



SD4844 (18W) Demo Model

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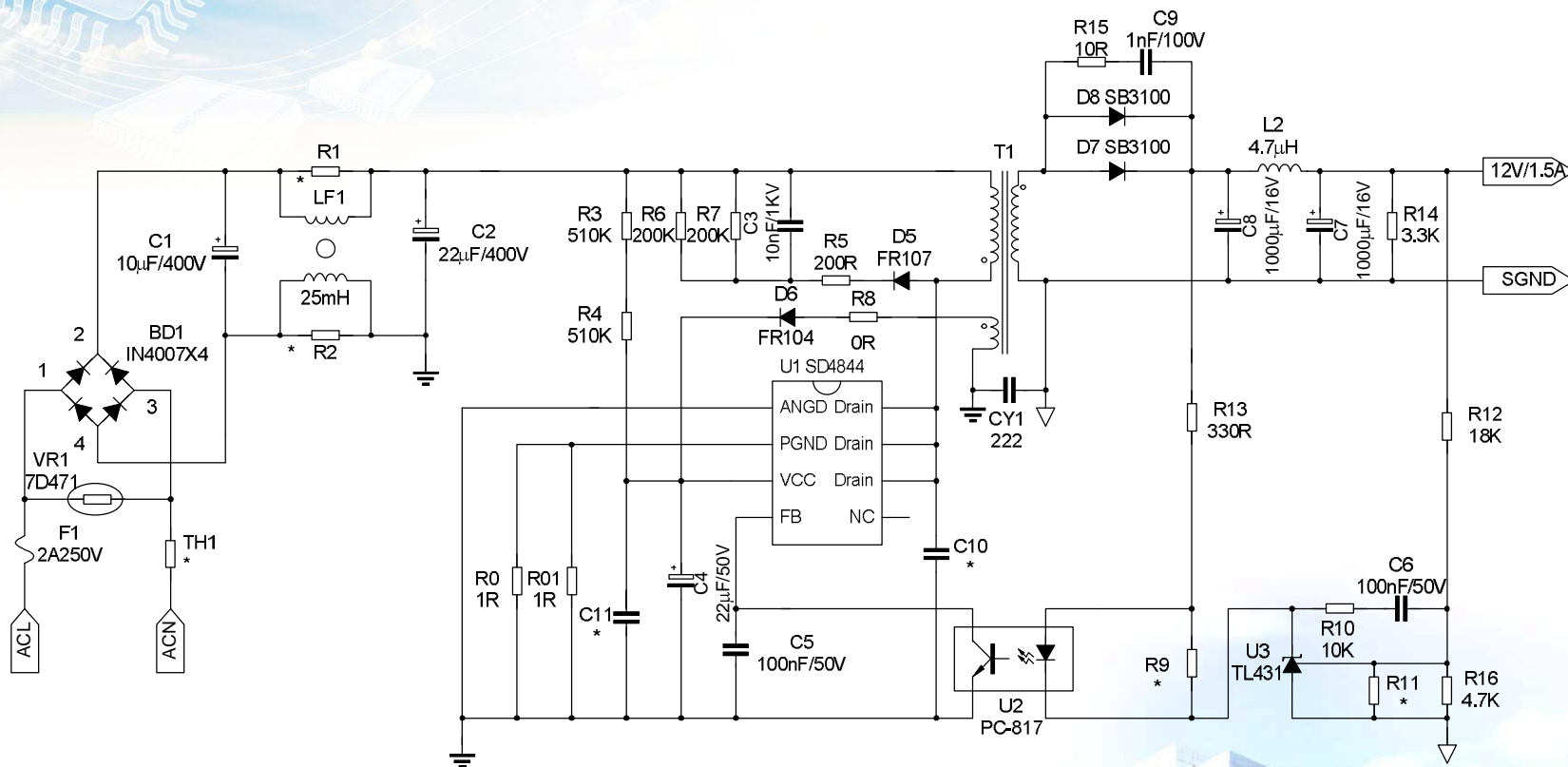
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Description	Symbol	Min.	Typ.	Max .	Units	comment/conditions
Input						
Voltage	VIN	85		265	Vac	2 Wire – no P.E
No-load Input Power				0.3W	W	Input 240 Vac
Output1						
Load Output Voltage	Vout		12		V	
Load Output Current	Iout		1.5		A	
Ripple				120	mV	20 MHz Bandwidth
Efficiency	η	80			%	Input 115Vac & 230Vac
Total Output Power						
Continuous Output Power	Pout		18		W	Total power
Peak power	Pout	15.6				
Conducted EMI Margin		3			dB	EN55022 class B @RTN-GND
Ambient Temperature	Tamb		25		C	Free convection, sea level



