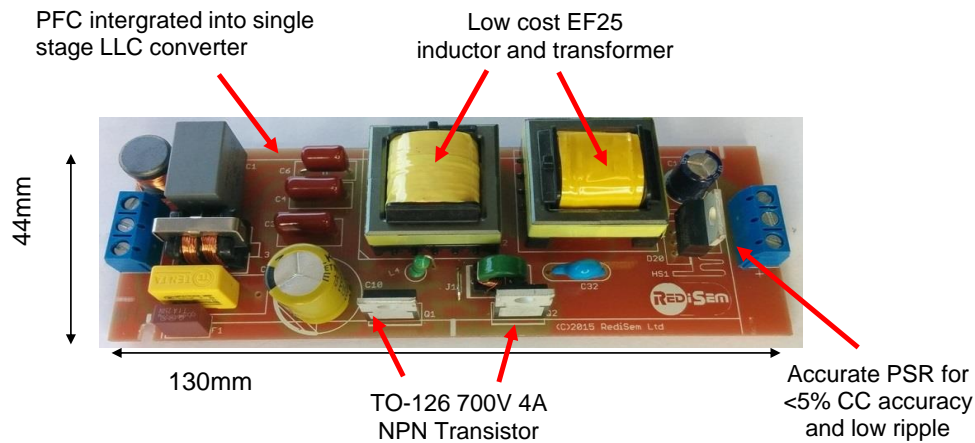




50W 1.2A Low Ripple LED driver



RediSem IC	RED2511 SO8 LLC LED Driver IC
Output Power	50W
Output Current	1.2A Constant Current
Line regulation	1.27% (198 - 264VAC)
Load Regulation	0.51% (42 - 30V)
Output Voltage range	42 - 30V
Low Freq. Ripple	5% @ 230V full load
Efficiency	91.8% @ 230V full load
Input	198-264VAC, 50Hz
Survive input range	170 - 320VAC
PF	0.98 @ 230V full load
THD	6% @ 230V full load
Time to Light	137ms
Size	112mm x 39mm x 23mm
Protection	Short circuit, Open Circuit, Over temperature, SELV
Converter	Dual boost PPFC CC LLC converter
Component Count	60



50W 1.2A Low Ripple LED driver

Input voltage	198V		230V		264V	
Input Power	39.65	53.89	39.90	54.33	40.15	54.60
Output Power	35.67	49.48	35.82	49.90	35.94	50.11
Output Voltage	30.00	42.00	30.00	42.00	30.00	42.00
Output current	1189mA	1178mA	1194mA	1188mA	1198mA	1193mA
Efficiency	89.96%	91.81%	89.77%	91.84%	89.51%	91.77%
Power Factor	0.97	0.98	0.95	0.98	0.92	0.96
THD	7.5%	14.8%	12.5%	6.0%	21.2%	11.1%

Test	Result	Condition
Peak no-load Voltage	50.00V	230VAC
Load Regulation 42 - 30V	0.51%	230VAC
Time To light	137ms	230VAC

Line regulation

input voltage	198V	264V
output current regulation at 45V	-0.85%	0.42%
output current regulation at 30V	-0.42%	0.33%

Low Frequency Visible Current Ripple

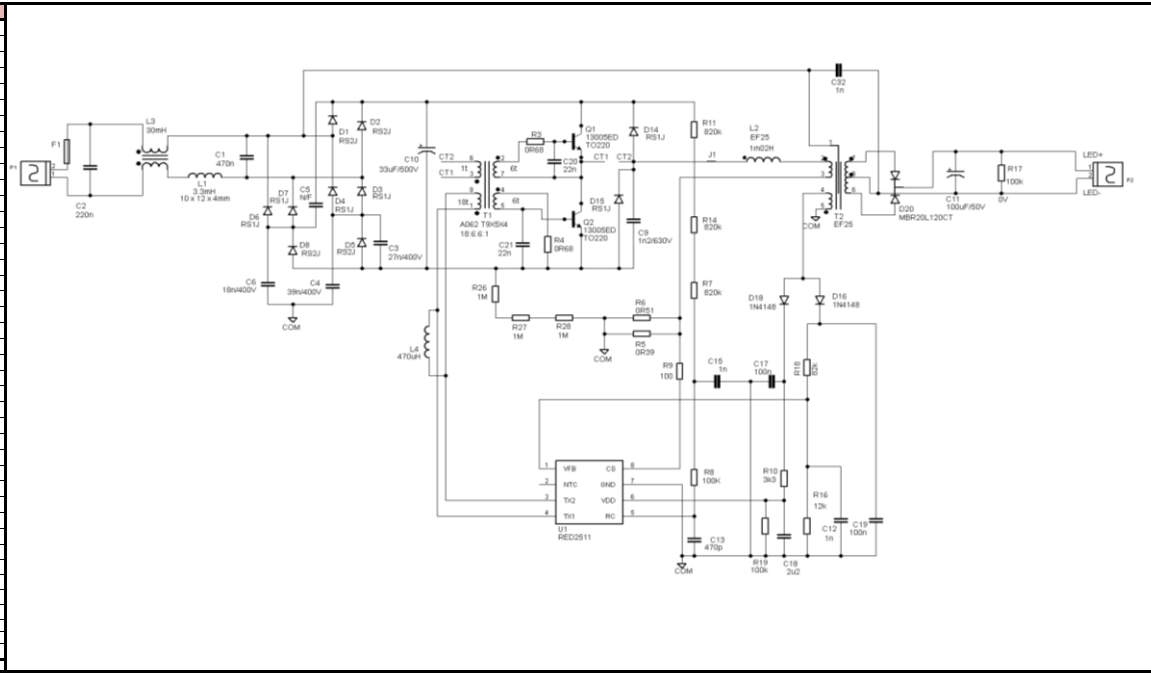
output voltage	30V	42V
output current (pk-pk)	43mA	59.00mA
output current ripple (pk-pk/avg)	3.60%	4.97%

