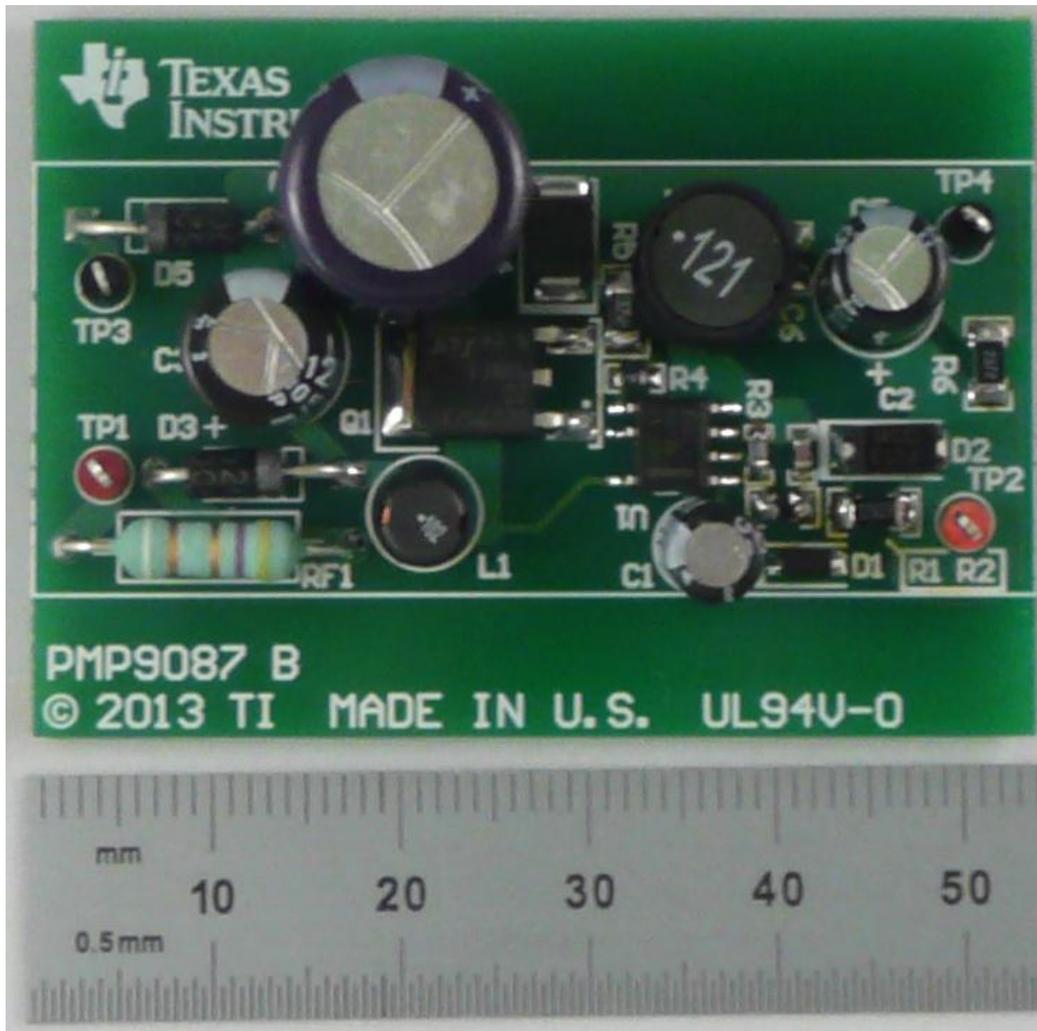


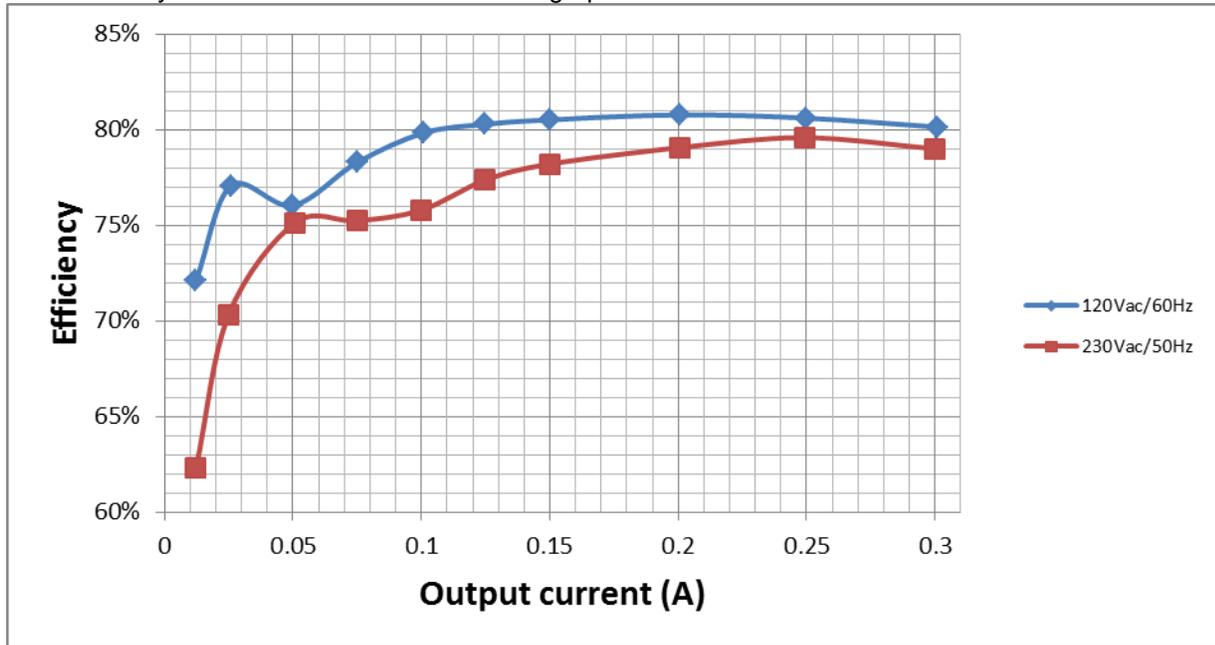
1 Photo

The photographs below show the PMP9530 Rev A assembly. This circuit was built on a PMP9087 Rev B PCB.



2 Converter Efficiency

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



V_{in}=120V_{AC}/60Hz

V _{in} (V)	I _{in} (mA)	P _{in} (W)	V _{out} (V)	I _{out} (A)	P _{out} (W)	Losses(W)	Efficiency (%)
119.92	144.1	6.873	18.31	0.3008	5.507648	1.365352	80.13%
119.95	122.19	5.673	18.29	0.25	0.2499	5.4231	80.60%
119.99	101.61	4.547	18.29	0.2008	3.672632	0.874368	80.77%
120.05	79.76	3.403	18.29	0.1498	2.739842	0.663158	80.51%
120.07	68.46	2.845	18.3	0.1248	2.28384	0.56116	80.28%
120.11	57.58	2.313	18.3	0.1009	1.84647	0.46653	79.83%
120.13	46.03	1.751	18.3	0.0749	1.37067	0.38033	78.28%
120.14	33.15	1.203	18.33	0.0499	0.914667	0.288333	76.03%
120.16	18.405	0.6121	18.24	0.02586	0.471686	0.1404136	77.06%
120.17	9.916	0.3102	18.27	0.01224	0.223625	0.0865752	72.09%
120.07	1.588	0.05152	18.4	0	0	0.05152	0.00%

