LED Driver

30W Slim Driver

SI-CU1023001WW (UL Class P)
SI-CU1023002WW (UL Type TL)

Constant Current LED Driver
Deep Dimming up to 1%

Features & Benefits

- Output Current Range: 350 ~ 800 mA (Adjustable through R-set)
- Output Voltage Range: 15 ~ 54 Vdc
- Output Power Range: Max. 30 W
- Dimming Control: 0 - 10 Vdc
- Input Voltage: 120 ~ 277 Vac, 50 / 60 Hz
- Safety: UL / cUL (UL 8750)
- EMI: FCC Part 15 Class B
- Protections: Short Circuit, Open Load Voltage, Over Temperature
- t_a Range: -20 ~ +50 °C
- Expected lifetime: 50,000 hours at t_c < 88 °C
- Environmental Compliance : RoHS
- Long lasting & high reliability
- Metal housing

Applications

- Indoor lighting

SAMSUNG

Table of Contents

1. Characteristics

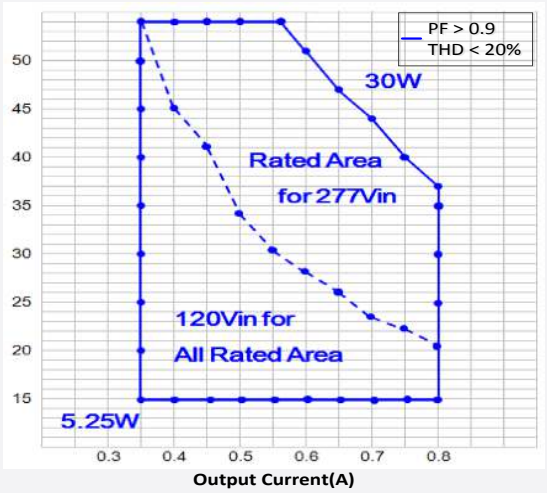
Article	Symbol	Specification			Unit	Note
		Min.	Typ.	Max.		
INPUT SPECIFICATIONS						
Nominal Voltage	Vin		120~277		Vac	
Voltage Range		108		305		
Nominal Frequency	Fin		50 / 60		Hz	
Frequency Range		47		63		
Input Current	Iin			0.35	A	At 120 Vac, 100% load
				0.15		At 277 Vac, 100% load
Total Harmonic Distortion	THD			20	%	At 120-277 Vac
Power Factor	PF	0.9			-	At 120-277 Vac
Efficiency	η	83	86		%	At 120 Vac
		85	87			At 277 Vac
Standby Power	Pstd			0.5	W	At 120 Vac, Vdim < 1Vdc
				1		At 277 Vac, Vdim < 1Vdc
In-rush Current				20	A_{pk}	Cold start at 277 Vac .
OUTPUT SPECIFICATIONS						
Output Voltage	Vo	15		54	Vdc	
Max. Voltage	Vp			57	Vdc	No-load condition
Output Current	Io	350		800	mA	
Ripple Current	Iripple	-30		30	%	For 37V/0.8A LED load mode
Nominal Power	Po			30	W	
Turn-on Delay Time	Td			0.5	s	@ Ambient Temperature Time to 90% of raged current

1) The PF, THD can meet the electrical performance above 60% of maximum output power.
2) Measured the unit is thermally stabilized after half an hour, ta=25℃.

