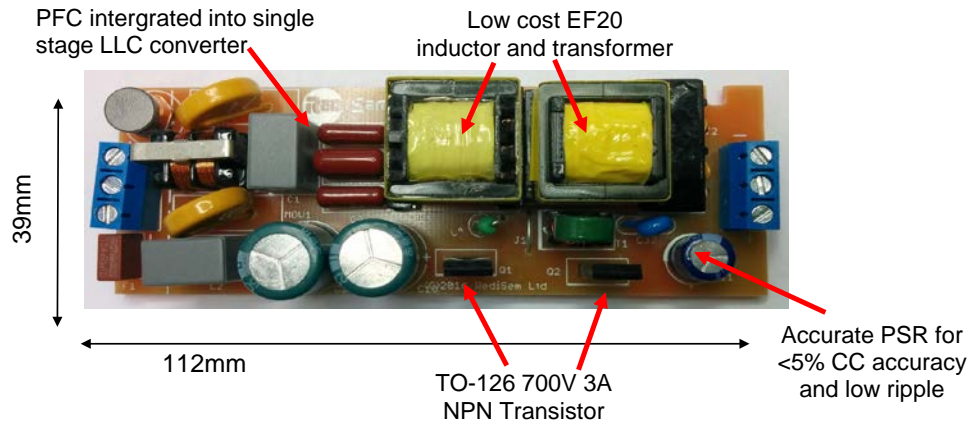




42W 1A Low Ripple 460V input LED driver



RediSem IC	RED2511 SO8 LLC LED Driver IC
Output Power	42W
Output Current	1A Constant Current
Line regulation	0.7% (198 - 264VAC)
Load Regulation	0.8% (42 - 30V)
Output Voltage range	42 - 30V
Low Freq. Ripple	4.3% @ 230V full load
Efficiency	91% @ 230V full load
Input	198-264VAC, 50Hz
Survive input range	170 - 460VAC
PF	0.97 @ 230V full load
THD	6.5% @ 230V full load
Time to Light	180ms
Size	112mm x 39mm x 24mm
Protection	Short circuit, Open Circuit, Over temperature, SELV
Converter	Dual boost PPFC CC LLC converter
Component Count	65



42W 1A Low Ripple 460V input LED driver

Input voltage	198V		230V		264V	
Input Power	33.72	45.77	33.89	45.84	34.02	46.02
Output Power	30.03	41.66	30.12	41.83	30.30	41.96
Output Voltage	30.00	42.00	30.00	42.00	30.00	42.00
Output current	1001mA	992mA	1004mA	996mA	1010mA	999mA
Efficiency	89.06%	91.03%	88.88%	91.26%	89.07%	91.17%
Power Factor	0.97	0.97	0.95	0.97	0.93	0.95
THD	7.5%	13.7%	13.4%	6.5%	22.1%	12.7%

Test	Result	Condition
Peak no-load Voltage	49.50V	230VAC
Load Regulation 42 - 30V	0.80%	230VAC
Surge	6KV	230VAC
High input voltage protection	360Vac	
High input voltage Survival	460Vac	
Time To light	180ms	230VAC

Line regulation

input voltage	198V	264V
output current regulation at 45V	-0.40%	0.30%
output current regulation at 30V	-0.30%	0.59%

Low Frequency Visible Current Ripple

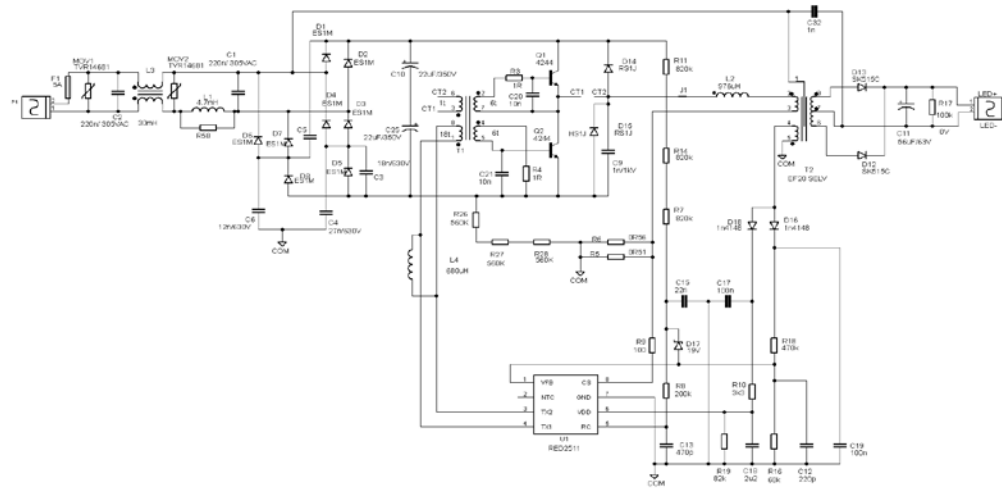
output voltage	30V	42V
output current (pk-pk)	30mA	43mA
output current ripple (pk-pk/avg)	1.49%	2.16%

