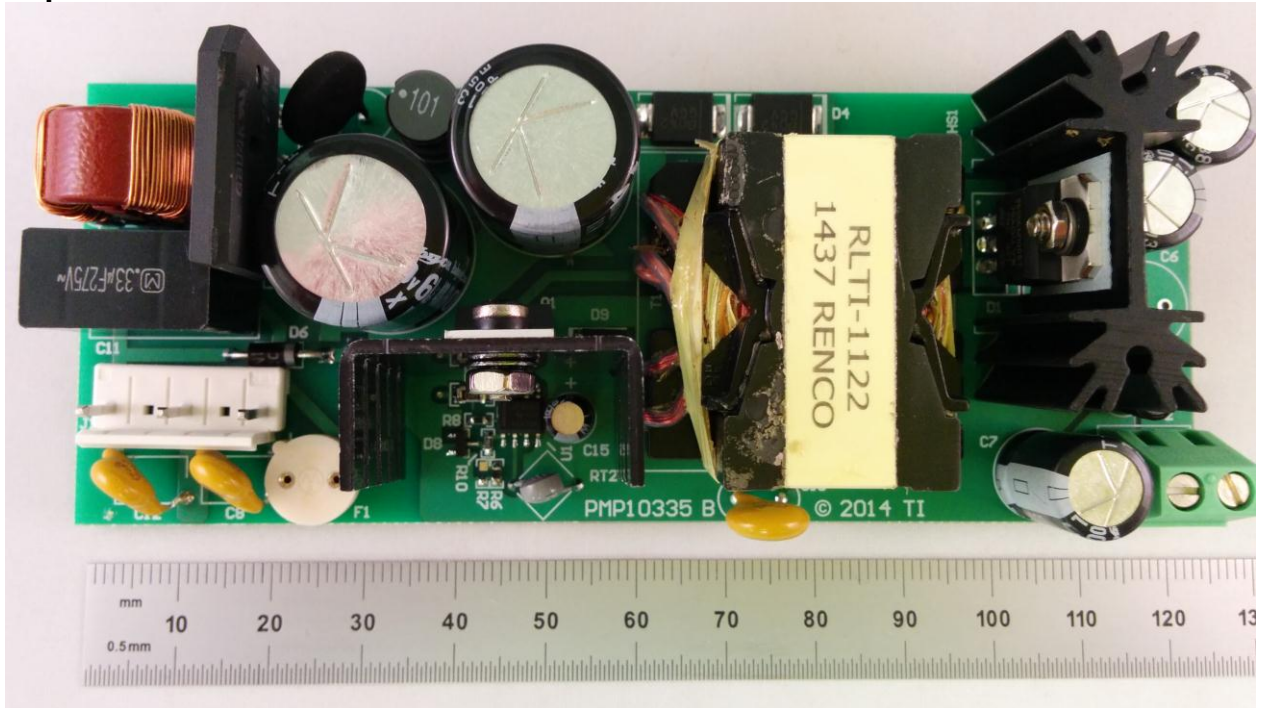


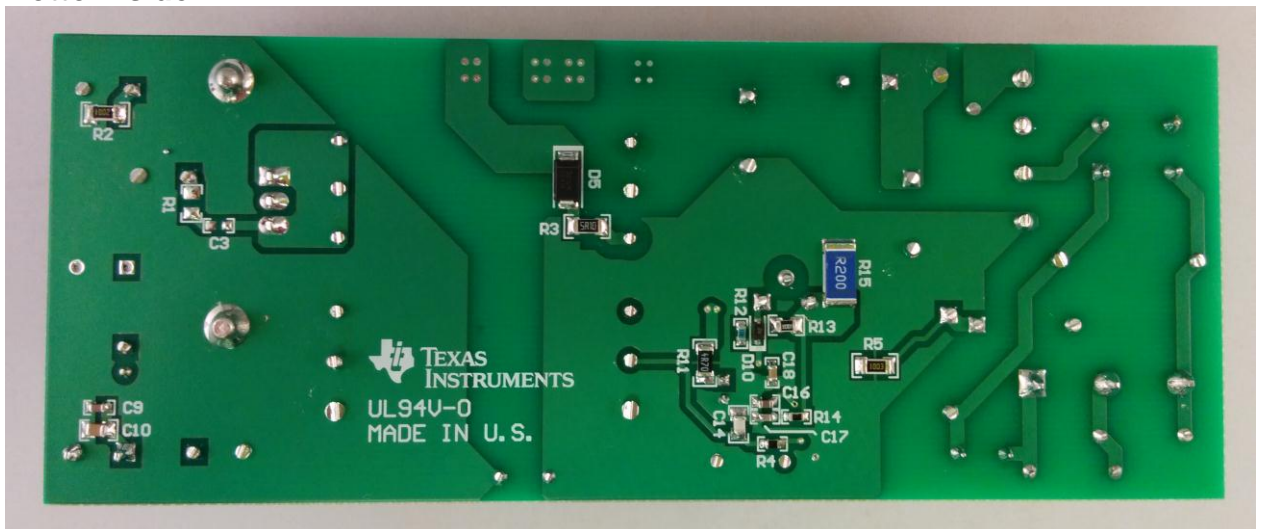
## 1 Photo

The photographs below show the PMP10335 Rev B assembly. This circuit was built on a PMP10335 Rev B PCB.

