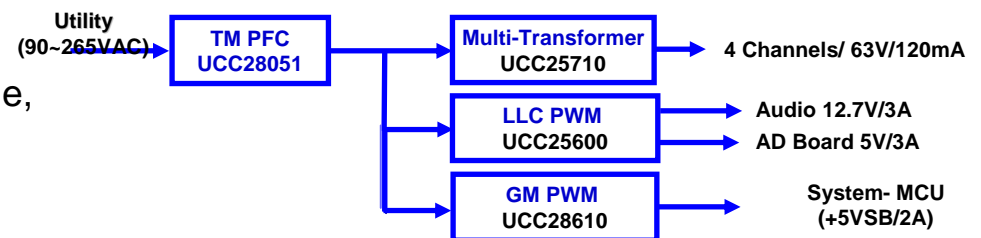


# PMP6252 LED Backlighting for Edge-Lite/ Group Dimming Digital TV Application

## Reference design Features

- Support to universal 90~264Vac range
- LED 4 outputs @120mA, 63V, 5Vsb@1A, 5V@3A, 13V@3A
- Eff 83.7%@110Vac, 85.2%@240Vac
- Secondary side 120Hz blanking control for dimming
- 8mm height and 6mmheight for LED magnetic component
- Board dimension 300mm(L) \* 200mm(W) \* 8mm(H)
- LED output common + and LED OVP and UVP
- Integrated the protection ckt to reduce the solution part count.
- Dedicated controller for edge-lit/ group dimming base on the LLC topology – **UCC25710**.
- Providing design package – Schematic, Gerbo file, PCB file, Magnetic components...



# Cross Regulation

Cross Regulation			
Load Condition		Output Voltage	
5V	13V	5V	13V
4mA	0A	5.13V	13.08V
4mA	3A	5.18V	12.55V
3A	0A	5.04V	13.82V
3A	3A	5.09V	13.4V

# LED Current

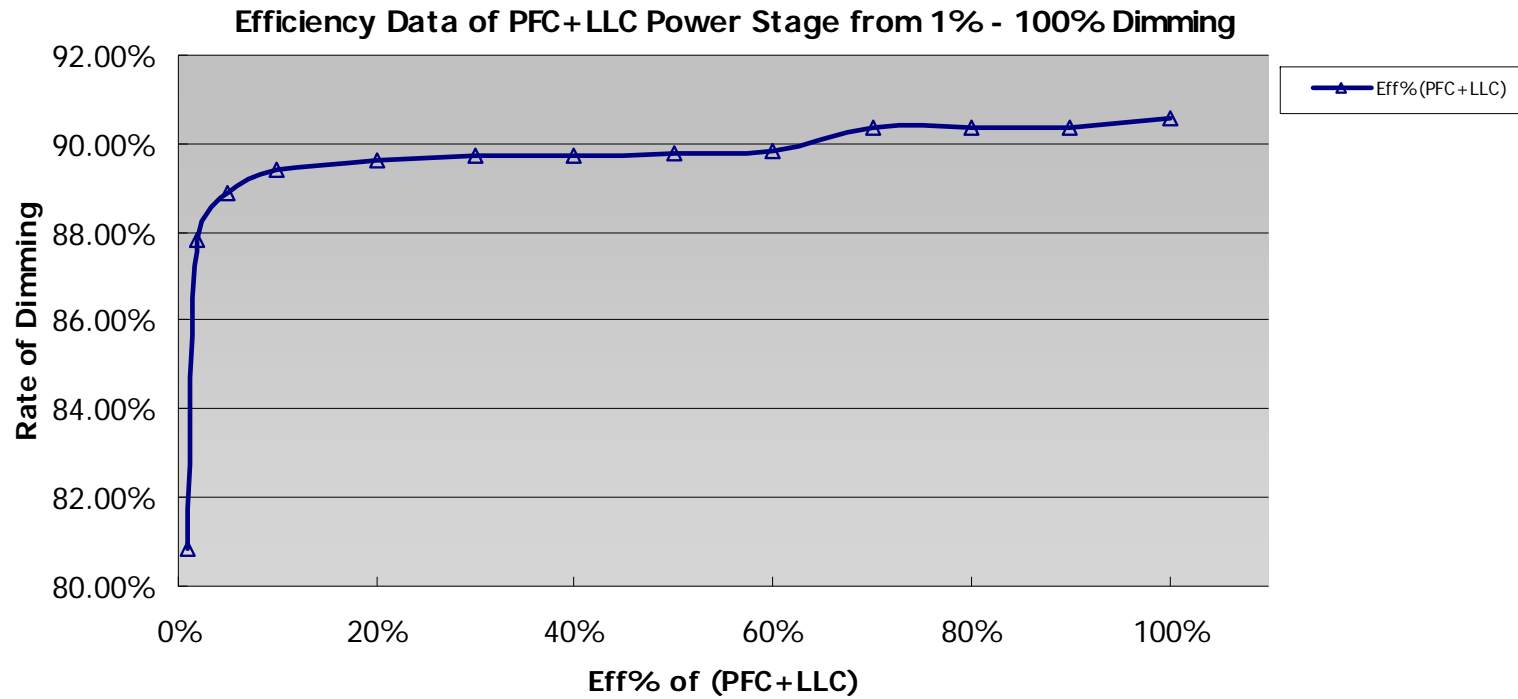
	LED1	LED2	LED3	LED4	AVG
100.00%	120.2	120.4	122.95	123.11	121.665
90.00%	108.2	108.32	110.77	110.8	109.5225
80.00%	96.18	96.26	98.49	98.52	97.3625
70.00%	84.16	84.24	86.19	86.19	85.195
60.00%	72.13	72.22	73.9	73.9	73.0375
50.00%	60.13	62.2	60.13	61.6	61.015
40.00%	48.12	48.16	49.26	49.28	48.705
30.00%	36.1	36.13	36.95	36.98	36.54
20.00%	24.07	24.09	24.63	24.66	24.3625
10.00%	12.04	12.05	12.32	12.34	12.1875
5.00%	6.02	6.02	6.15	6.18	6.0925
2.00%	2.4	2.41	2.46	2.47	2.435
1.00%	1.2	1.2	1.23	1.24	1.2175

