PMP20815B Test Results

## 1 Board Photo

The image below shows PMP20815 Rev B. This is a low line input (90VAC to 130VAC) Opto/DCM Flyback that produces a 72W output (24V@3A)
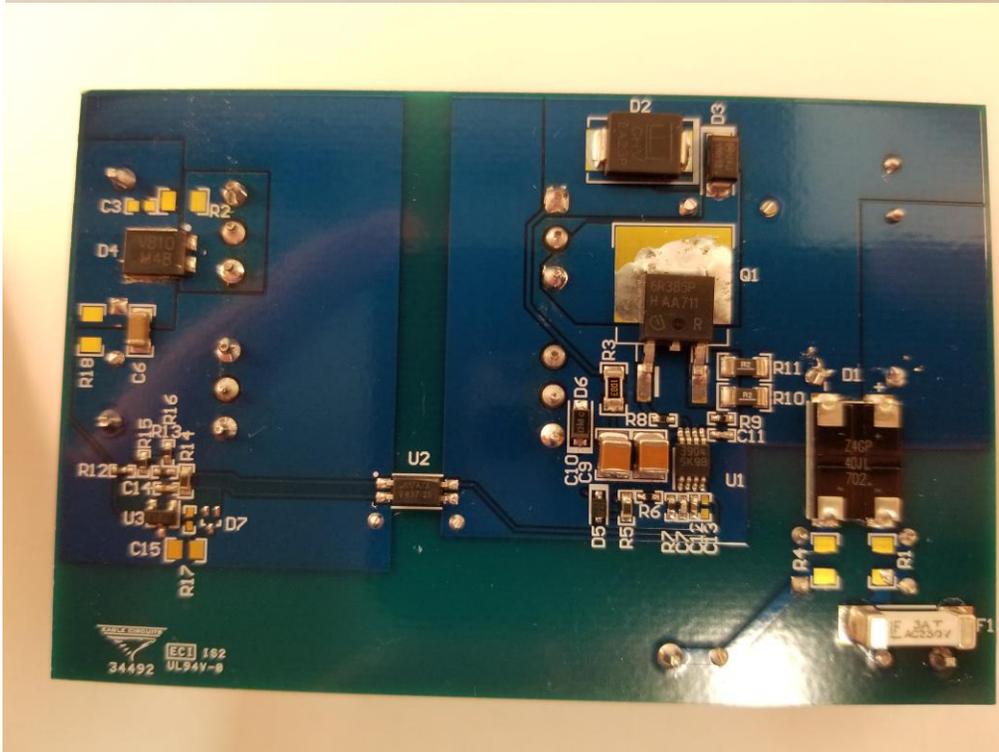
## 2   Efficiency

