



150W Single Output Power Driver for LED Lighting

PSDV151103A



■ Model Name

- PSDV151103A, for UL / cUL

■ Features :

- Suitable for LED lighting application
- UL8750/UL1012 Non Class 2
- For use in Dry and Damp Location
- Full-protection provided : OCP/OLP/OTP/SCP
- 0-10V Dimming Control
- Wide Vout
- Adjustable Output Current
- Potting product



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■ Electrical specification

No.	Item	Min	Typ	Max	Unit	Remark
1	Nominal Input Voltage	120		277	Vac	
2	Wide Input Voltage	108		305	Vac	
3	Maximum Input Current			2	Arms	
4	Nominal Input Frequency	50		60	Hz	
5	Wide Input Frequency	47		63	Hz	
6	Power Factor (PF)	0.9				1)
7	Total Harmonic Distortion (THD)			20	%	1)
8	Inrush Current	NEMA410				10)
9	Earth Leakage Current			500	μ A	
10	Output Voltage	120		280	Vdc	3)
11	Adjustable Output Current Range	250		530	mA	
12	Output Current	503	530	556	mA	
13	Output Current Ripple			10	%	1)
14	Output Peak Current			700	mA	1)
15	Output Aging Current Differential			26	mA	2hr Aging
16	Turn-on Delay Time			750	ms	4)
17	Electrical Efficiency	92			%	5)
18	12V Output Voltage	10.8	12	13.2	Vdc	
19	12V Output Current			50	mA	
20	Dimming Control	10		100	%	
21	Output Open LED Protection	-	-	-	-	Auto-recovery
22	Output Short Circuit Protection	-	-	-	-	Auto-recovery
23	12V Output Short Circuit Protection	-	-	-	-	Auto-recovery
24	Over-temperature Protection	105			$^{\circ}$ C	Auto-recovery
25	Case Temperature (Tc)			85	$^{\circ}$ C	Input 120Vac
26	Storage Temperature	-40		85	$^{\circ}$ C	
27	Operating Temperature	-40		50	$^{\circ}$ C	
28	Insulation Resistance	100			M Ω	500Vdc between Input & Output
29	Differential Mode (Line to Line)	-4		4	kV	6)
30	Common Mode (Line to Ground)	-6		6	kV	6) 7)
31	Contact Discharge Test Voltage	-4		4	kV	8)
32	Air Discharge Test Voltage	-8		8	kV	8) 9)

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No.	Item		Min	Typ	Max	Unit	Remark
33	Dielectric Withstand Voltage	Input to Output	3854			Vac	Apply for 1 minute 11)
34		Input to Case	1554			Vac	
35		Output to Case	500			Vdc	
36	Vibration				3	G	
37	Humidity				90	%	

☞ Application Notes

- 1) Test Condition: 120/277Vac 50/60Hz Input, LED Load_265V, Ambient Temperature 25°C
- 2) Output Voltage of 120Vdc~265Vdc can be applied at Non Dimming and Output Current 350mA
- 3) LED load having Vf of this range can be driven until Vf drop to below 265V by self-heating.
- 4) Test Condition: Input voltage 277Vac 60Hz, Room Temperature, Cold start
- 5) Test Condition: 240Vac Input, 1hr Aging, LED Load_265V, Ambient Temperature 25°C
- 6) Surge Specification above is higher than IEC/EN 61000-4-5 (Line to Line 1kV, Line to GND 2kV)
- 7) The metal case of the LED driver must be connected with F.G
- 8) ESD Specification above meets IEC/EN 61000-4-2 Requirements (Contact 4KV, Air 8KV)
- 9) The metal case of the driver should be grounded.
- 10) Input 120Vac, < 144Apeak, < 0.7ms, < 41A2sec
- 11) Determined by Paragraph 8.4.2, UL8750, IEC/EN61347-1, IEC/EN61347-2-13