➤ Circuit Diagram

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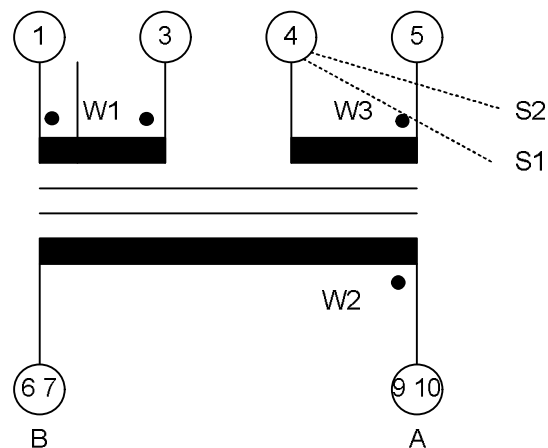
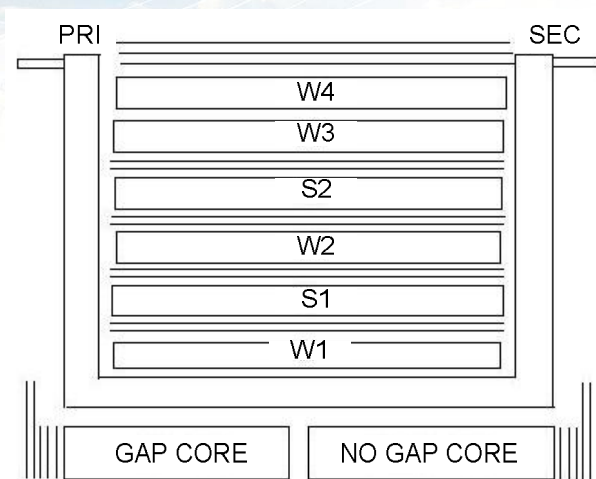



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NO.	Item	Description	Quantity	NO.	Item	Description	Quantity
1	F1	2A/250V	1PCS	17	C4	22uF/50V $\Phi 5 \times 12\text{mm}$	1PCS
2	VR1	7D471	1PCS	18	C5,C6	100nF/50V 0805/0603	2pcs
3	R0/R01	1 Ω $\pm 5\%$ 1206	2PCS	19	C7,C8	1000uF/16V	2PCS
4	R3,R4	510K Ω $\pm 5\%$ 1206	2PCS	20	C9	1nF/100V	1PCS
5	R5	200 Ω $\pm 5\%$ 1206	1PCS	21	CY1	222M/400V Y1 Pin=10mm	1PCS
6	R6,R7	200K Ω $\pm 5\%$ 1206	2PCS	22	LF1	UU9.8 25mH	1PCS
7	R8	0 Ω $\pm 5\%$ 0805	1PCS	23	L2	4.7uH Pin=3.5mm	1pcs
8	R10	10K Ω $\pm 5\%$ 0805/0603	1PCS	24	T1	EF-20 10pin	1PCS
9	R12	18K Ω $\pm 1\%$ 0805/0603	1PCS	25	D1~D4	1N4007 DO-41 1A/1000V	4PCS
10	R13	330 Ω $\pm 5\%$ 0805/0603	1PCS	26	D5	FR107 DO-41 1A/1000V	1PCS
11	R14	3.3K Ω $\pm 5\%$ 1206	1PCS	27	D6	FR104 DO-41 1A/400V	1PCS
12	R15	10 Ω $\pm 5\%$ 1206	1PCS	28	D7、D8	SR3100 DO-201AD 3A/100V	2PCS
13	R16	4.7K Ω $\pm 1\%$ 0805/0603	1PCS	29	U1	SD4844P DIP-8	1PCS
14	C1	10uF/400V $\Phi 10 \times 20\text{mm}$	1PCS	30	U2	PC817-C DIP-4	1PCS
15	C2	22uF/400V $\Phi 13 \times 20\text{mm}$	1PCS	31	U3	TL431 $\pm 1\%$ TO-92	1PCS
16	C3	10nF/1KV Pin=5mm	1PCS	32	PCB		1PCS

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●Electrical Diagram(EF20 5+5PIN)



●Electrical Specifications

Primary Inductance	Pin 1-3, all other windings open, measured at 1kHz, 0.4MS	0.7mH, $\pm 10\%$
Primary Leakage Inductance	Pin 1-3, all other windings shorted, measured at 10kHz, 0.4VRMS	50 uH (Max.)