# LED Current Tolerance

	Tolerance1	Tolerance2	Tolerance3	Tolerance4
100.00%	-1.204126084	-1.03974027	1.05617885	1.1876875
90.00%	-1.207514438	-1.09794791	1.13903536	1.16642699
80.00%	-1.214533316	-1.13236616	1.15804339	1.18885608
70.00%	-1.214860027	-1.1209578	1.16790891	1.16790891
60.00%	-1.242512408	-1.11928804	1.18090022	1.18090022
50.00%	-1.450463001	1.942145374	-1.450463	0.95878063
40.00%	-1.201108716	-1.11898162	1.1395134	1.18057694
30.00%	-1.204159825	-1.12205802	1.12205802	1.20415982
20.00%	-1.2006157	-1.11852232	1.09799897	1.22113905
10.00%	-1.21025641	-1.12820513	1.08717949	1.25128205
5.00%	-1.18998769	-1.18998769	0.94378334	1.43619204
2.00%	-1.437371663	-1.02669405	1.02669405	1.43737166
1.00%	-1.437371663	-1.43737166	1.02669405	1.84804928

Inductance tolerance 3% might cause current tolerance 1%

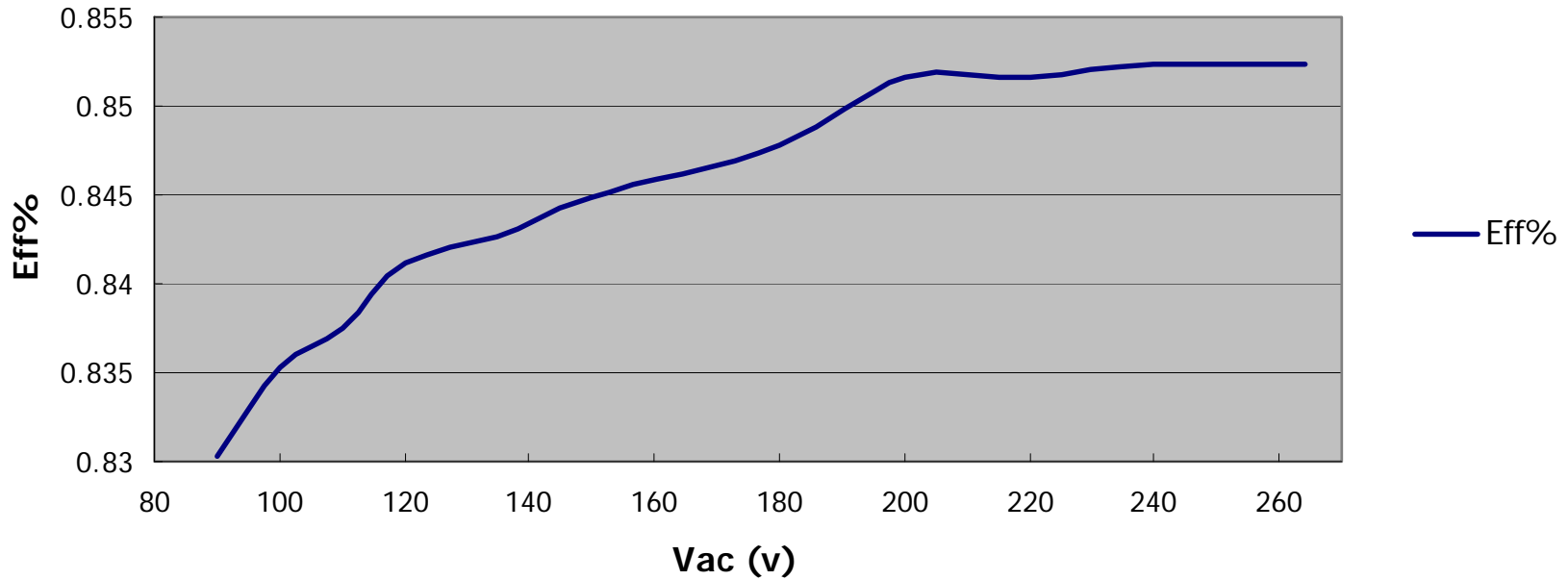
# LLC Efficiency



Efficiency exclude Stby Power Converter at full load condition ~ 90%

# Efficiency

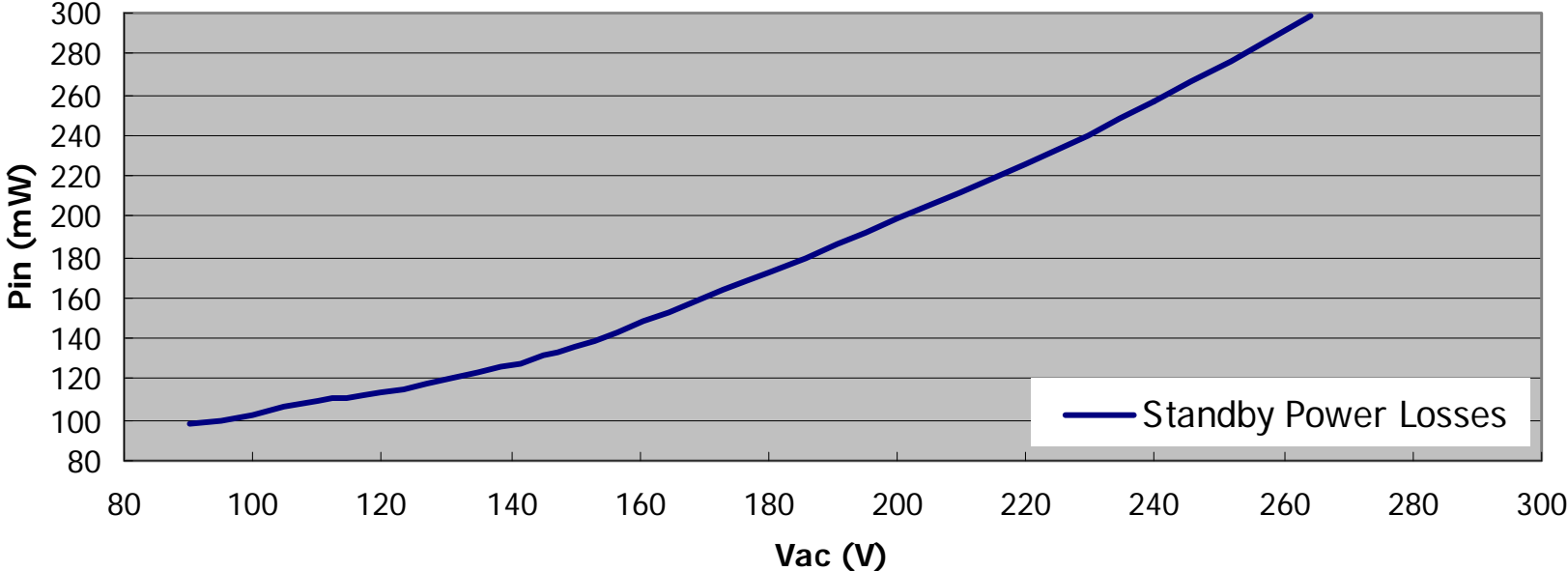
Efficiency Curve of 150Watt LED TV Back Light Reference Design



Vin	90	100	110	120	135	150	180	200	220	240	264
Pin	115.6	114.9	114.6	114.1	113.9	113.6	113.2	112.7	112.7	112.6	112.6
Eff	0.83023	0.83529	0.83748	0.84115	0.84262	0.84485	0.84783	0.85159	0.85159	0.85235	0.85235