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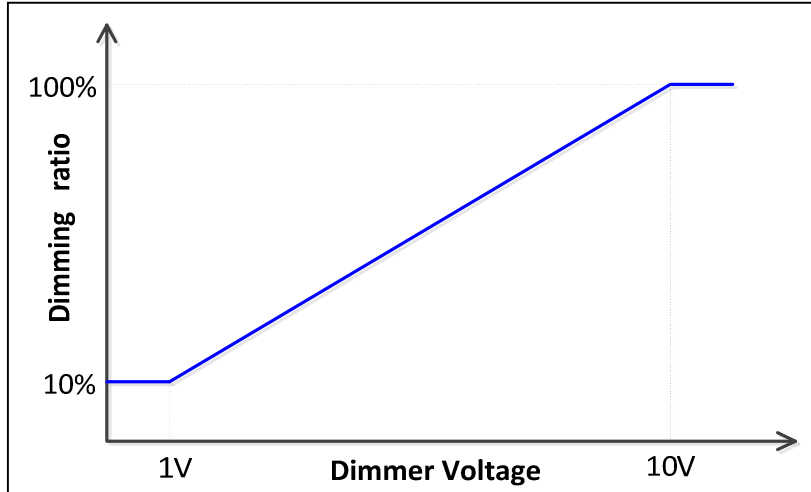
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■ Dimming Curve



☞ Safety Standards

Including safety requirements above, the LED driver complies with the following safety standards:

No.	Item	Description
1	UL8750	UL Safety Standards
2	FCC Part 15	Conducted and Radiated Emission Test, Class B
3	IEC/EN 61347-1, IEC/EN 61347-2-13	IEC Safety Standards
4	EN 55015	Conducted and Radiated Emission Test
5	IEC/EN 61000-3-2	Harmonic current emissions: Class C
6	IEC/EN 61000-3-3	Voltage Fluctuations and Flicker
7	IEC/EN 61000-4-2	Electrostatic Discharge (ESD): Contact 4kV, Air 8kV
8	IEC/EN 61000-4-3	Radio-frequency Electromagnetic Fields
9	IEC/EN 61000-4-4	Electrical Fast Transients (EFT)
10	IEC/EN 61000-4-5	Surges: Line to Line 1kV, Line to GND 2kV
11	IEC/EN 61000-4-6	Injected Currents
12	IEC/EN 61000-4-8	Power Frequency Magnetic Fields
13	IEC/EN 61000-4-11	Voltage Dips and Short Interruptions

