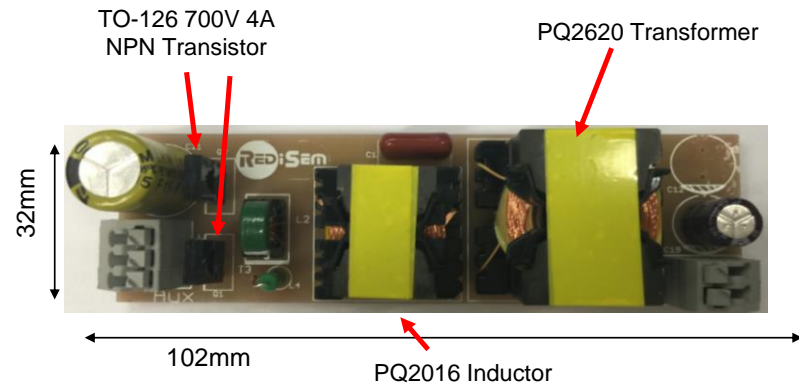




150W LLC Half Bridge 214V 700mA



RediSem IC	RED2601 SO8 LLC LED Driver IC
Output Power	150W
Output Current	700mA Constant Current
Load Regulation	0.65% (214 - 107V)
Output Voltage range	214 - 107V
Low Freq. Ripple	0.5% @ full load
Efficiency	97% @ full load
Input	430VDC
Size	102mm x 32mm
Protection	Short circuit, Open Circuit, Over temperature, SELV
Converter	CC LLC converter
Component Count	43



150W LLC Half Bridge 214V 700mA

Input voltage (DC)	430V	
Input Power	79.12W	155.23W
Output Power	74.37W	150.23W
Output Voltage	107.00	214.00
Output current	695mA	702mA
Efficiency	93.99%	96.78%

No load condition

input voltage	430V
No Load Voltage (peak)	255.00V

Load regulation

input voltage	430V
output current load regulation 214V between 107V	0.50%

Current Ripple for Low Frequency Ripple only

output voltage	107V	214V
output current (pk-pk)	8mA	14mA
output current (avg)	695mA	702mA
output current ripple (low freq.)	1.08%	1.99%

Short circuit Protection

input voltage	430V
input power (output short circuit)	pass

Note for this sample:

1. For proper design, Input capacitance should be at least 55uF Ecap with 430V average input
2. For proper design, Aux power should be applied to LLC part from APFC and disconnect R48 from the circuit. Otherwise, the chip restart after turn off (LED Filckering)

thermal results (open case in a box)

Vout	214V	107V
Q1	100C	123C
Q2	96C	115C
inductor wire	105C	112C
inductor core	104C	111C
Transformer wire	104C	100C
Transformer core	105C	98C
Ouput Diode	111C	108C
Ta	74C	75C



150W LLC Half Bridge 214V 700mA

Code	Value	Description	Qty	Supplier	Comments
C9	1n5	1206 NPO 5% 630VDC	1		
C10	1u	ELEC 20% 450VDC	1		
C13	330p	0805 X7R 10% 25VDC	1		
C17	100n	0805 X7R 10% 25VDC	1		Designed for 50uF total
C18	10n	0805 X7R 10% 50VDC	1		
C19	4u7	0805 X7R 10% 10VDC	1		
C20 C21	10n	0603 X7R 10% 10VDC	2		
C61	1N	0603 X7R 10% 10VDC	1		
C80	82n	MKP 5% 630VDC	1		
D12 D13 D20 D21	ES2G	DIODE-SMC	4		
D18	1N4148	DIODE-1206	1		
D14 D15	RS1J	SMA Fast Diode 600VDC	2		
D30	10V	ZENER DIODE-1206	1		
L2	413uH	PQ2016	1		W20046
L4	270uH	0410 0.25W Axial	1		
P2	P2	Terminal 2 Pin	1		
P3	P3	Terminal 3 Pin	1		
Q1 Q2	3DD13005ED	NPN (Ts=2-2.5us) TO126 4A	2	Jilin Huawei	
R3 R4	0R68	0805 0.1W 1.0%	2		
R5	0R47	1206 0.25W 1.0%	1		
R6	0R33	1206 0.25W 1.0%	1		
R8	33k	0805 0.1W 1.0%	1		
R9	100R	0603 0.06W 1.0%	1		
R10	1k	0805 0.1W 1.0%	1		
R11	470k	0603 0.06W 1.0%	1		
R41	160k	0603 0.06W 1.0%	1		
R17	470k	1206 0.25W 1.0%	1		

R61	12k	0603 0.06W 1.0%	1		
R24 R25	1M5	1206 0.25W 1.0%	2		
R26 R27	2M	1206 0.25W 1.0%	2		
R59	10k	0603 0.06W 1.0%	1		
T2	PQ26/20	Output Transformer	1		W40035
T3	A062 T9x5x4	Base Drive: 18:6:6:1 turns	1	ACME	
U1	RED2601	LLC LED controller IC	1	RediSem	
		TOTAL	43		

