**PMP11271 REV B** **TEST REPORT**
**TEXAS INSTRUMENTS** **08-11-2015**

All testing performed with 48VIN and 20MHz BW unless otherwise noted.

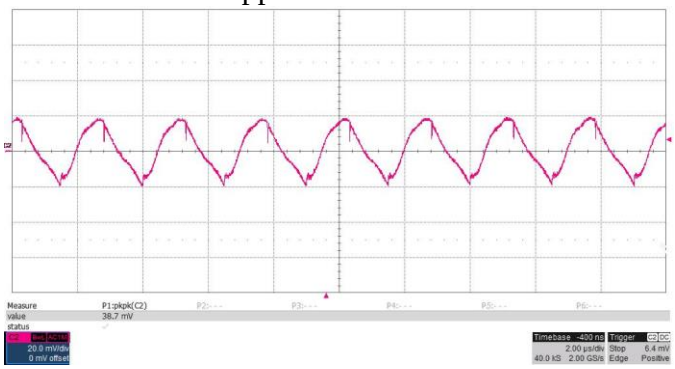
## Efficiency

| Flyback Converter, No TPS62082 | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | ----------AUX Input---------- | | | ---Converter Only-- | | ----------PoE Input---------- | | |
| | | | | | VDD/ | VDD/ | | | |
| J4 | J4 | J3 | J3 | J3 | PWRGND | PWRGND | J1 | J1 | J1 |
| Iout | Vout | Iin | Vin | Eff | Vin | Eff | Iin | Vin | Eff |
| 0.000 | 5.029 | 0.026 | 48.00 | 0.0% | 47.56 | 0.0% | 0.026 | 48.00 | 0.0% |
| 0.100 | 5.029 | 0.037 | 48.00 | 28.3% | 47.55 | 28.6% | 0.037 | 48.00 | 28.3% |
| 0.200 | 5.029 | 0.048 | 48.00 | 43.7% | 47.54 | 44.1% | 0.048 | 48.00 | 43.7% |
| 0.300 | 5.029 | 0.058 | 48.00 | 54.2% | 47.52 | 54.7% | 0.059 | 48.00 | 53.3% |
| 0.400 | 5.029 | 0.069 | 48.00 | 60.7% | 47.50 | 61.4% | 0.070 | 48.00 | 59.9% |
| 0.500 | 5.029 | 0.080 | 48.00 | 65.5% | 47.49 | 66.2% | 0.081 | 48.00 | 64.7% |
| 0.750 | 5.029 | 0.106 | 48.00 | 74.1% | 47.48 | 74.9% | 0.109 | 48.00 | 72.1% |
| 1.000 | 5.029 | 0.134 | 48.00 | 78.2% | 47.45 | 79.1% | 0.137 | 48.00 | 76.5% |
| 1.250 | 5.029 | 0.161 | 48.00 | 81.3% | 47.43 | 82.3% | 0.165 | 48.00 | 79.4% |
| 1.500 | 5.029 | 0.189 | 48.00 | 83.2% | 47.41 | 84.2% | 0.194 | 48.00 | 81.0% |
| 1.750 | 5.029 | 0.217 | 48.00 | 84.5% | 47.39 | 85.6% | 0.223 | 48.00 | 82.2% |
| 2.000 | 5.029 | 0.246 | 48.00 | 85.2% | 47.36 | 86.3% | 0.253 | 48.00 | 82.8% |

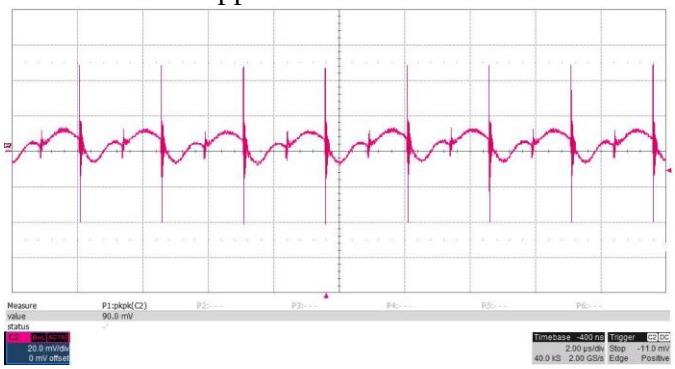
| TPS62082 | | | | |
|---|---|---|---|---|
| J5 | J5 | C29 | C29 | |
| Iout | Vout | Iin | Vin | Eff |
| 0.000 | 3.326 | 0.001 | 5.00 | 0.0% |
| 0.100 | 3.327 | 0.075 | 5.00 | 88.7% |
| 0.200 | 3.240 | 0.141 | 5.00 | 91.9% |
| 0.300 | 3.241 | 0.208 | 5.00 | 93.5% |
| 0.400 | 3.240 | 0.276 | 5.00 | 93.9% |
| 0.500 | 3.240 | 0.345 | 5.00 | 93.9% |
| 0.600 | 3.240 | 0.415 | 5.00 | 93.7% |
| 0.700 | 3.239 | 0.485 | 5.00 | 93.5% |
| 0.800 | 3.239 | 0.556 | 5.00 | 93.2% |
| 0.900 | 3.239 | 0.629 | 5.00 | 92.7% |
| 1.000 | 3.240 | 0.701 | 5.00 | 92.4% |
| 1.075 | 3.240 | 0.756 | 5.00 | 92.1% |

