch1: Vout Ripple

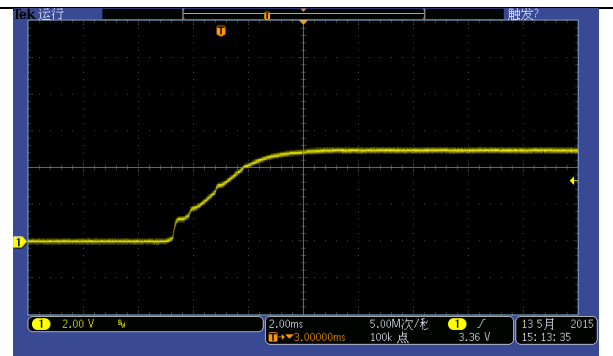


Vin=28V Io=1.3A  
Ch1: Vout Ripple

### 3.4 Start up

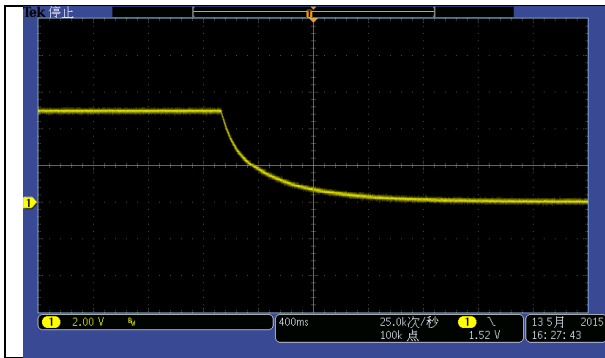


Vin=12V Io=0A  
Ch1: Vout

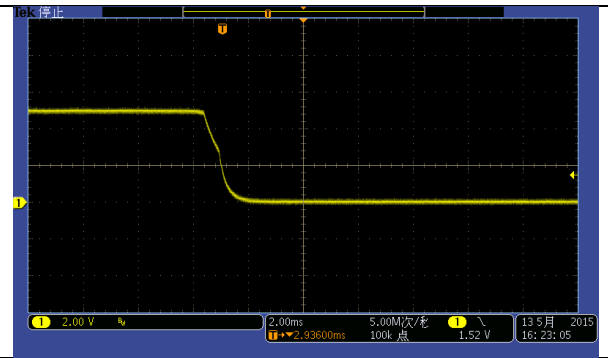


Vin=12V Io=1.3A  
Ch1: Vout

### 3.5 Shut down

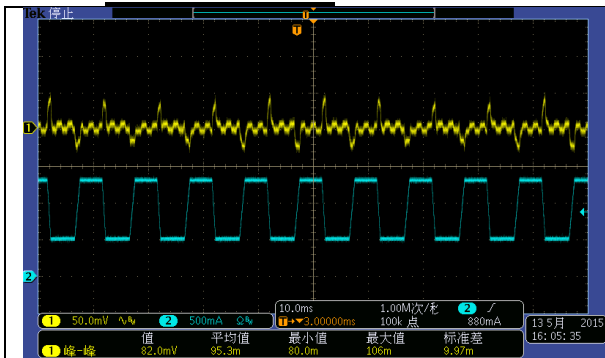


Vin=12V Io=0A  
Ch1: Vout



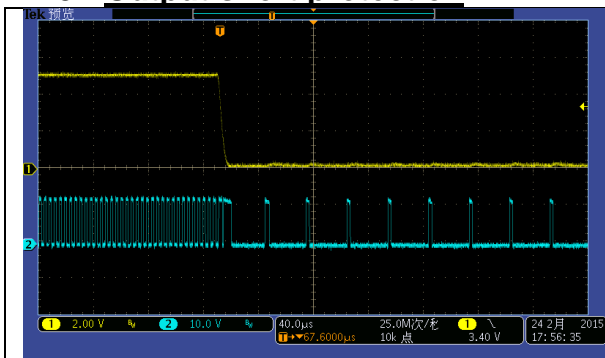
Vin=12V Io=1.3A  
Ch1: Vout

### 3.6 Load Transient



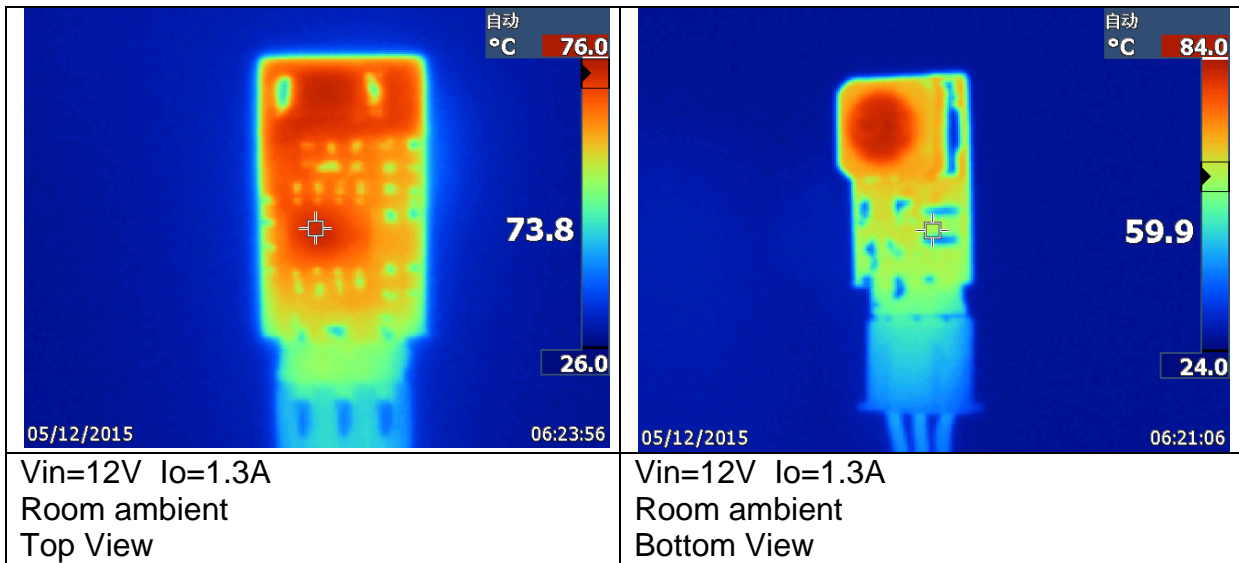
Vin=12V  
Io =0.5A to 1.3A  
Ch1: Vout  
Ch2: Iout

### 3.7 Output short protection



Vin=12V  
Output from full load to short  
Ch1: Vout  
Ch2: LX Pin of LM5405

## 4 Thermal



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Mailing Address: Texas Instruments, Post Office Box 655303, Dallas, Texas 75265  
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