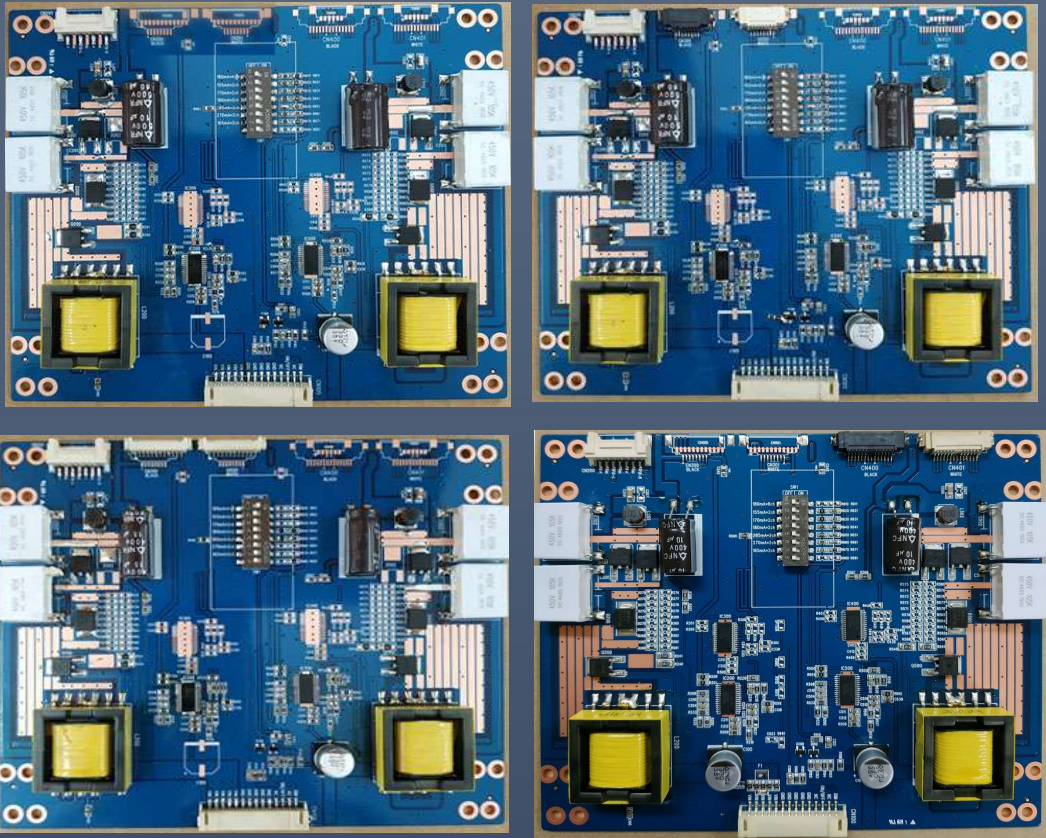


Data Sheet



*Product Name : LED Driver
(for Multi Panel Supportable Type)
Model No : CVT456-MULTI2*

Contents

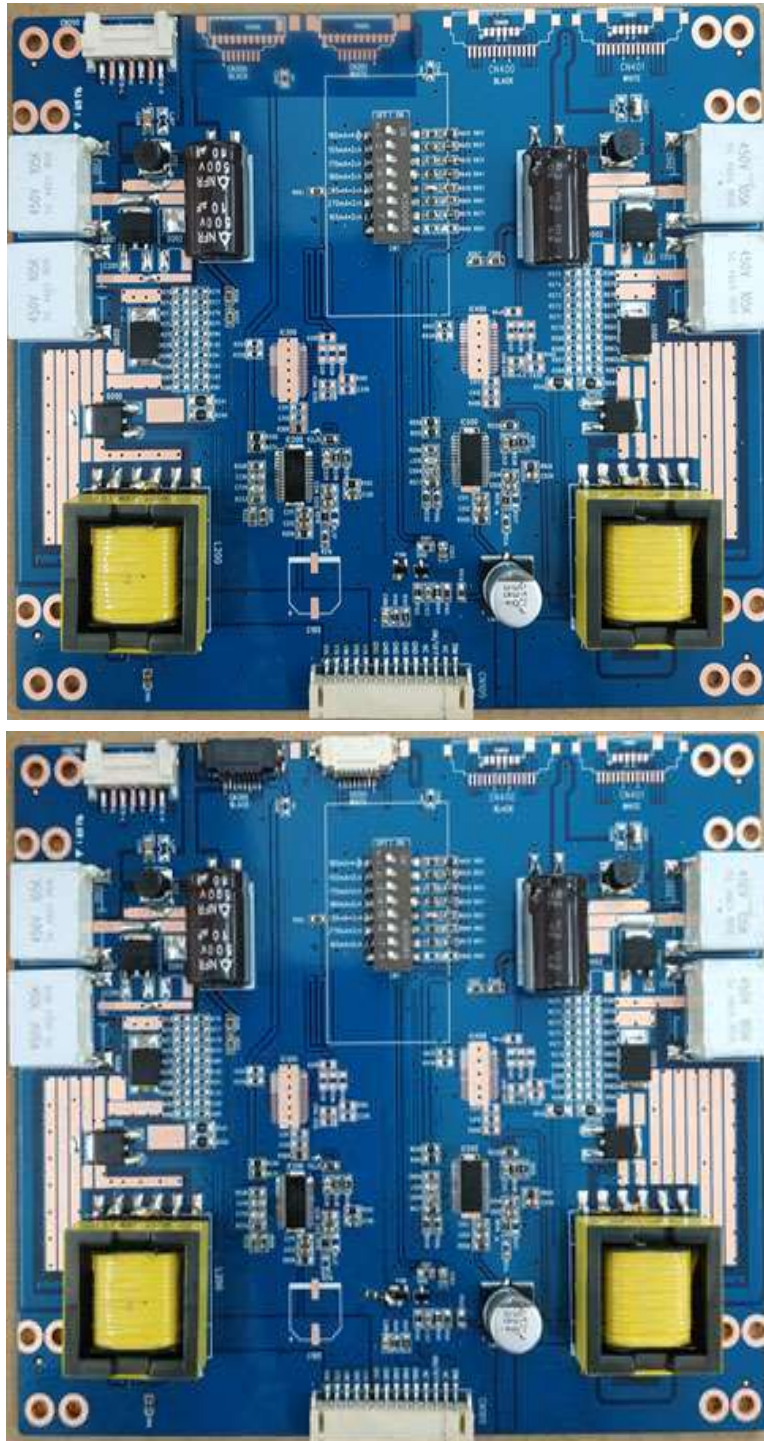
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Revision History

