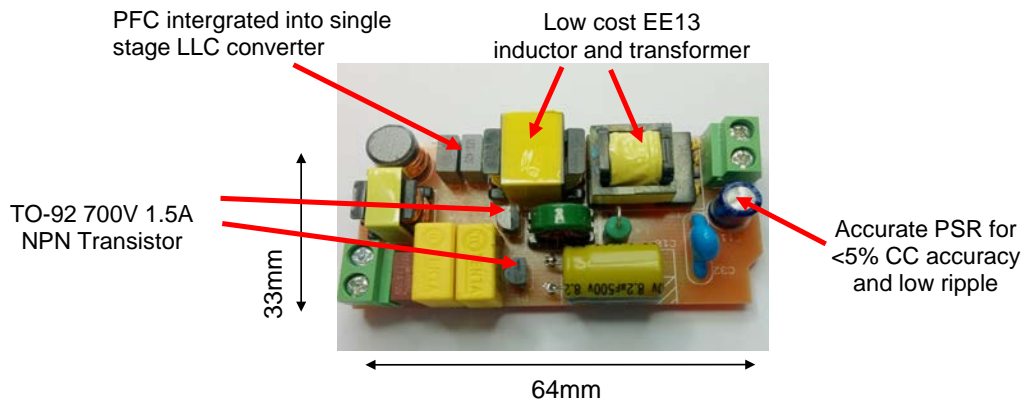




22W 530mA Low Ripple LED driver



RediSem IC	RED2401 SOT23-6 LLC LED Driver IC
Output Power	22W
Output Current	530mA Constant Current
Line regulation	1.14% (198 - 264VAC)
Load Regulation	0.38% (42 - 30V)
Output Voltage range	42 - 30V
Low Freq. Ripple	2% @ 230V full load
Efficiency	90% @ 230V full load
Input	198-264VAC, 50Hz
Survive input range	170 - 320VAC
PF	0.96 @ 230V full load
THD	9% @ 230V full load
Time to Light	250ms
Size	64mm x 33mm x 18mm
Protection	Short circuit, Open Circuit, Over temperature, SELV
Converter	Dual boost PPFC CC LLC converter
Component Count	52



22W 530mA Low Ripple LED driver

Input voltage	198V		230V		264V	
Input Power	17.97	24.48	18.09	24.63	18.18	24.79
Output Power	15.72	22.01	15.78	22.18	15.81	22.26
Output Voltage	30.00	42.00	30.00	42.00	30.00	42.00
Output current	524mA	524mA	526mA	528mA	527mA	530mA
Efficiency	87.48%	89.90%	87.23%	90.04%	86.96%	89.79%
Power Factor	0.95	0.96	0.91	0.96	0.86	0.92
THD	10.8%	15.0%	22.6%	9.0%	31.3%	17.6%

Test	Result	Condition
Peak no-load Voltage	53.00V	230VAC
Load Regulation 42 - 30V	-0.38%	230VAC
Time To light	250ms	230VAC

Line regulation

input voltage	198V	264V
output current regulation at 45V	-0.76%	0.38%
output current regulation at 30V	-0.38%	0.19%

Low Frequency Visible Current Ripple

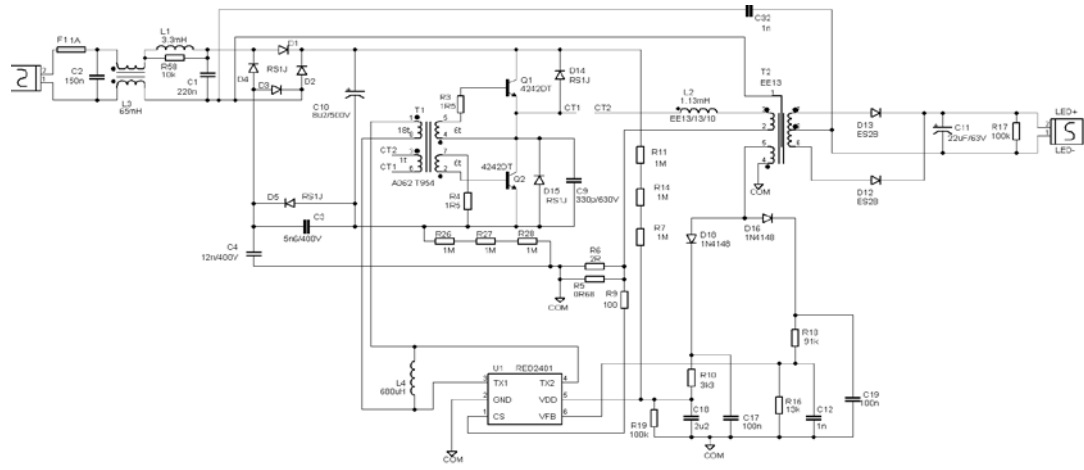
output voltage	30V	42V
output current (pk-pk)	13mA	21mA
output current ripple (pk-pk/avg)	1.24%	1.99%