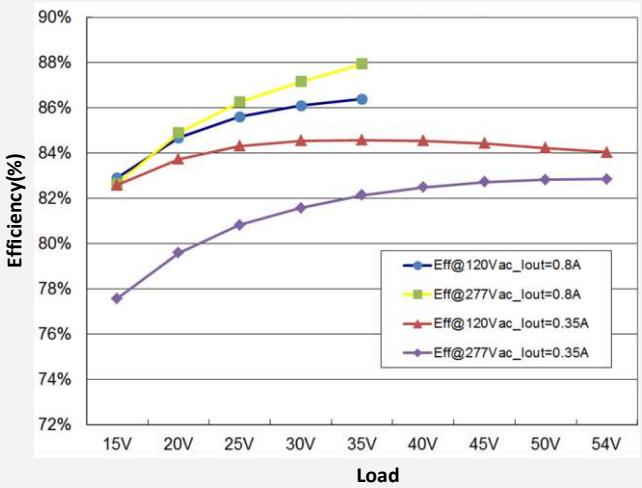
Article		Symbol	Specification			Unit	Note
			Min.	Typ.	Max.		
DIMMING SPECIFICATIONS							
Dimming Range			1		100	%	See 4)Dimming Specification section
Dim. Min.				1		Vdc	
Dim. Max			8		10	Vdc	
I_{SOURCE}					0.6	mA	
● Recommend for compatible dimmer : IP710-DL, NTSTV-DV, DVSTV							
ENVIRONMENTAL SPECIFICATIONS							
Ambient Temperature		t_a	-20		50	ºC	
Case Temperature		t_c			88	ºC	Measured at tc point as indicated on the product label
Storage Temperature		t_s	-25		80	ºC	
Ambient Humidity			10		90	%	Not condensing
Lightning Surge	L / N		±1			kV	According to IEC/EN 61000-4-5
	LN / GND		±2				
IP Rating				Damp & Dry		-	Suitable for indoor environment
Expected Lifetime (e-cap)			50,000			h	At tc < 88 ºC, ta = -20 ~ 50 ºC
MTBF				100,000		h	
Dimensions		L x W x H		300 x 30 x 21		mm	
Net Weight				259		g	±10 %