# Standby Mode Power Consumption Performance – @5V/ 30mW

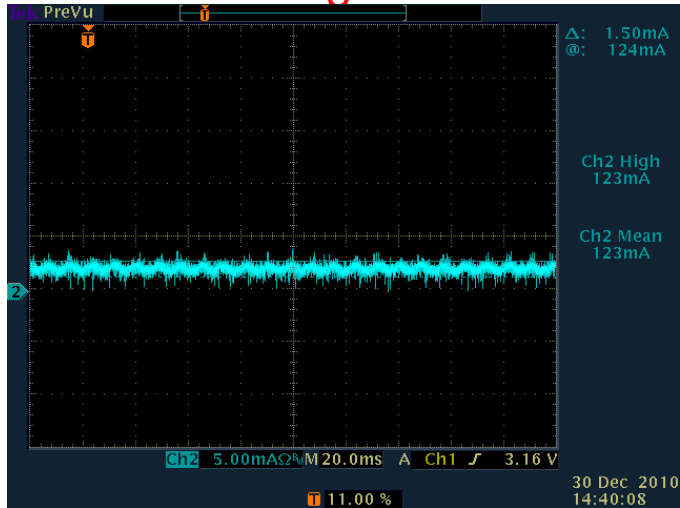
Standby Power Losses at 30mW with universal AC input



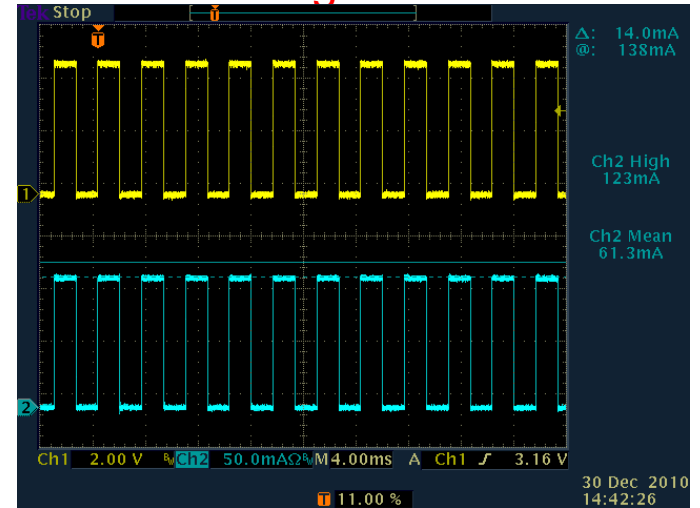
Vin	90	100	110	120	135	150	180	200	220	240	264
Pin	98.3	103	109	114	124	136	173	199	226	256	298

# Dimming Waveforms

## 100% Dimming

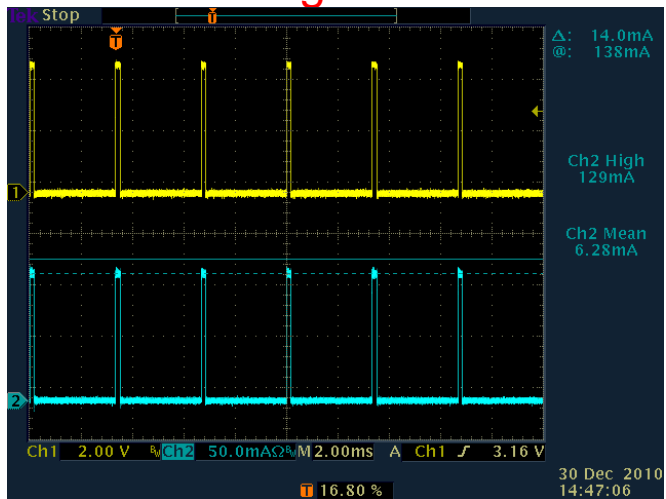


## 50% Dimming

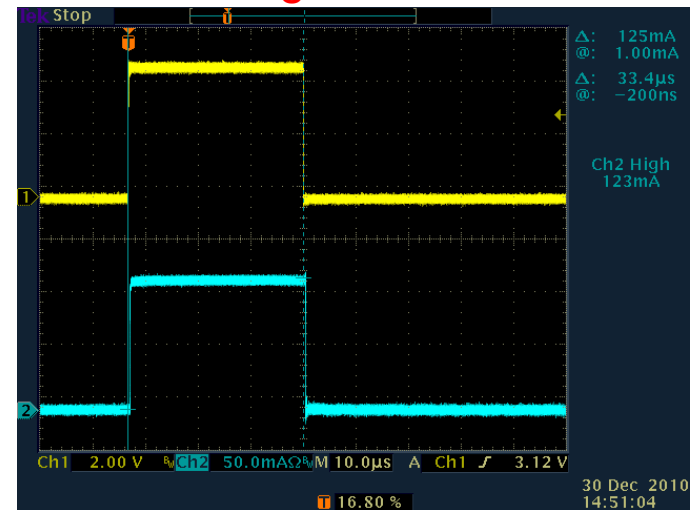


Current  
DIM

## 10% Dimming



## 1% Dimming





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