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	Wire	Start Point	Terminal	Turns	Remark
Layer 1: Primary (W1)	0.25mm	3Pin	2Pin	45TS	
Layer 2: Shield (S1)	0.25mm#2	GND	-	15TS	GND connected
Layer 3: Secondary (W2)	0.5mm*2	6, 7Pin	9、10Pin	10TS	
Layer 4: Shield (S2)	0.28mm*4	GND	-	7TS	GND connected
Layer 5: Primary (W3)	0.28mm	2pin	1pin	35TS	
Layer 6: VCC (W4)	0.21mm	4Pin	5Pin	12TS	



● Average Efficiency: (CEC)

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Input voltage : 90~264Vac
Input voltage Frequency : 50Hz/60Hz
Load : 0.75A~3.0A
Ambient Temperature : 25°C

Test Devices:

Power&Power Factor Test : Voltech PM3000A
Load : Chroma6312

Test Result:

Condition	Result								
Input Voltage	Efficiency(%)		Standby Power (W)	Average Efficiency(%)		Input Current (A)	Output Ripple (mV)		Short Protection
							No Load	Full Load	
115Vac	Output Power (W) :18.0	80.03	0.16	Input Voltage Frequency: 60Hz	81.65	/	107.3	72.4	Pass
230Vac		80.03	0.24	Input Voltage Frequency: 50Hz	80.39	/	118.6	70.4	Pass



● Efficiency Regulation

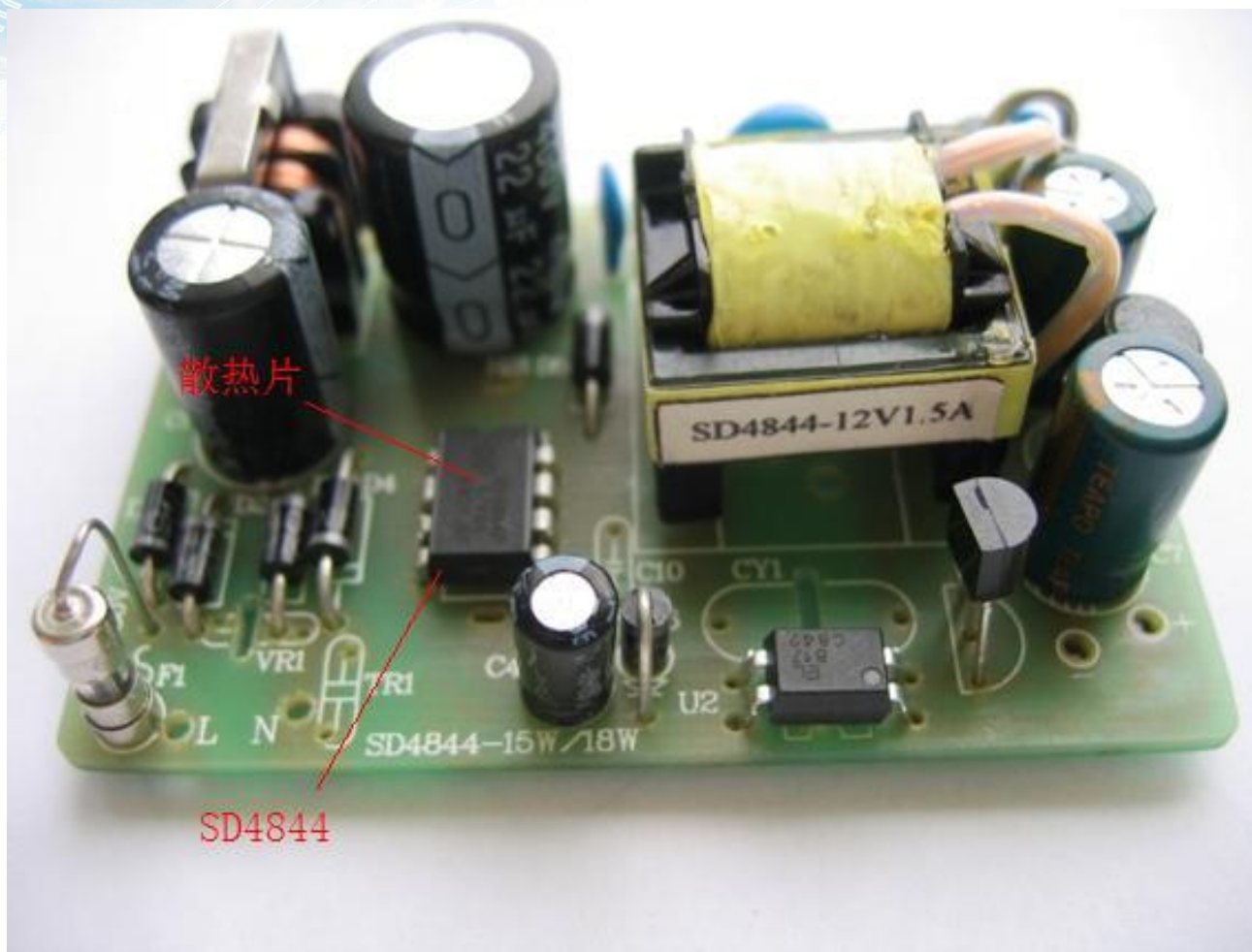
Requirement: $> 0.0626 * \ln(18) + 0.622 = 80.3\%$