Thermal Results (cased)	198V 42V	264V 30V
Ta	54.9C	54.7C
Q1	101.9C	107.3C
Q2	107.1C	114.3C
L2 core	103.5C	113.7C
L2 winding	104.6C	109.8C
T2 core	114.0C	108.2C
T2 winding	108.0C	104.8C
D12	103.0C	102.0C



22W 530mA Low Ripple LED driver

Code	Value	Description	Qty	Supplier	Part no.
C1	220n	X2 MKP 20% 275VAC	1		
C2	150n	X2 MKP 20% 275VAC	1		
C3	5n6	MKP 5% 400VDC	1	Fara	
C4	12n	MKP 5% 400VDC	1	Fara	
C9	330p	1206 NPO 5% 630VDC	1	Murata	
C10	8u2	ELEC 20% 500VDC KLM	1	YMIN	
C11	22uF	ELEC 20% 63VDC	1	Aishi	
C12	1n	0603 X7R 10% 25VDC	1		
C17,19	100n	0603 X7R 10% 25VDC	2		
C18	2u2	0603 X7R 10% 25VDC	1		
C32	1n	Y-CAP	1		
D1,2,3,4,5,14,15	RS1J	SMA Fast Diode 600VDC	7	TSC/Vishay	
D12,D13	ES2B	Schottky Diode, 100V 2A	2		
D16,18	1N4148	MiniMELF	2		
F1	1A	Fuse 1A T	1		
L1	3.3mH	8x10 Drum Core	1	Ningbo Eilux Electric	W10015
L2	1130uH	EE13/10 Main Inductor	1	Ningbo Eilux Electric	W20032
L3	65mH	EE10 Common Mode	1	Ningbo Eilux Electric	W30014
L4	680uH	0410 0.25W Axial	1		
R3,4	1R5	0805 0.06W 1.0%	2		
R5	2R	0805 0.06W 1.0%	1		
R6	0R68	0805 0.06W 1.0%	1		
R7,11,14	1M	0805 0.125W 1.0%	3		
R9	100R	0805 0.06W 1.0%	1		
R10	3K3	0603 0.06W 1.0%	1		
R16	13k	0603 0.06W 1.0%	1		
R17	100k	0805 0.06W 1.0%	1		
R18	91k	0603 0.06W 1.0%	1		
R19	100k	0603 0.06W 1.0%	1		
R26,27,28	1M	0805 0.06W 1.0%	3		
R58	10k	1206 0.25W 1.0%	1		
P1,P2		Terminal 2 Pin	2		
Q1,Q2	4242DT	NPN (Tss-2-2.5us) TO92 1.5A	2	Jilin Huawei	
T1	A062 T954	Base Drive 18.6:6:1 turns	1	ACME	A062T9'5'4C(RX)
T2	EE13	Output Transformer	1	Ningbo Eilux Electric	W40024
U1	RED2401	LLC LED controller IC	1	RediSem	
TOTAL			52		



Inductor	
CoreType	EE13/13/10
Material	YR48D
Value	1130 uH
Winding	110t x 7s x 0.10mm

Transformer	
Core type	EE13
Material	YR48D
Pri	58t x 1s x 0.18mm ECW
Aux	7t x 1s x 0.15mm ECW
Sec1	34t x 1s x 0.2mm TEXE
Sec2	34t x 1s x 0.2mm TEXE

次級要雙線並繞