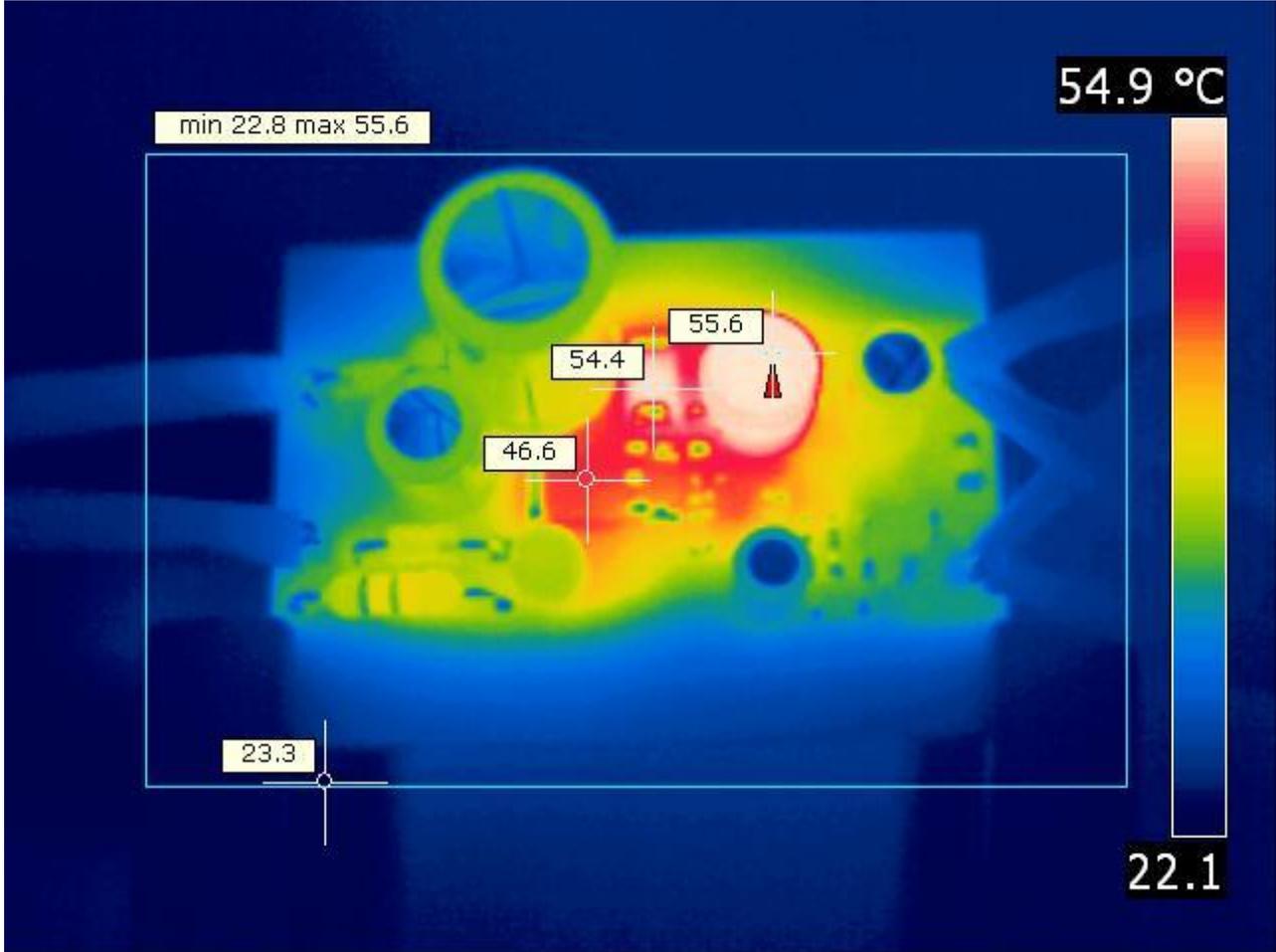
Vin=230V_{AC}/50Hz

Vin(V)	Iin(mA)	Pin(W)	Vout(V)	Iout(A)	Pout(W)	Losses(W)	Efficiency (%)
230	93.12	6.956	18.31	0.3001	5.494831	1.461169	78.99%
230.1	79.15	5.725	18.29	0.2491	4.556039	1.168961	79.58%
230.1	66.28	4.638	18.27	0.2007	3.666789	0.971211	79.06%
230.1	52.28	3.502	18.28	0.1498	2.738344	0.763656	78.19%
230.1	45.1	2.949	18.28	0.1248	2.281344	0.667656	77.36%
230.1	37.99	2.411	18.29	0.0999	1.827171	0.583829	75.78%
230.1	29.53	1.814	18.22	0.0749	1.364678	0.449322	75.23%
230.1	20.92	1.232	18.21	0.05083	0.925614	0.3063857	75.13%
230.2	11.464	0.6456	18.23	0.0249	0.453927	0.191673	70.31%
230.2	6.417	0.3593	18.25	0.01227	0.223928	0.1353725	62.32%
230.2	1.079	0.09284	18.41	0	0	0.09284	0.00%