### Top side

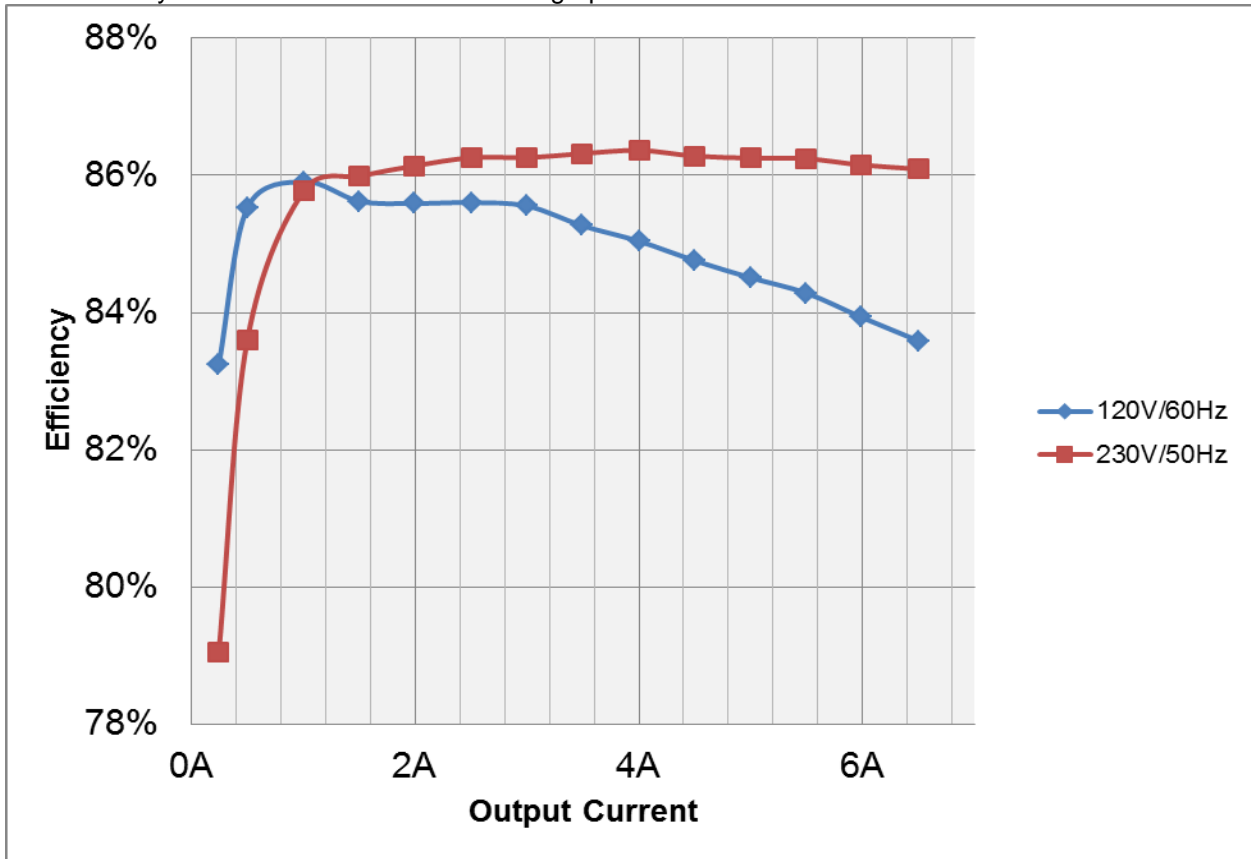


### Bottom side



## 2 Converter Efficiency

The efficiency data is shown in the tables and graph below.



### Vin=120V<sub>AC</sub>/60Hz

Vin(ac)	Iin(A)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Eff. (%)
120.01	1.326	93.44	12.02	6.498	78.11	83.59%
120.02	1.233	85.84	12.03	5.989	72.05	83.93%
120.02	1.142	78.51	12.04	5.496	66.17	84.28%
120.04	1.049	71.28	12.04	5.003	60.24	84.51%
120.05	0.952	63.89	12.05	4.494	54.15	84.76%
120.06	0.857	56.74	12.06	4.001	48.25	85.04%
120.06	0.757	49.39	12.06	3.492	42.11	85.27%
120.07	0.658	42.31	12.07	2.999	36.20	85.55%
120.08	0.559	35.32	12.07	2.505	30.24	85.60%
120.09	0.457	28.11	12.06	1.995	24.06	85.59%
120.1	0.356	21.17	12.06	1.503	18.13	85.62%
120.11	0.249	14.2	12.09	1.009	12.20	85.91%
120.12	0.139	7.15	12.23	0.5	6.12	85.52%
120.12	0.082	3.614	12.28	0.245	3.01	83.25%

