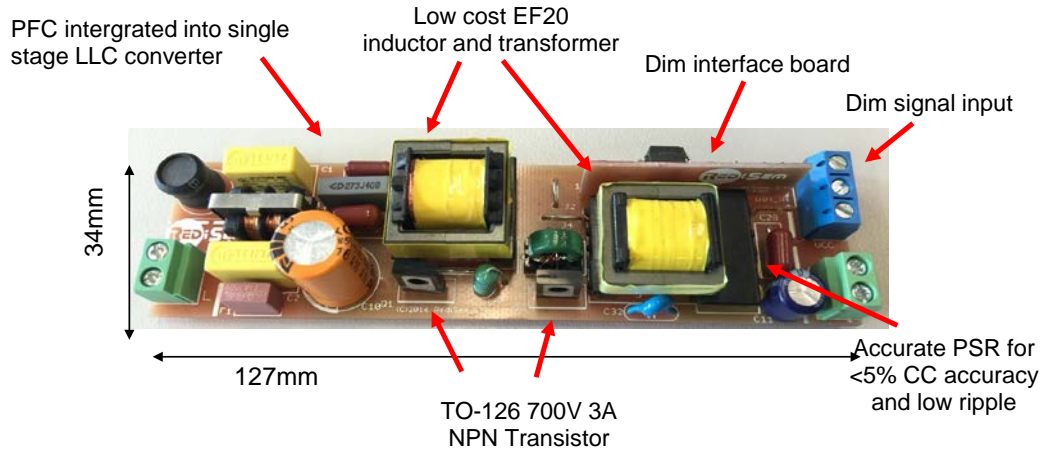




42W 1A PPFC DIM LED driver



RediSem IC	RED2821 SO8 LLC LED Driver IC
Output Power	42W
Output Current	1A Constant Current
Line regulation	0.7% (198 - 264VAC)
Load Regulation	0.4% (42 - 30V)
Output Voltage range	42 - 30V
Low Freq. Ripple	2.0% @ 230V full load
Efficiency	90.2% @ 230V full load
Input	198-264VAC, 50Hz
Survive input range	170 - 320VAC
PF	0.97 @ 230V full load
THD	8.2% @ 230V full load
Time to Light	200ms
Size	127mm x 34mm x 24mm
Protection	Short circuit, Open Circuit, Over temperature, SELV
Converter	Dual boost PPFC CC LLC converter
Component Count	63



42W 1A PPFC DIM LED driver

Input voltage	198V		230V		264V	
Input Power	33.88	46.07	34.15	46.37	34.41	46.78
Output Power	29.88	41.58	30.00	41.83	30.12	42.13
Output Voltage	30.00	42.00	30.00	42.00	30.00	42.00
Output current	996mA	990mA	1000mA	996mA	1004mA	1003mA
Efficiency	88.19%	90.25%	87.85%	90.21%	87.53%	90.05%
Power Factor	0.97	0.98	0.96	0.97	0.93	0.96
THD	9.4%	12.2%	14.7%	8.2%	22.7%	14.8%

Test	Result	Condition
Peak no-load Voltage	47.40V	230VAC
Load Regulation 42 - 30V	0.40%	230VAC
Time To light	200ms	230VAC

Line regulation

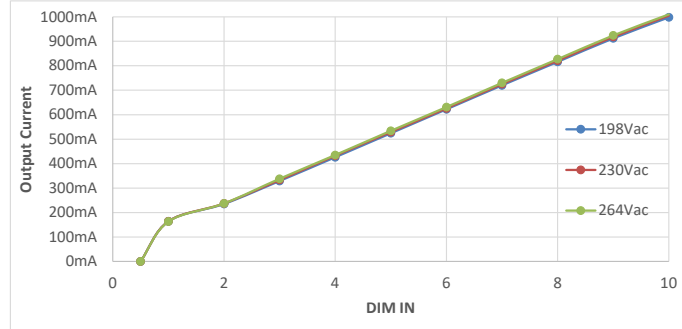
input voltage	198V	264V
output current regulation at 45V	-0.61%	0.70%
output current regulation at 30V	-0.40%	0.40%

Low Frequency Visible Current Ripple

output voltage	30V	42V
output current (pk-pk)	15mA	20mA
output current ripple (pk-pk/avg)	1.50%	2.01%

DIM input

0 - 10V DIM input	10	9	8	7	6	5	4	3	2	1	0.5
198Vac	998mA	912mA	816mA	720mA	622mA	524mA	426mA	329mA	235mA	164mA	0mA
230Vac	1005mA	918mA	821mA	725mA	626mA	529mA	432mA	333mA	237mA	164mA	0mA
264Vac	1010mA	924mA	827mA	730mA	631mA	534mA	435mA	338mA	237mA	163mA	0mA