2.1   115VAC/60Hz (24V)
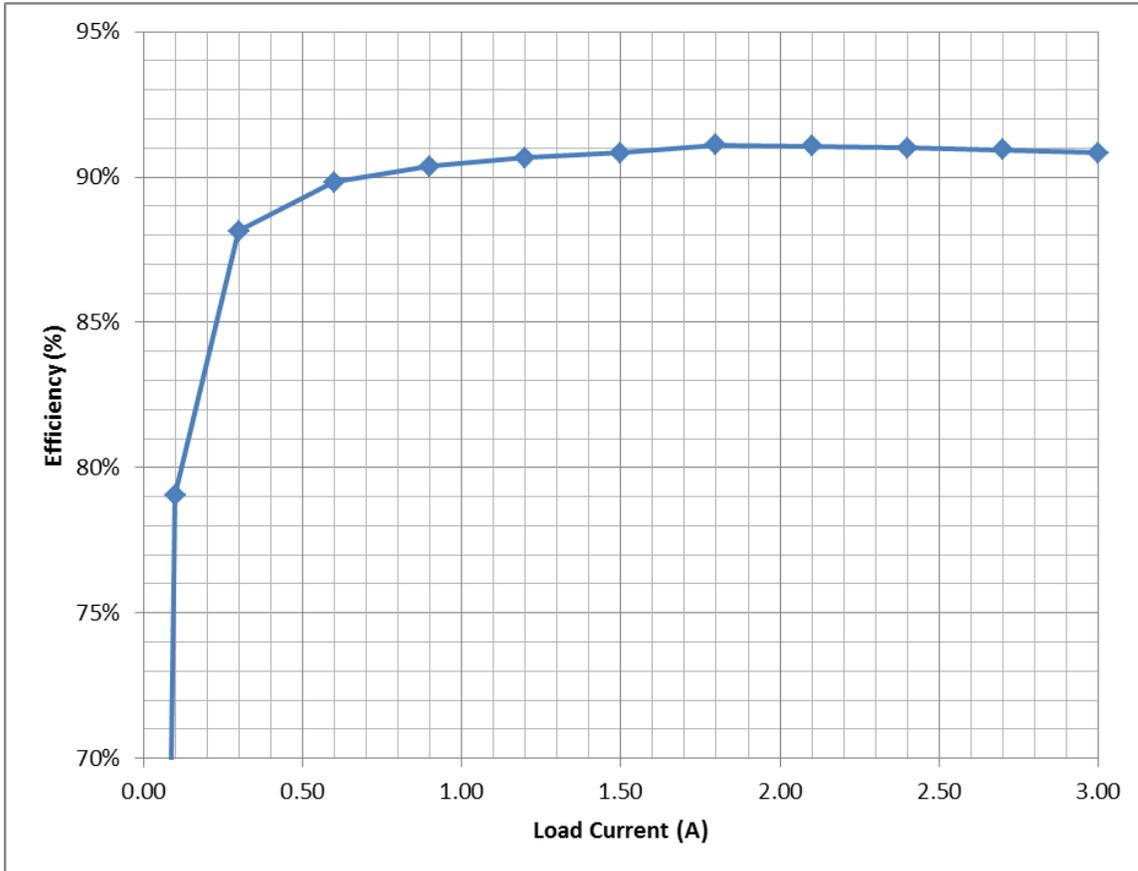
115VAC/60Hz

Iout	Vout	Vin	Iin	PF	Pin	Pout	Efficiency
0.000	24.09	115.2			0.30	0.00	0%
0.100	24.08	115.2	0.087	0.305	3.05	2.41	79%
0.300	24.08	115.2	0.209	0.340	8.20	7.22	88%
0.600	24.08	115.2	0.358	0.390	16.09	14.45	90%
0.900	24.08	115.2	0.487	0.427	23.98	21.67	90%
1.200	24.08	115.2	0.609	0.454	31.87	28.90	91%
1.500	24.08	115.2	0.725	0.476	39.77	36.12	91%
1.800	24.08	115.2	0.842	0.491	47.58	43.34	91%
2.100	24.08	115.2	0.951	0.507	55.53	50.57	91%
2.400	24.08	115.2	1.060	0.521	63.51	57.79	91%
2.700	24.08	115.2	1.167	0.533	71.49	65.02	91%
3.000	24.08	115.2	1.273	0.543	79.53	72.24	91%

