T8
TEST REPORT

Input voltage range: 180~264Vac

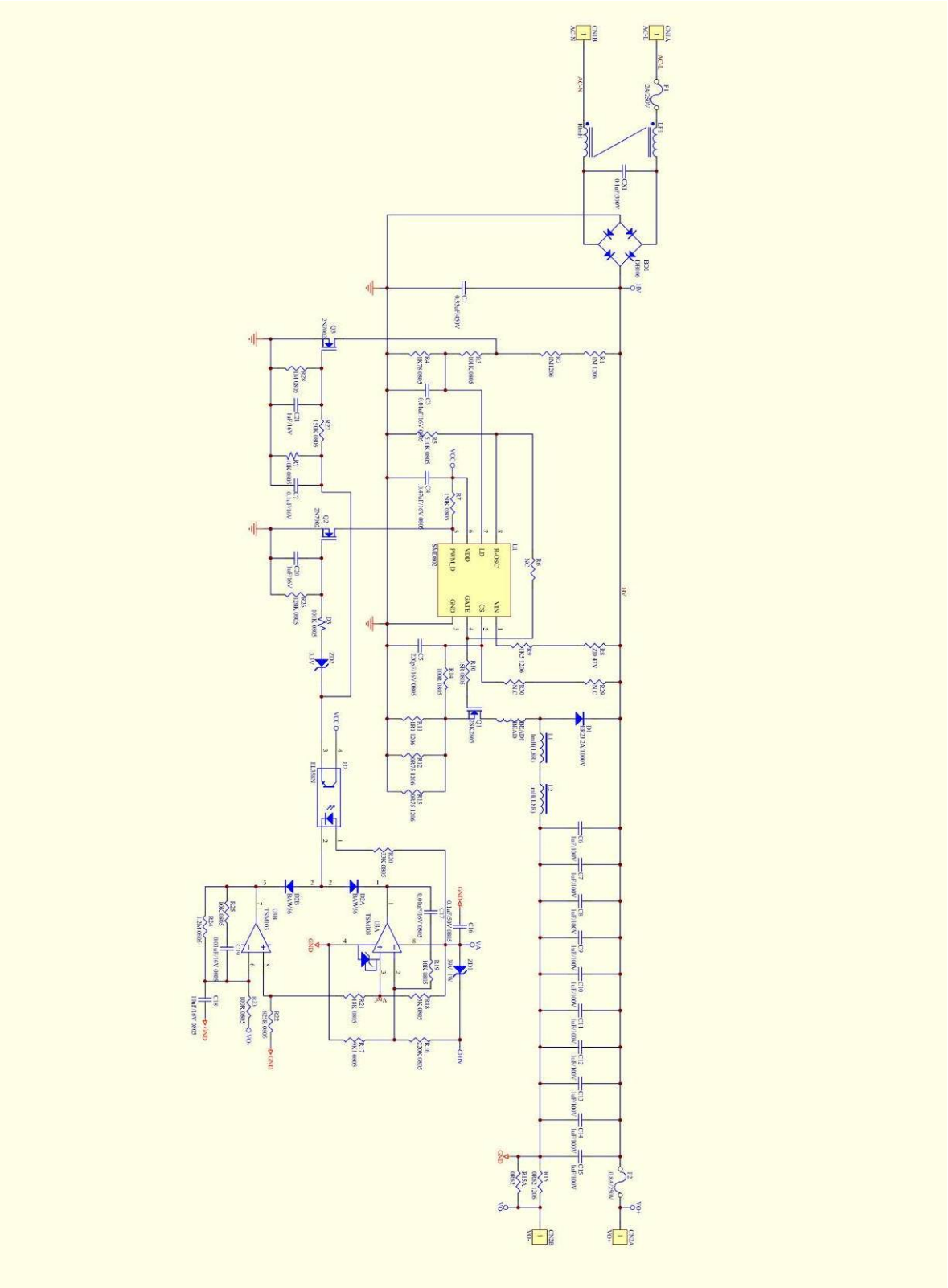
Output voltage & current :60V/280mA

Date(s) of Test: 2011/01/17

APPROVED BY:	CHECKED BY:	PAPERED BY:
		LIVIAN YUAN

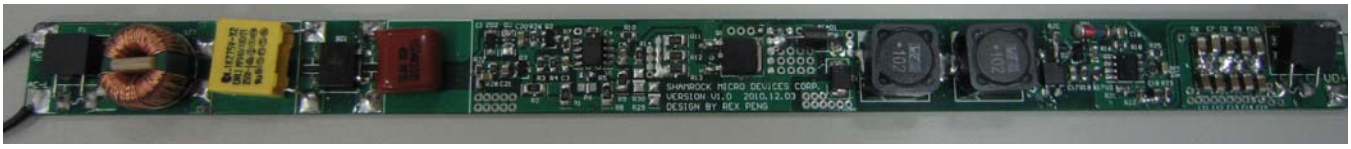
CHECK LIST

1.Schematic Circuit



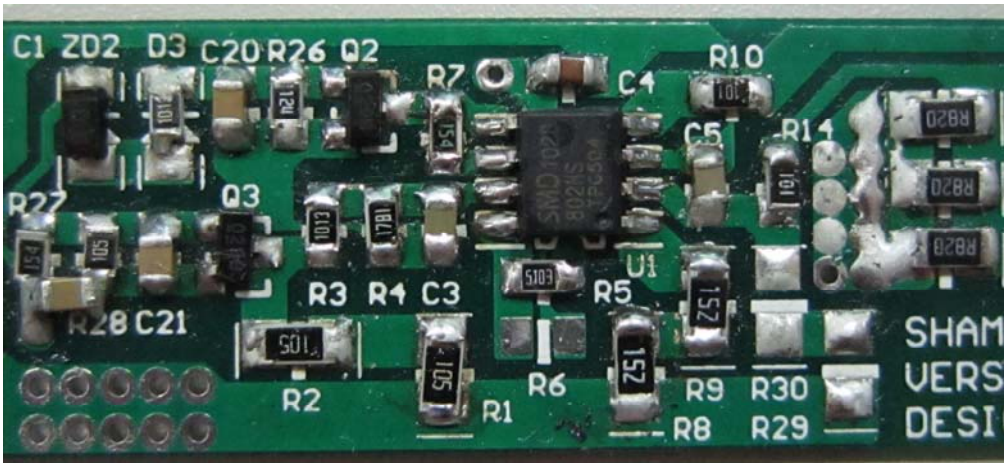
2.Circuit Board Photograph

Top

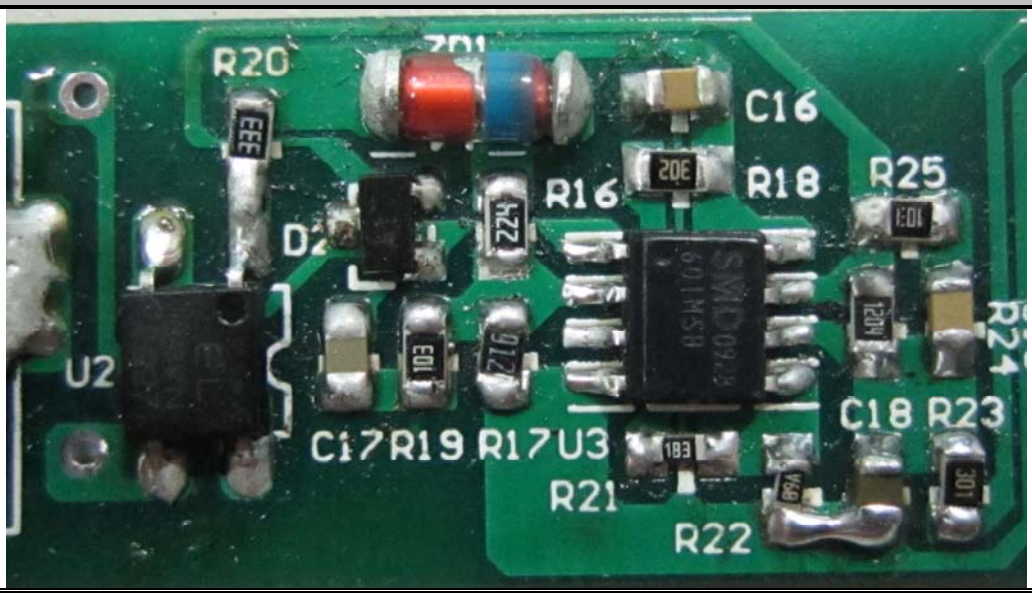


BOTTOM

SMD802

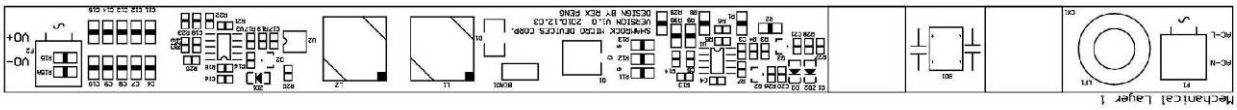


SMD601



3.PCB Layout

TOP LAAYER

TOP SILKSCREEN OVERLAY

BOTTOM LAAYER


4.Bill of Material

NO	Location	Part Value	Specifications	Manufacturer
1	BD1	DB106	800V/1A-DF-S	ST
2	BEAD1	BEAD	K5B3.5X4X1	KINGCORE
3	C?	0.1uF/16V	SMD-0805- Capacitor	KAMAYA
4	C1	0.33uF/450V	15MM-MPP Capacitor	HJC
5	C3	0.01uF/16V	SMD-0805- Capacitor	KAMAYA
6	C4	0.01uF/16V	SMD-0805- Capacitor	KAMAYA
7	C5	220pF/16V	SMD-0805- Capacitor	KAMAYA
8	C6	1uF/100V	SMD-1206- Capacitor	KAMAYA
9	C7	1uF/100V	SMD-1206- Capacitor	KAMAYA