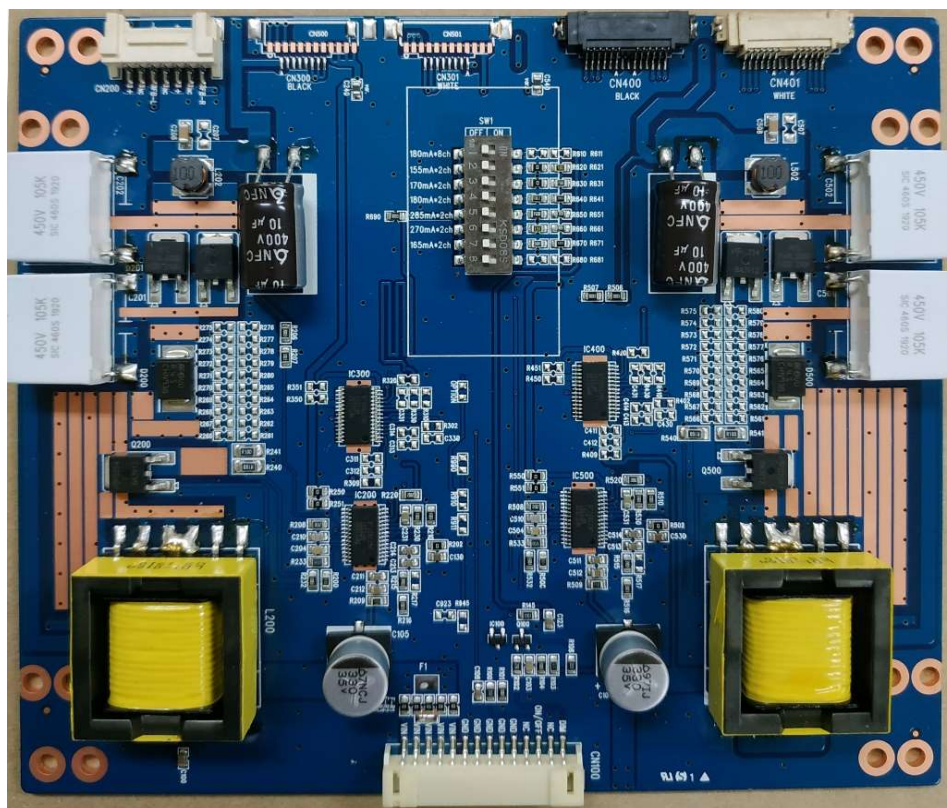
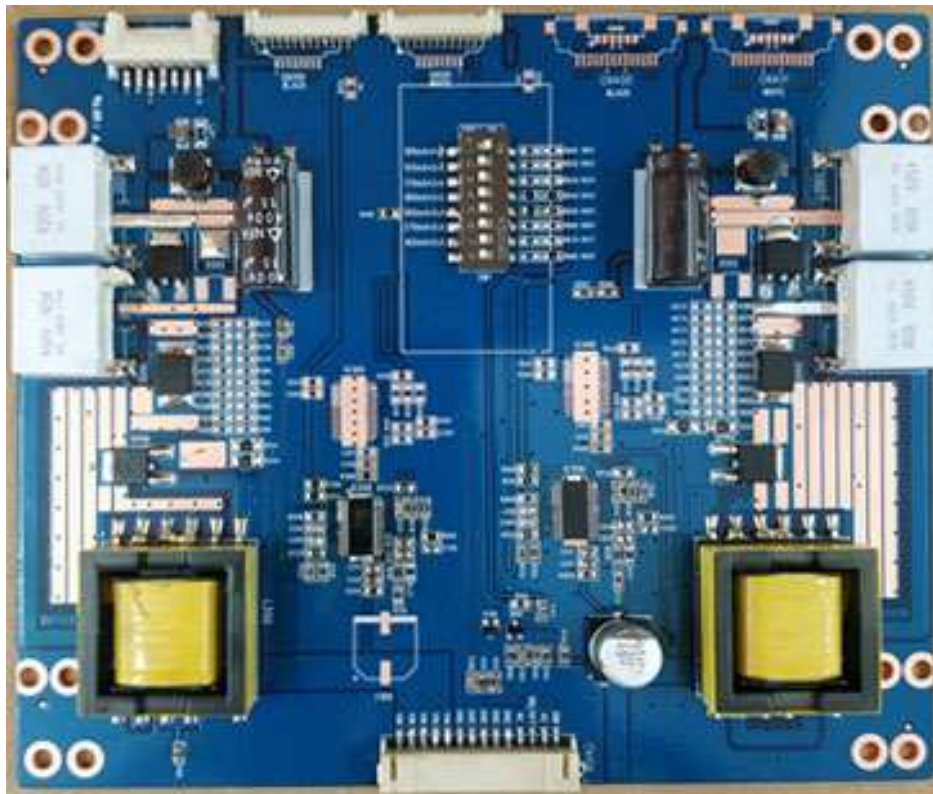
PCB Version	Rev. date	Revision Details
ES1	Aug. 2018	● Engineering Sample
R1	Feb. 2019	● Initial version issued
R1	May. 2019	● The 49", LD490EQE-FKA1 model has been verified by real panel test.
R2	Dec 2019	● Various setting for LG & Innolux LCD