3   Startup
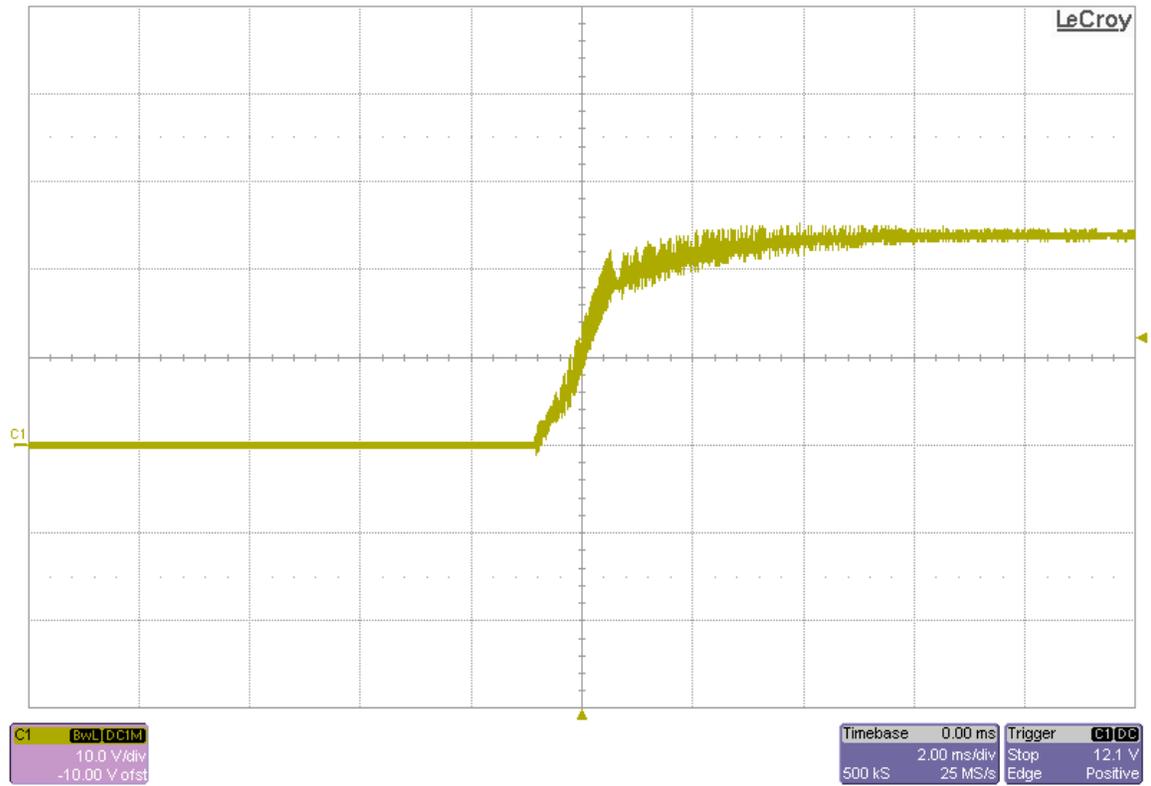
4   Output Ripple Voltage

The following image shows the output ripple at full load.