10	C8	1uF/100V	SMD-1206- Capacitor	KAMAYA
11	C9	1uF/100V	SMD-1206- Capacitor	KAMAYA
12	C10	1uF/100V	SMD-1206- Capacitor	KAMAYA
13	C11	1uF/100V	SMD-1206- Capacitor	KAMAYA
14	C12	1uF/100V	SMD-1206- Capacitor	KAMAYA
15	C13	1uF/100V	SMD-1206- Capacitor	KAMAYA
16	C14	1uF/100V	SMD-1206- Capacitor	KAMAYA
17	C15	1uF/100V	SMD-1206- Capacitor	KAMAYA
18	C16	0.1uF/50V	SMD-0805- Capacitor	KAMAYA
19	C17	0.01uF/16V	SMD-0805- Capacitor	KAMAYA
20	C18	10uF/16V	SMD-0805- Capacitor	KAMAYA
21	C19	0.01uF/16V	SMD-0805- Capacitor	KAMAYA
22	C20	1uF/16V	SMD-0805- Capacitor	KAMAYA
23	C21	1uF/16V	SMD-0805- Capacitor	KAMAYA
24	CX1	0.1uF/300V	15MM-X2- Capacitor	UTX
25	D1	ER2J	2A/600V- Superfast Rectifier	PANJIT
26	D2	BAW56	75V/150mA-SOT23-Fast Diode	PANJIT
27	D3	101K	SMD-0805- Resistance	KAMAYA
28	F1	2A/250V	2A/250V -FUSE	BELFUSE
29	F2	1A/250V	1A/250V -FUSE	BELFUSE
30	L1	1mH(1.8R)	L-SMD-12X6MM	WE
31	L2	1mH(1.8R)	L-SMD-12X6MM	WE
32	LF1	10mH	L-T-14X8MM-H	
33	Q1	2SK2865	2A/600V-TO252	TOSHIBA

