

深圳市金逸晨电子有限公司

ShenZhen GoldenMorning Electronic Co.,Ltd

PRODUCT SPECIFICATION

Model No	E066XT-W-H14-08
Product Name	0.66 OLED Module
Version	V1.0
Date	2025-03-13

- ☐ Preliminary Specification
- ☒ Final Specification

PREPARED BY	CHECKED BY	APPROVED BY

Revision History

Version	Date	Page	Revise record	Remarks
1.0	2025-03-13	-	First issued	-

TABLE OF CONTENT

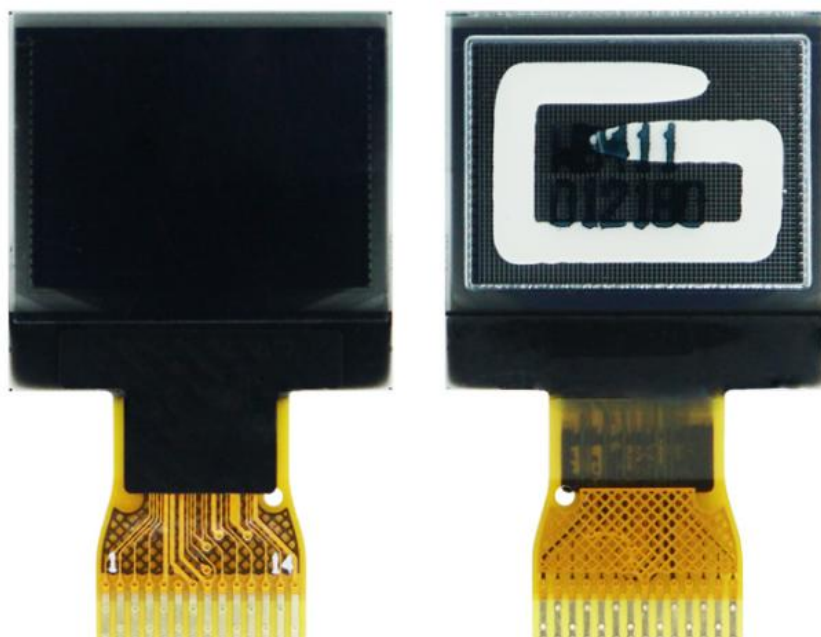
NO.Contents	Page
1. General Parameter	4
2. Physical drawing	4
3. Mechanical Dimension	5
4. Absolute Maximum Ratings	6
5. DC Characteristics	6
6. Pins Definitions.	7
7. Schematic Diagram	8
8. Timing Characteristics	9
9. Optical Characteristics	10
10. Reliability	11
11. Precautions	12

1. General Parameter

NO.	Features	Details	Unit
1	Display Size(Diagonal)	0.66"	Inch
2	LCD type	OLED	-
3	View Direction	ALL	-
4	Drive Duty	1/48	-
5	Resolution	64 x 48	Pixels
6	Module size	16.42(W) x 16.20(H) x 1.25(T)	mm
7	Active Area	13.42(W) x 10.06(H)	mm
8	Pixel Pitch	0.21(W) x 0.21(H)	mm
9	Pixel Size	0.19(W) x 0.19(H)	mm
10	Interface	I ² C	-
11	Display Colors	White	-
12	Driver IC	ST7315	-
13	IC package type	COG	-
14	Operating Temperature	-20℃~70℃	℃
15	Storage Temperature	-30℃~80℃	℃
16	Weight	-	g

Note 1 : Please refer to the mechanical drawing.

2. Physical drawing



[illegible]

4. Absolute Maximum Ratings

Item	Symbol	Min.	Max.	Unit
IO Supply Voltage	VDD	-0.3	+4.0	V
Power Supply Voltage	VBAT	-0.3	+5.0	V
VOLED Supply Voltage	VOLED	0	16	V
Operating temperature	Top	-20	70	°C
Storage temperature	Tst	-30	80	°C

Note 1 : All the above voltages are on the basis of “VSS = 0V” .

Note 2 : When this module is used beyond the above absolute maximum ratings, permanent breakage of the module may occur. Also, for normal operations, it is desirable to use this module under the conditions according “Optics & Electrical Characteristics” . If this module is used beyond these conditions, malfunctioning of the module can occur and the reliability of the module may deteriorate.