2. Typical Characteristics Graphs

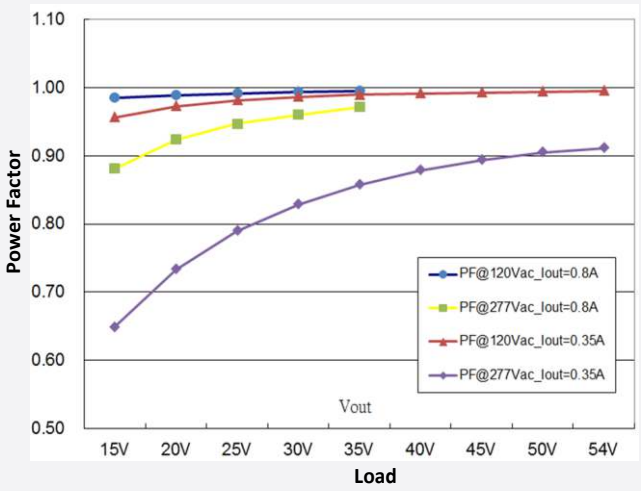
a) Operating Window



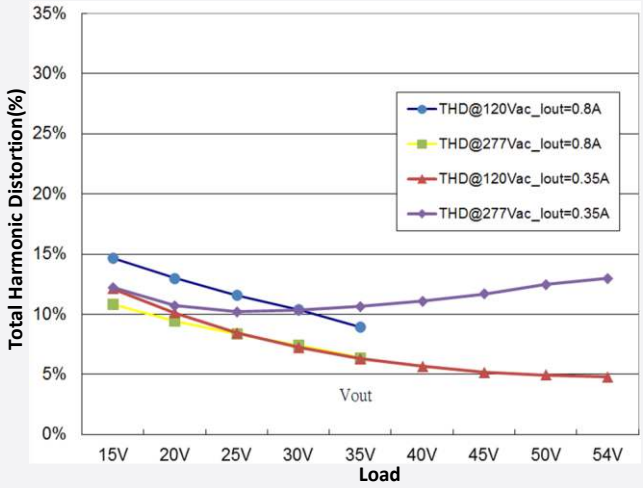
b) Efficiency vs. Load



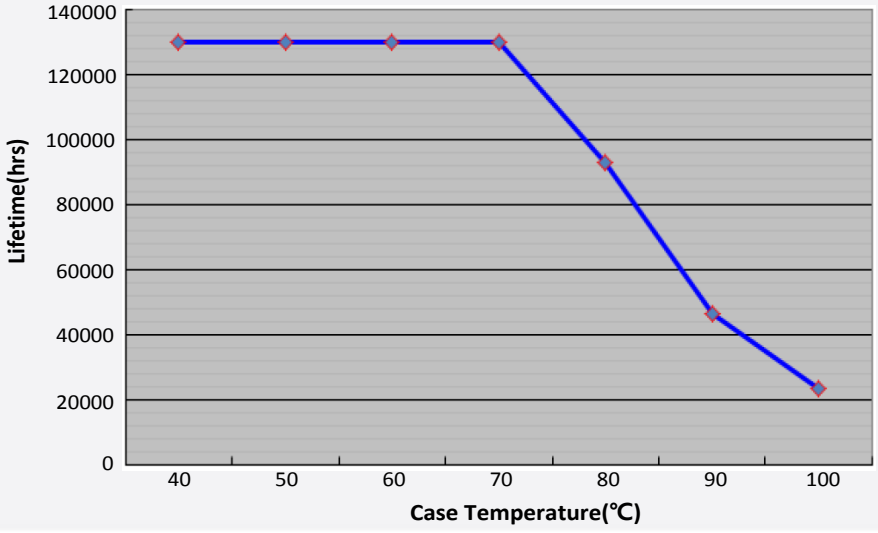
c) PF vs. Load



d) THD vs. Load

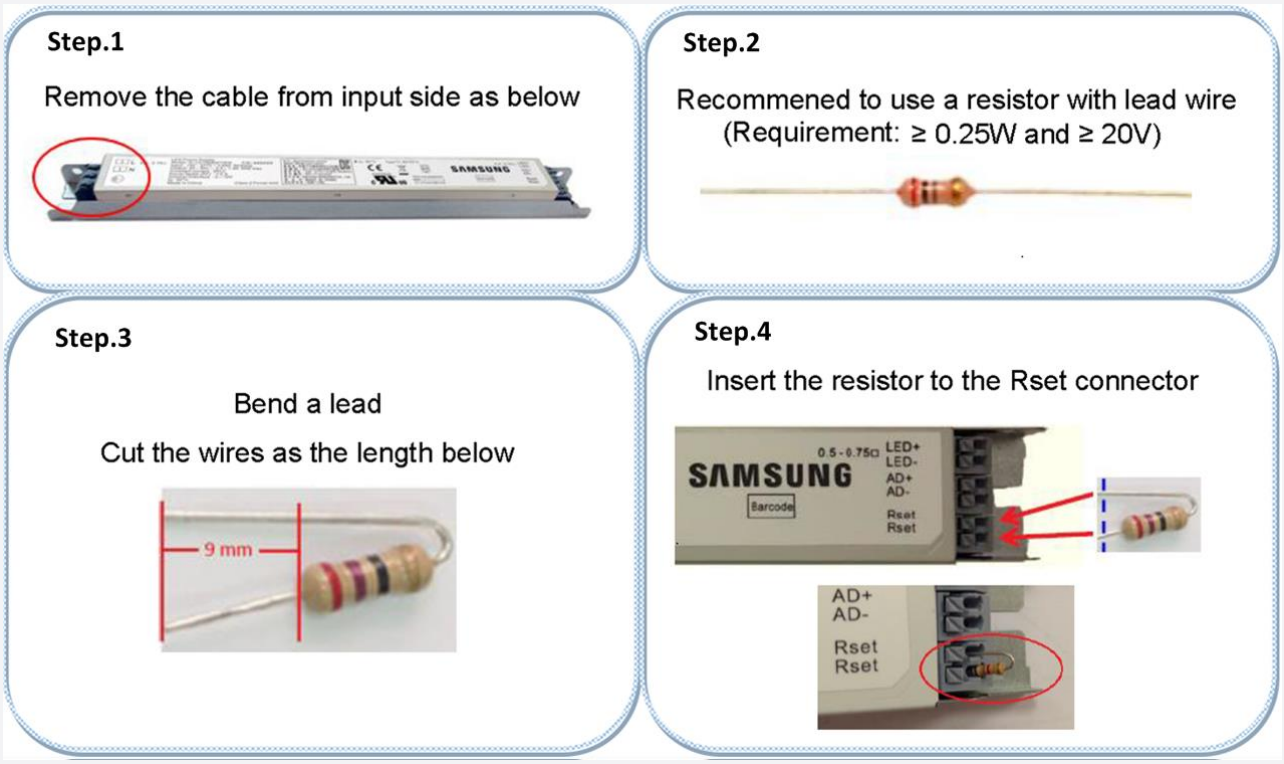


e) Lifetime vs. tc



f) Installation Instruction for R-set Setting

1. Power OFF the driver.
2. Choice a resistance from Rset table. Use lead type resistor for easy to connect(Recommend).
3. Forming the resistor.
4. Connection.



