WINSTAR Display

OLED SPECIFICATION

Model No:

WEO12832S#RP3N00000-FC

Represented by:

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SPECIFICATION Version: A

CUSTOMER :
MODULE NO. : WEO12832S#RP3N00000-FC

APPROVED BY: (FOR CUSTOMER USE ONLY)	

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RELEASE DATE:			

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2.General Specification

Item	Dimension	Unit
Dot Matrix	128 × 32 Dots	—
Module dimension	30.0 × 11.5 × 1.26	mm
Active Area	22.384 × 5.584	mm
Pixel Size	0.152 × 0.152	mm
Pixel Pitch	0.175 × 0.175	mm
Display Mode	Passive Matrix	
Display Color	Sky Blue	
Drive Duty	1/32 Duty	
IC	SH1106	
Interface	I2C	
Size	0.91 inch	

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4.Interface Pin Function

No.	Symbol	Function
1	C1N	Connect to charge pump capacitor. These pins are not used and should be disconnected when Vpp is supplied externally.
2	C1P	
3	C2P	
4	C2N	
5	VDD2	Power supply pad for Power supply for charge pump circuit. This pin should be disconnected when VPP is supplied externally
6	NC	No connection
7	VSS	Ground.
8	VDD1	Power supply input
9	RES#	This is a reset signal input pad. When RES is set to “L”, the settings are initialized. The reset operation is performed by the RES signal level.
10	SCL	When the I2C interface is selected, D0 serves as the serial clock input pad (SCL) and D1 serves as the serial data input pad (SDAI).
11	SDA	
12	IREF	This is a segment current reference pad. A resistor should be connected between this pad and VSS. Set the current at 18.75uA.
13	VCOMH	This is a pad for the voltage output high level for common signals. A capacitor should be connected between this pad and VSS.
14	VPP	OLED panel power supply. Generated by internal charge pump. Connect to capacitor. It could be supplied externally.

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5.Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit	Notes
Supply Voltage for Logic	VDD1	-0.3	3.6	V	1,2
Power supply for charge pump circuit	VDD2	-0.3	4.8	V	1,2
Supply Voltage for Display	VPP	-0.3	14.5	V	1,2
Operating Temperature	TOP	-40	+80	°C	—
Storage Temperature	TSTG	-40	+85	°C	—

Note ：

1. All the above voltages are on the basis of “VSS = 0V”.
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 to Section 6 ‘’Electrical Characteristics’’. If this module is used beyond these conditions, malfunctioning of the module can occur and the reliability of the module may deteriorate.
3. The absolute limit temperature was verified according to the test conditions of reliability test (See section 9. Reliability) , and module was met all criteria.
4. The defined temperature ranges do not include the polarizer. The maximum withstood temperature of the polarizer should be 80 °C.

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6.Electrical Characteristics

6.1 DC Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage for Logic	VDD1	—	1.65	3.0	3.3	V
Supply Voltage for Display (Supplied Externally)	VPP	—	6.4	7.25	8	V
Charge Pump Regulator Supply Voltage	VDD2	—	2.9	—	4.2	V
Charge Pump Output Voltage for Display (Generated by Internal DC/DC)	Charge Pump VPP	—	7.0	7.4	—	V
Input High Volt.	VIH	—	0.8×VDD1	—	VDD1	V
Input Low Volt.	VIL	—	VSS	—	0.2×VDD1	V
Output High Volt.	VOH	—	0.8×VDD1	—	VDD1	V
Output Low Volt.	VOL	—	VSS	—	0.2×VDD1	V
Operating Current for VPP (VPP Supplied Externally)	IPP	VPP =7.25V	—	8	12	mA
Display 50% Pixel on (VPP Generated by Internal DC/DC)	IDD2	—	—	15	25	mA

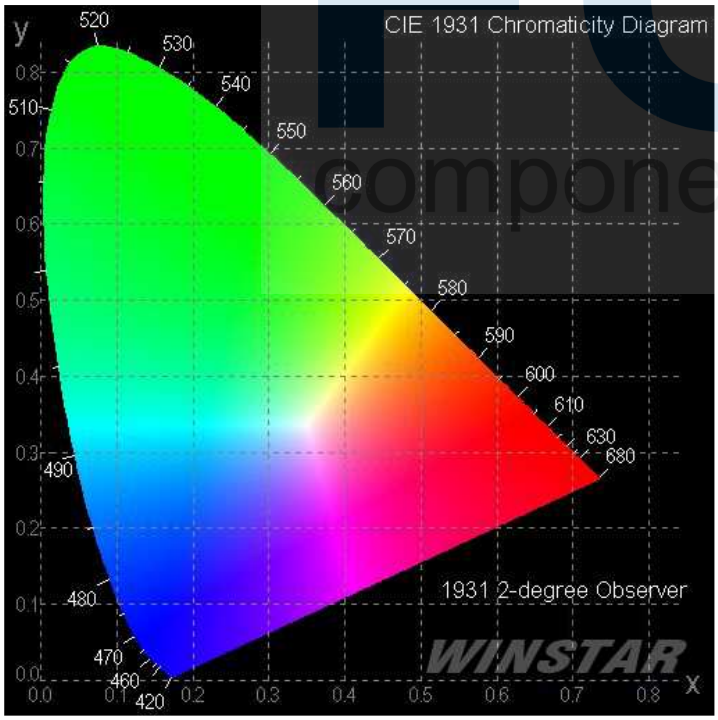
Note: The VCC (VPP) value can be adjusted according to the demand brightness. When VCC (VPP) is lowered, the brightness decreases or when VCC (VPP) is increased, the brightness increases. The VCC (VPP) value is set within the recommended range. The life time of OLED is directly related to the set brightness, and lower brightness helps to improve the life time.