Note 3 : The defined temperature ranges do not include the polarizer. The maximum withstood temperature of the polarizer should be 80°C.

Note 4 : 50% Checkerboard.End of lifetime is specified as 50% of initial brightness reached. The average operating lifetime at room temperature is estimated by the accelerated operation at high temperature conditions.

5. DC Characteristics

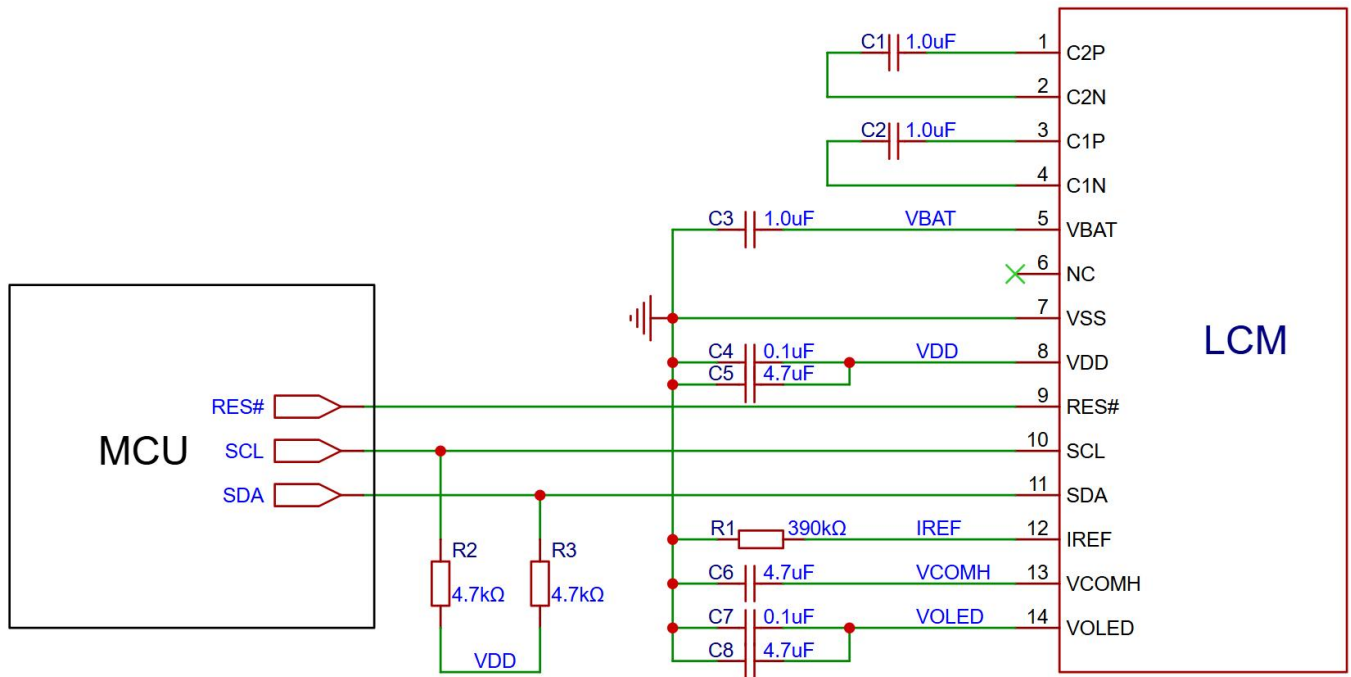
Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
IO Supply Voltage	VDD	2.4	-	3.5	V	
Power Supply Voltage	VBAT	2.4	-	4.0	V	
Charge Pump Regulator Supply (Charge Pump Output Voltage ITO resistance < 3Ω for charge pump related pins)	VOLED 6V Mode	5.5	6	-	V	VBAT = 2.4V~4.5V,Maximum output loading = 4mA
	VOLED 7.5V Mode	7	7.5	-	V	VBAT = 3.0V~4.5V,Maximum output loading = 8mA
	VOLED 8.5V Mode	8	8.5	-	V	VBAT = 3.6V~4.5V,Maximum output loading = 12mA
	VOLED 9V Mode	8.5	9	-	V	VBAT = 3.8V~4.5V,Maximum output loading = 4mA
Input high voltage	V _{IN}	0.8*VDD	-	-	V	
Input low voltage	V _{IL}	-	-	0.2*VDD	V	
Output high voltage	V _{OH}	0.9*VDD	-	-	V	
Output low voltage	V _{OL}	-	-	0.1*VDD	V	
Display ON Current (Pattern: All ON)	I _{OLED}	-	625	1000	uA	VDD = 2.8V VOLED = 12V IREF = 30uA Contrast=FFh
	I _{DD}	-	240	330	uA	