※ Resistor wire should be the opposite side of driver metal case.

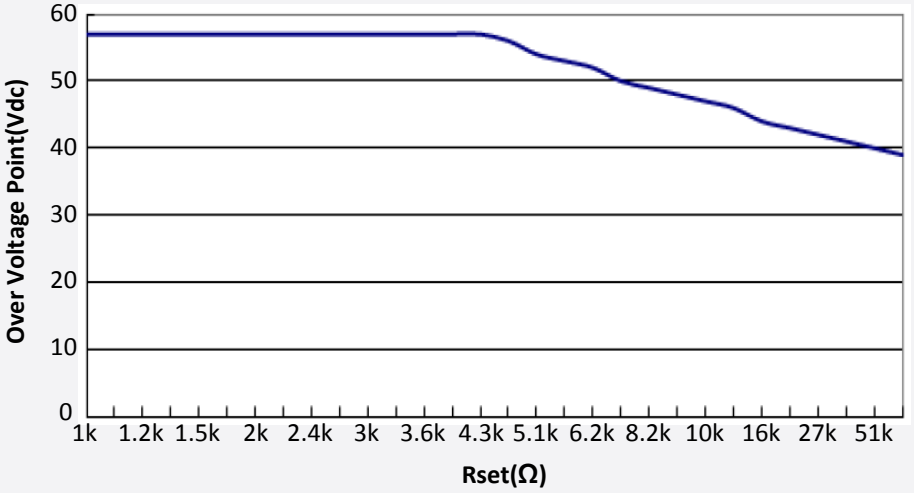
g) Installation Instruction for R-set Setting

Rset(kΩ)	Output Current(mA)	Current Tolerance(%)	Output Voltage(V)	Open Load Voltage(V)
1.0	350		15 ~ 54	56.9
1.3	375		15 ~ 54	56.9
1.5	392		15 ~ 54	56.9
1.6	402		15 ~ 54	56.9
2.0	438		15 ~ 54	56.9
2.2	446		15 ~ 54	56.9
2.7	482		15 ~ 54	56.9
3.0	501		15 ~ 54	56.9
3.9	537		15 ~ 54	56.9
4.3	564		15 ~ 54	56.9
4.7	573		15 ~ 53	56.9
5.6	591		15 ~ 51	55.3
6.2	610		15 ~ 50	53.3
7.5	636		15 ~ 48	51.7
8.2	646	±5	15 ~ 47	51.0
9.1	655		15 ~ 46	50.3
10	673		15 ~ 45	48.9
11	682		15 ~ 44	48.1
12	690		15 ~ 44	47.4
15	709		15 ~ 43	46.0
18	727		15 ~ 42	44.6
22	736		15 ~ 41	43.4
24	745		15 ~ 41	43.1
30	754		15 ~ 40	42.0
33	764		15 ~ 40	41.6
43	773		15 ~ 39	41.0
51	782		15 ~ 39	40.3
82	791		15 ~ 38	39.4
110	800		15 ~ 37	39.0

