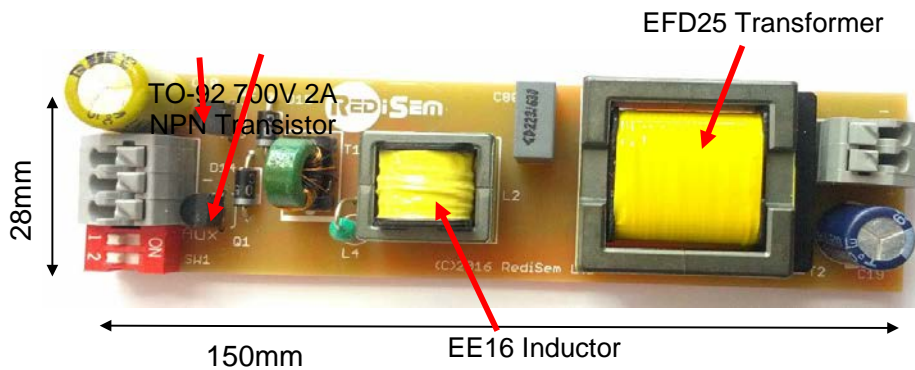




75W LLC LED 27V-54V 1400mA Iset



RediSem IC	RED2601 SO8 LLC LED Driver IC
Output Power	75W
Output Current	1400mA Constant Current
Load Regulation	0.98% (27 - 54V)
Output Voltage range	27 - 54V
Low Freq. Ripple	0.7% @ full load
Efficiency	96.5% @ full load
Input	410VDC
Size	150mm x 28mm
Protection	Short circuit, Open Circuit, Over temperature, SELV
Converter	CC LLC converter
Component Count	42



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$I_o = 1400\text{mA}$ (SW1 - OFF, SW2 - ON)

Input voltage (DC)	410V	
Input Power	41.82W	80.36W
Output Power	38.37W	77.49W
Output Voltage	27.00	54.00
Output current	1421mA	1435mA
Efficiency	91.74%	96.43%

$I_o = 1200\text{mA}$ (SW1 - ON, SW2 - OFF)

Input voltage (DC)	410V	
Input Power	36.90W	71.34W
Output Power	34.02W	68.69W
Output Voltage	27.00	54.00
Output current	1260mA	1272mA
Efficiency	92.20%	96.28%

$I_o = 1050\text{mA}$ (SW1 - OFF, SW2 - OFF)

Input voltage (DC)	410V	
Input Power	32.39W	61.91W
Output Power	29.59W	59.72W
Output Voltage	27.00	54.00
Output current	1096mA	1106mA
Efficiency	91.36%	96.47%

No load condition

input voltage	410V
No Load Voltage (peak)	66.00V

Load regulation

input voltage	410V
output current load regulation 54V between 27V	0.98%

Current Ripple for Low Frequency Ripple only

output voltage	27V	54V
output current (pk-pk)	8mA	10mA
output current (avg)	1421mA	1435mA
output current ripple (low freq.)	0.56%	0.70%

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 22 μF Ecap with 410V average input
2. For proper design for application, Aux power should be applied to LLC part from APFC



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Code	Value	Description	Qty	Supplier	Part no.
C9	390p	1206 NPO 5% 630VDC	1	Murata	
C10	8u2	ELEC 20% 450VDC	1	Ymin	
C13	330p	0805 X7R 10% 25VDC	1		
C16	470p	0805 X7R 10% 25VDC	1		
C17	100n	0805 X7R 10% 50VDC	1		
C18	1uF	0805 X7R 10% 10VDC	1		
C19	100uF	ECAP 20% 63VDC	1	RZ Aishi	
C42	470p	0805 X7R 10% 50VDC	1		
C80	47n	MKP 5% 630VDC	1	Fara	
D12 13	5K320C	200V 5A Diode	2	TSC	
D14 15	FR105	Fast Diode 600VDC	2	TSC/Vishay	
D16	2N4148	small signal schottky diode	1		
D30	10V	zener diode	1		
L2	727uH	main inductor EE16	1		W20045
L4	680uH	0410 inductor	1		
P1 P2		terminal	2		
Q1 Q2	3DD4243DT	NPN transistor To-92 400V 2A	2	Jilin Huawei	
R3 4	1k	0805 1% resistor	2		
R5	1R2	1206 1% resistor	1		
R6	0R82	1206 1% resistor	1		
R8	43k	0805 1% resistor	1		
R9	27R	0805 1% resistor	1		
R10	1k5	0805 1% resistor	1		
R17	100k	1206 1% resistor	1		
R24 25 26 27	2M2	1206 1% resistor	4		
R41	160k	0805 1% resistor	1		
R48 56	82R	0805 1% resistor	2		
R59	10k	0805 1% resistor	1		
R61	12k	0805 1% resistor	1		
SW1		DIP switch	1		
T1		Base drive	1		
T2	EFD25	output Transformer	1		W40032
U1	RED2801	SCB IC	1	RediSem	
Total			42		

