

WINSTAR Display

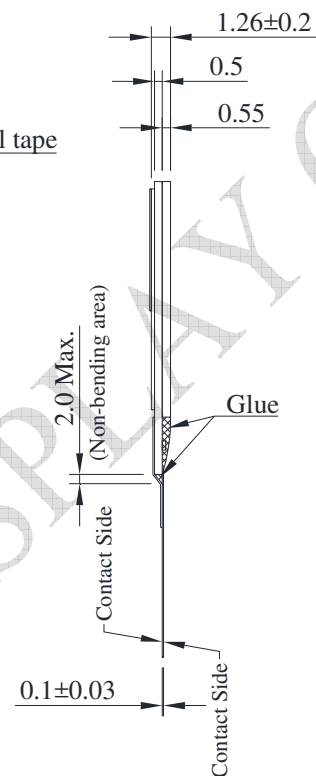
OLED SPECIFICATION

Model No:

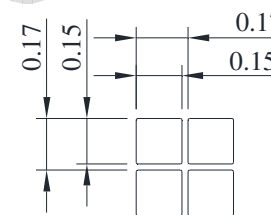
WEO012864AD

General Specification

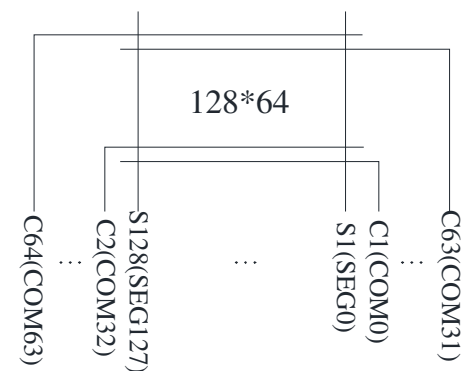
Item	Dimension	Unit
Dot Matrix	128 x 64 Dots	—
Module dimension	26.70 x 19.26 x 1.26	mm
Active Area	21.74 x 10.86	mm
Pixel Size	0.15 x 0.15	mm
Pixel Pitch	0.17 x 0.17	mm
Display Mode	Passive Matrix	
Display Color	Monochrome	
Drive Duty	1/64 Duty	
IC	ST7315	
Interface	6800,8080,SPI,I2C	
Size	0.96 inch	



PIN	SYMBOL	PIN	SYMBOL
1	NC(GND)	16	RWR
2	C2N	17	ERD
3	C2P	18	D0
4	C1P	19	D1
5	C1N	20	D2
6	VBAT	21	D3
7	NC	22	D4
8	DGND	23	D5
9	VDD	24	D6
10	IF0	25	D7
11	IF1	26	IREF
12	IF2	27	VCOMH
13	CSB	28	VOLED
14	RSTB	29	PGND
15	A0	30	NC(GND)