**Vin=230V<sub>AC</sub>/50Hz**

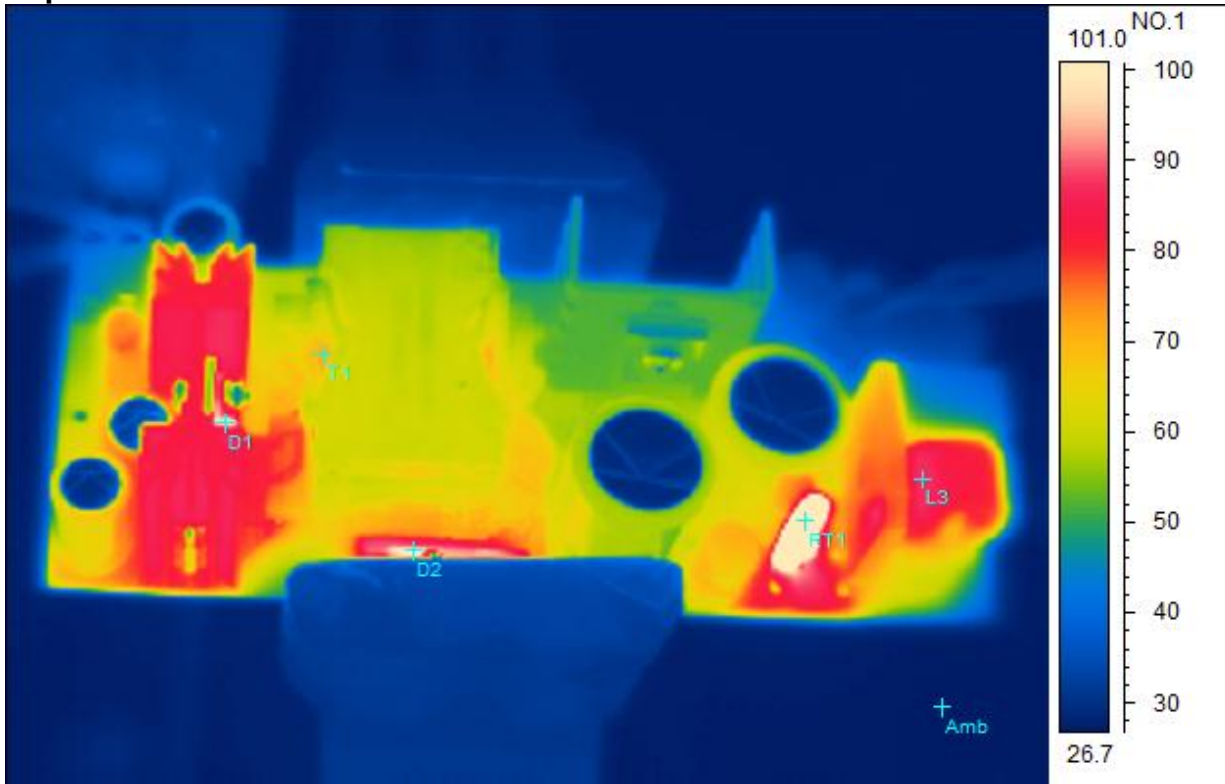
Vin(ac)	Iin(A)	Pin(W)	Vo1(V)	Io1(A)	Pout(W)	Eff. (%)
230	0.812	90.71	12.02	6.497	78.09	86.09%
230	0.751	83.49	12.01	5.989	71.93	86.15%
230	0.692	76.55	12.01	5.497	66.02	86.24%
230	0.631	69.62	12.00	5.004	60.05	86.25%
230	0.571	62.53	12.00	4.496	53.95	86.28%
230.1	0.51	55.56	11.99	4.002	47.98	86.36%
230.1	0.446	48.52	11.99	3.493	41.88	86.32%
230.1	0.388	41.7	11.99	3.000	35.97	86.26%
230.1	0.329	34.82	11.99	2.505	30.03	86.26%
230.1	0.268	27.76	11.98	1.996	23.91	86.14%
230.1	0.209	20.94	11.98	1.503	18.01	85.99%
230.1	0.152	14.15	12.03	1.009	12.14	85.78%
230.1	0.095	7.29	12.19	0.500	6.10	83.61%
230.1	0.072	3.79	12.23	0.245	3.00	79.06%

### 3 Thermal Images

The thermal images below show a top view and bottom view of the board. The ambient temperature was 20°C with no forced air flow. The output was at 12V/6.5A.