Thermal Results (cased)	198V 42V	264V 30V
Ta	55.0C	55.4C
Q1	94.4C	101.0C
Q2	91.7C	101.0C
L2 core	97.0C	112.0C
L2 winding	96.6C	111.0C
T2 core	98.0C	96.3C
T2 winding	104.0C	104.5C
D12	94.4C	94.3C
D13	98.5C	98.6C



42W 1A Low Ripple 460V input LED driver

Code	Value	Description	Qty	Supplier	Part no.
C1,2	220n	X2 MKP 20% 305VAC	2		
C3	18n	MKP 5% 400VDC	1	Fara	
C4	27n	MKP 5% 400VDC	1	Fara	
C6	12n	MKP 5% 400VDC	1	Fara	
C10,C25	22u	ELEC 20% 350VDC	2	Ymin	
C11	56u	ELEC 20% 50VDC	1	Aishi RZ range	
C9	1n	1206 NPO 5% 630VDC	1		
C12	220p	0805 X7R 10% 25VDC	1	Murata	
C13	470p	0805 C0G 5% 50VDC	1		
C15	22n	0805 X7R 10% 25VDC	1		
C17,19	100n	0805 X7R 10% 50VDC	2		
C18	2u2	0805 X7R 10% 16VDC	1		
C20,C21	10n	0805 X7R 10% 50VDC	2		
C32	1n	Y-CAP	1		
D1,2,3,4,5,6,7,8	ES1M	SMA Fast Diode 1KVDC	8	TSC/Vishay	
D14,D15	RS1J	SMA Fast Diode 600VDC	2	TSC/Vishay	
D12,D13	SK515C	Schottky Diode, 150V 5A	2	TSC/Vishay	
D16,18	LL4148	MiniMELF	2		
D17	19V	Zenar diode	1		
F1	5A	Fuse 5A T	1		
J1		Jumper wire	1		
L1	4.7mH 8x10	Drum Core	1		W10001
L2	976uH	EF20/11 Main Inductor	1		W20030
L3	30mH	JUJ9.8 Common Mode	1		W30013
L4	680uH	0410 0.25V Axial	1		
MOV1 MOV2	TVR14681		2		
R3,4	1R	0805 0.06W 1.0%	2		
R5	OR56	1206 0.25W 1.0%	1		
R6	OR51	1206 0.25W 1.0%	1		
R7,11,14	820k	0805 0.125W 1.0%	3		
R8	200k	0805 0.06W 1.0%	1		
R9	100R	0805 0.06W 1.0%	1		
R10	3k3	0805 0.06W 1.0%	1		
R19	82k	0805 0.06W 1.0%	1		
R16	68k	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	560k	0805 0.125W 1.0%	3		
P1,P2		Terminal 2 Pin	2		
Q1,Q2	3DD4244DM	NPN (I _{cs} =2.5us) TO126 3A	2	Jilin Huawei	
T1	A062 19.5v4V	Base Drive: 18.6:5:1 turns	1	ACME	A062T9*5.4C(RX)
T2	EF20	Output Transformer	1	Ninbo Elix Electric	W40022
U1	RED2511	LLC LED controller IC	1	RediSem	
TOTAL			65		



Inductor	
Core Type	EF20/11
Material	PC44
Value	976 uH
Winding	105t x 15s x 0.10mm

Transformer	
Core type	EF20
Material	PC44
Pri	47t x 2s x 0.3mm ECW
Aux	6t x 1s x 0.15mm ECW
Sec1	28t x 1s x 0.4mm 1EXE
Sec2	29t x 1s x 0.4mm 1EXE

次級雙線並繞