4.1   Output Ripple (3A Load)
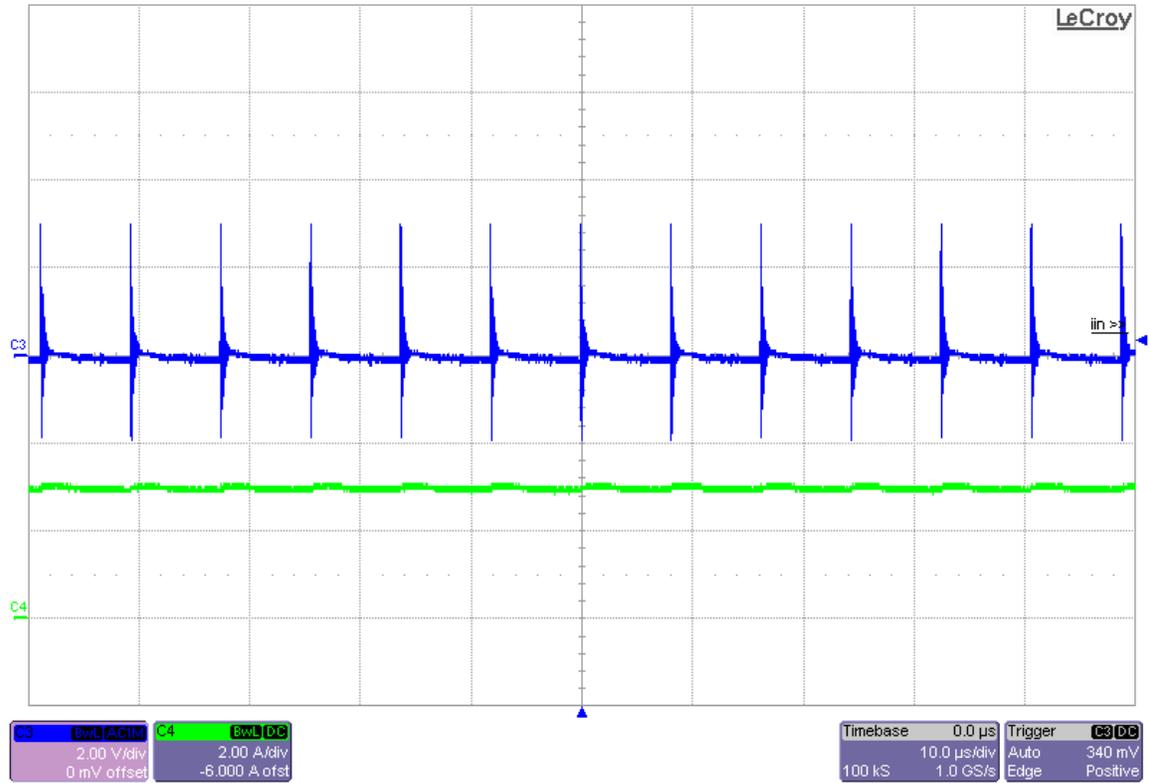
5 Load Transients

5.1 0-3A Step

PMP20815B Test Results
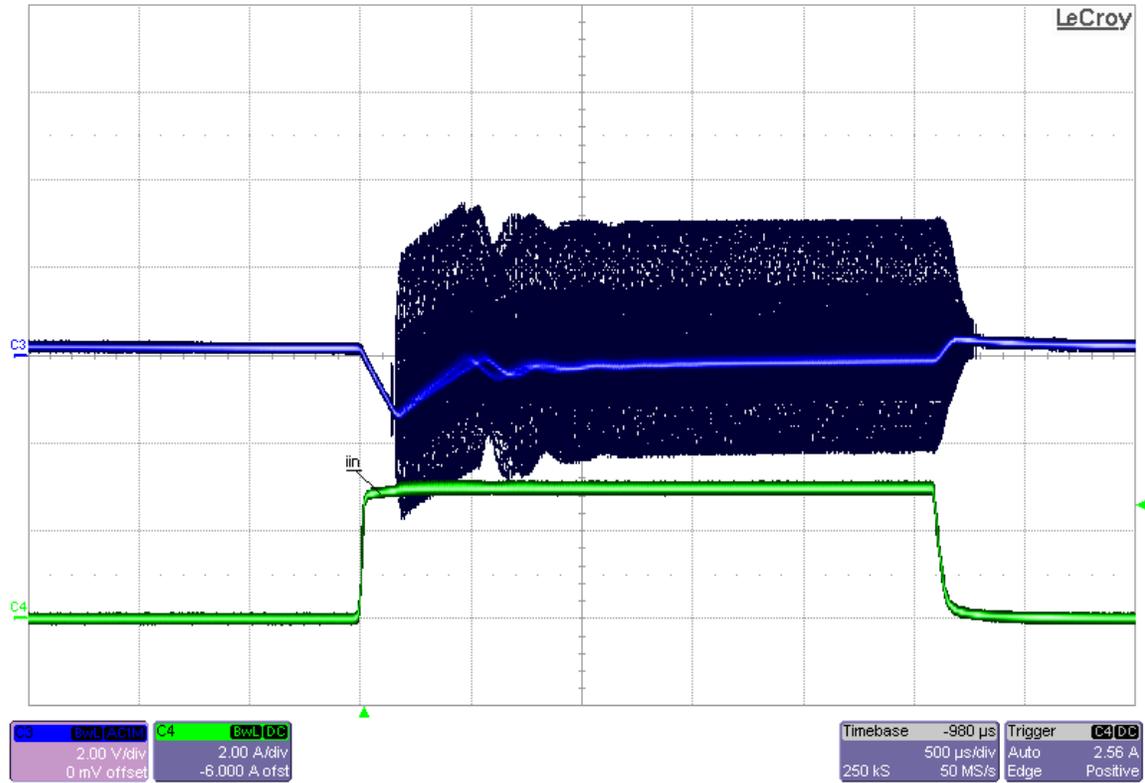
6 Switch Node Waveforms