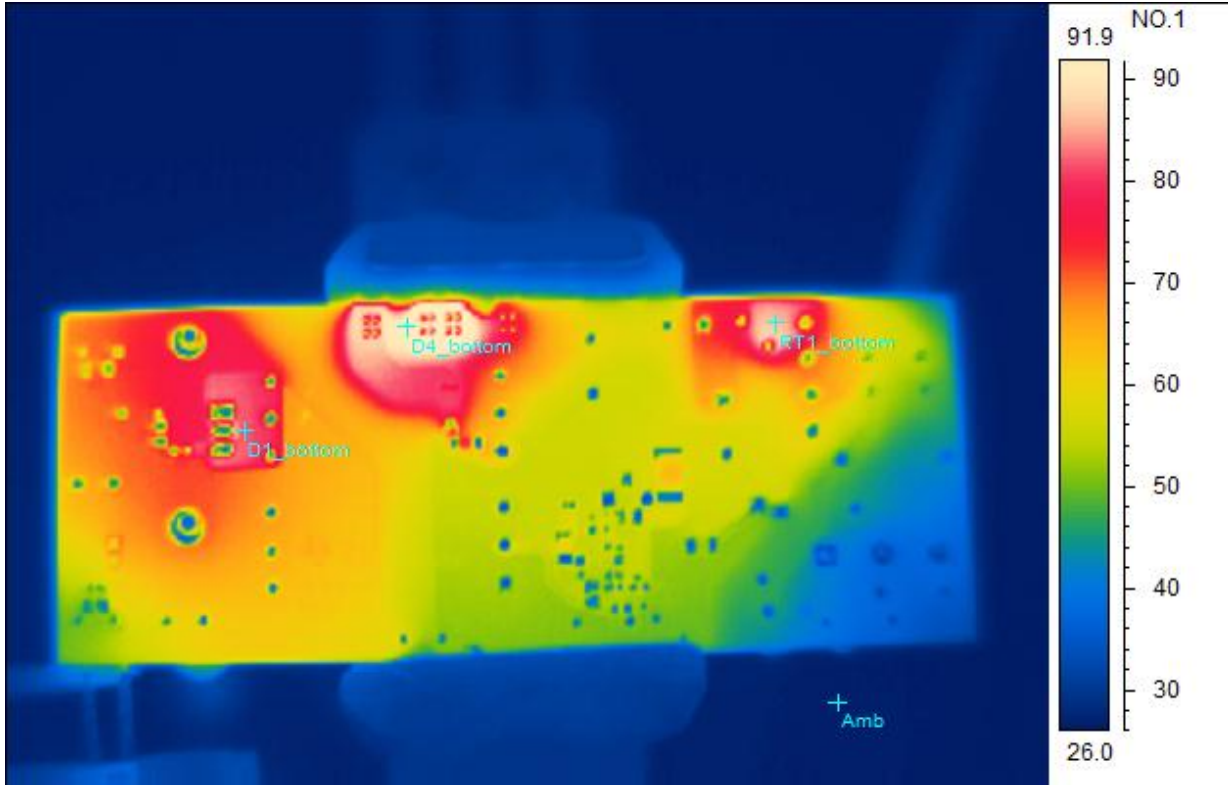
**120V<sub>AC</sub>/60Hz**

**Top Side**



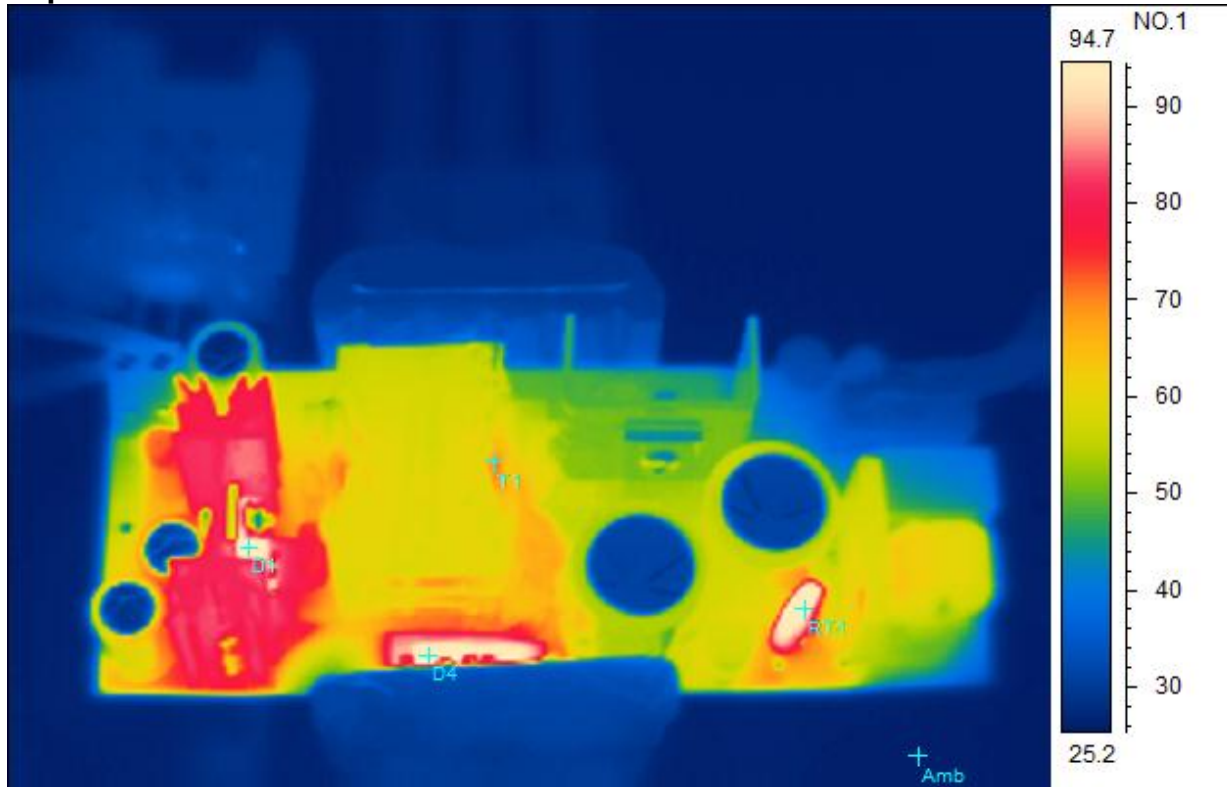
Spot analysis	Value
D1Temperature	100.5°C
D2Temperature	101.3°C
RT1Temperature	123.2°C
L3Temperature	90.2°C
T1Temperature	76.3°C
Amb Temperature	26.9°C

## 120V<sub>AC</sub>/60Hz Bottom Side



Spot analysis	Value
D4_bottomTemperature	93.8°C
D1_bottomTemperature	83.9°C
RT1_bottom Temperature	87.8°C
Amb Temperature	26.8°C