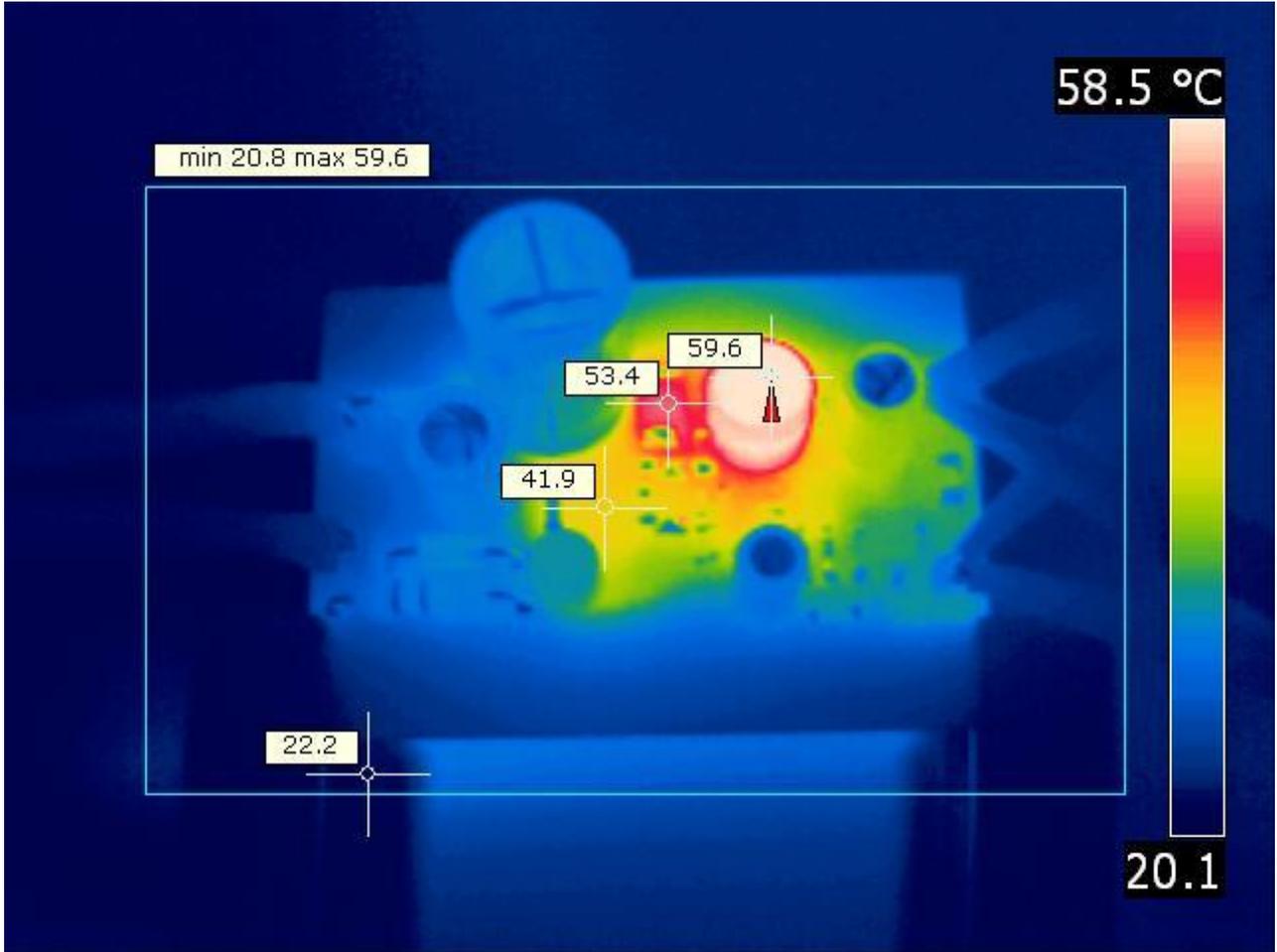
3 Thermal Images

The thermal images below show a top view and bottom view of the board under 120V_{ac}/60Hz and 230V_{ac}/50Hz input conditions. The ambient temperature was 20°C with no forced air flow. The output was at full load: 18V/0.3A.