Thermal Results (cased)	198V 42V	264V 30V
Ta	53.4C	53.5C
Q1	92.3C	98.6C
Q2	92.4C	98.3C
L2 core	97.7C	109.4C
L2 winding	99.5C	109.8C
T2 core	96.7C	93.2C
T2 winding	97.9C	97.7C
D20	99.1C	99.1C



50W 1.2A Low Ripple LED driver

Code	Value	Description	Qty	Supplier	Part no.
C1	470n	X2 MKP 20% 275VAC	1	Tenta	
C2	220n	X2 MKP 20% 275VAC	1	Tenta	
C3	27n	MKP 5% 400VDC	1	Fara	
C4	39n	MKP 5% 400VDC	1	Fara	
C6	18n	MKP 5% 400VDC	1	Fara	
C10	33u	ELEC 20% 500VDC	1	Aishi	
C11	100u	ELEC 20% 50VDC	1	Aishi	
C9	1n2	1206 NPO 5% 630VDC	1	Murata	
C12,15	1n	0805 X7R 10% 50VDC	2	Samsung	
C13	470p	0805 COG 5% 50VDC	1	Samsung	
C17,19	100n	0805 X7R 10% 50VDC	2	Samsung	
C18	2u2	0805 X7R 10% 16VDC	1	Samsung	
C20,21	22n	0805 X7R 10% 50VDC	2	Samsung	
C32	1n	Y-CAP	1		
D1,2,5,8	RS2J	SMA Fast Diode 600VDC	4	TSC/Vishay	
D3,4,6,7	RS1J	SMA Fast Diode 600VDC 1A	4	TSC/Vishay	
D20	MBR20LT120CT	TO220 120V 20A Schottky Diode	1		
D14,D15	RS1J	SMA Fast Diode 600VDC 1A	2	TSC	
D16,18	LL4148	MiniMELF	2	Vishay	
F1	1A	Fuse	1		
J1		Jumper wire	1		
L1	3.3mH	10x12x4mm Drum Core	1	Ningbo Eilux Electric	W10012
L2	1m02H	EF25 Main Inductor	1	Ningbo Eilux Electric	W20034
L3	30mH	1UU9.8 Common mode	1	Ningbo Eilux Electric	W30013
L4	470uH	0410 0.25W Axial	1		
R3,4	0R68	0805 0.06W 1.0%	2		
R5	0R39	1206 0.25W 1.0%	1		
R6	0R51	1206 0.25W 1.0%	1		
R7,11,14	820k	0805 0.125W 1.0%	3		
R8,19	100k	0805 0.06W 1.0%	2		
R9	100R	0805 0.06W 1.0%	1		
R10	3k3	0805 0.06W 1.0%	1		
R16	12k	0805 0.06W 1.0%	1		
R17	100k	1206 0.25W 1.0%	1		
R18	82k	0805 0.06W 1.0%	1		
R26,27,28	1M	0805 0.125W 1.0%	3		
P1,P2		Terminal 2 Pin	2		
Q1,Q2	13005ED	TO220 4A NPN Transistor (Ts=2-2.5us)	2	Jilin Sino	
T1	A062 T9x5x4	Base Drive	1	ACME	A062T9*5*4C(RX)
T2	FF25	Output Transformer	1	Ningbo Eilux Electric	W40025
U1	RED2511	LLC LED controller IC	1	Redisem	
TOTAL			60		



Inductor	
Core type	EF25
Material	VR48D
Value	1m02H
Winding	125t x 25s x 0.10mm

Transformer	
Core type	EE25
Material	VR48D
Value	33t x 20s x 0.1mm ECW
Aux	5t x 1s x 0.15mm ECW
Sec1	23t x 1s x 0.6mm TEXE
Sec2	23t x 1s x 0.6mm TEXE

次級要雙線並繞