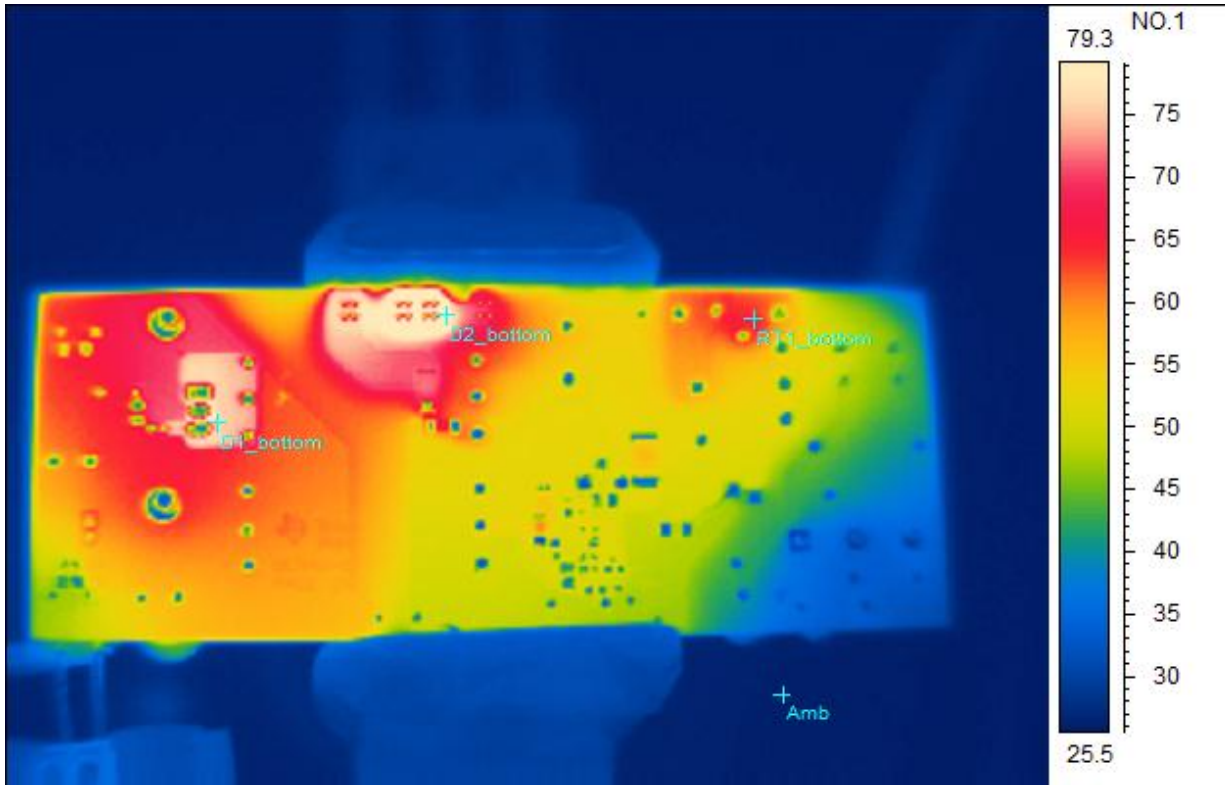
## 230V<sub>AC</sub>/50Hz Top Side



Spot analysis	Value
RT1Temperature	96.9°C
D1Temperature	100.9°C
D4Temperature	98.9°C
T1Temperature	74.3°C
Amb Temperature	26.2°C



**230V<sub>AC</sub>/50Hz  
Bottom Side**

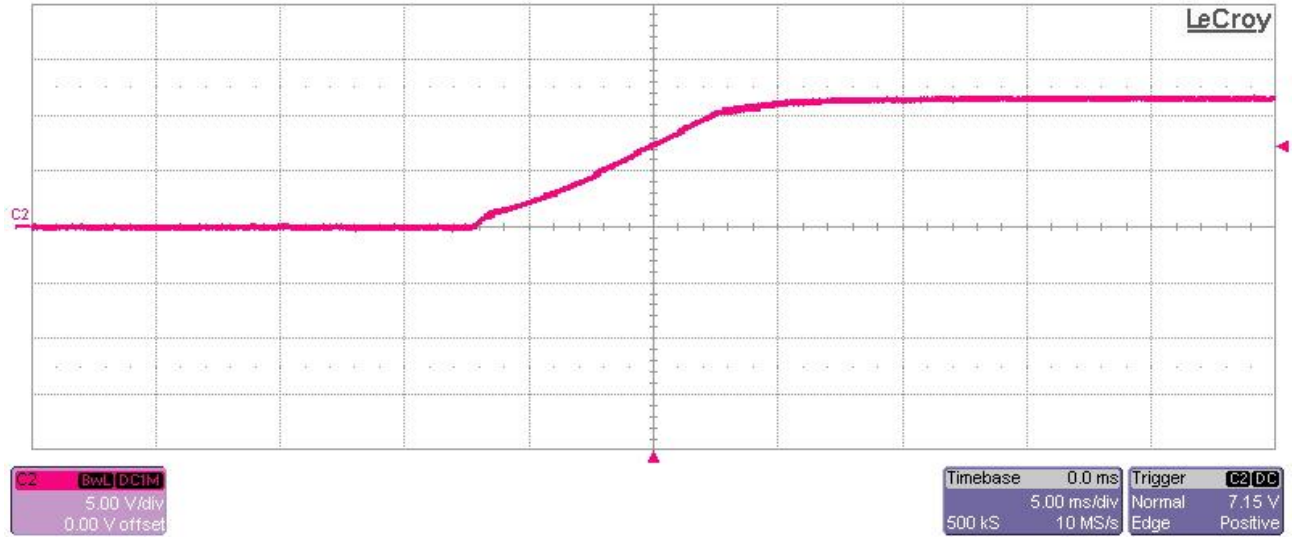


Spot analysis	Value
D1_bottomTemperature	76.5°C
D2_bottomTemperature	80.4°C
RT1_bottomTemperature	66.1°C
Amb Temperature	26.1°C

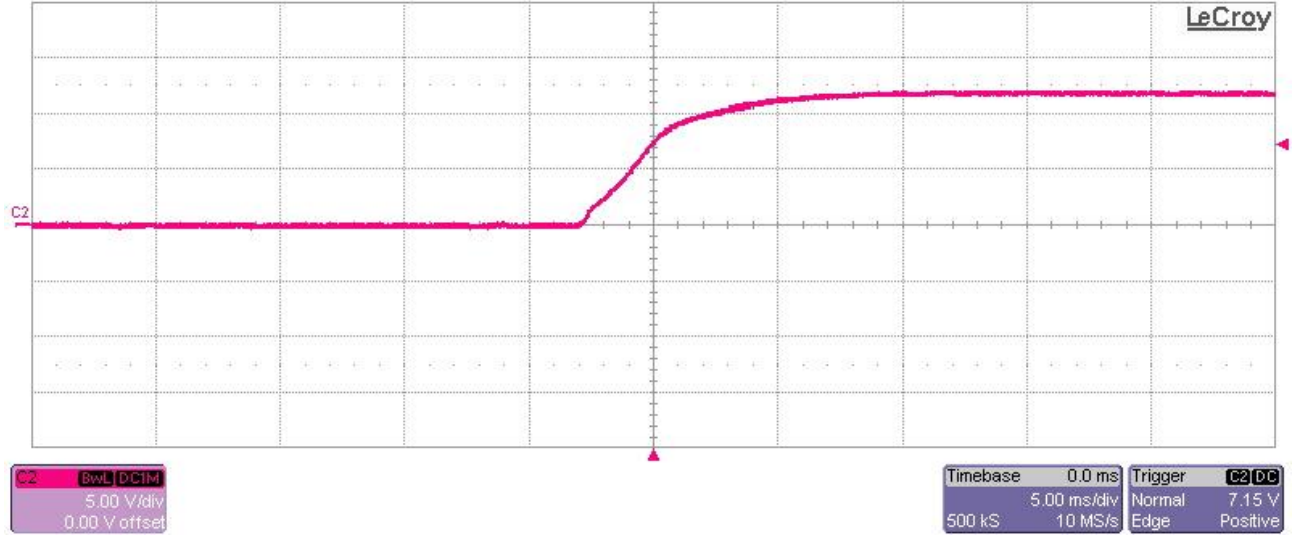
## 4 Startup

The output voltages at startup are shown in the images below.