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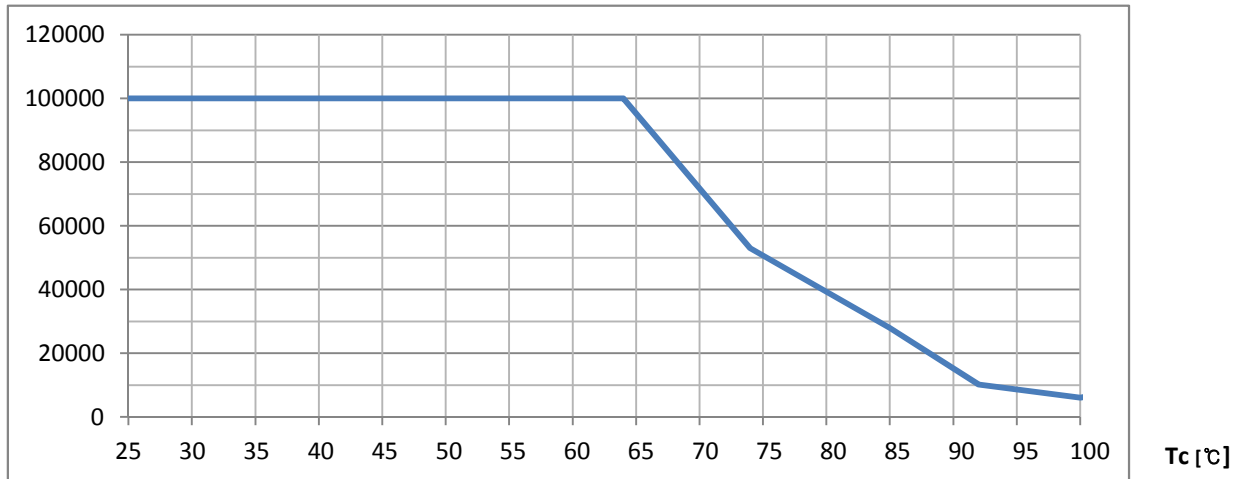
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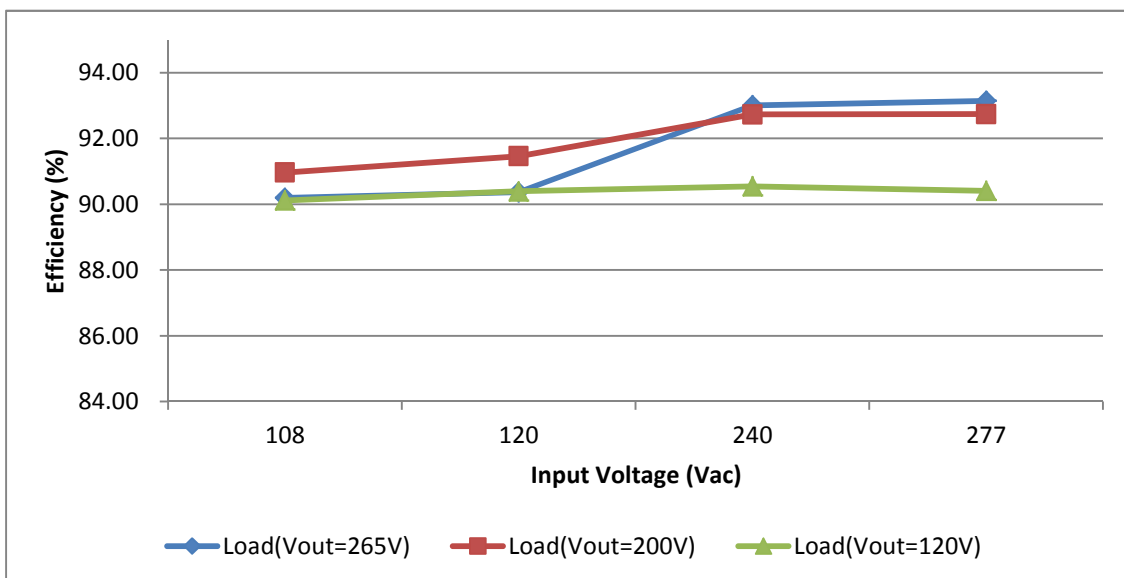
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Life Time vs Tcase



Remark) LED Driver has a rated lifetime of 50,000 hours @ $T_c \leq 75^\circ\text{C}$

Efficiency(%) (LED Current = 530mA)