7.Optical Characteristics

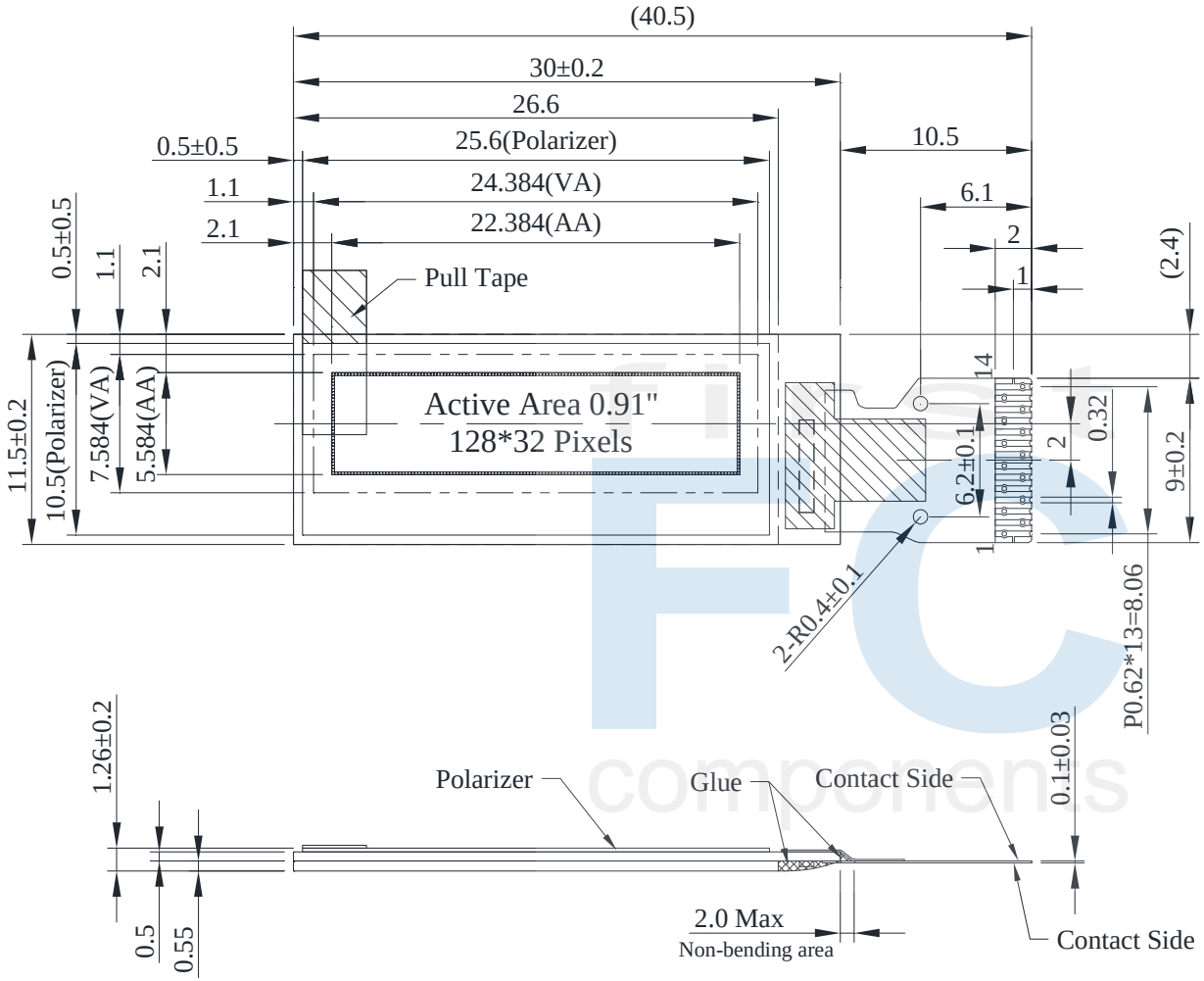
Item	Symbol	Condition	Min	Typ	Max	Unit
View Angle	(V)θ	—	160	—	—	deg
	(H)φ	—	160	—	—	deg
Contrast Ratio	CR	Dark	10,000:1	—	—	—
Response Time	T rise	—	—	10	—	μs
	T fall	—	—	10	—	μs
Display with 50% checkerboard Brightness(1)			100	120	—	cd/m^2
CIEx(Sky Blue)		(CIE1931)	0.12	0.16	0.20	—
CIEy(Sky Blue)		(CIE1931)	0.22	0.26	0.30	—

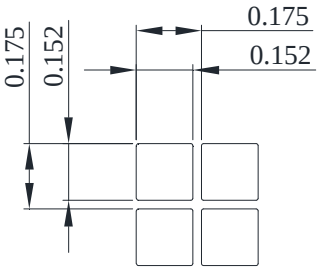
Note：

1. The brightness value is based on the setting of VCC(VPP) equal to the Typical value.
2. 50% checkerboard means half of the display area turn on & half area turn off, shown as a checkerboard.



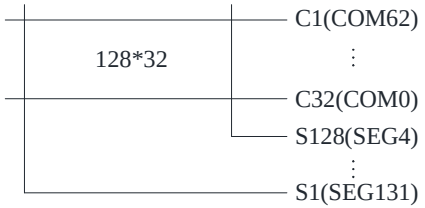
3. Contour Drawing & Block Diagram





Dots Size
Scale 20/1

PIN	SYMBOL
1	C1N
2	C1P
3	C2P
4	C2N
5	VDD2
6	NC
7	VSS
8	VDD1
9	RES#
10	SCL
11	SDA
12	IREF
13	VCOMH
14	VPP



Seg&Com Layout

The non-specified tolerance of dimension is ±0.3mm.