### 4.1 Start Up @ 120V<sub>AC</sub>: 12V/6.5A.

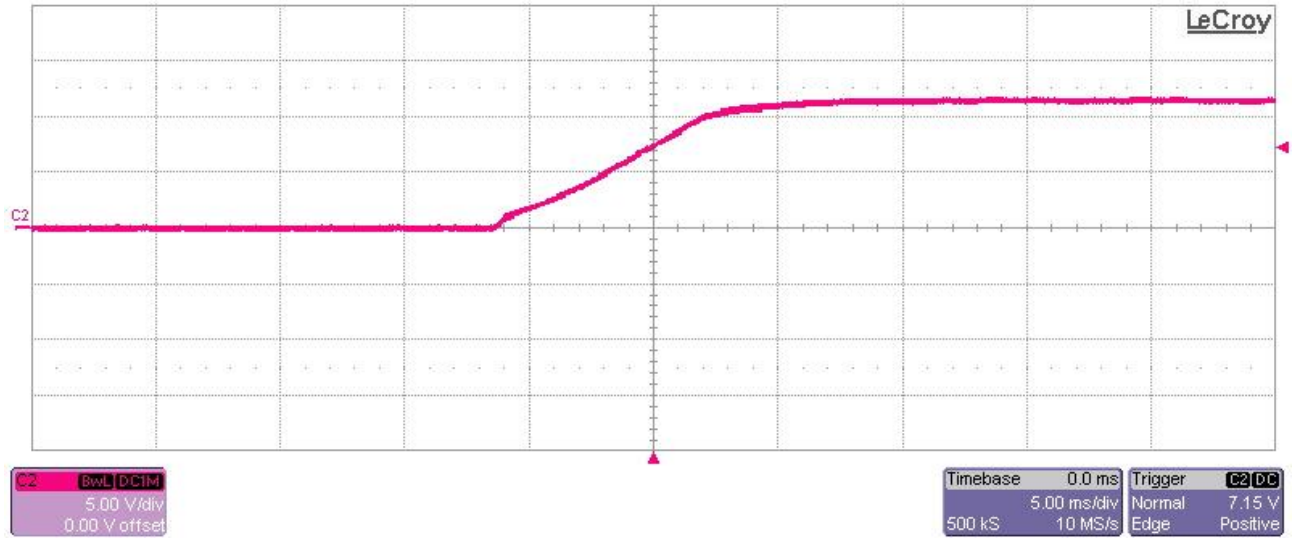


### 4.2 Start Up @ 120V<sub>AC</sub>: no load.

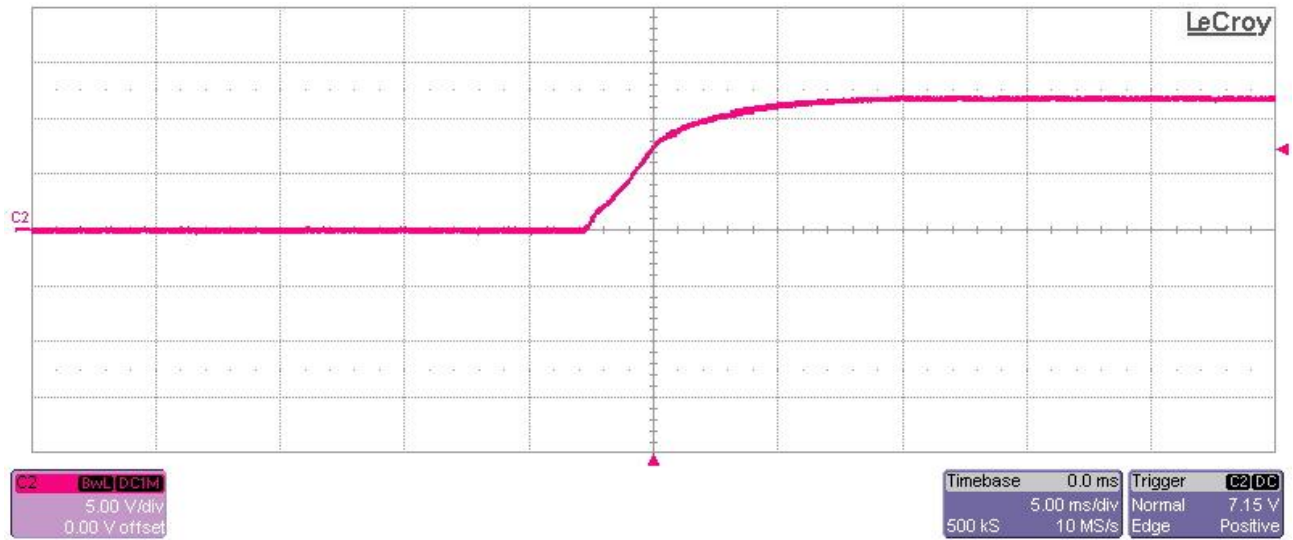




### 4.3 Start Up @ 230V<sub>AC</sub>: 12V/6.5A.



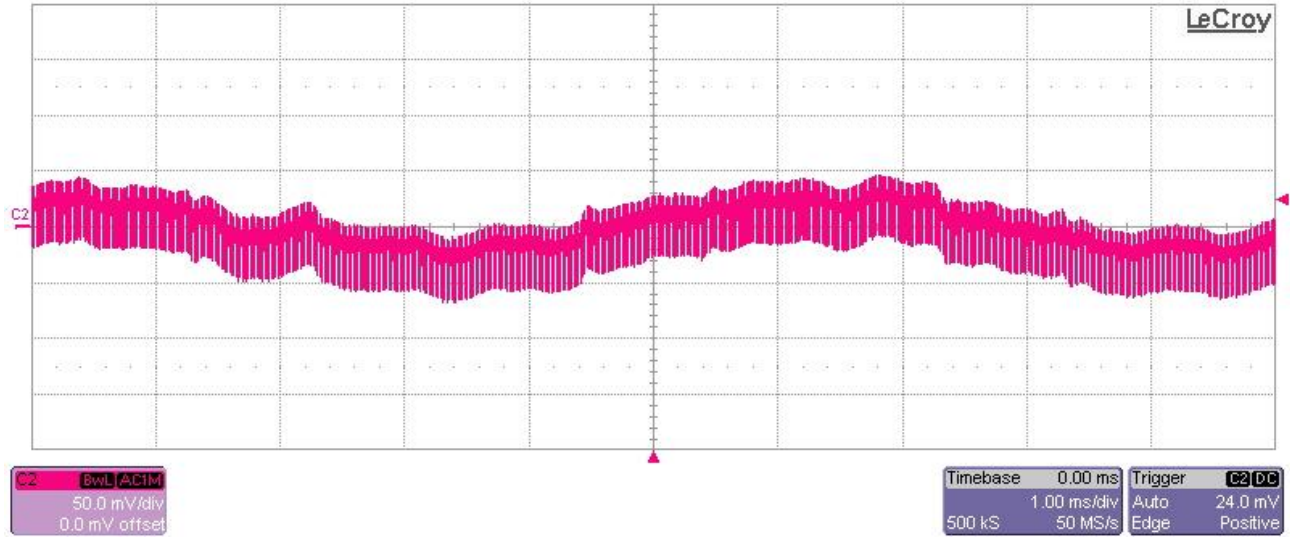