34	Q2	2N7002	60V/115mA-SOT23	PANJIT
35	Q3	2N7002	60V/115mA-SOT23	PANJIT
36	R?	10K	SMD-0805- Resistance	KAMAYA
37	R1	1M	SMD-1206- Resistance	KAMAYA
38	R2	1M	SMD-1206- Resistance	KAMAYA
39	R3	100K	SMD-0805- Resistance	KAMAYA
40	R4	1K78	SMD-0805- Resistance	KAMAYA
41	R5	510K	SMD-0805- Resistance	KAMAYA
42	R7	150K	SMD-0805- Resistance	KAMAYA
43	R8	MMSZ5261B	47V/500mA-SOD123-Zener	PANJIT
44	R9	1K5	SMD-1206- Resistance	KAMAYA
45	R10	15R	SMD-0805- Resistance	KAMAYA
46	R11	0R82	SMD-1206- Resistance	KAMAYA
47	R12	0R82	SMD-1206- Resistance	KAMAYA
48	R13	0R82	SMD-1206- Resistance	KAMAYA
49	R14	100R	SMD-0805- Resistance	KAMAYA
50	R15	0R62	SMD-1206- Resistance	KAMAYA
51	R15A	0R62	SMD-1206- Resistance	KAMAYA
52	R16	220K	SMD-0805- Resistance	KAMAYA
53	R17	9K1	SMD-0805- Resistance	KAMAYA
54	R18	3K	SMD-0805- Resistance	KAMAYA
55	R19	10K	SMD-0805- Resistance	KAMAYA
56	R20	33K	SMD-0805- Resistance	KAMAYA
57	R21	18K	SMD-0805- Resistance	KAMAYA
58	R22	825R	SMD-0805- Resistance	KAMAYA
59	R23	300R	SMD-0805- Resistance	KAMAYA
60	R24	1.2M	SMD-0805- Resistance	KAMAYA
61	R25	10K	SMD-0805- Resistance	KAMAYA
62	R26	120K	SMD-0805- Resistance	KAMAYA
63	R27	150K	SMD-0805- Resistance	KAMAYA
64	R28	1M	SMD-0805- Resistance	KAMAYA
65	U1	SMD802	SO-8	SMD
66	U2	EL358N	EL358N	EVERLIGHT
67	U3	SMD601	SO-8	SMD
68	ZD1	DL4754A	39V/1W-DL41-Zener	PANJIT
69	ZD2	MMSZ5226B	3.3V/500mW-SOD123-Zener	PANJIT

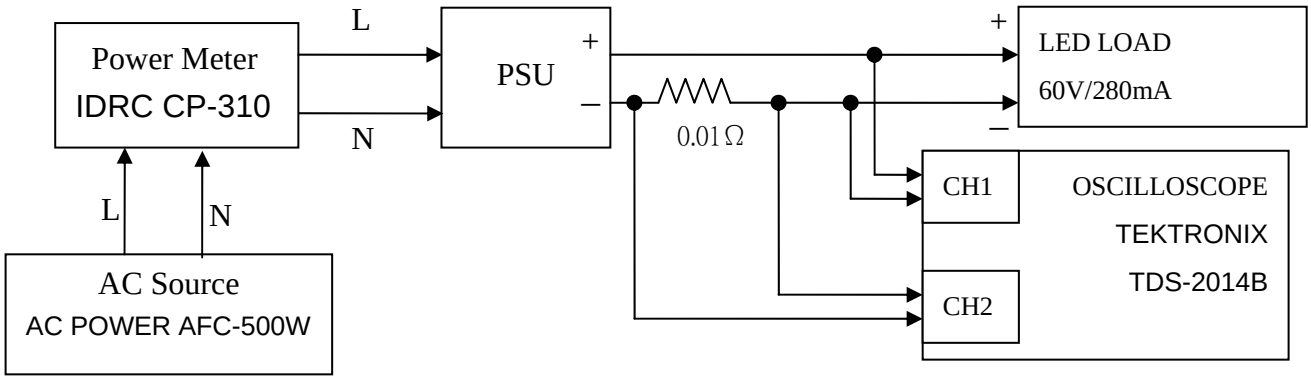
1. Input Current & Line Regulation

Test Condition:

TEST BY: LIVIAN TEST DATE: 2011/01/17

Input Voltage	180/230/264VAC
Input Frequency	50Hz
Output Load	60V/280mA
Ambient Temperature	25℃

Setup Diagram:



Test Result:

Input Voltage	Input Current (mA)	Test Specifications(mA)	Pass/Fail
180V/50Hz	106.6	≦110	Pass
230V/50Hz	84.9		Pass
264V/50Hz	76.3		Pass

Input Voltage	Output Voltage (V)	Output t Current (mA)	Test Specifications(mA)	Pass/Fail
180V/50Hz	60.8	283	270≦I_{OUT}≦300	----
230V/50Hz	61	281		Pass
264V/50Hz	61	281		----

★Output t Current= Oscilloscope CH2 Voltage / 0.01

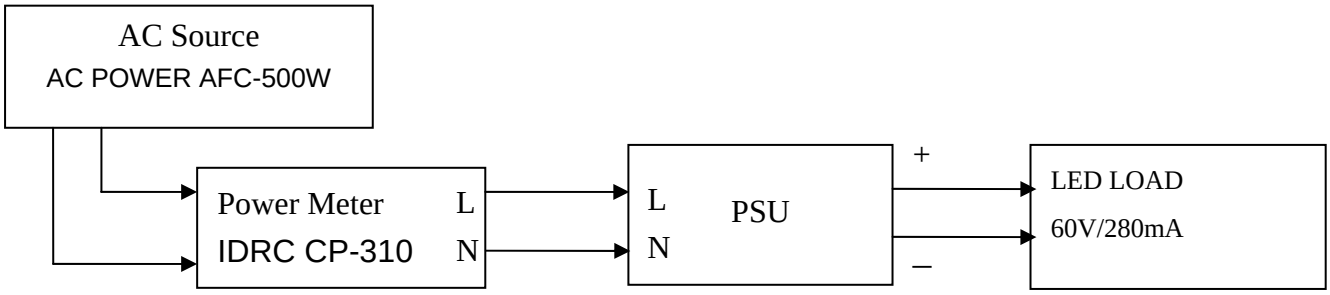
2. P.F (Power Factor)