### 6.1 Drain of FET Q1

Power Design Services
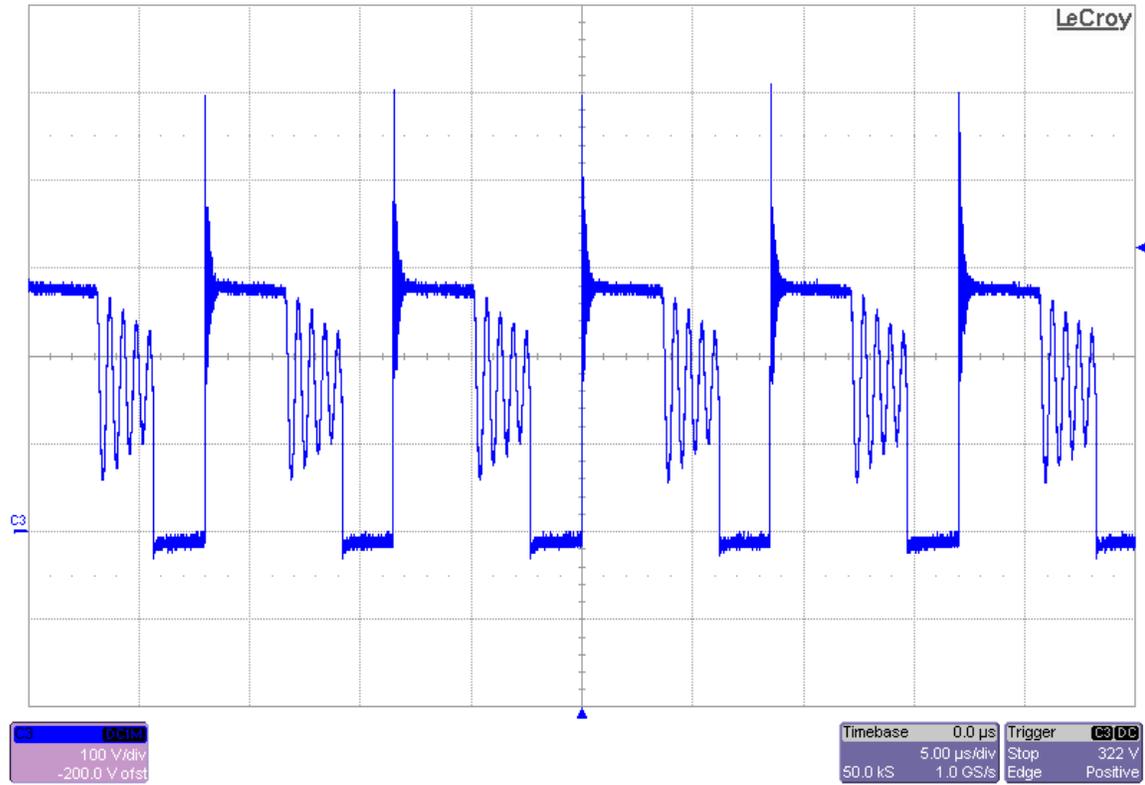
6.2 Anode of Diode D4
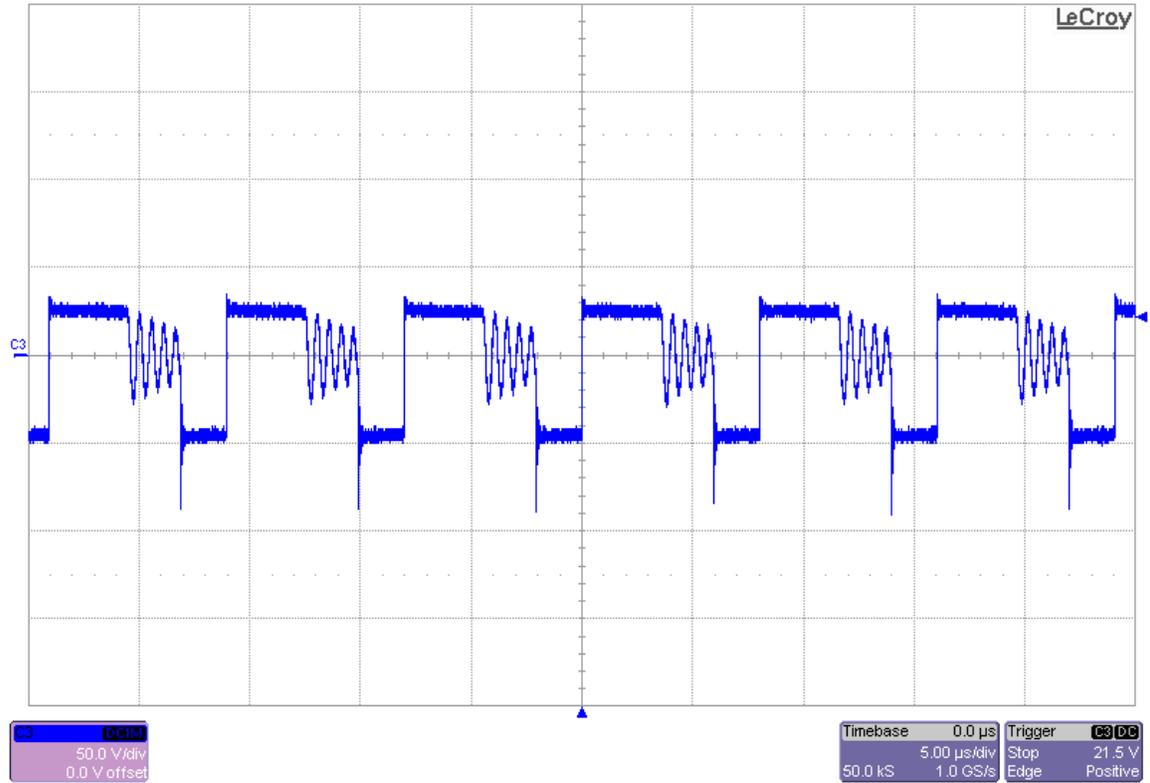
7 Thermal Images

