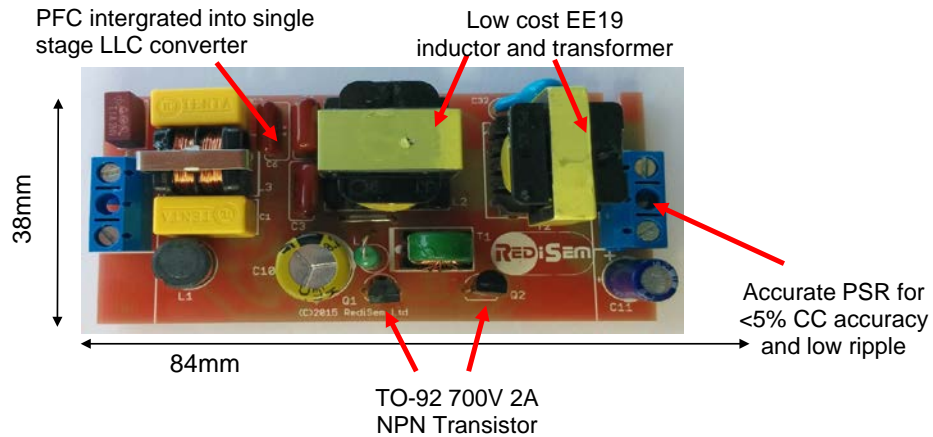




30W 700mA Low Ripple LED driver



RediSem IC	RED2501 SO8 LLC LED Driver IC
Output Power	30W
Output Current	700mA Constant Current
Line regulation	1.15% (198 - 264VAC)
Load Regulation	1.3% (42 - 30V)
Output Voltage range	42 - 30V
Low Freq. Ripple	5% @ 230V full load
Efficiency	91% @ 230V full load
Input	198-264VAC, 50Hz
Survive input range	170 - 320VAC
PF	0.97 @ 230V full load
THD	6.9% @ 230V full load
Time to Light	180ms
Size	84mm x 38mm x 24mm
Protection	Short circuit, Open Circuit, Over temperature, SELV
Converter	Dual boost PPFC CC LLC converter
Component Count	59



30W 700mA Low Ripple LED driver

Input voltage	198V		230V		264V	
Input Power	23.67	31.95	23.85	31.98	24.03	32.30
Output Power	20.97	28.98	21.06	29.11	21.12	29.32
Output Voltage	30.00	42.00	30.00	42.00	30.00	42.00
Output current	699mA	690mA	702mA	693mA	704mA	698mA
Efficiency	88.59%	90.70%	88.30%	91.01%	87.89%	90.76%
Power Factor	0.96	0.96	0.94	0.97	0.91	0.95
THD	7.8%	15.4%	8.6%	6.9%	10.2%	11.9%

Test	Result	Condition
Peak no-load Voltage	49.20V	230VAC
Load Regulation 42 - 30V	1.30%	230VAC
Time To light	180ms	230VAC

Line regulation

input voltage	198V	264V
output current regulation at 45V	-0.43%	0.72%
output current regulation at 30V	-0.43%	0.28%

Low Frequency Visible Current Ripple

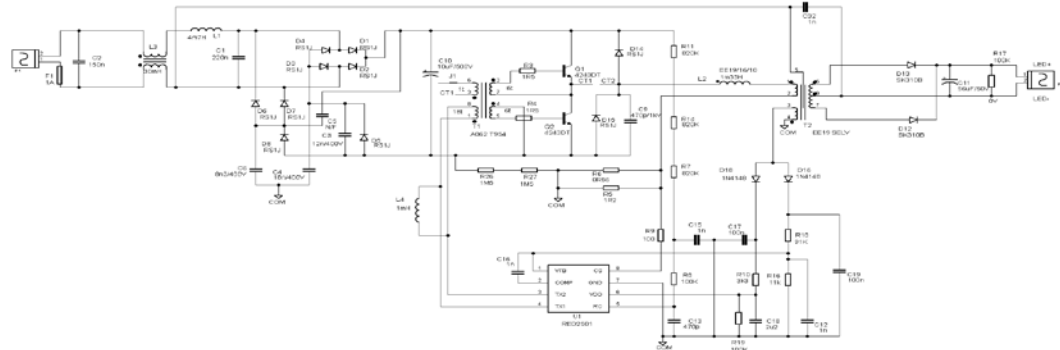
output voltage	30V	42V
output current (pk-pk)	24mA	33mA
output current ripple (pk-pk/avg)	3.35%	4.76%

Thermal Results (cased)	198V 42V	264V 30V
Ta	57.0C	57.0C
Q1	100.0C	105.0C
Q2	96.0C	102.0C
L2 core	98.0C	109.0C
L2 winding	101.0C	110.0C
T2 core	103.0C	99.0C
T2 winding	107.0C	106.0C
D12	90.4C	90.3C
D13	92.6C	92.8C



30W 700mA 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	12n	MKP 5% 400VDC	1	Fara	
C4	18n	MKP 5% 400VDC	1	Fara	
C6	8n2	MKP 5% 400VDC	1	Fara	
C10	10u	ELEC 20% 500VDC	1	Ymin	
C11	56u	ELEC 20% 50VDC	1	Aishi RJ range	
C9	470p	1206 NPO 5% 630VDC	1	Murata	
C12,15,16	1n	0805 X7R 10% 25VDC	3		
C13	470p	0805 COG 5% 50VDC	1		
C17,19	100n	0805 X7R 10% 50VDC	2		
C18	2u2	0805 X7R 10% 16VDC	1		
C32	1n	Y-CAP	1		
D1,2,3,4,5,6,7,8,14,15	RST1J	SMA Fast Diode 600VDC	10	TSC/Vishay	
D12,D13	SK310B	Schottky Diode, 100V 3A	2		
D16,18	LL4148	MiniMELF	2		
F1	1A	Fuse 1A T	1		
J1		Jumper wire	1		
L1	4m7H	8x10 Drum Core	1	Ningbo Elux Electric	W10001
L2	1330uH	Main Inductor EE/19/16/10	1	Ningbo Elux Electric	W20031
L3	30mH	UU9.8 Common Mode	1	Ningbo Elux Electric	W30013
L4	1mH	0410 0.25W Axial	1		
R3,4	1R5	0805 0.06W 1.0%	2		
R5	0R56	1206 0.25W 1.0%	1		
R6	1R2	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	11k	0805 0.06W 1.0%	1		
R17	100k	1206 0.25W 1.0%	1		
R18	91k	0805 0.06W 1.0%	1		
R26,27	1M5	1206 0.125W 1.0%	2		
P1,P2		Terminal 2 Pin	2		
Q1,Q2	3DD4243DT	NPN (T _s =2-2.5us) TO92 2A	2	Jilin Huawei	
T1	A062 T95x4	Base Drive: 18:6:6:1 turns	1	ACME	A062T9'5'4C(RX)
T2	EE19	Output Transformer	1	Ningbo Elux Electric	W40023
U1	RED2501	LLC LED controller IC	1	RedSem	
TOTAL			59		



Inductor	
CoreType	EE/19/16/10
Material	PC44
Value	1330 uH
Winding	135t x 10s x 0.10mm

Transformer	
Core type	EE19
Material	PC44
Pri	64t x 1s x 0.23mm ECW
Aux	9t x 1s x 0.35mm ECW
Sec1	38t x 1s x 0.35mm TEXE
Sec2	38t x 1s x 0.35mm TEXE

次級雙線並繞