V_{in}=120V_{AC}/60Hz



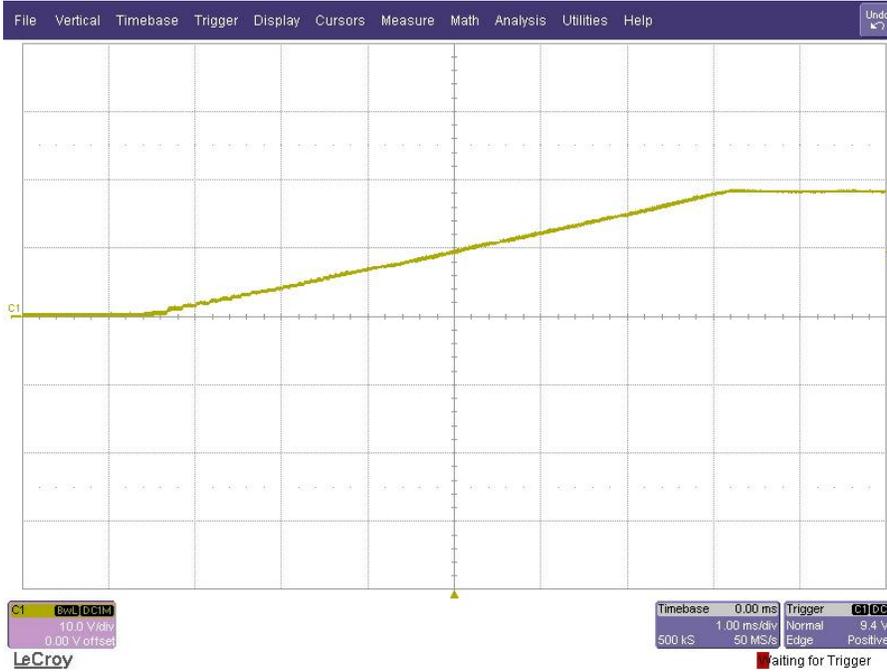
$V_{in}=230V_{AC}/50Hz$



4 Startup Waveforms

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

4.1 Start Up @ 85V_{ac}: 18V/0.3A.



4.2 Start Up @ 85V_{ac}: no load.



5 Turn off

The output voltage at turn off transient is shown in the image below at full load (18V/0.3A) and 85V_{ao}/60Hz input.



6 Output Ripple Voltages

The output ripple voltages are shown in the plots below with 120V_{ac}/60Hz input.