1. Spec Summary

This specification defines all the technical figures as an users' manual regarding this LED driver supporting for various type displays 43", 49", 55" & 65" models below which have not been built-in the mating LED driver..



LED Driver for Multi Panel Supportable



2. Absolute Rating

2.1 Temperature

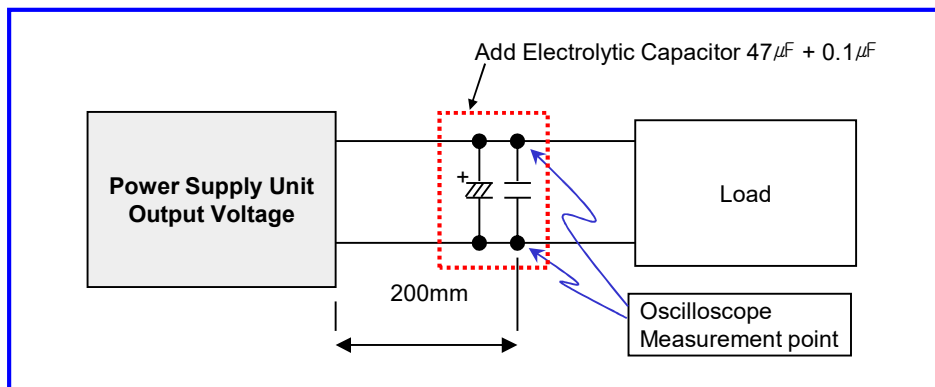
- Operating Temp. : 0 ~ 50 °C
- Storage Temp. : -10 ~ 65 °C

2.2 Humidity

- Operation humidity : 30 ~ 85% non-condensing
- Storage humidity : 5 ~ 90% non-condensing

2.3 Ripple and Noise

Ripple and noise are defined as periodic or random signal over frequency band of 10Hz to 20MHz. Measurements shall be made with an oscilloscope with 20MHz bandwidth.



Output Voltage	LED Output
Ripple Voltage Range (mV)	1200

Ripple& Noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uF & 47uF parallel capacitor.

👁 Test condition

Temperature: 25 °C room temperature

Test equipment: No dimming

👁 Over Shoot

The output overshoot at turn-on shall not exceed 25% of normal voltage value with or without the load connected.