Test Condition:

TEST BY: LIVIAN TEST DATE: 2011/01/17

Input Voltage	180/230/264VAC
Input Frequency	50Hz
Output Load	60V/280mA
Ambient Temperature	25℃

Setup Diagram:



Test Result:

Item	Input Voltage	P.F (Power Factor)	Test Specifications	Pass/Fail
T8	180V/50Hz	0.979	≧0.9	Pass
	230V/50Hz	0.960		Pass
	264V/50Hz	0.938		Pass

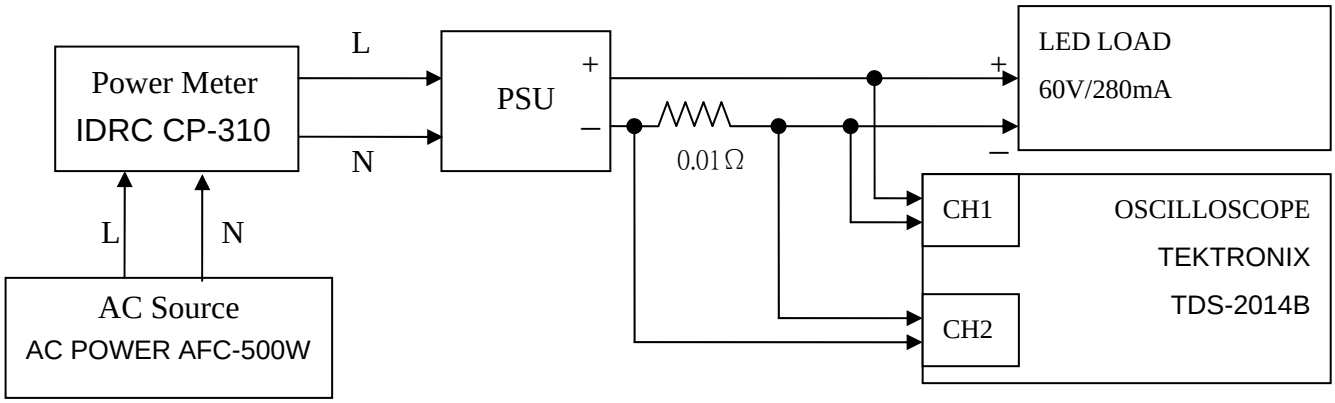
3. Efficiency

Test Condition:

TEST BY: LIVIAN TEST DATE: 2011/01/17

Input Voltage	180/230/264VAC
Input Frequency	50Hz
Output Load	60V/280mA
Ambient Temperature	25℃

Setup Diagram:



Test Result:

Item	*Input Voltage*	Input(W)	Output(W)	Efficiency	*Test Specifications*	Pass/Fail
T8	180V/50Hz	18.72	17.21	91.91%	≧90%	Pass
	230V/50Hz	18.73	17.14	91.57%		Pass
	264V/50Hz	18.81	17.14	91.13%		Pass

★**Output watts=output voltage x output current**

★**Efficiency= output watts / Input watts**

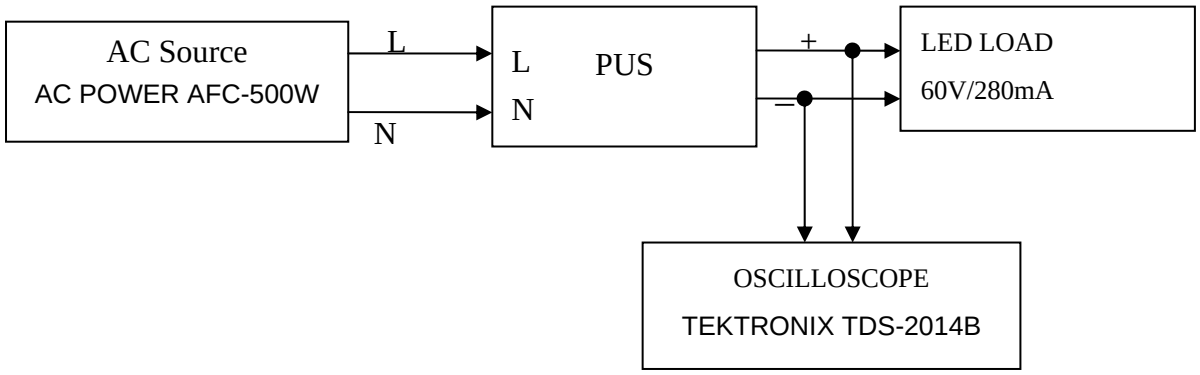
4. Ripple And Noise

Test Condition:

TEST BY: LIVIAN TEST DATE: 2010/12/30

Input Voltage	180/230/264VAC
Input Frequency	50Hz
Output Load	60V/280mA
Ambient Temperature	25℃