6. Pins Definitions.

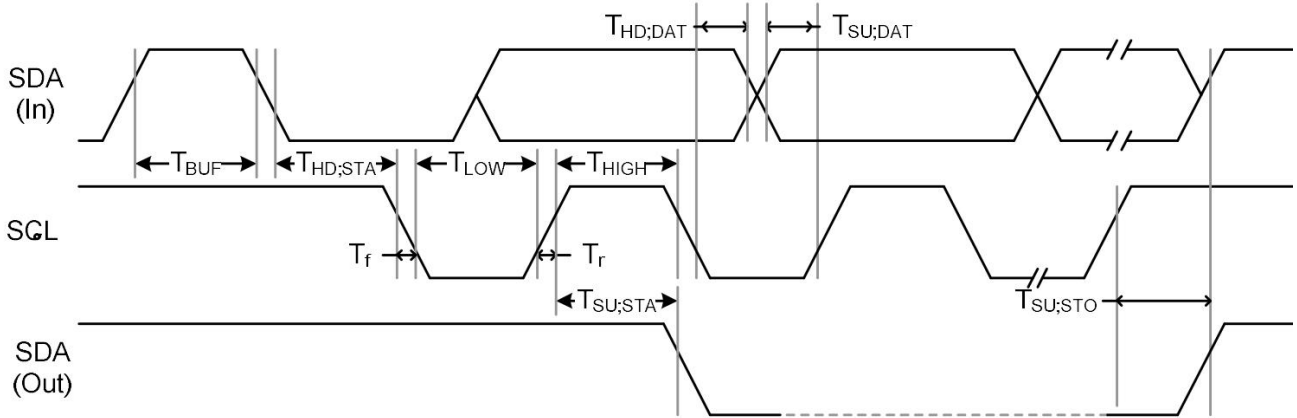
Pin.No	Symbol	Description
1	C2P	for charge pump capacitor; Connect to each other with a capacitor.
2	C2N	
3	C1P	for charge pump capacitor; Connect to each other with a capacitor.
4	C1N	
5	VBAT	Power Supply for DC/DC Converter Circuit This is the power supply pin for the internal buffer of the DC/DC voltage converter. It must be connected to external source when the converter is used. It should be connected to VDD when the converter is not used
6	NC	No connect.
7	VSS	Ground pin. It must be connected to external ground.
8	VDD	Power supply pin for core logic operation.
9	RES#	This pin is reset signal input. When the pin is pulled LOW, initialization of the chip is executed. Keep this pin HIGH (i.e. connect to VDD) during normal operation.
10	SCLK	Serial Clock Input Pad
11	SDA	Serial Data Input Pad.
12	IREF	This is segment output current reference pin. When external IREF is used, a resistor should be connected between this pin and VSS to maintain the IREF current at 30uA. Please refer to IC Specification manual for the details of resistor value.
13	VCOMH	COM signal deselected voltage level. A capacitor should be connected between this pin and VSS
14	VOLED	Power supply for panel driving voltage. This is also the most positive power voltage supply pin. When charge pump is enabled, a capacitor should be connected between this pin and VSS.

Note 1 : See the IC Specification manual for details.

7. Schematic Diagram.



8. Timing Characteristics.



(VDD= 2.4V~3.3V, GND= 0V, TA=25°C, Bare Chip)

Item	Symbol	Min.	Typ.	Max.	Unit	Conditions
SCL Clock Frequency	FSCL	-	-	400	KHz	
Signal Rise Time	Tr	-	-	300	ns	
Signal Fall Time	Tf	-	-	300	ns	
Start Condition Setup Time	TSU;STA	600	-	-	ns	
Start Condition Hold Time	THD;STA	600	-	-	ns	
Data Setup Time	TSU;DAT	100	-	-	ns	
Data Hold Time	THD;DAT	300	-	-	ns	
Setup Time for STOP Condition	TSU;STO	600	-	-	ns	
Bus Free Time Between a STOP and START	TBUF	1300	-	-	ns	

1. The input signal rise time and fall time (tr, tf) is specified at 40 ns or less.
2. All timing is specified using 20% and 80% of VDD as the reference

9. Optical Characteristics.

All data in below based the condition (Ta = 22±3℃,60±10%RH).