3. Electrical Characteristics

3.1 Input Requirement

Parameter		Symbol	Values			Unit	Remark	
			Min	Typ	Max			
Power Supply Input Voltage		VBL	21.6	24	26.4V	Vdc		
Input Current of Power Supply		IBL	-	-	5	A		
		In-Rush	-	-	10			
Power Consumption		PBL	-	-	120	W		
Input Voltage for Control System Signals	On/Off	On	V on	2.5	-	5.25	Vdc	
		Off	V off	-0.3	-	0.8	Vdc	
	Brightness Adjust	ExtVBR-B	10	-	100	%	On Duty	
	Pulse Duty Level (PWM)	High Level		2.5	-	5.25	Vdc	High : On duty Low : Off duty
		Low Level		0.0	-	0.7	Vdc	
		Normal Frequency.		100	-	1K	Hz	
	Frequency Range		60	-	10k	Hz		
Analog Dimming Control	Duty		10	-	100	%		

3.2 Output Voltage and Current for targeting LCD Models

[Note - 1] Output Connector : Yeon-Ho / CN200_20037WR-H07AA

Panel Type	Setting guide (DIP Switch)	Output Voltage Range			Output Constant Current (mA)		
		Min.	Typ.	Max.	Min.	Typ.	Max.
LD430EUE-FHB1	#2	-	118.2	140	147.3	155	162.7
LD430EUE-FHC1	#2	99	118.2	140	147.3	155	162.7
LC430EUE-FHM1~2	#4	110.9	120.5	129	171	180	189
LC430EGE-FHM1	#4	127.8	139	150.3	171	180	189
LD490EUE-FHA1	#4	188.1	204.6	221.1	171	180	189
LD490EUE-FHB1	#3	138.2	129.2	147.2	160	170	180
LD490EUE-FHC1	#3	138.2	129.2	147.2	160	170	180
LD490EGE-FHM1	#4	145.4	158.1	170.9	171	180	189
LC490EUE-FHM1	#3	129.2	138.2	147.2	160	170	180
LD550EUE-FHA1	#4	213.8	232.5	251.3	171	180	189
LD550EUE-FHB1	#2	175.8	191.5	207.3	147.3	155	162.7
LD550EUE-FHC1	#2	175.8	191.5	207.3	147.3	155	162.7
LD550EGE-FHM1	#4	170.4	185.4	200.4	171	180	189
LC550EGE-FHM1	#4	170.4	185.5	200.4	171	180	189
LC550EUE-FJM1	#4	170.4	185.5	200.4	171	180	189
LD650EGE-FHM1	#4	193.8	210.8	227.8	171	180	189
LC650EGE-FHM1	#4	193.8	210.8	227.8	171	180	189
LC650EUF-FHB1	#4	220.3	222.5	244.1	171	180	189
LD650EUF-FHB1	#4	220.3	222.5	244.1	171	180	189

[Note - 2] Output Connector : UJU / CN300_IS100-L08T-46-B,
CN301_IS100-L08T-46-C

Panel Type	Setting guide (DIP Switch)	Output Voltage Range			Output Constant Current (mA)		
		Min.	Typ.	Max.	Min.	Typ.	Max.
LD430EQE-FLA1	#7	151.1	160.1	170.1	156.8	165	173.3
LD550EQE-FKA1	#5	-	148	-	-	285	-
LD650EQE-FJA1	#5	-	179	-	-	285	-
LD490EQE-FKA1	#6	-	136	-	-	270	-

LED Driver for Multi Panel Supportable

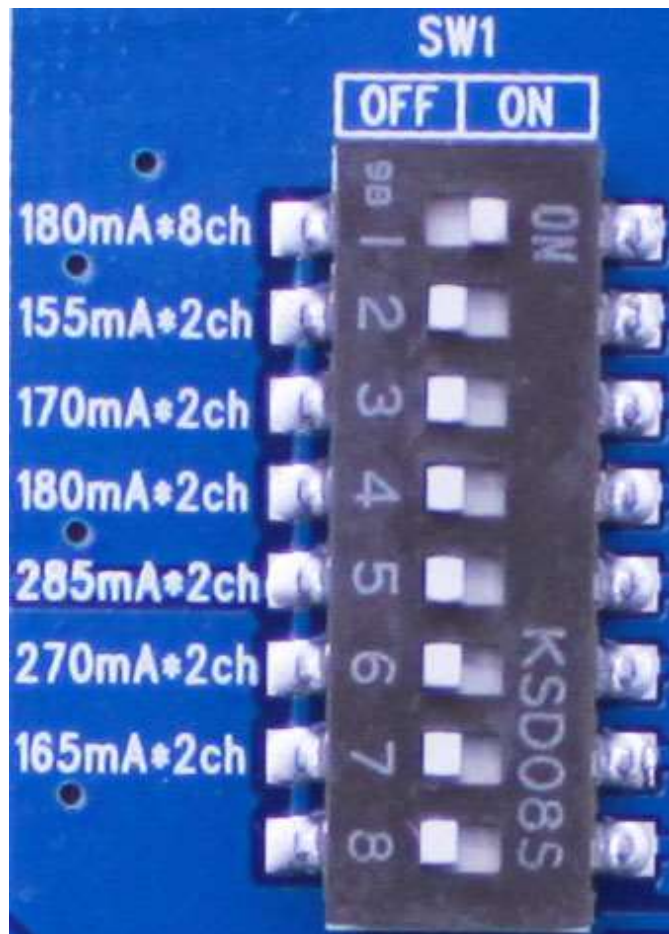
[Note - 3] Output Connector : Yeon-Ho / CN500_12505WR-12P,
CN501_12505WR-12P