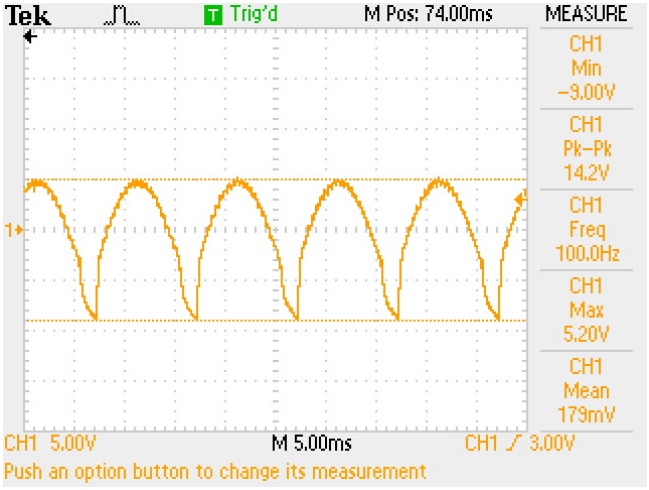
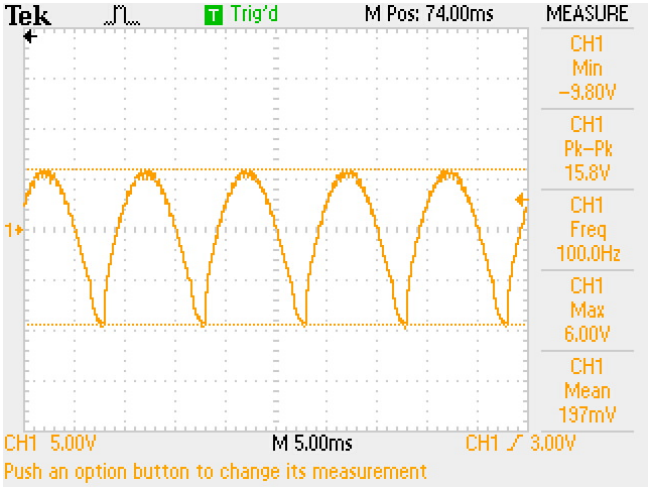
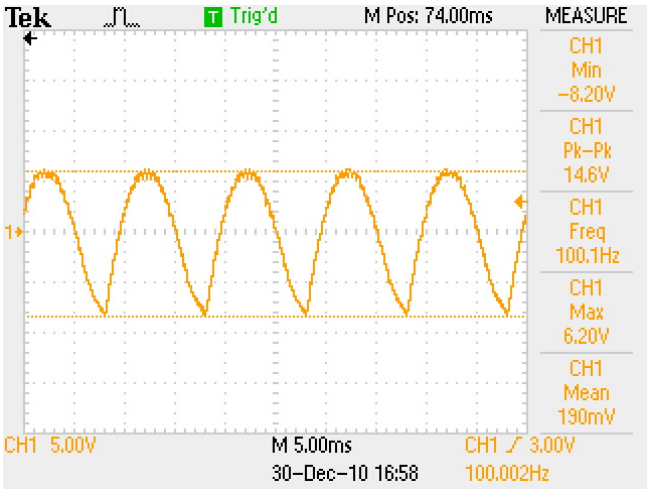
Setup Diagram:



Test Result:

Test Picture	Input Voltage	Measured (Vp-p)	*Test Specifications*	Pass/Fail
Pic.4-1	180V/50Hz	14.2	≦18V	Pass
Pic.4-2	230V/50Hz	15.8		Pass
Pic.4-3	264V/50Hz	14.6		Pass

Test Waveform:

Pic.4-1 Vin=180Vac/50Hz	Pic.4-2 Vin=230Vac/50Hz
	
Pic.4-3 Vin=264Vac/50Hz	
	

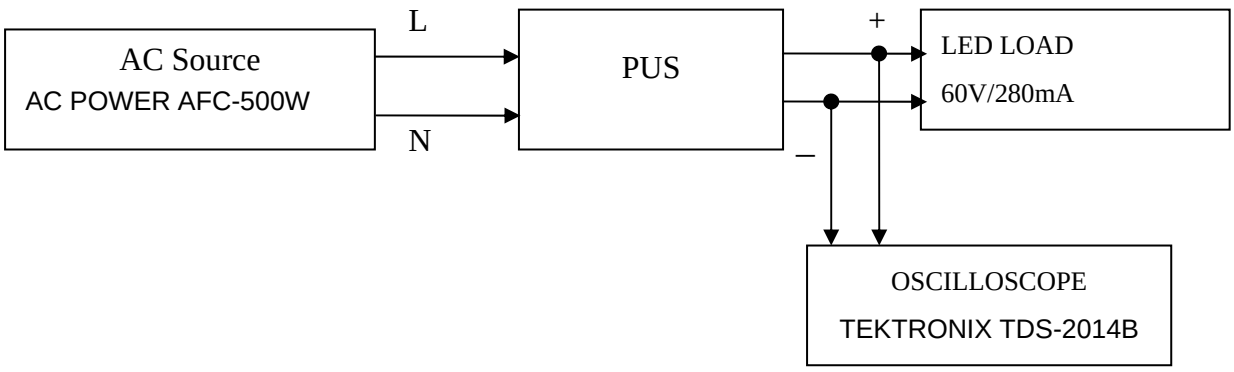
5. Over Shoot

Test Condition:

TEST BY: LIVIAN TEST DATE: 2010/12/30

Input Voltage	180/230/264VAC
Input Frequency	50Hz
Output Load	60V/280mA
Ambient Temperature	25℃

