Product Specification

DB-LD0D

■ Preliminary Specifications

☐ Final Specifications

Module	Auto Dimming Driver Board + LDR Cable
Model Name	DB-LD0D
Document Version	Rev.01

Customer

Approved by Date

Notice: This Specification is subject to change without notice.

Approved By	Prepared By

Taiwan Screen Optronics Co ., Ltd
Tel : +886-2-8227-5490 Fax : +886-2-3234-7264
4F., No.97, Lide St., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)

Revise History

Version	Date	Page	Description
00	2018/09/19	All	First Edition for Customer

Taiwan Screen Optronics Co ., Ltd
Tel : +886-2-8227-5490 Fax : +886-2-3234-7264
4F., No.97, Lide St., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)

Content

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4F., No.97, Lide St., Zhonghe Dist., New Taipei City 235, Taiwan (R.O.C.)

1. General Description

This Product Specification is made to be the standard of TWScreen manufactured LED Driving Board such a standard will be followed in TWScreen production, shipment, and quality inspection.

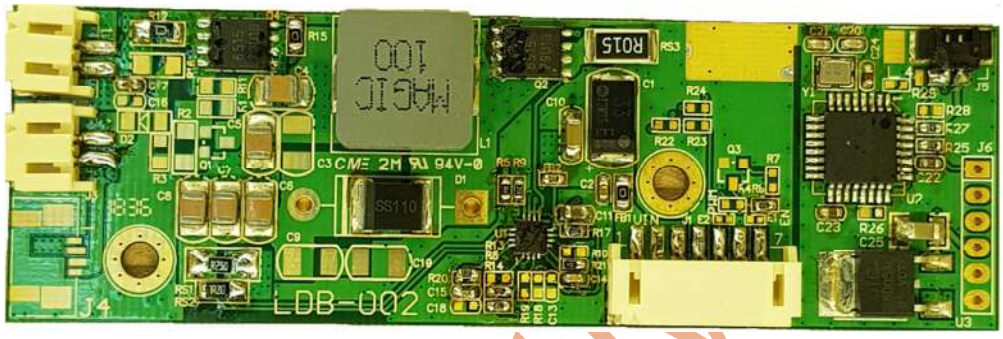

Figure-01 Product Appearance

2. Feature

- 50W LED Driver
- Auto dimming by ambient illuminate.

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3. Protection

Item	Max.	Remark
Over current protection (OCP)	Depending on LED B/L	
Over voltage protection (OVP)	30.5V(Note1)	

Note1 : When the LED string is opened, over voltage protection will limit the output to approximately 30.5V

4. Optional Backlight Driving Condition (Depends on panel)

Item	Symbol	Min.	Typ.	Max.	Unit	Remark
LED Voltage	V_{LED}		-		V	
LED Current	I_{LED}		-		mA	min.
			-		mA	max.

5. Absolute Maximum Ratings

Parameter	Symbol	Min.	Typ.	Max	Unit	Remark
Input Voltage	Vin	10.8	12	15	V	
Output Voltage	Vout			50	V	
Output Current	Iout			1000	mA	

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6. Interface Characteristics

Parameter	Symbol	Min.	Typ.	Max.	Unit	Remark
Backlight ON Voltage	INVON	1.25	5	Vin	V	
Backlight OFF Voltage	INVOFF			0.4	V	

7. Environmental

Item	Symbol	Conditions	Min.	Max.	Unit	Remark
Operating Temperature	Top	Ha=90%RH	-20	70	℃	
Storage Temperature	Tstg	Ha=95%RH	-20	70	℃	

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8. Connector Socket

8.1 Connector Type

Connector (J1)

Connector Name / Designation	For Signal Connector
Manufacturer	JST or compatible
Type / Part Number	S7B-PH-SM4-TB or compatible
Mating Housing / Part Number	PHR-7 or compatible

Connector (J2 & J3)

Connector Name / Designation	For Signal Connector
Manufacturer	JST or compatible
Type / Part Number	S2B-PH-SM4-TB or compatible
Mating Housing / Part Number	PHR-2 or compatible

Connector (J5)

Connector Name / Designation	For Signal Connector
Manufacturer	ACES or compatible
Type / Part Number	50271 or compatible
Mating Housing / Part Number	50276 or compatible