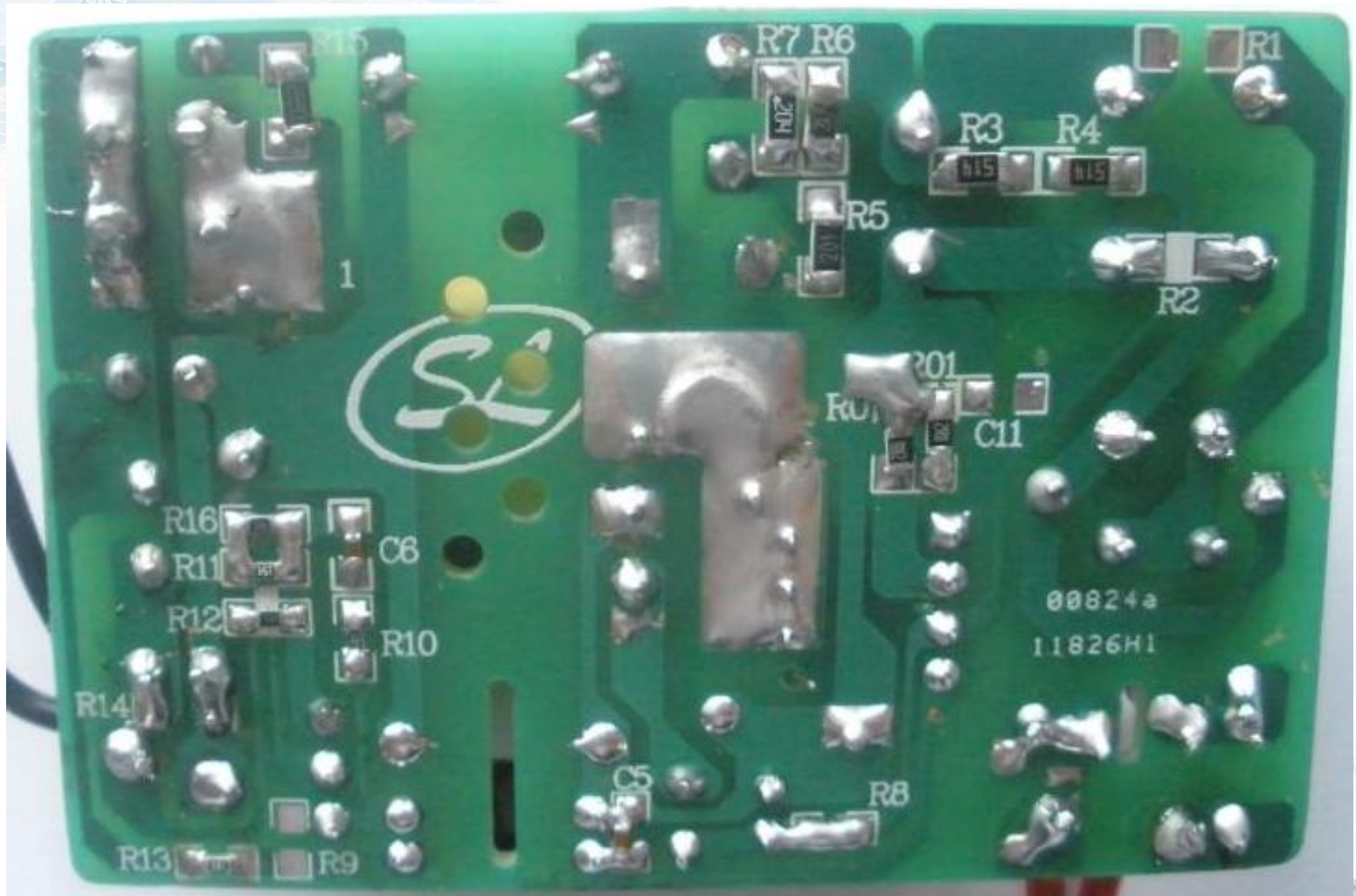
AC input	100% Load	75% Load	50% Load	25% Load	Eff. at Average
115Vac	80.18%	81.44%	82.25%	82.76%	81.65%
230Vac	81.05%	81.37%	80.86%	78.91%	80.39%

* Measured at end of DC Plug;

* DC cable Spec.:20AWG 1.8M









Thank you!