Panel Type	Setting guide (DIP Switch)	Output Voltage Range			Output Constant Current (mA)		
		Min.	Typ.	Max.	Min.	Typ.	Max.
Innolux 40", S400DJ1-KS5	#1 (4 string LED *2)	34.83	-	41.92	171	180	189

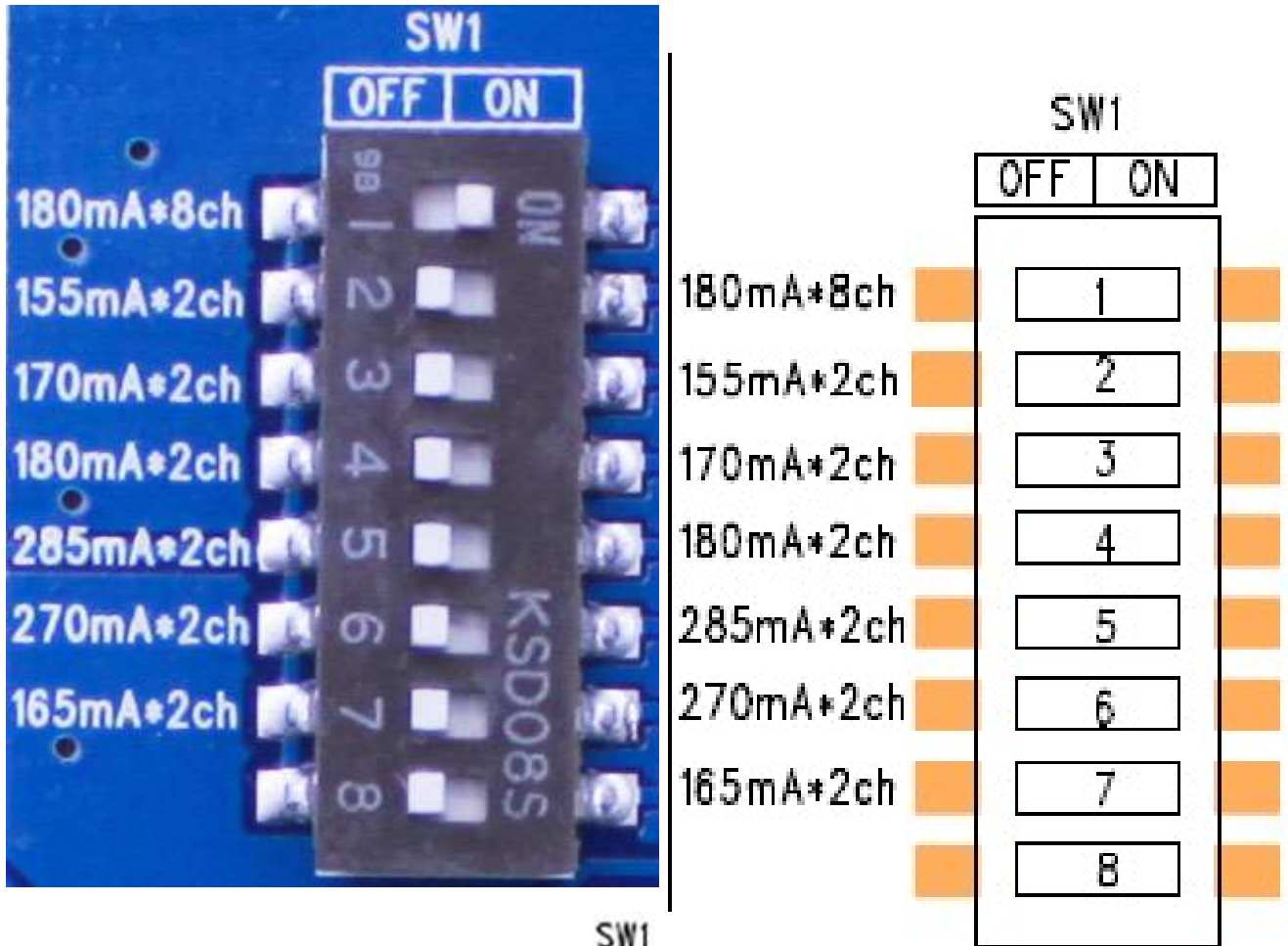
[Note - 4] : forwarding current setting

- When user settle a target LED Driver spec depending the LCD model, users can use the selection switch of forwarding current level which is reserved on the top middle position of PCB as below picture.

