

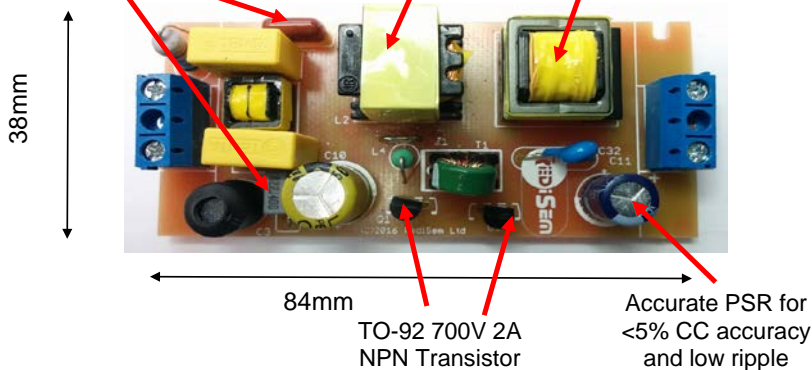


32W 800mA Low Ripple LED driver

PFC intergrated into single stage LLC converter

Low cost EE16/10 Inductor

Low cost EE16 transformer



RediSem IC	RED2402 SOT23-6 LLC LED Driver IC
Output Power	32W
Output Current	800mA Constant Current
Line regulation	1.4% (198 - 264VAC)
Load Regulation	0.12% (33 - 40V)
Output Voltage range	40 - 33V
Low Freq. Ripple	2% @ 230V full load
Efficiency	90% @ 230V full load
Input	198-264VAC, 50Hz
Survive input range	170 - 320VAC
PF	0.98 @ 230V full load
THD	5.8% @ 230V full load
Time to Light	100ms
Size	84mm x 38mm x 24mm
Protection	Short circuit, Open Circuit, Over temperature, SELV
Converter	Single boost PPFC CC LLC converter
Component Count	44



32W 800mA Low Ripple LED driver

Input voltage	198V		230V		264V	
Input Power	29.62	35.54	29.72	35.59	29.84	35.76
Output Power	26.33	31.76	26.43	32.08	26.50	32.20
Output Voltage	33.00	40.00	33.00	40.00	33.00	40.00
Output current	798mA	794mA	801mA	802mA	803mA	805mA
Efficiency	88.91%	89.36%	88.94%	90.14%	88.80%	90.04%
Power Factor	0.98	0.97	0.96	0.98	0.92	0.95
THD	6.2%	18.1%	14.0%	5.8%	25.6%	17.0%

Test	Result	Condition
Peak no-load Voltage	45.00V	230VAC
Load Regulation 40 - 33V	-0.12%	230VAC
Time To light	100ms	230VAC

Line regulation

input voltage	198V	264V
output current regulation at 40V	-1.01%	0.37%
output current regulation at 33V	-0.38%	0.25%

Low Frequency Visible Current Ripple

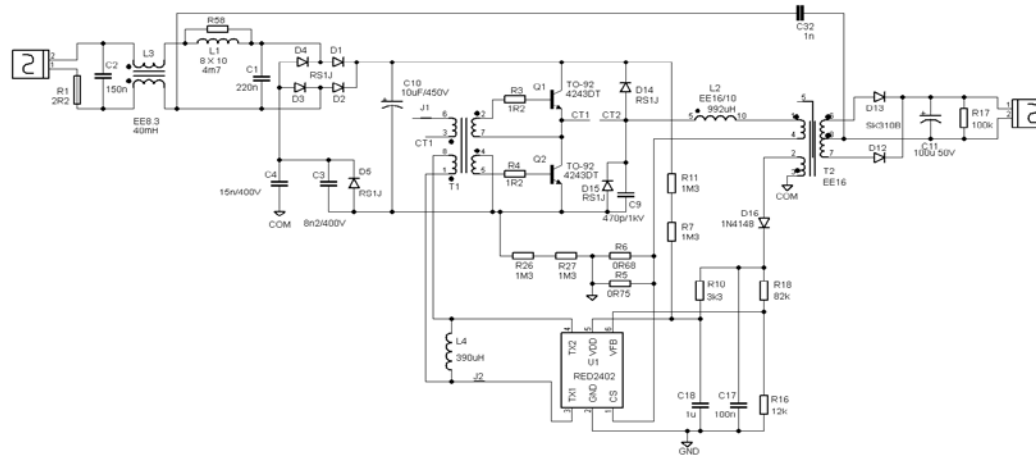
output voltage	40V
output current (pk-pk)	31.0mA
output current ripple (pk-pk/avg)	1.94%

Thermal Results (cased)	198V 40V	264V 33V
Ta	51.0C	51.0C
Q1	98.0C	101.0C
Q2	95.0C	97.0C
L2 core	106.0C	114.0C
L2 winding	107.0C	113.0C
T2 core	109.0C	105.0C
T2 winding	113.0C	111.0C
D12	88.0C	88.0C



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Code	Value	Description	Qty	Part no.
C1	220n	X2 MKP 20% 275VAC	1	
C2	150n	X2 MKP 20% 275VAC	1	
C3	8n2	MKP 5% 400VDC	1	
C4	15n	MKP 5% 400VDC	1	
C9	470p	1206 NPO 5% 630VDC	1	
C10	10u	ELEC 20% 450VDC	1	
C11	100u	ELEC 20% 50VDC	1	
C17	100n	0805 X7R 10% 50VDC	1	
C18	1u	0805 X7R 10% 16VDC	1	
C32	1n	Y-CAP	1	
D1,2,3,4,5,14,15	RS1J	SMA Fast Diode 600VDC	7	
D12,D13	SK310B	Schottky Diode, 100V 3A	2	
D16	LL4148	MiniMELF	1	
L1	4m7H	8x10 Drum Core	1	W10019
L2	992uH	Main Inductor EE16/10	1	W20052
L3	40mH	EE8.3 Common Mode	1	
L4	390uH	0410 0.25W Axial	1	
R1	2R2	Fuse resistor 2R2	1	
R3,4	1R2	0805 0.06W 1.0%	2	
R5	0R75	1206 0.25W 1.0%	1	
R6	0R68	1206 0.25W 1.0%	1	
R7,11,26,27	1M3	1206 0.25W 1.0%	4	
R10	3k3	0805 0.06W 1.0%	1	
R16	12k	0805 0.06W 1.0%	1	
R17	100k	0805 0.06W 1.0%	1	
R18	82k	0805 0.06W 1.0%	1	
P1,P2		Terminal 2 Pin	2	
Q1,Q2	3DD4243DT	NPN (T _s =2-2.5us) TO92 2A	2	
T1	A062 T9x5x4	Base Drive: 18:6:6:1 turns	1	
T2	EE16	Output Transformer	1	W40042
U1	RED2402	Low Ripple LED controller IC	1	
TOTAL			44	



Inductor	
CoreType	EE16/10
Material	PC44
Value	992uH
Winding	120t x 15s x 0.10mm

Transformer	
Core type	EE16
Material	PC44
Pri	56t x 1s x 0.25mm ECW
Aux	7t x 1s x 0.15mm ECW
Sec1	31t x 1s x 0.3mm 1EXE
Sec2	31t x 1s x 0.3mm 1EXE

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