### 4.4 Start Up @ 230V<sub>AC</sub>: no load.



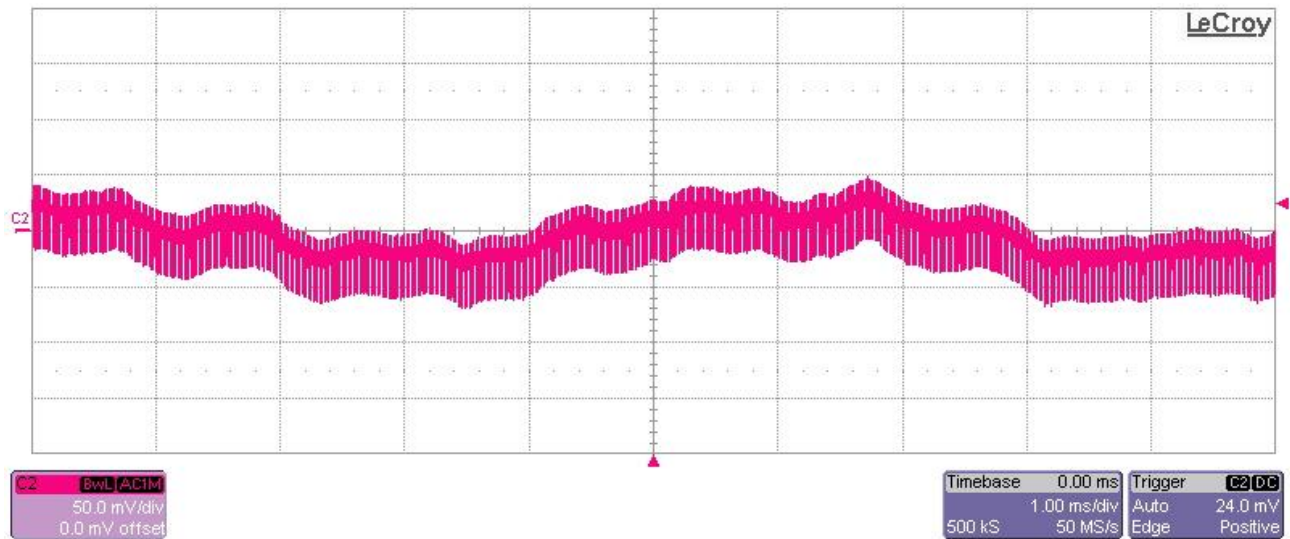
## 5 Output Ripple Voltages

The output ripple voltage is shown in the plots below at 12V/5A full load.

### 5.1 12V<sub>ripple</sub> at 120V<sub>AC</sub>/60Hz



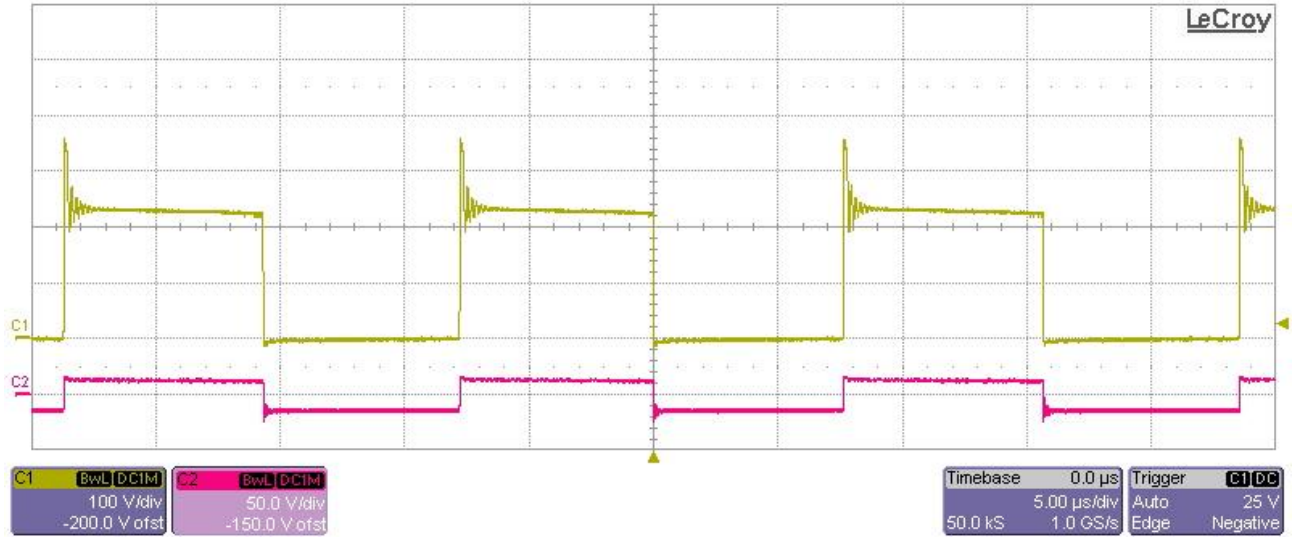
### 5.2 12V<sub>ripple</sub> at 230V<sub>AC</sub>/50Hz