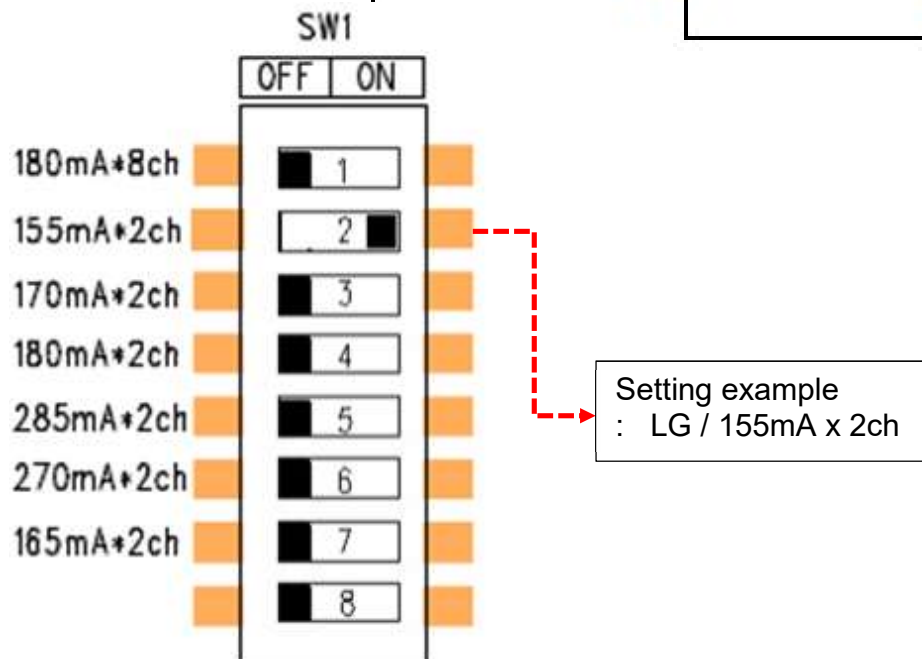
- How can user select the target current level? : refer to the above [Note 1, 2 & 3]



4. Switch Setting on SW1



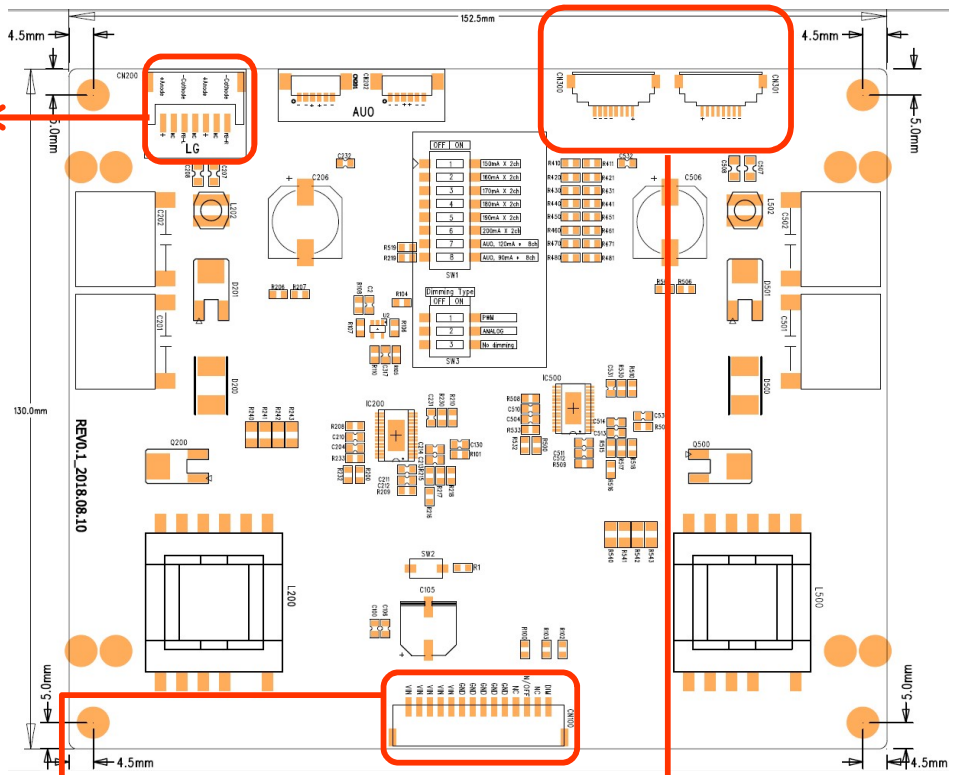
For example :



5. Connectors and Pin Assignment

CN200 : 20037WR-H07AA (YEON-HO)
Panel Type : LG

Pin No.	Symbol	Description
1	FB-R	LED Output Current(cathode)
2	N.C	No Connection
3	VLED	LED Input Current(anode)
4	NC	No Connection
5	FB-L	LED Output Current(cathode)
6	NC	No Connection
7	VLED	LED Input Current(anode)



Panel Type: LG / LD650EQE-FJA1, LD550EQE-FKA1, LD650EQE-FJA1

CN100 : 20022WR-14 (YEON-HO)