6.1 Full load (18V/0.3A)

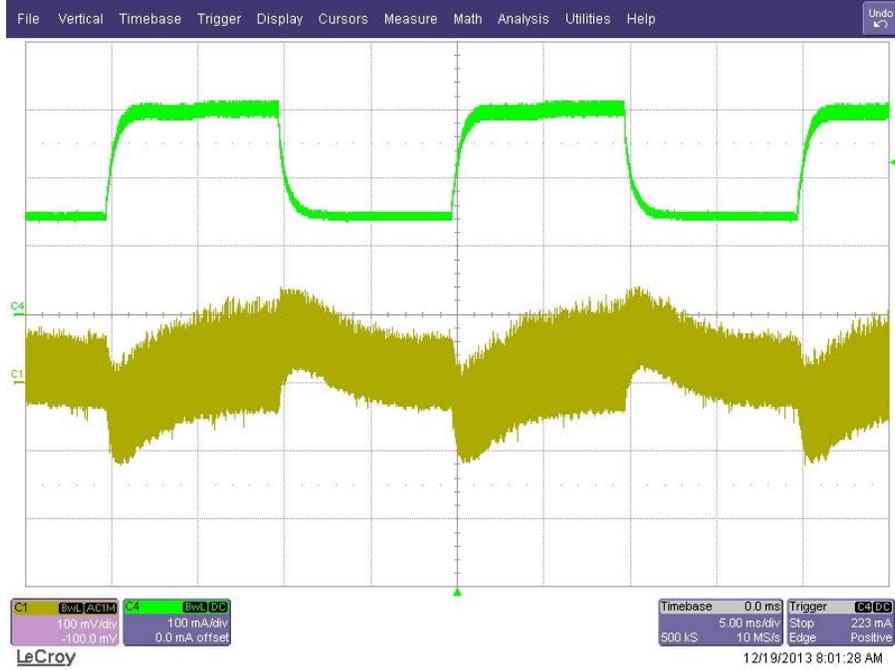


6.2 No load



7 Load Transient

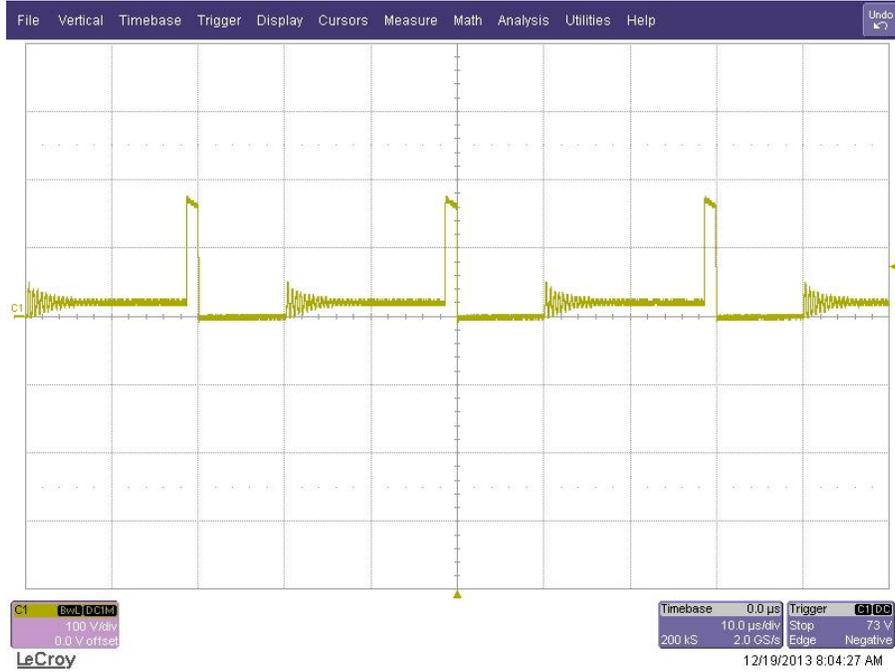
The image below shows $18V_{out}$ voltage response to a **0.15A** to **0.3A** load transient.



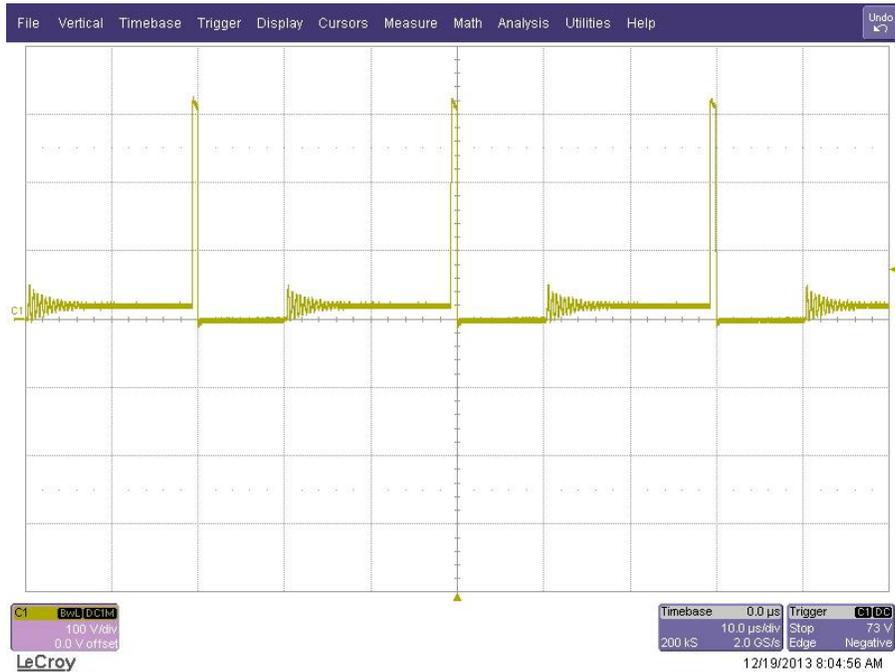
8 Switching Waveforms

The images below show key switching waveforms of PMP9530RevA. The waveforms are measured with 0.3A full load.

8.1 Diode D4 @ 120V_{ac}/60Hz



8.2 Diode D4 @ 230V_{ac}/50Hz



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