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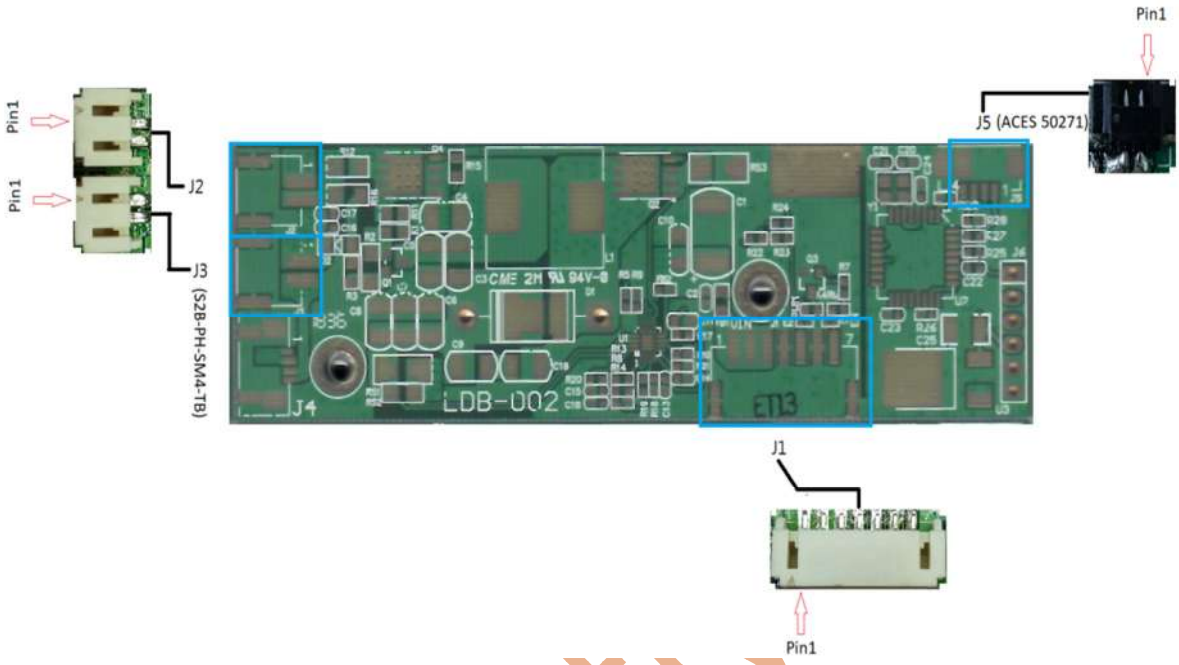

Figure-02 Connector Location

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8.2 Pin Definition

Connector (J1)

PIN No.	Symbol	Description
1	Vin	Power Input (+12V)
2	Vin	Power Input (+12V)
3	Vin	Power Input (+12V)
4	GND	Ground
5	-	N/A
6	GND	Ground
7	EN	Backlight on/off Control (5V / 0V)

Connector (J2 & J3)

PIN No.	Symbol	Description
1	V_LED+	LED Power +
2	V_LED-	LED Power -

Connector (J5)

PIN No.	Symbol	Description
1	LDR	Red wire
2	LDR	Black wire

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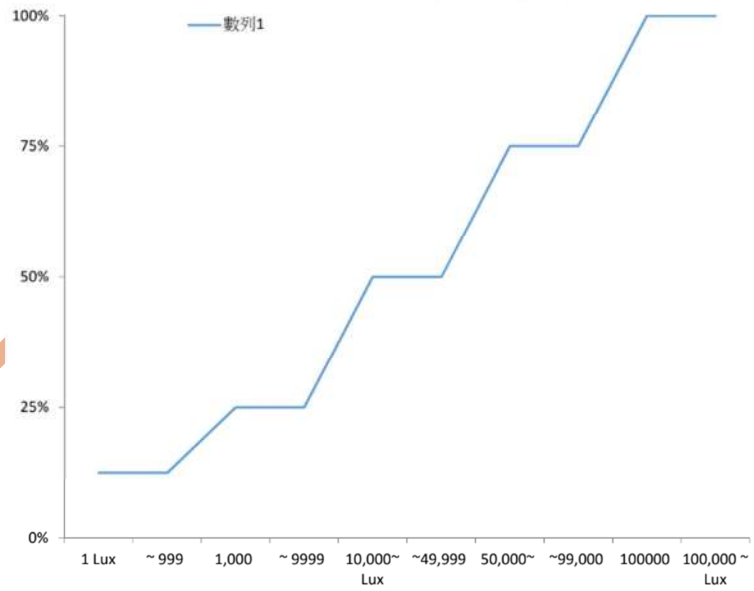
9. The Condition of Auto dimming

9.1 Relationship between Illuminance and LCD brightness

There are five stages for auto dimming.

Stages.	Status	Illuminance (Lux)	Ratio/Total Bri. (%)	LCD Brightness (cd/m^2)	LDR Install surrounding (Lux)	Remark
1	Street light	1~999	12.5	125	Under 1,000	Min.
2	Light rainy	1,000~9,999	25	250	1,000~3,000	
3	Overcast	10,000~49,999	50	500	3,000~6,000	
4	Cloudy	50,000~99,999	75	750	6,000~9,000	
5	Sunny	100,000~	100	1,000	over 9,000	Max.



Note 1: Install surrounding (Lux) mean that LDR install position illuminance, this is initial values in the table.

Note 2: The LDR must be installed in a location that be able to avoid from direct sunlight and water.

Note 3: Auto dimming performance will be different according install place of device.

Note 4: Please contact sales of the TWScreen, if you have any requirement.