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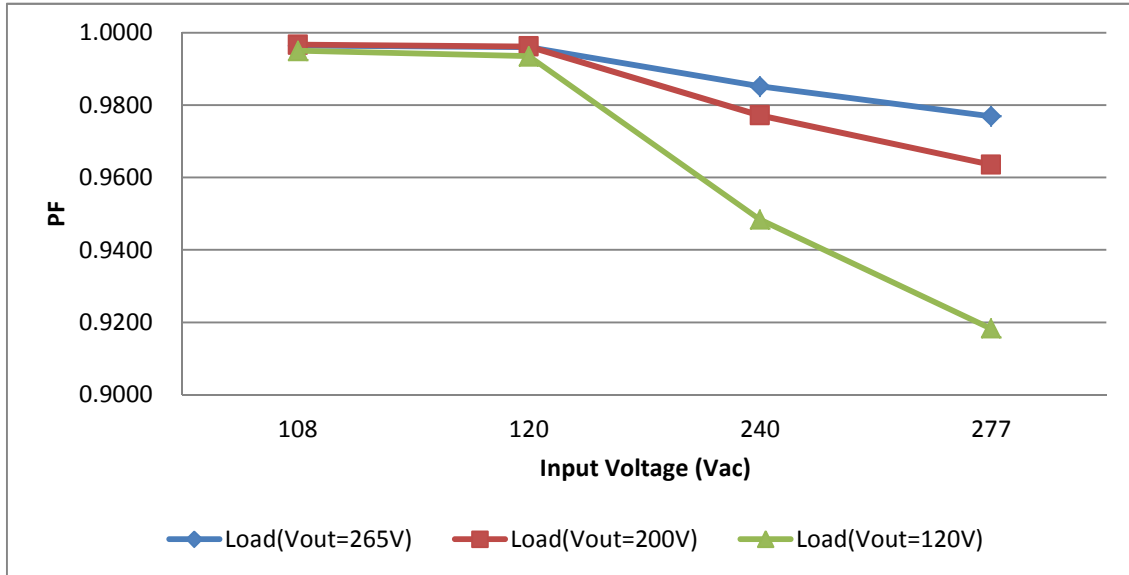
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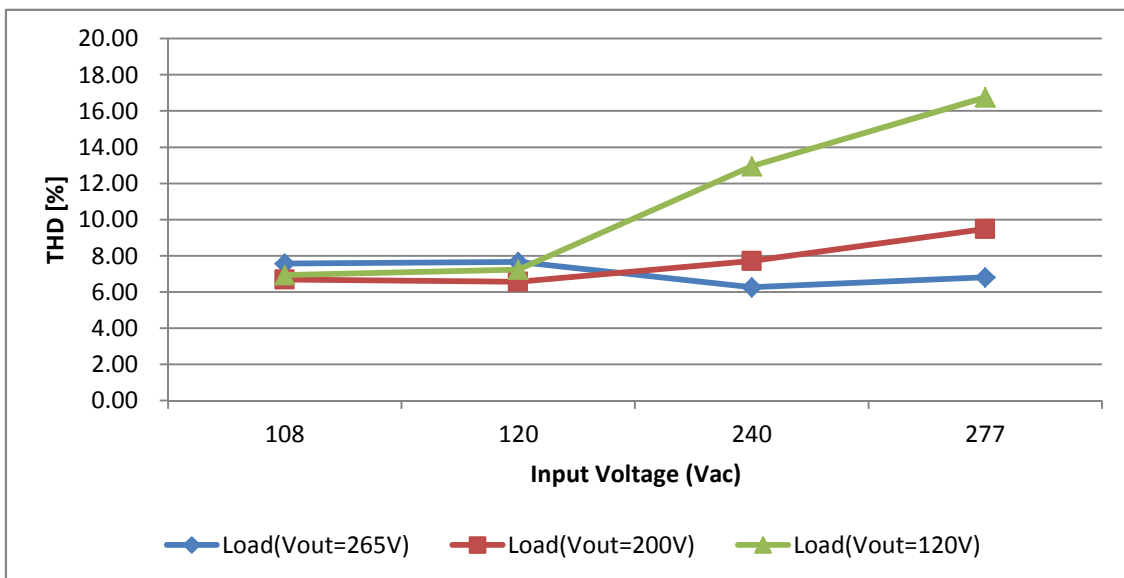
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■ Power Factor (LED Current = 530mA)



■ THD(%) (LED Current = 530mA)