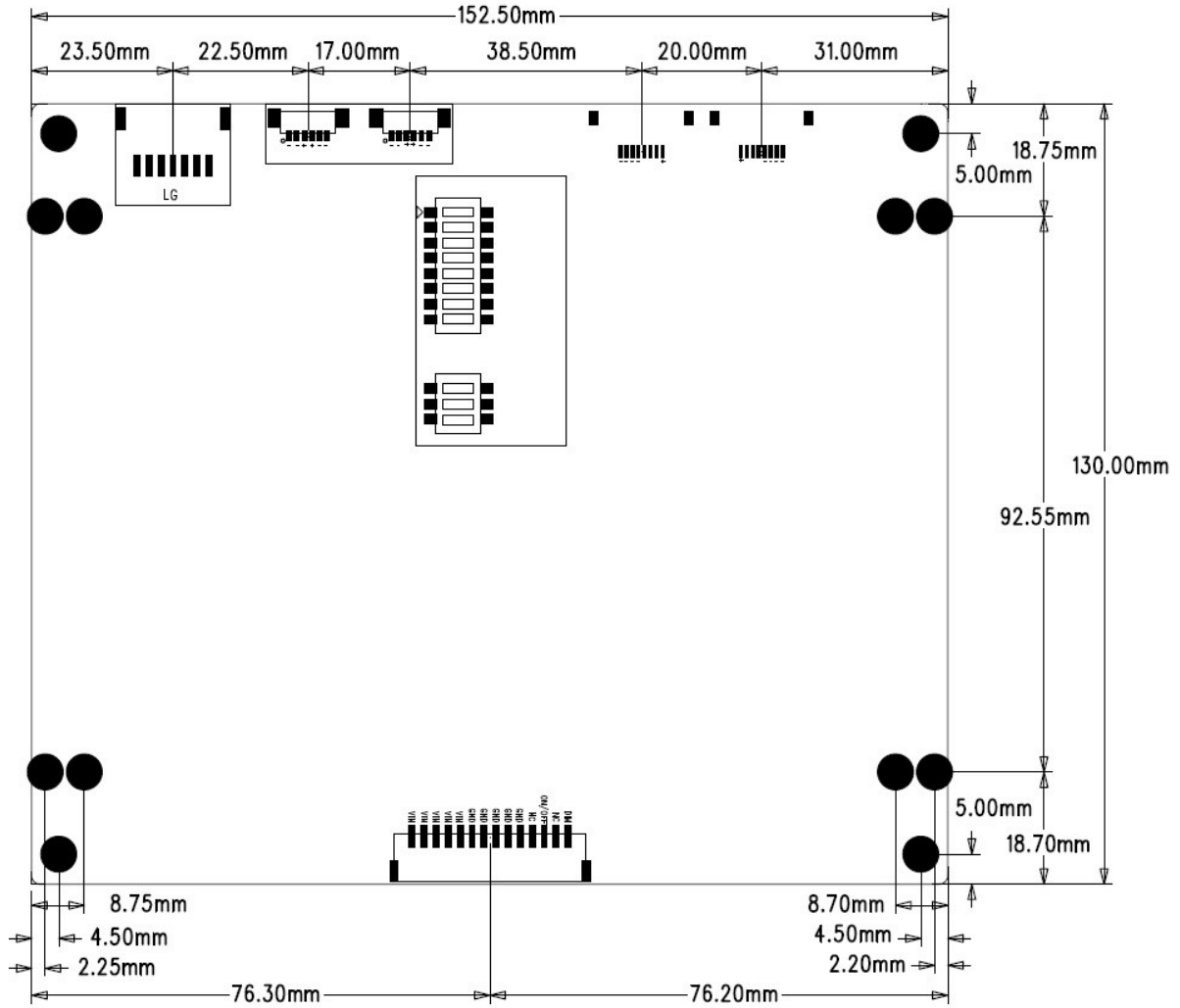
Pin No.	Symbol	Description
1~5	VIN	Voltage Input (24V)
2~10	GND	Ground
11	NC	No Connection
12	ON/OFF	LED Drive On/Off (Active High)
13	NC	No Connection
14	DIM	External Dimming(PWM, Analog)

CN300: IS100-L08T-C46-B (black color, manufactured by UJU)		
Pin No.	Symbol	Description
1	VLED	LED Output Current(anode)
2	NC	No Connection
3	NC	No Connection
4	NC	No Connection
5	NC	No Connection
6	FB-R3	LED Output Current(cathode)
7	FB-R2	LED Output Current(cathode)
8	FB-R1	LED Output Current(cathode)