SCALE: 20/1



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Interface Pin Function

No.	Symbol	Function																								
1	N.C. (GND)	The supporting pins can reduce the influences from stresses on the function pins. These pins must be connected to external ground.																								
2	C2N	DC/DC voltage converter. Connect a capacitor between CA1P and CA1N. Connect a capacitor between CA2P and CA2N.																								
3	C2P																									
4	C1P																									
5	C1N																									
6	VBAT	Analog power for internal booster. If VDD=VABT																								
7	NC	NC																								
8	DGND	Digital ground. Connect to GND																								
9	VDD	Power supply pin for core logic operation.																								
10	IF0	These pins select interface operation mode.																								
		<table><tr><th>IF2</th><th>IF1</th><th>IF0</th><th>MPU interface type</th></tr><tr><td>L</td><td>L</td><td>L</td><td>4-line serial interface</td></tr><tr><td>L</td><td>L</td><td>H</td><td>3-line serial interface</td></tr><tr><td>L</td><td>H</td><td>L</td><td>I2C serial interface</td></tr><tr><td>H</td><td>H</td><td>L</td><td>8-bit 8080 parallel interface</td></tr><tr><td>H</td><td>L</td><td>L</td><td>8-bit 6800 parallel interface</td></tr></table>	IF2	IF1	IF0	MPU interface type	L	L	L	4-line serial interface	L	L	H	3-line serial interface	L	H	L	I2C serial interface	H	H	L	8-bit 8080 parallel interface	H	L	L	8-bit 6800 parallel interface
IF2	IF1	IF0	MPU interface type																							
L	L	L	4-line serial interface																							
L	L	H	3-line serial interface																							
L	H	L	I2C serial interface																							
H	H	L	8-bit 8080 parallel interface																							
H	L	L	8-bit 6800 parallel interface																							
11	IF1																									
12	IF2																									
13	CSB	Chip select input pin. CSB="L": This chip is selected and the MPU interface is active. CSB="H": This chip is not selected and the MPU interface is disabled (D[7:0] are high impedance).																								
14	RSTB	This pin is reset signal input. When the pin is low, initialization of the chip is executed. Keep this pin HIGH (i.e. connect to VDD) during normal operation.																								
15	A0	It determines whether the access is related to data or command. A0 = "H": Indicates that D[7:0] are display data; A0 = "L": Indicates that D[7:0] are control data. This pin is I2C slave address bit (SA0), when I2C interface is selected.																								
		Read / Write execution control pin. (This pin is only used in parallel interface)																								
		<table><tr><th>MPU Type</th><th>RWR</th><th>Description</th></tr><tr><td>6800-series</td><td>R/W</td><td>Read / Write control input pin R/W = "H" : read R/W = "L" : write</td></tr><tr><td>8080-series</td><td>/WR</td><td>Write enable input pin. The data are latched at the rising edge of the /WR signal.</td></tr></table>	MPU Type	RWR	Description	6800-series	R/W	Read / Write control input pin R/W = "H" : read R/W = "L" : write	8080-series	/WR	Write enable input pin. The data are latched at the rising edge of the /WR signal.															
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16	RWR																									
		This pin is not used in serial interfaces and should be connected to DGND.																								

17	ERD	Read / Write execution control pin. (This pin is only used in parallel interface)		
		MPU Type	ERD	Description
		6800-series	E	Read / Write control input pin. R/W = "H": When E is "H", data bus is in output status. R/W = "L": The data are latched at the falling edge of the E signal.
		8080-series	/RD	Read enable input pin. When /RD is "L", data bus is in output status.
This pin is not used in serial interfaces and should be connected to DGND.				
18~25	D0~D7	When using 8-bit parallel interface: 8080 or 6800 mode 8 bit bi-directional data bus. Connect to the data bus of 8-bit microprocessor. When CSB is "H", D[7:0] are high impedance. When using serial interface : 3-line SPI or 4-line SPI mode D[2:1] : serial input/output data (SDA). D[0] : serial input clock (SCL). D1 to D2 must be connected together (SDA) D[7:3] : fix to "L" by DGND. When using serial interface : I2C interface D[2] : SDA_OUT, serial data and acknowledge output for the I2C interface. D[1] : SDA_IN, serial input data D[0] : SCL, serial input clock . D1 to D2 must be connected together (SDA) D[7:3] : fix to "L" by DGND.		
26	IREF	Internal IREF is used, please leave this pin open.		
27	VCOMH	VCOMH is the driving voltage for common and segment circuits.		
28	VOLED	VOLED is the diving voltage for segment circuit.		
29	PGND	Analog ground. Connect to GND		
30	NC (GND)	The supporting pins can reduce the influences from stresses on the function pins. These pins must be connected to external ground.		

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage for Logic	VDD	-0.3	5.5	V
Supply Voltage for Display	VOLED	0	18.0	V
Operating Temperature	TOP	-40	+80	°C
Storage Temperature	TSTG	-40	+85	°C

Electrical Characteristics

DC Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage for Logic	VDD	—	2.4	3.0	5.0	V
Supply Voltage for Display (Supplied Externally)	VOLED	—	7.5	12.0	16.5	V
Charge Pump Regulator Supply Voltage	VBAT	—	3.0	3.5	5.0	V
Charge Pump Output Voltage for Display (Generated by Internal DC/DC)	Charge Pump VOLED	—	7.0	7.5	—	V
Input High Volt.	VIH	—	0.8×VDD	—	—	V
Input Low Volt.	VIL	—	—	—	0.2×VDD	V
Output High Volt.	VOH	—	0.9×VDD	—	—	V
Output Low Volt.	VOL	—	—	—	0.1×VDD	V
Display 50% Pixel on Operating Current for VOLED (VOLED Supplied Externally)	IOLED	VOLED=12V	—	6	12	mA
Display 50% Pixel on (VOLED Generated by Internal DC/DC)	IBAT	VBAT=3.5V	—	15	30	mA