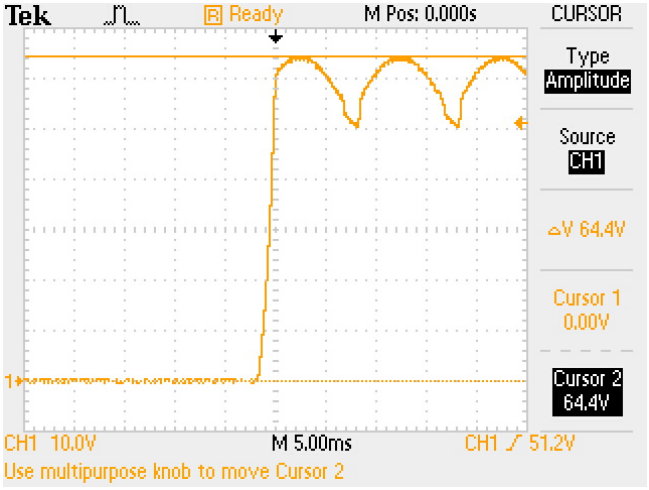
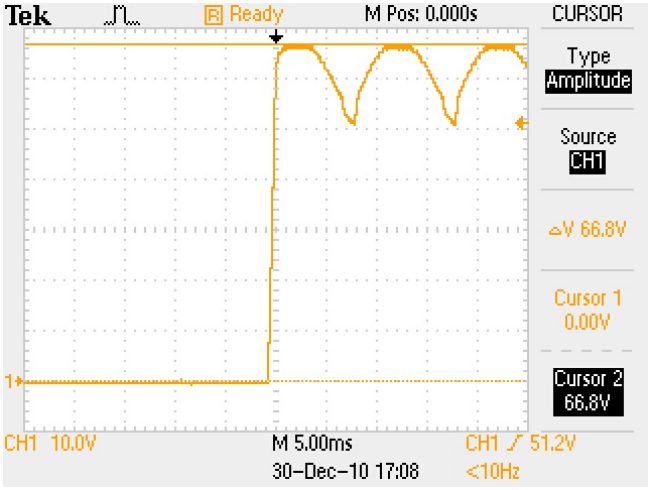
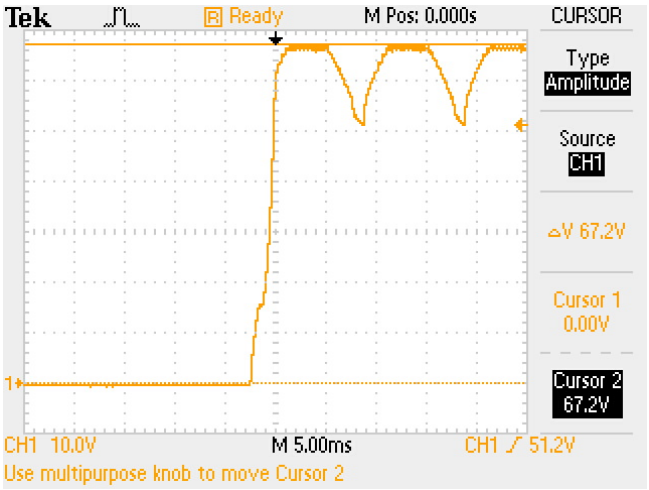
Setup Diagram:



Test Result:

Test Picture	Input Voltage	Max Vout (V)	*Test Specifications*	Pass/Fail
Pic.5-1	180V/50Hz	64.4	≦72V	Pass
Pic.5-2	230V/50Hz	66.8		Pass
Pic.5-3	264V/50Hz	67.2		Pass

Test Waveform:

Pic.5-1 Vin=180Vac/50Hz	Pic.5-2 Vin=230Vac/50Hz
	
Pic.5-3 Vin=264Vac/50Hz	
	

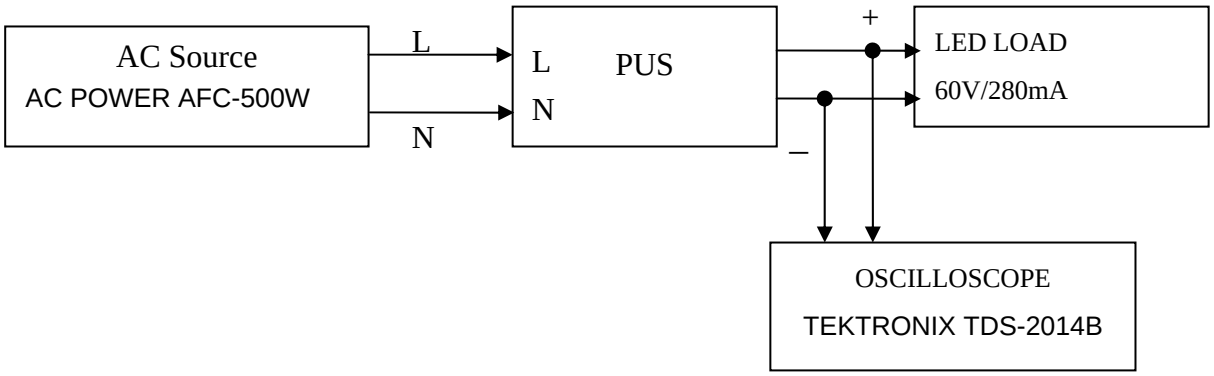
6. Rise Time

Test Condition:

TEST BY: LIVIAN TEST DATE: 2010/12/30

Input Voltage	180/230/264VAC
Input Frequency	50Hz
Output Load	60V/280mA
Ambient Temperature	25℃

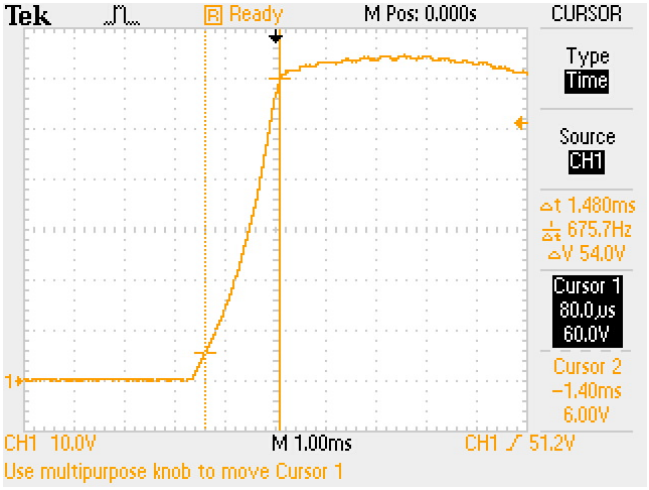
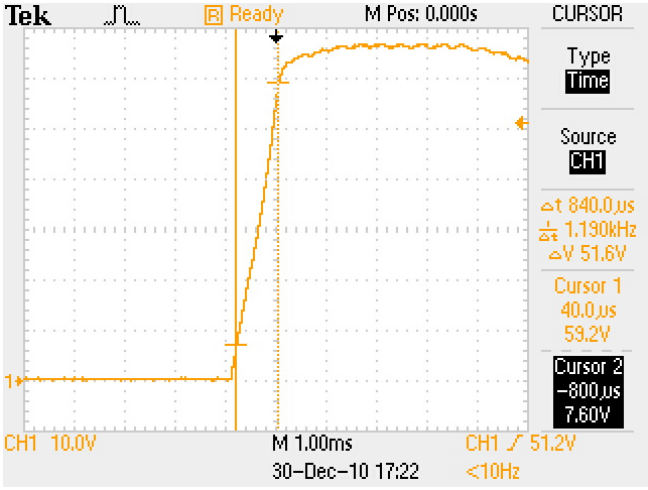
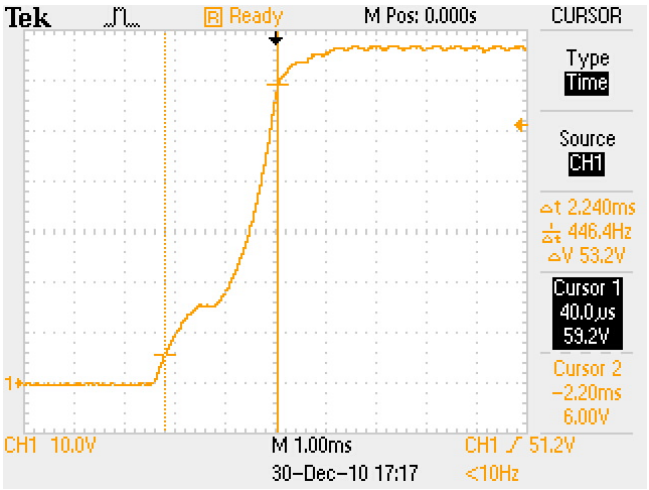
Setup Diagram:



Test Result:

Test Picture	Input Voltage	Measured (ms)	*Test Specifications*	Pass/Fail
Pic.6-1	100V/60Hz	**1.48**	≦10mS	Pass
Pic.6-2	115V/60Hz	**0.84**		Pass
Pic.6-3	130V/60Hz	**2.24**		Pass

Test Waveform:

Pic.6-1 Vin=180Vac/50Hz	Pic.6-2 Vin=230Vac/50Hz
	
Pic.6-3 Vin=264Vac/50Hz	
	

7. Voltage Derating

Test Condition:

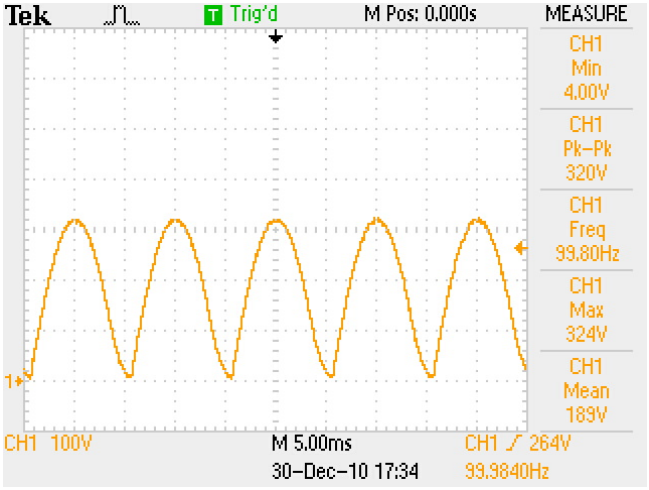
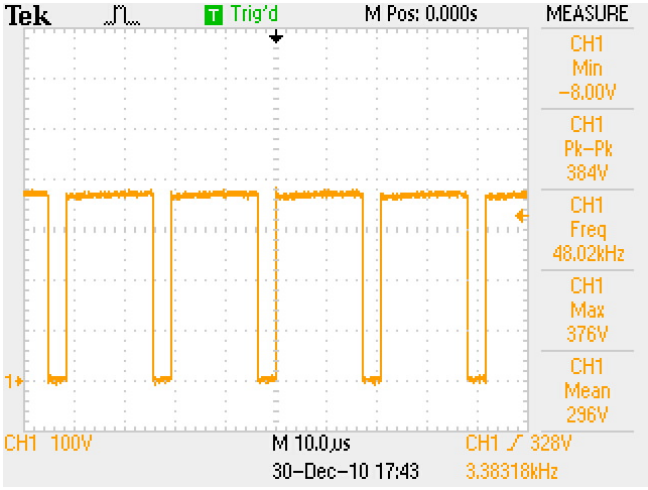
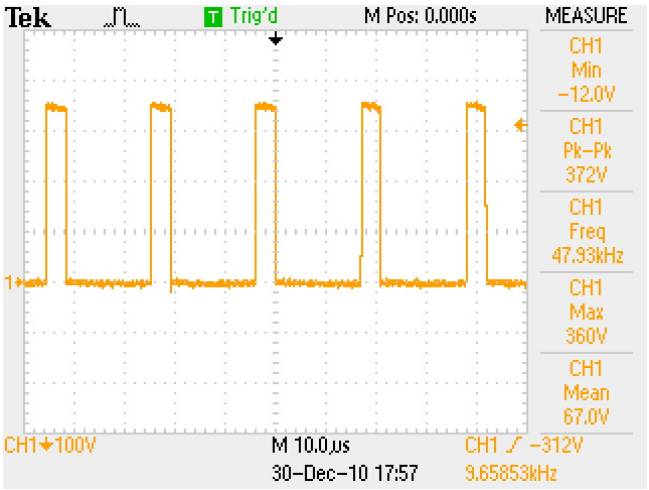
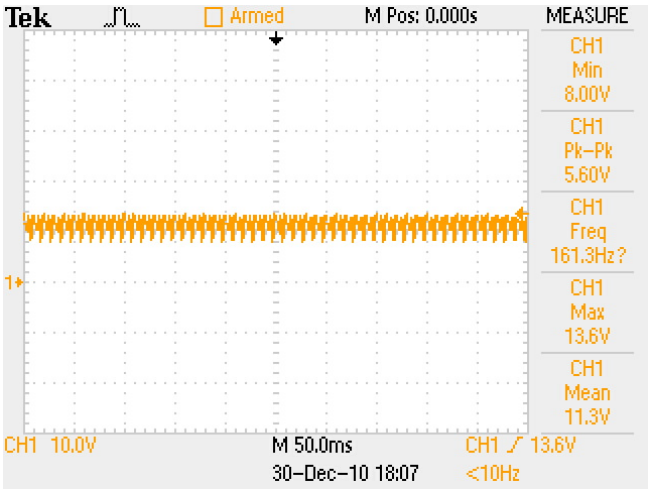
TEST BY: LIVIAN TEST DATE: 2010/12/30