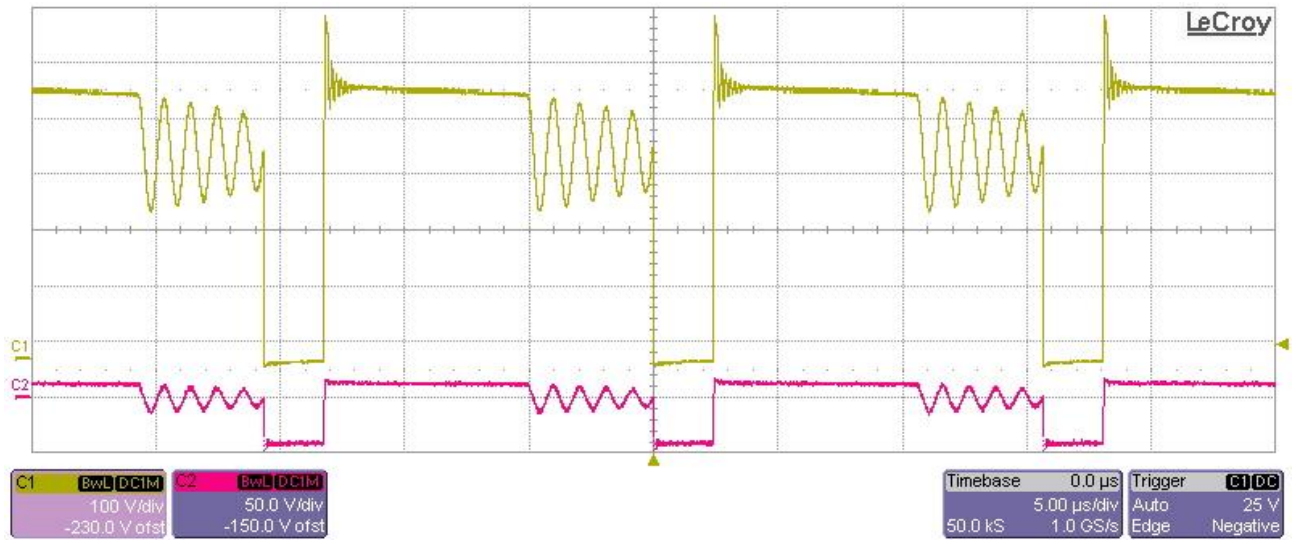
## 6 Switching Waveforms

The images below show key switching waveforms of PMP10335 RevB. The waveforms are measured with 12V/6.5A load. CH2:  $V_{DS}(Q_1)$ , CH1: T1 secondary winding voltage.

### 6.1 85V<sub>a0</sub>/60Hz



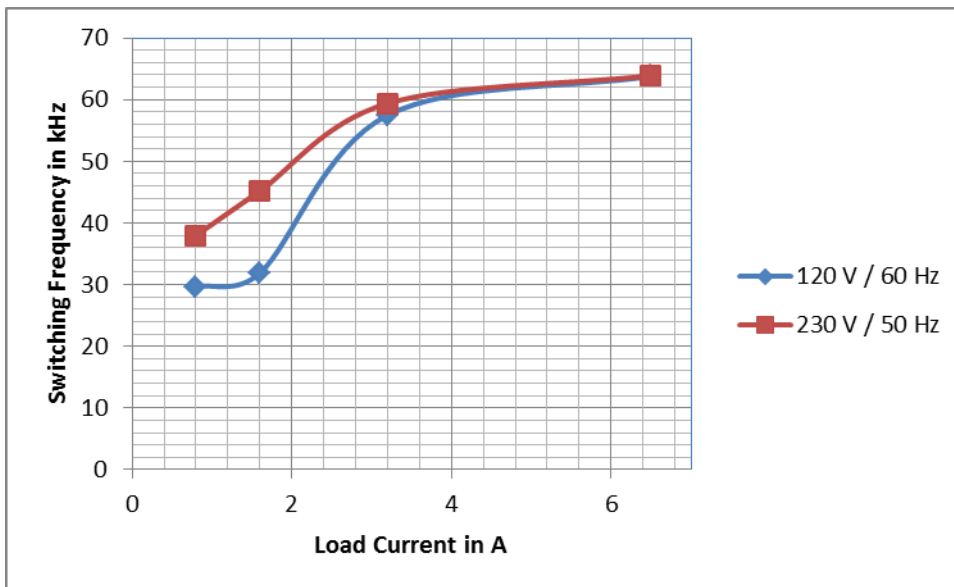
### 6.2 265V<sub>a0</sub>/50Hz



## 7 Switching Frequency at different loads

The table and graph below show the switching frequencies for different load conditions of PMP10335 RevB.

Voltage (V)	Load (A)	Freq (kHz)
230	0.8	29.7
230	1.6	31.9
230	3.2	57.5
230	6.5	63.8
120	0.8	38
120	1.6	45.2
120	3.2	59.4
120	6.5	63.9



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