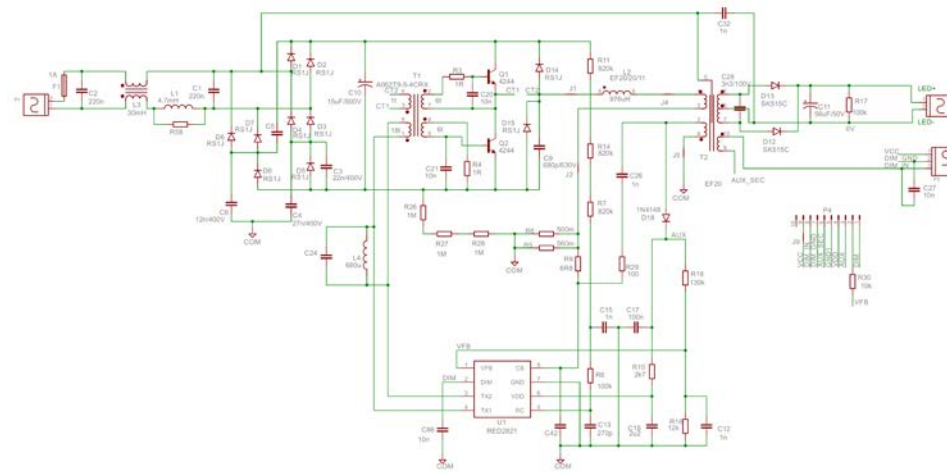


Thermal Results (cased)	198V 42V	264V 30V
Ta	51.1C	51.2C
Q1	93.7C	103.6C
Q2	92.6C	105.3C
L2 core	94.0C	105.8C
L2 winding	89.9C	100.5C
T2 core	96.5C	96.7C
T2 winding	95.3C	95.2C



42W 1A PPFC DIM LED driver

Code	Value	Description	Qty	Supplier	Part no.
C1,2	220n	X2 MKP 20% 275VAC	2		
C3	22n	MKP 5% 400VDC	1	Fara	
C4	27n	MKP 5% 400VDC	1	Fara	
C6	12n	MKP 5% 400VDC	1	Fara	
C10	15u	ELEC 20% 500VDC	1	Ymin	
C11	56u	ELEC 20% 50VDC	1	Aishi RZ range	
C9	680p	1206 NPO 5% E30VDC	1		
C12,15,26	1n	0805 X7R 10% 50VDC	3	Murata	
C13	270p	0805 C0G 5% 50VDC	1		
C17	100n	0805 X7R 10% 50VDC	1		
C20,21	10n	0805 X7R 10% 50VDC	2		
C18	2u2	0805 X7R 10% 16VDC	1		
C27,86	10n	0805 X7R 10% 16VDC	2		
C28	3n3	MKP 5% 100VDC	1	Fara	
C32	1n	Y-CAP	1		
D1,2,3,4,5,6,7,8,14,15	RS1J	SMA Fast Diode 600VDC	10	TSC/Vishay	
D12,D13	SK515C	Schottky Diode, 150V 5A	2		
D18	LL4148	MiniMELF	1		
F1	1A	Fuse 1A T	1		
L1	4.7mH 8x10	Drum Core	1	Ninbo Eilux Electric	W10001
L2	976uH	EF2011 Main Inductor	1	Ninbo Eilux Electric	W20030
L3	30mH	LIU9.8 Common Mode	1	Ninbo Eilux Electric	W30013
L4	680uH	0410 0.25W Axial	1		
R3,4	1R	0805 0.06W 1.0%	2		
R5	0R56	1206 0.25W 1.0%	1		
R6	0R5	1206 0.25W 1.0%	1		
R7,11,14	820k	0805 0.125W 1.0%	3		
R8	100k	0805 0.06W 1.0%	1		
R9	6R8	0805 0.06W 1.0%	1		
R10	2k7	0805 0.06W 1.0%	1		
R16	12k	0805 0.06W 1.0%	1		
R17	100k	1206 0.25W 1.0%	1		
R18	130k	0805 0.06W 1.0%	1		
R26,27,28	1M	0805 0.125W 1.0%	3		
R29	100R	0805 0.06W 1.0%	1		
R30	10k	0805 0.06W 1.0%	1		
P1,P2		Terminal 2 Pin	2		
Q1,Q2	3DD4244DM	NPN (Ts=2-2.5us) TO126 3A	2	Jilin Huawei	
T1	A062 T9x5x4	Base Drive: 18.6:6:1 turns	1	ACME	A062T9*5 4C(RX)
T2	EF20	Output Transformer	1		
U1	RED2821	LLC LED controller IC	1	RediSem	
TOTAL			63		



Inductor	
CoreType	EF20/11
Material	PC44
Value	976 uH
Winding	10St x 15s x 0.10mm

Transformer	
Core type	EF20
Material	PC44
Pri	47s x 2s x 0.3mm ECW
Aux	9t x 1s x 0.15mm ECW
Sec1 *	28t x 1s x 0.4mm TEXE
Sec2 *	28t x 1s x 0.4mm TEXE
Aux2	17t x 0.15mm ECW

次級要雙線並繞