Items		Symbol	Min.	Typ.	Max.	Unit	Remark
Brightness (VCC Supplied Externally)		Lbr	80	-	-	cd/m ²	
Brightness (VCC Generated by Internal DC/DC)		Lbr	80	100	-	cd/m ²	-
Color Coordinate	White	CIE x	0.25	0.29	0.33	CIE1931	Darkroom
		CIE y	0.27	0.31	0.35		
Dark Room Contrast		CR	-	2000:1	-		
Viewing Angle			-	FREE	-	dggree	

Note:

Optical measurement taken at VDD = 2.8V, VCC = 12V & 7.25V

10. Reliability

10.1. MTBF

The LCD module shall be designed to meet a minimum MTBF value of 50000 hours with normal.

10.2. Test Condition

No	Item	Condition	Criteria
1	High Temperature Operating	70℃*24Hrs	1. No Defect Of Operational Function In Room Temperature Are Allowable. 2. IDD of LCM in Pre-and Post-Test Should Follow Specification.
2	Low Temperature Operating	-20℃*24Hrs	
3	High Humidity Storage	50℃*90%RH*24Hrs	
4	High Temperature Storage	80℃*24Hrs	
5	Low Temperature Storage	-30℃*24Hrs	
6	Thermal Cycling Test Storage	-	
7	Packing vibration	-	
8	Electrical Static Discharge	-	
		-	
9	Drop Test (Packaged)	-	

Note 1 : The test samples should be applied to only one test item.

Note 2 : Sample size for each test item is 2pcs.

Note 3 : No defective function allowable.

11. Precautions

11.1. Storage Conditions

- 11.1.1. Store the panel or module in a dark place where the temperature is $23\pm5^{\circ}\text{C}$ and the humidity is below $45\pm 20\%\text{RH}$.
- 11.1.2. Store in anti-static electricity container.
- 11.1.3. Store in clean environment, free from dust, active gas, and solvent.
- 11.1.4. Do not place the module near organics solvents or corrosive gases.
- 11.1.5. Do not crush, shake, or jolt the module.
- 11.1.6. Strong light exposure causes degradation of polarizer and color filter.

11.2. Handling Precautions

- 11.2.1. Avoid static electricity, which can damage the CMOS LSI.
- 11.2.2. The polarizing plate of the display is very fragile, please handle it very carefully.
- 11.2.3. Do not give external shock.
- 11.2.4. Do not apply excessive force on the surface.
- 11.2.5. Do not wipe the polarizer with dry cloth, as it might cause scratch. If the surface of the LCD needs to be cleaned, wipe it swiftly with cotton or other soft cloth soaked with petroleum IPA, do not use other chemicals.
- 11.2.6. Reverse and use within ratings in order to keep performance and prevent damage
- 11.2.7. Do not remove the panel or frame from the module.
- 11.2.8. Except for soldering the interface, do not make any alterations or modifications with a soldering iron; Ensure welding temperature at 320°C to 350°C , the welding time control within the 10 s, welding note don't stay too long in the same place to avoid scald FPC.

11.3. Limited Warranty

- 11.3.1. Our warranty liability is limited to repair and/or replacement. We will not be responsible for any consequential loss. (我们的保证责任仅限于修理和/或更换。我们将不负任何相应的损失。)
- 11.3.2. If possible, we suggest customer to use up all modules in six months. If the module storage time over twelve months, we suggest that recheck it before the module be used. (如果可能，我们建议客户在 6 个月内用完所有模块。如果模块存放时间超过 12 个月，我们建议在使用模块前重新检查。)
- 11.3.3. The warranty period is twelve months from the date of delivery. Buyer shall complete the assembly of all processes within twelve months of validity. During the warranty period, if the product quality problems, our company will be responsible for repair and replacement. All products must be stored and handled in accordance with regulations. Under warranty. When the goods do not comply with the above terms, we do not provide warranty services. (保修期为交货之日起十二个月。买方应在 12 个月内完成所有流程的组装。在保修期内，如果产品出现质量问题，我公司将负责维修和更换。所有产品必须按照规定储存和处理。在保修期内。当货物不符合上述条款时，我们不提供保修服务。)