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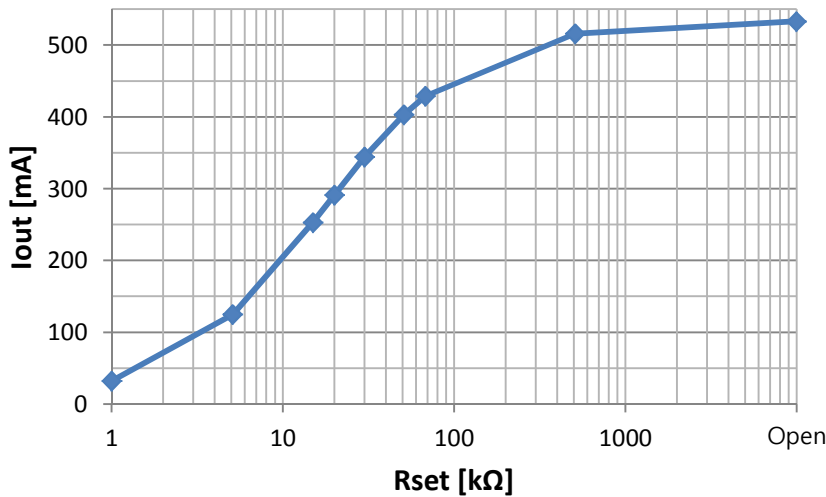
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■ Rset vs. Electrical Characteristics

Rset [kΩ]	Input					Output			
	Vltg [V]	Crnt [A]	PF	THD [%]	Power[W]	Vltg [V]	Crnt [A]	Power[W]	Efficiency [%]
(Open)	108	1.432	0.9964	7.56	154.7	261.7	0.53	139.5	90.19%
	120	1.278	0.9960	7.66	154.4	261.7	0.53	139.5	90.37%
	240	0.632	0.9852	6.25	150.0	261.7	0.53	139.5	93.00%
	277	0.551	0.9769	6.81	149.8	261.7	0.53	139.5	93.14%
30	108	0.873	0.9964	6.33	94.4	245.0	0.35	84.5	89.56%
	120	0.783	0.9956	6.30	94.0	245.0	0.35	84.5	89.92%
	240	0.400	0.9670	9.77	93.2	245.0	0.35	84.5	90.68%
	277	0.354	0.9471	12.56	93.2	245.0	0.35	84.5	90.66%
15	108	0.650	0.9948	7.03	70.2	241.2	0.26	61.5	87.68%
	120	0.584	0.9932	7.39	70.0	241.2	0.26	61.5	87.93%
	240	0.306	0.9464	13.24	69.8	241.2	0.26	61.5	88.08%
	277	0.275	0.9153	17.20	70.0	241.2	0.26	61.5	87.93%

Rset vs Iout



Rset [kΩ]	Io [mA]
1	30
5.1	130
15	250
20	290
30	350
51	400
68	430
510	520

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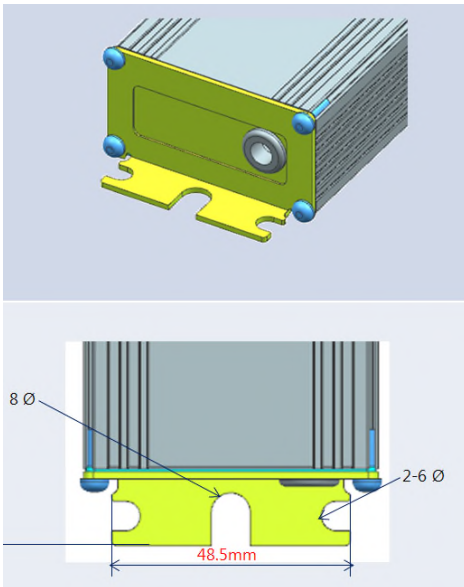
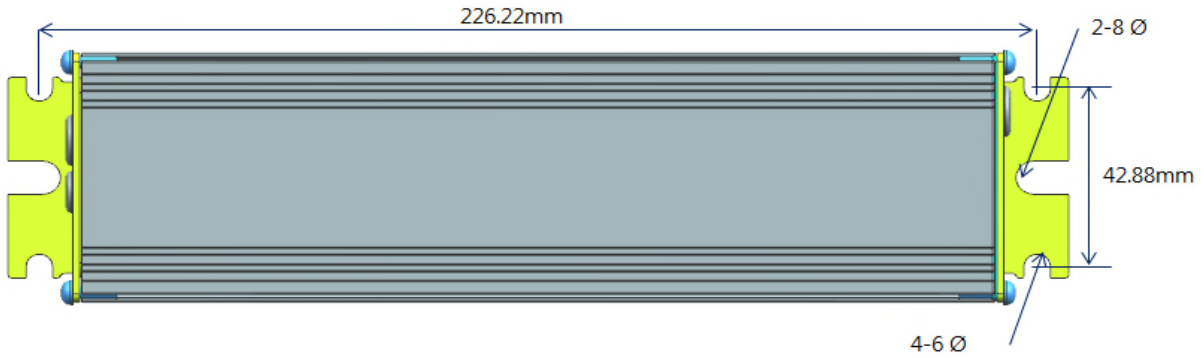
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■ Mechanical Specification