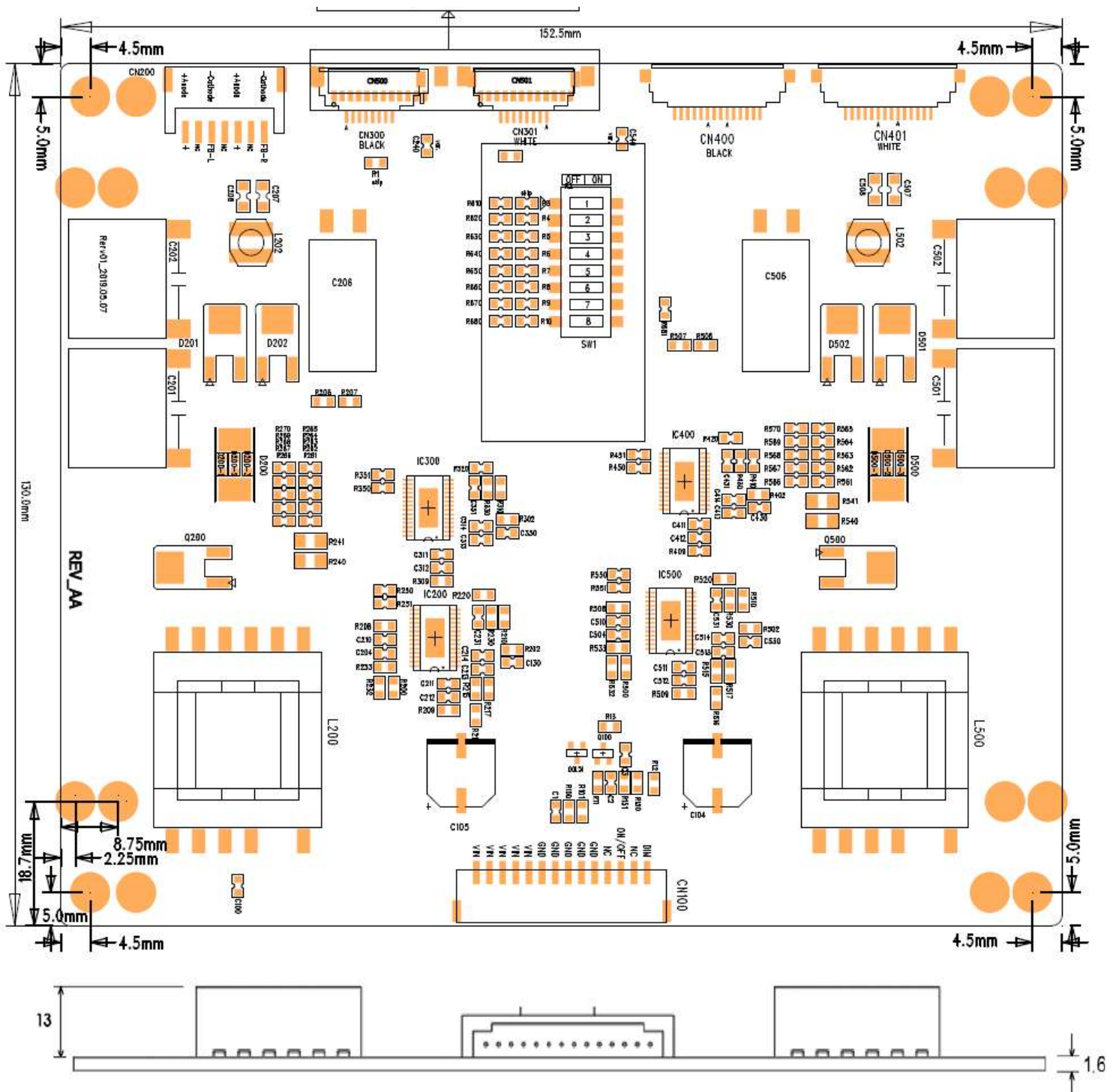
CN301: IS100-L08T-C46-C (natural color, manufactured by UJU)		
Pin No.	Symbol	Description
1	FB-L1	LED Output Current(cathode)
2	FB-L2	LED Output Current(cathode)
3	FB-L3	LED Output Current(cathode)
4	NC	No Connection
5	NC	No Connection
6	NC	No Connection
7	NC	No Connection
8	VLED	LED Output Current(anode)

6. Dimension

6.1 Dimension (152.5 x 130 x 13 mm) and weight (230g)



6.2 PCB Drawing with Dimension

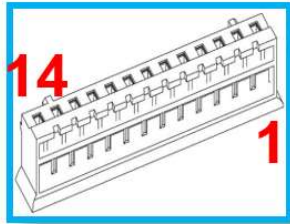


8. Power Input Cable (Optional Accessory)

8.1 Interconnection Cable

(between this LED Driver and user's SMPS & user's Driving Board)

PN : CBL501-MULTI2-OPEN-STD



500mm

LED Driver / GH688A / CN1			
WAFER : 20022WR-14AML(YEONHO)			
HOUSING : 20022HS-14(YEONHO)			
FLYING LEAD	WHT	24V	1
FLYING LEAD	WHT	24V	2
FLYING LEAD	WHT	24V	3
FLYING LEAD	WHT	24V	4
FLYING LEAD	WHT	24V	5
FLYING LEAD	WHT	GND	6
FLYING LEAD	WHT	GND	7
FLYING LEAD	WHT	GND	8
FLYING LEAD	WHT	GND	9
FLYING LEAD	WHT	GND	10
-	-	NC	11
FLYING LEAD	WHT	ON/OFF	12
-	-	NC	13
FLYING LEAD	WHT	DIM	14



9. Ordering Information

Order Code	Description	Status