## Ripple and Noise

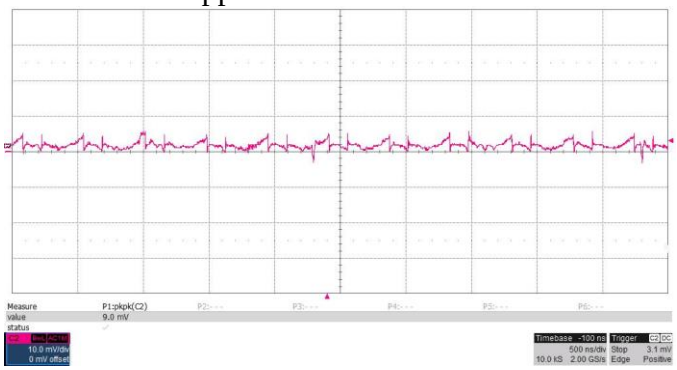
5V Output Ripple across C15, 2A load on 5V, no TPS62082
20mV/div, 2usec/div
Measured 38.7mVpp:




Input Ripple across C8, 2A load on 5V, no TPS62082
20mV/div, 2usec/div
Measured 90mVpp:

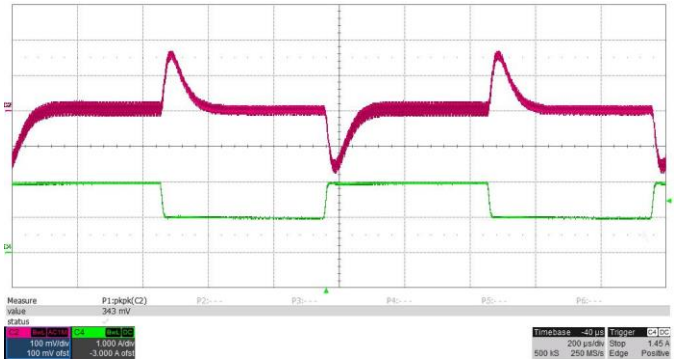



3.3V Output Ripple across C30, 1.075A load on 3.3V, 1.25A load on 5V
10mV/div, 2usec/div
Measured 9mVpp:

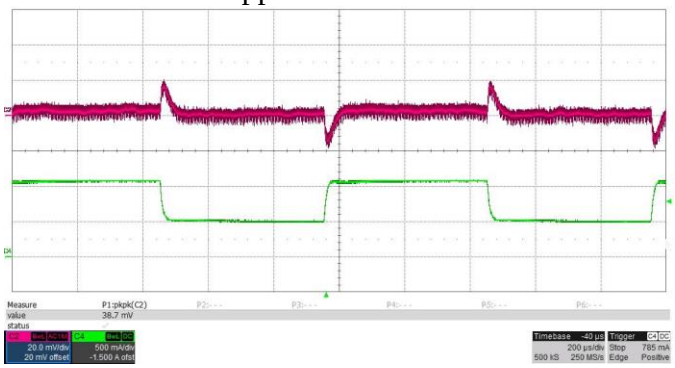


## Dynamic Loading

5V Load Step; 1A to 2A, no TPS62082
Slew Rate = 100mA/usec
100mV/div, 1A/div, 200usec/div
Measured 343mVpp:

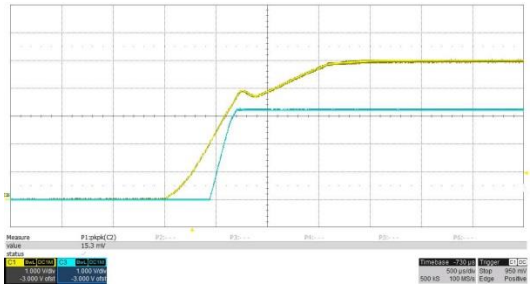


3.3V Load Step; 500mA to 1.075A, 1.25A load on 5V
Slew Rate = 100mA/usec
20mV/div, 500mA/div, 200usec/div
Measured 38.7mVpp:

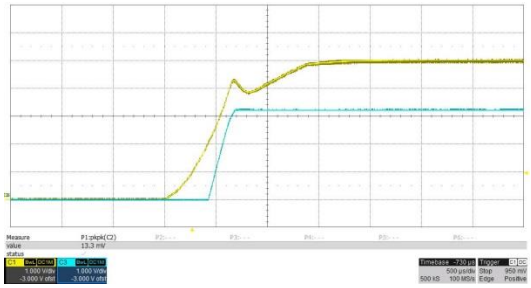


## Turn On Response

3.3V/1.075A, 5V/1.25A
500usec/div, 1V/div, 1V/div:

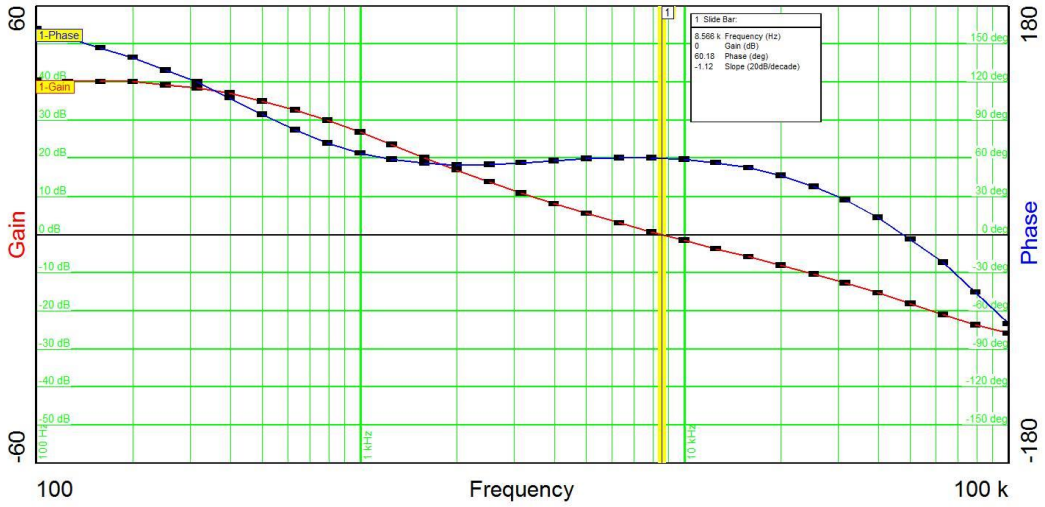


3.3V/0A, 5V/0A
500usec/div, 1V/div, 1V/div:



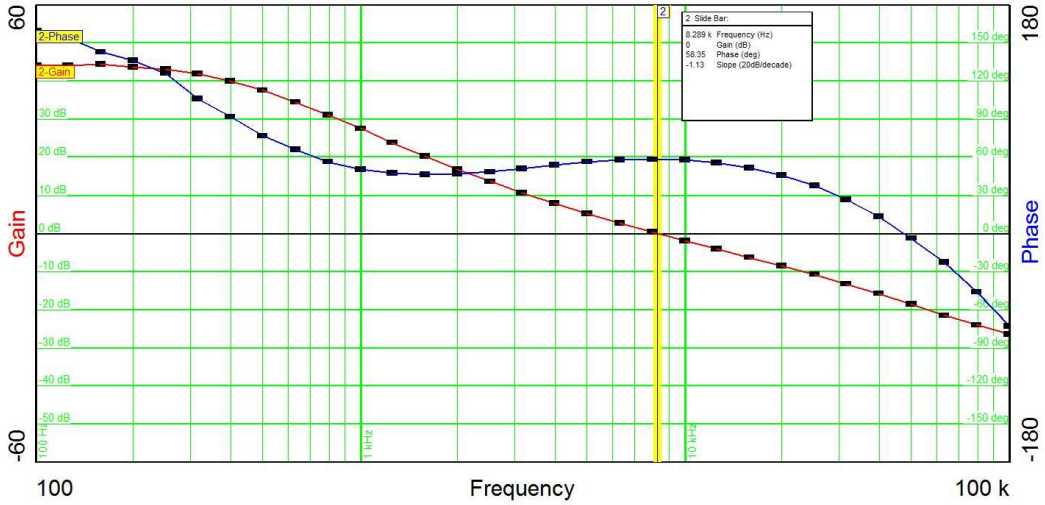
## Control Loop Plots

Flyback converter, no TPS62082, 48V input, 2A load:




BW=8.5KHz; PM=60 degrees; GM=18dB

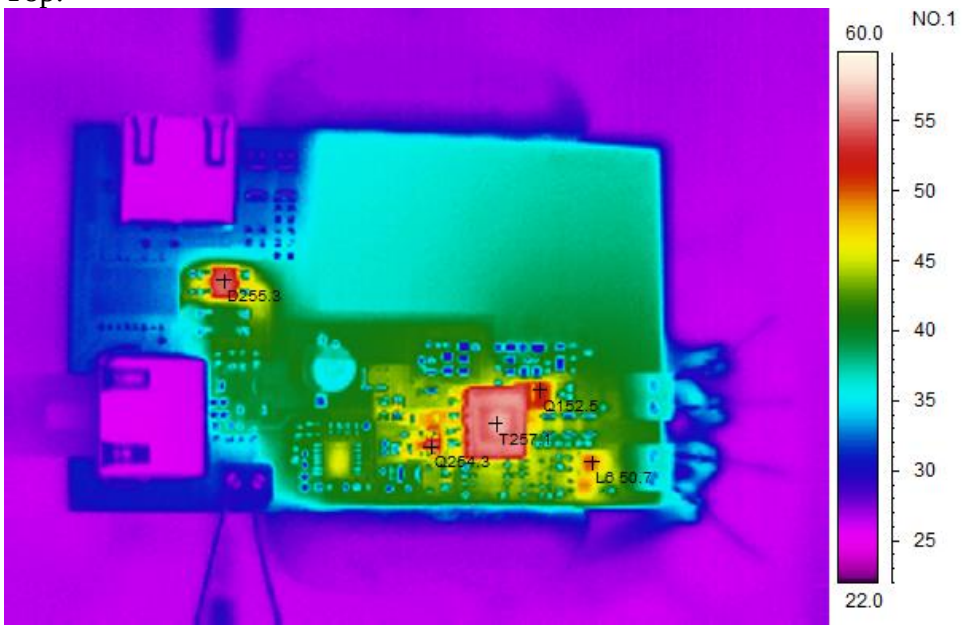
Flyback converter, with TPS62082, 48V input, 5V/1.25A load, 3.3V/1.075A load:



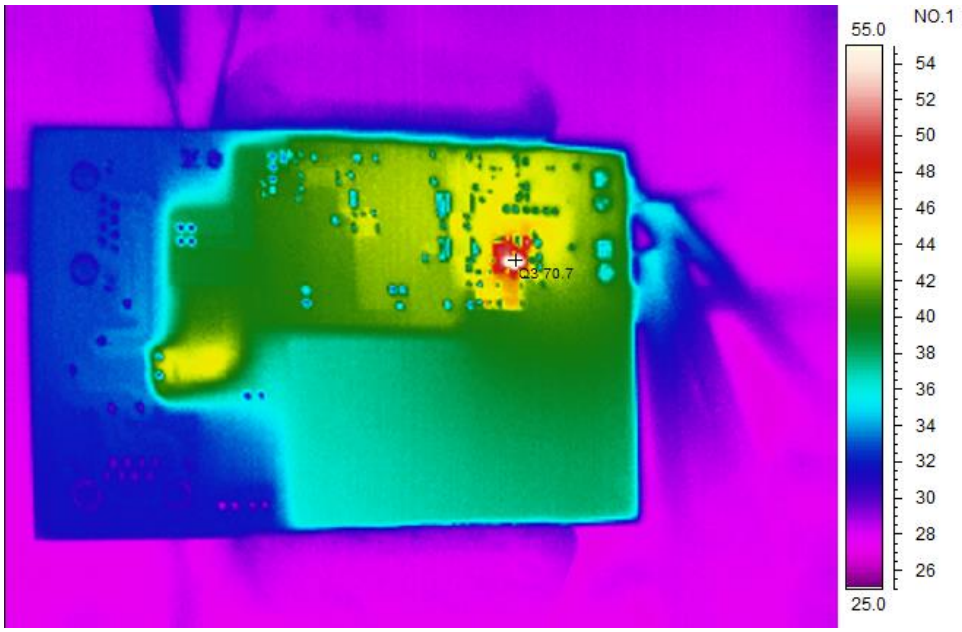

BW=8.2KHz; PM=58 degrees; GM=18dB

## Thermal Plot

Top:

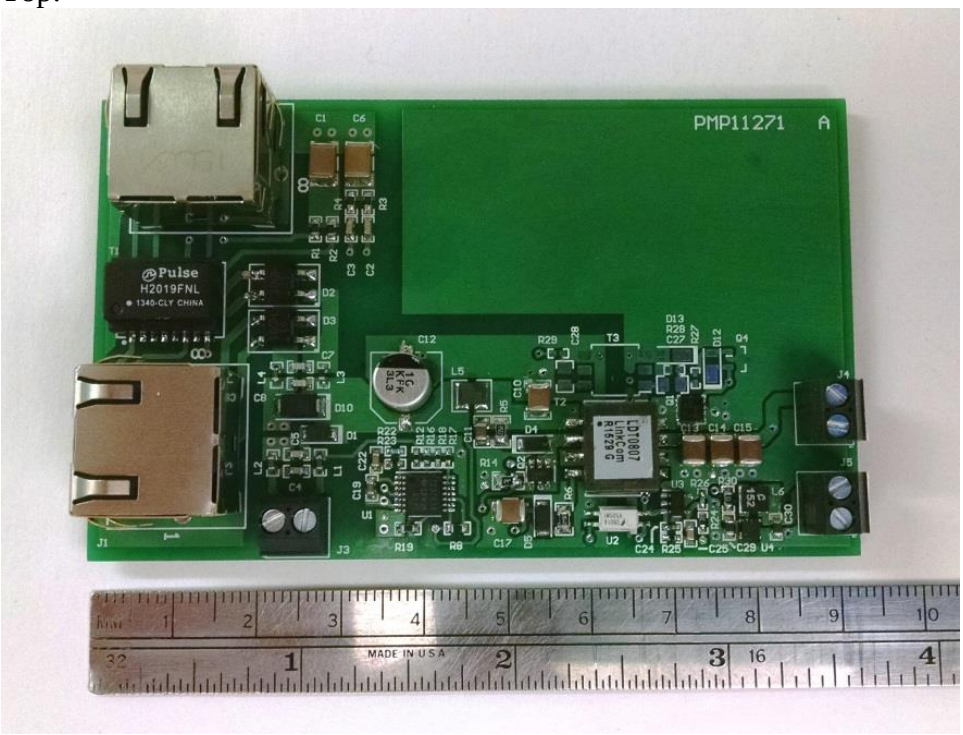



Bottom:

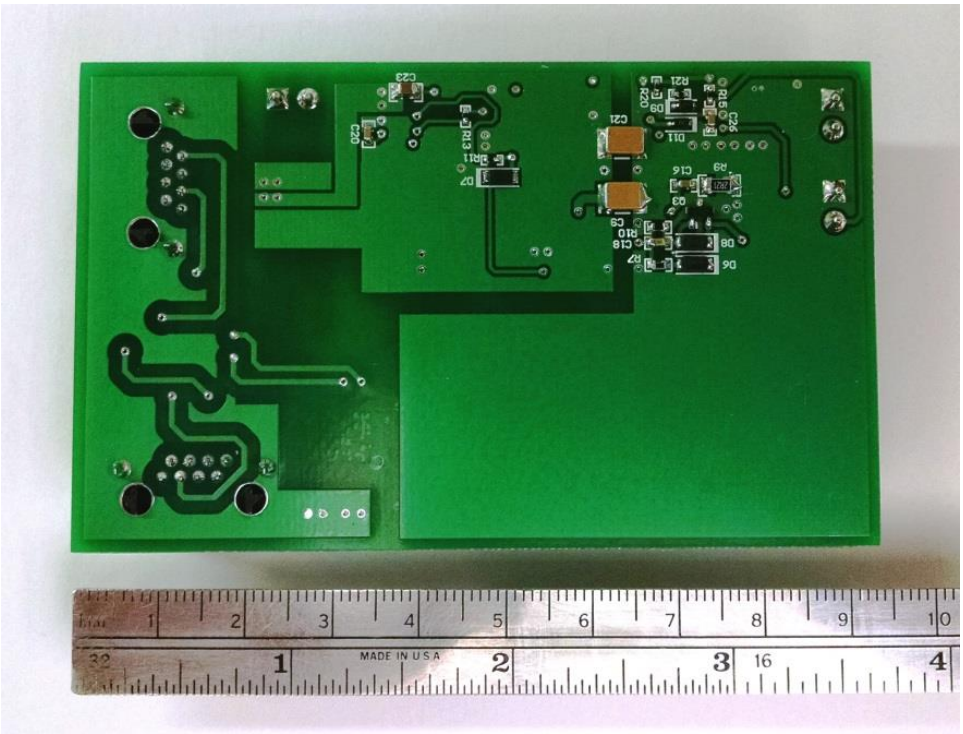


## Photo

Top:




Bottom:



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