These thermal images were taken after a 5 minute soak when fully loaded to 3A, and then when pulsed between 0 and 3A at a 50% duty cycle

7.1 120VAC/60Hz – Continuous Full Load

Spot analysis	Value
Choke Temperature	62.3°C
Pri Winding Temperature	47.4°C
XFMR Core Temperature	38.1°C

120VAC/60Hz
Iout = 3A continuous

120VAC/60Hz
Iout = 3A continuous

Spot analysis	Value
Bridge Temperature	69.2°C
Rectifier Temperature	94.1°C
Pri FET Temperature	63.3°C
Snub TVS Temperature	64.7°C
Rcs Temperature	67.7°C
R3 Temperature	66.1°C
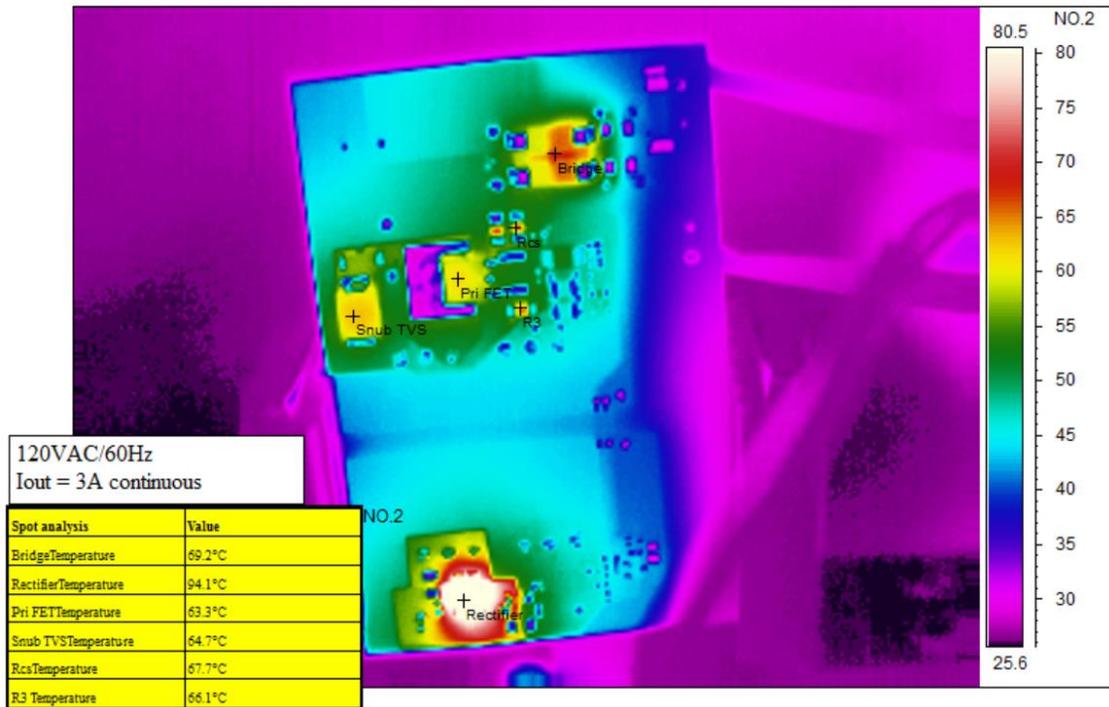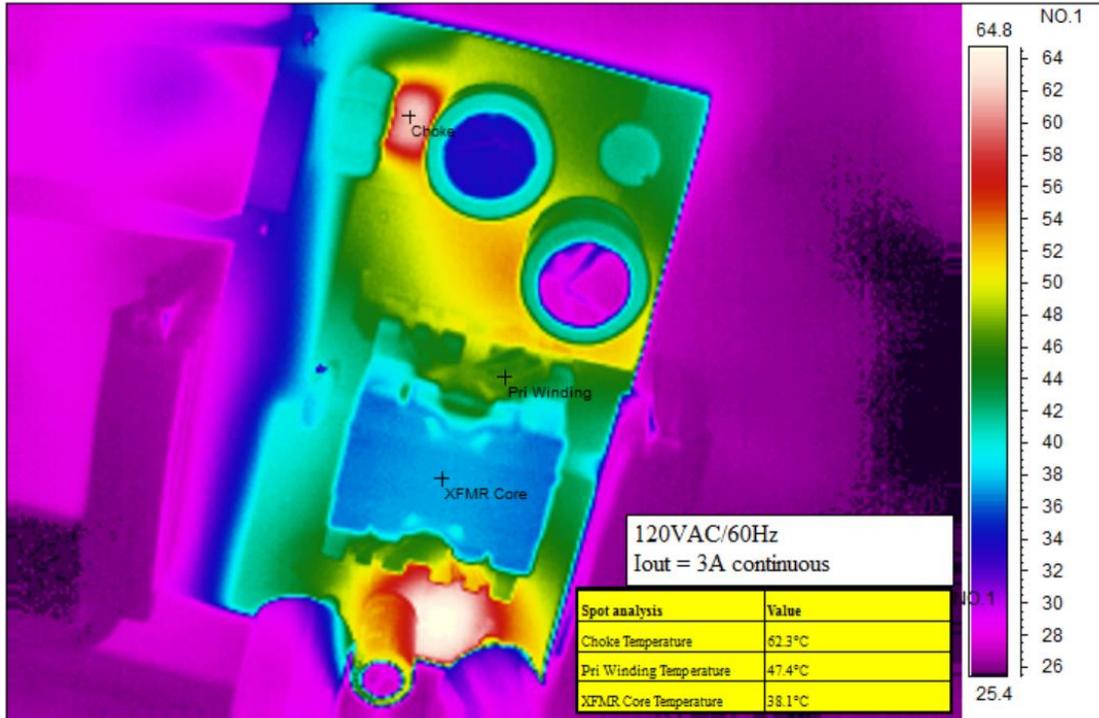
7.2   120VAC/60Hz – Pulsed Load