■ Enclosure Size

Unit	Case Width	Case Length	Case Height	Mounting Width	Mounting Length	Overall Length
mm	60	211	32	42.9	226	240
inch	2.362	8.307	1.26	1.689	8.898	9.449

■ Case Material : Aluminium

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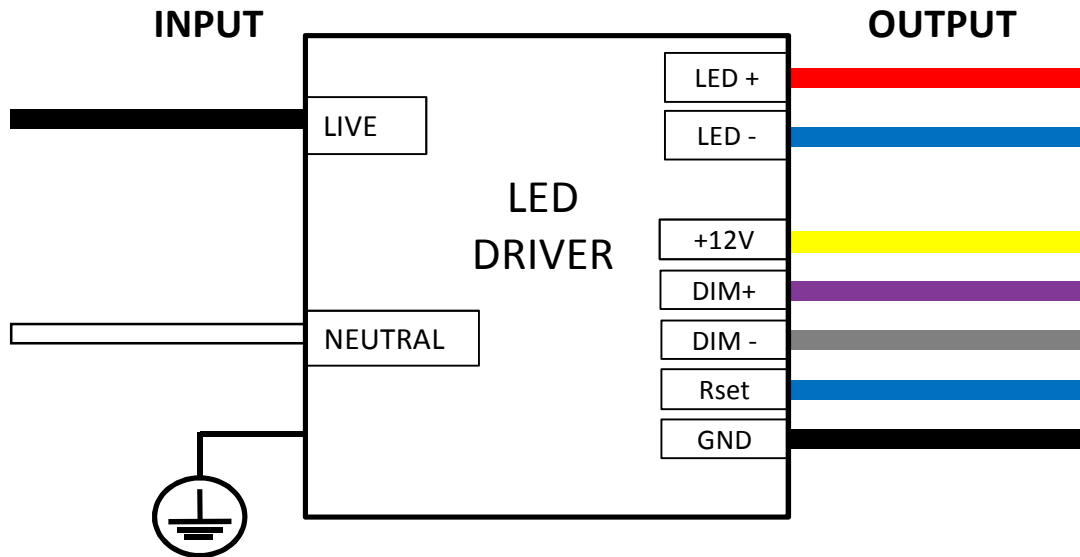
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■ Wiring Diagram



Remark) Output wiring specifications can be changed.

■ Rating Label Drawing

		LED Driver Model : PSDV151103A		DIAGRAM OF INPUT/OUTPUT CONNECTION:	
INPUT : 120-277 V~, 50/60 Hz, 200 W, Max 2 A, N(PF)=0.9		CAUTION : Suitable for dry and damp locations.			
OUTPUT : 120-280 V~ / 530 mA, 13.2 V~ / 50 mA (constant current type)		EMC : Meets FCC Class B			
DIMMING CONTROL : Source & Sink Dimming		Do not open the case, hazardous voltage inside.			
tc= 85°C		Install in accordance with national and local electrical code.			
		This product is used for LED module only.			
Made in China Dongguan SAMSUNG ELECTRO-MECHANICS		Technical Support : www.sem.samsung.com			

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