Input Voltage	264VAC
Input Frequency	50Hz
Output Load	60V/280mA
Ambient Temperature	25℃

Test Results:

Test Picture	Part No.	Rating	Measurement Value	Rating (%)	SPEC	Pass/Fail
Pic.7-1	U1	Max rating: 520V	324	62.31%	90%	PASS
Pic.7-2	Q1	Max rating: 600V	376	62.67%	90%	PASS
Pic.7-3	D1	Max rating: 600	360	60%	80%	PASS
Pic.7-4	U3	Max rating: 32V	13.6	42.5%	90%	PASS

Test Waveform:

Pic.7-1 (U1) Vin=264Vac/50Hz	Pic.7-2 (Q1)Vin=264Vac/50Hz
	
Pic.7-3(D1) Vin=264Vac/50Hz	Pic.7-4(U3) Vin=264Vac/50Hz
	

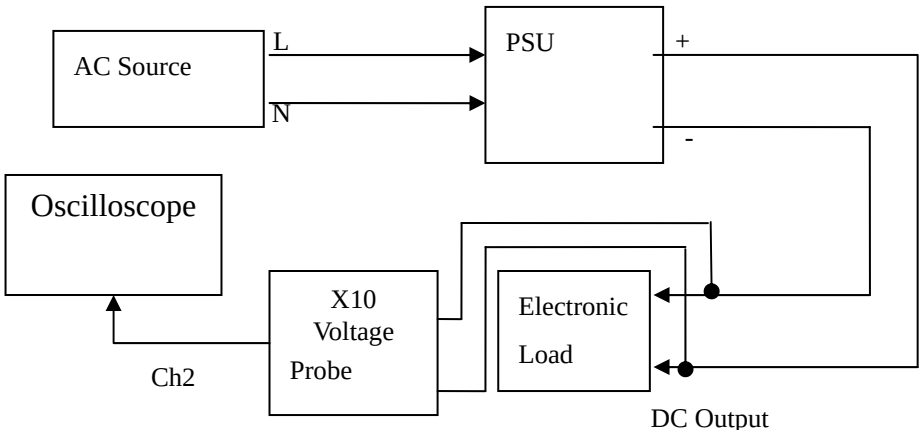
8. O.V.P. (Over voltage protection)

Test Condition:

TEST BY: LIVIAN TEST DATE: 2011/01/17

Input Voltage	180/230/264VAC
Input Frequency	50Hz
Output Load	60V/280mA
Ambient Temperature	25℃

Setup Diagram:



Test Results:

Input Voltage	Output Load	Measured (Vmax)	Required	Pass/Fail
180VAC/50Hz	283A	65.2	≦66V	PASS
230VAC/50Hz	281A	65.3		PASS
264VAC/50Hz	281A	65.3		PASS

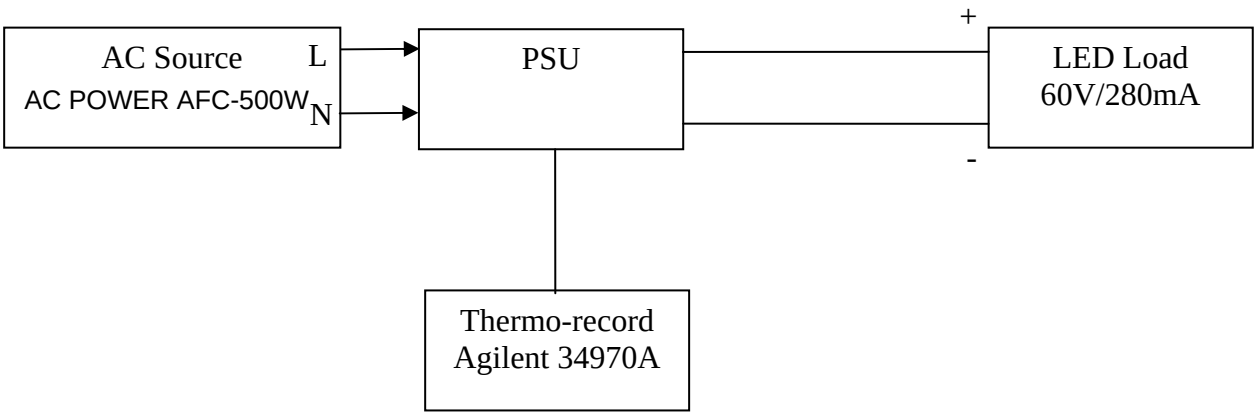
9. TEMPERATURE RISE TEST

Test Condition:

TEST BY: LIVIAN TEST DATE: 2010/12/30

Input Voltage	230VAC
Input Frequency	50Hz
Output Load	60V/280mA
Ambient Temperature	25℃

Setup Diagram:



Test Results:

No	Location	Description	230 /50 (25℃)		
			Tc(℃) 1HR	*Specifications*	Pass/Fail
1	U1	SMD802	67.1	125	Pass
2	Q1	2SK2865	77.9	150	Pass
3	D1	ER2J	80.3	150	Pass
4	BD1	B6S	56.3	125	Pass
5	U2	EL358N	70.4	125	Pass
6	U3	SMD601	67.8	125	Pass
7	ZD2	MMSZ5226B	72.6	150	Pass
8	LF1	10mH	45.5	130	Pass
9	L1	1mH(1.8R)	79.7	130	Pass
10.	L2	1mH(1.8R)	77.4	130	Pass