120VAC/60Hz
Iout = 0-3A step @ 5 Hz

Spot analysis	Value
ChokeTemperature	51.3°C
Pri WindingTemperature	45.3°C
XFMR Core Temperature	40.3°C

120VAC/60Hz
Iout = 0-3A step @ 5 Hz

Spot analysis	Value
BridgeTemperature	54.0°C
RectifierTemperature	66.5°C
Pri FET Temperature	51.1°C
TVS SnubTemperature	51.2°C
Rcs Temperature	49.7°C
R3 Temperature	62.4°C
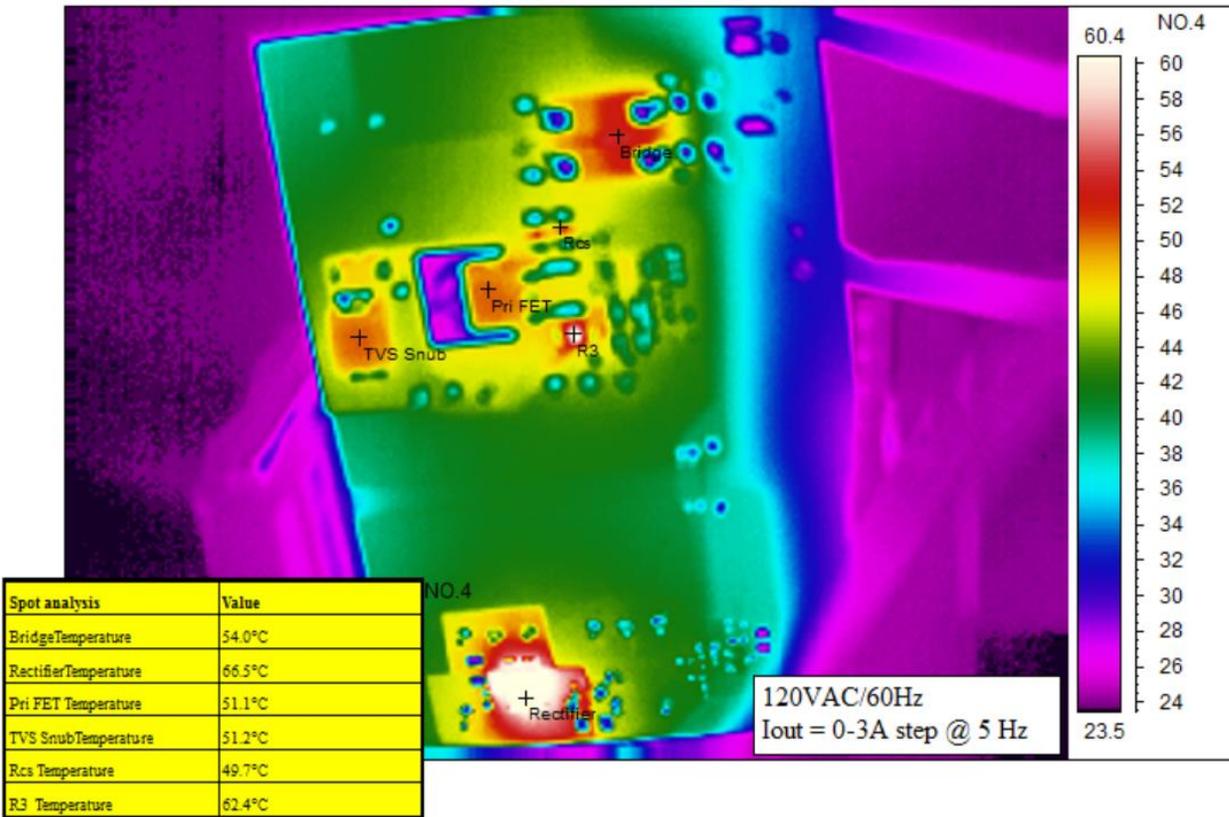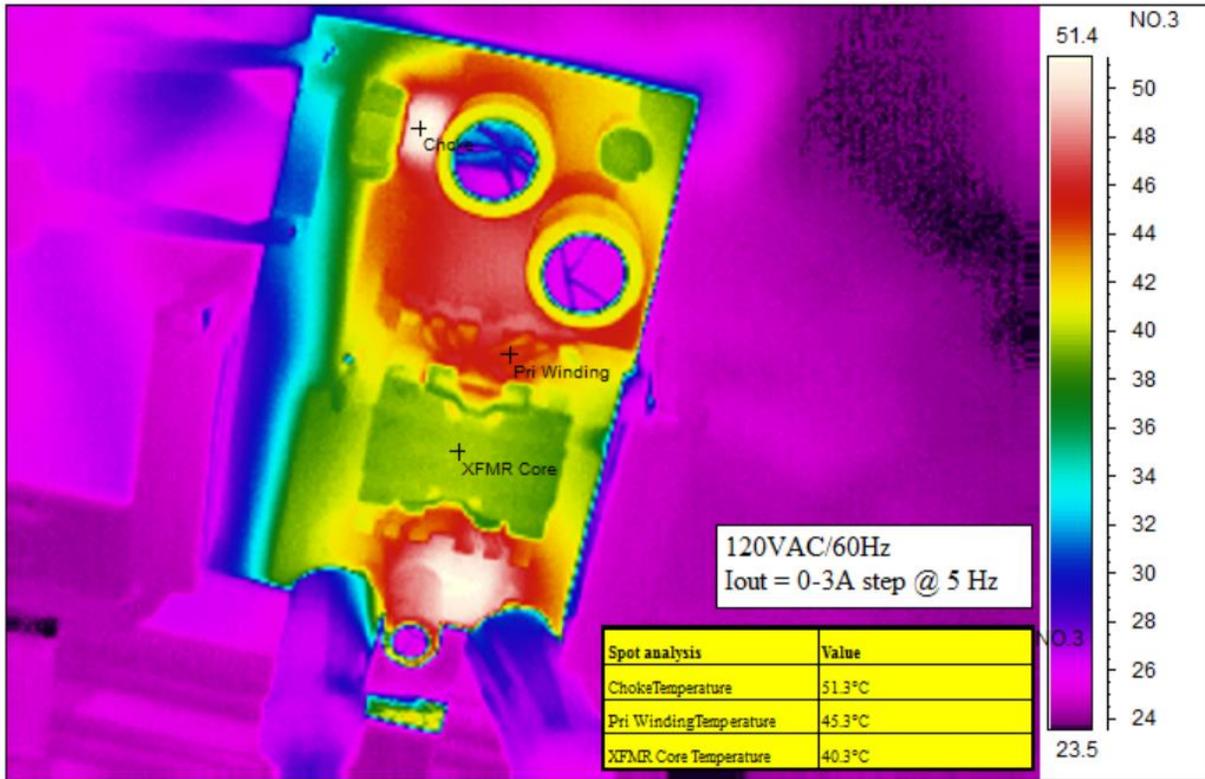
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