3. Protection

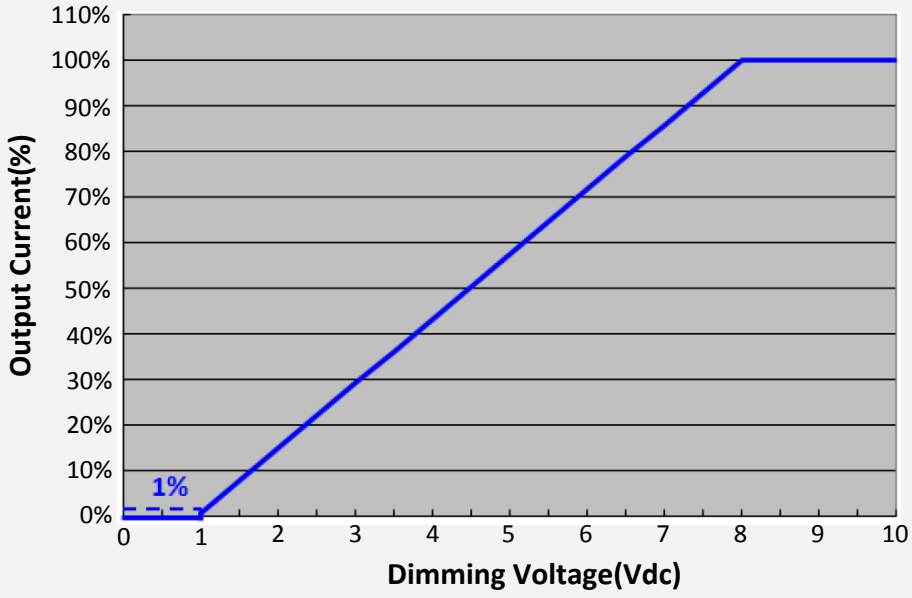
Protection Specification	Protection Mode	Condition
Output Short Protection	Auto-Recovery	(1) AC turn on then output short (2) Output short then AC turn on
Output Open Protection	Clamp Open Load Voltage*	(1) AC turn on then output open (2) Output open then AC turn on
Output Temperature Protection	Latch	tc point : 95 ± 10 ℃
AC Transient Protection	Auto-Recovery	120 ~ 277 Vac range switching

- The open load voltage can be adjusted by Rset resistor setting. Please refer to the below graph.



4. Dimming Specification

The unit has Analog Dimming(AD) function, using 0-10 Vdc. The typical dimming curve is shown below.



5. Reliability & Standards

a) International Standard

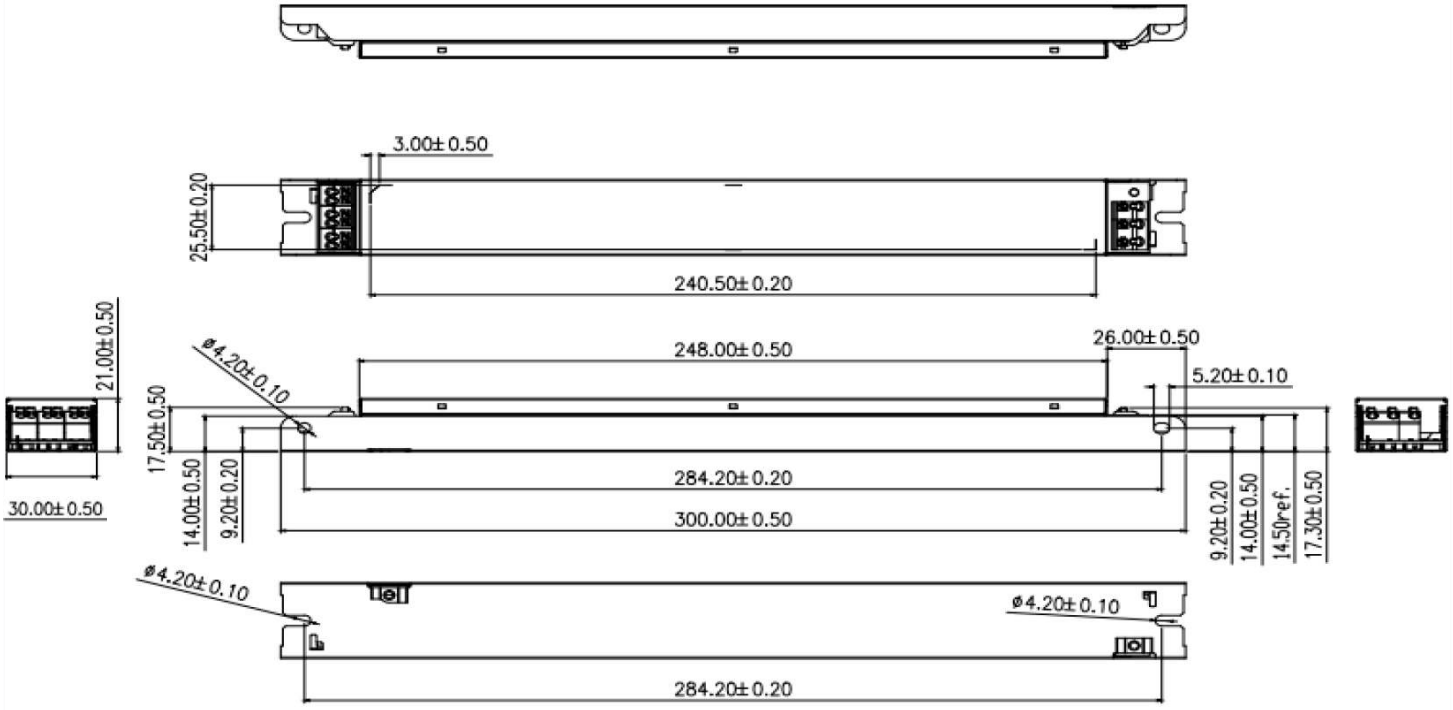
International Standard	Certification
UL Safety Standards (Class 2 Output)	UL 8750
Electro Magnetic Interference	FCC Part 15 Class B
Electrostatic Discharge (ESD): Contact ±4kV, Air ±8kV	IEC/EN 61000-4-2
Electrical Fast Transients (EFT)	IEC/EN 61000-4-4
Surge : Differential mode ±1KV, Common mode ±2KV	IEC/EN 61000-4-5
Touch Current	IEC/EN 61347