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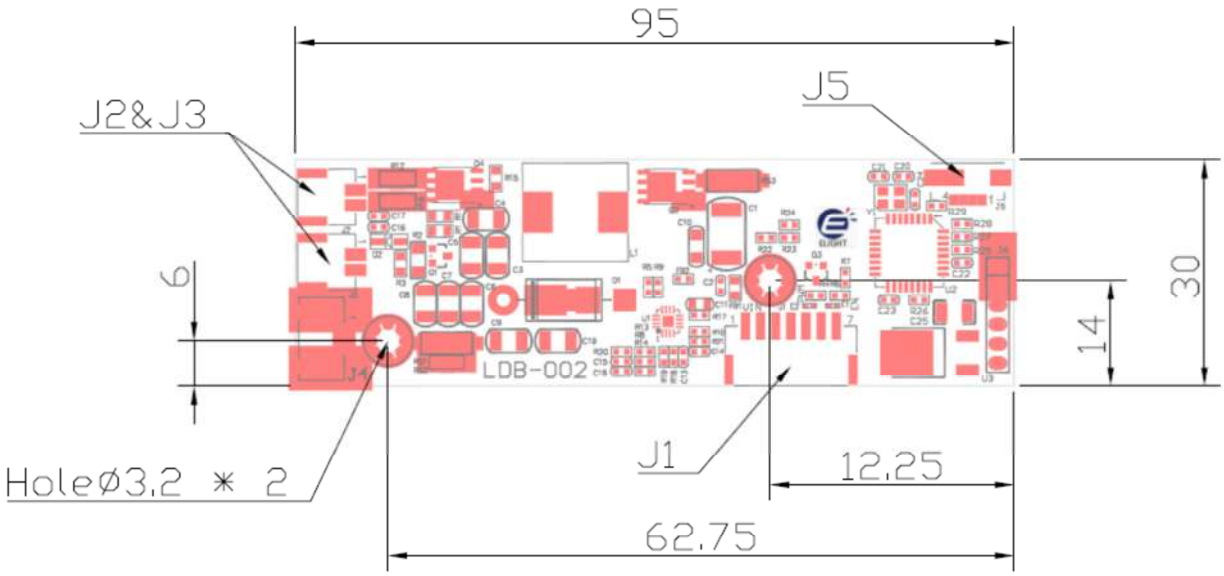
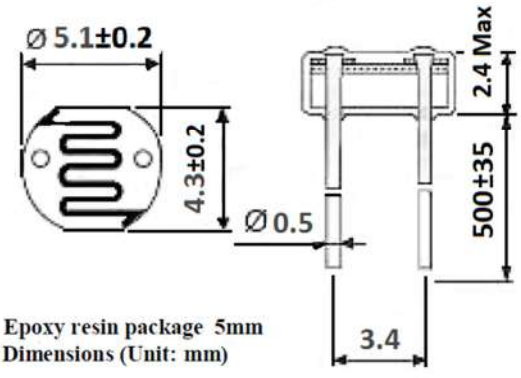
10. Mechanical Characteristics

10.1 LED Board

Dimension: 95(L) *30(W) *8.5(H) mm
Weight: 31±0.5g (Max.)



10.2 LDR Outline Dimension



Cable Lengthiness: 500mm

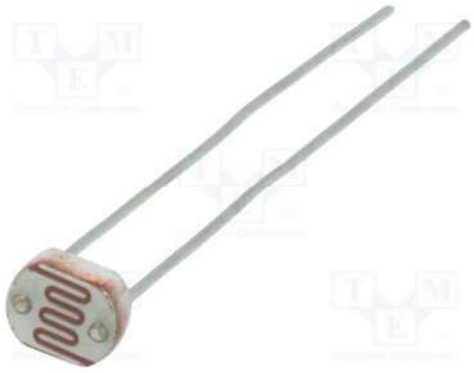


Figure-03 LDR appearance

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11. Precautions

1. When an ambient temperature exceeds a rated ambient temperature, LDR shall be applied on the derating curve by derating the load power. General purpose LDR under overloads is not combustion resistant and is likely to emit, flame, gas, smoke, red heat, etc. Flame retardant resistor generally emits smoke and red heat in a certain power and over but do not emit fire or flame.
2. When resistors are shielded or coated with resin etc., stress from the storage heat and the resins are applied. So, performance and reliability should be checked well before use.
3. LDR shall be used in a condition causing no dew condensation.
4. Keep temperature from rising by choosing resistor with a higher rated capacity;
5. Do not use a component having the exact load value required.
6. For considerations of safety in extended period applications, the rating should be more than four times higher than the actual wattage involved, but never use LDR at less than 25% of its rated power.
7. In applications where resistors are subject to intermittent current surges and spikes, be sure in advance that the components selected are capable of withstanding brief durations of increased load.
8. Do not exceed the recommended rated load. Resistor must use within the rated voltage range to prevent the shortening of service life and/or failure of the wound resistance elements.
9. For basic particulars for cautions, refer to EIAJ Technical Report RCR-2121 "Guidance for care note on fixed-resistors".
10. Install LDR should be avoided direct sunlight and rain. And install have good ventilate position.

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