b) Test Items and Conditions

Test Item		Specification	Condition
Leakage Current		< 0.7 mA	
Earth Continuity		< 0.5 Ω	
Hi-Pot	Input – Output	3750 Vac, 60 s, cut-off current 10 mA	100 % tested in production line
	Input – F.G	1500 Vac, 60 s, cut-off current 10 mA	100 % tested in production line
Insulation Resistance	Input – Output	500 Vdc, 60 s, Insulation resistance > 4 MΩ	100 % tested in production line
	Input – F.G	500 Vdc, 60 s, Insulation resistance > 2 MΩ	100 % tested in production line
Surge	L / N	±1 kV	
	LN / F.G	±2 kV	
ESD	Contact	±4 kV	
	Air	±8 kV	

6. Outline Drawing & Dimension

Dimension : 300 (L) x 30 (W) x 21 (H) Unit: mm



Housing material : SGCC

7. Label Structure

SI-CU1023001WW

SI-CU1023002WW

8. Packing Structure

Packing material	Driver Quantity (pcs)	Dimension (mm)		
		Length	Width	Height
Outer Box	28	483	385	148
Pallet	1008 (36 outer boxes)	1220	1020	120

SAMSUNG

9. Precautions in Handling & Use

1) To prevent the LED Driver from any defect, please handle and store it with care
    - Do not drop or give shock
    - Do not store in very humid location or at extreme temperature
    - Do not open or disassemble the product
2) Static electricity or surge voltage may damage the components inside LED Driver, as such please observe proper anti-electrostatic working process
    - People handing the Driver should be well grounded (e.g. using ESD wrist band) and wear anti-static working clothes and gloves
    - All related devices and instruments in the production line should be well grounded (e.g. working table, measuring equipment, assembly jigs)
3) Observe the correct polarity of output terminal
4) Avoid input voltage exceeds the maximum rating, which will cause damage to the circuit and result in malfunction

Legal and additional information.

About Samsung Electronics Co., Ltd.

Samsung Electronics Co., Ltd inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and semiconductor and LED solutions. For the latest news, please visit the Samsung Newsroom at http://news.samsung.com.

Samsung Electronics Co., Ltd.
Samsung-ro, Giheung-gu
Yongin-si, Gyeonggi-do, 17113
KOREA
www.samsungled.com

SAMSUNG