## WINSTAR Display

# **OLED SPECIFICATION**

Model No:

WEO012864AL

# **General Specification**

ltem	Dimension	Unit		
Dot Matrix	128 x 64	-		
Module dimension	60.5 × 37.0 × 2.01	mm		
Active Area	55.01 × 27.49	mm		
Pixel Size	0.40 × 0.40	mm		
Pixel Pitch	0.43 × 0.43	mm		
Display Mode	Passive Matrix			
Display Color	Monochrome			
Drive Duty	1/64 Duty			
IC	SH1106			
Interface	I2C , 4-Wire SPI , 8-bits 6800 or 8080 parallel			
Size	2.42 inch			

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#### **Contour Drawing & Block Diagram**



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### **Interface Pin Function**

	No.	Symbol	Function					
	1	ESD_GND	ESD G	ESD Ground pin				
	2	VSS	Ground	Ground.				
	3-10	NC	No con	No connection				
	11	VDD1	Power :	Power supply input				
	12	IM1	These a	4-wire SPI				
			IM1	1	1	0	0	-
	13	IM2	IM2 Note (1) 0 is ( (2) 1 is (	IM2 1 0 1 0   Note (1) 0 is connected to VSS (2) 1 is connected to VDD1				
	14	NC	No con	nection				
	15	CS	This pa	This pad is the chip select input. When $\overline{CS}$ = "L", then the chip select becomes active, and data/command I/O is enabled.				
	16	RES	This is a reset signal input pad. When $\overline{\text{RES}}$ is set to "L", the settings are initialized. The reset operation is performed by the $\overline{\text{RES}}$ signal level.					
	17	AO	This is are data A0 = "H A0 = "L In I2C i OLED o	This is the Data/Command control pad that determines whether the data bits are data or a command. A0 = "H": the inputs at D0 to D7 are treated as display data. A0 = "L": the inputs at D0 to D7 are transferred to the command registers. In I2C interface, this pad serves as SA0 to distinguish the different address of OLED driver.				
(A)	18	WR (R/W)	This is When o the 808 rising e When o input te When F When F	a MPU interface connected to an 0 MPU $\overline{WR}$ s dge of the $\overline{WR}$ connected to a 6 rminal. $R/\overline{W}$ = "H": Read $R/\overline{W}$ = "L": Write	e input pad. 8080 MPU, thi ignal. The sign signal. 5800 Series MF d.	is is active LOW als on the data PU: This is the r	/. This pad con bus are latched ead/write contr	nects to d at the ol signal

19	E/RD	This is a MPU interface input pad. When connected to an 8080 series MPU, it is active LOW. This pad is connected to the $\overline{RD}$ signal of the 8080 series MPU, and the data bus is in an output status when this signal is "L". When connected to a 6800 series MPU, this is active HIGH. This is used as an enable clock input of the 6800 series MPU. When $\overline{RD}$ = "H": Enable. When $\overline{RD}$ = "L": Disable.
20~27	D0~D7	This is an 8-bit bi-directional data bus that connects to an 8-bit or 16-bit standard MPU data bus. When the serial interface is selected, then D0 serves as the serial clock input pad (SCL) and D1 serves as the serial data input pad (SI). At this time, D2 to D7 are set to high impedance. When the I2C interface is selected, then D0 serves as the serial clock input pad (SCL) and D1 serves as the serial data input pad (SDAI). At this time, D2 to D7 are set to high impedance.
28	IREF	This is a segment current reference pad. A resistor should be connected between this pad and VSS. Set the current at 18.75uA.
29	VCOMH	This is a pad for the voltage output high level for common signals. A capacitor should be connected between this pad and VSS.
30	VPP	OLED panel power supply. It could be supplied externally. A capacitor should be connected between this pad and VSS.
31	ESD_GND	ESD Ground pin

### **Absolute Maximum Ratings**

Parameter	Symbol	Min	Мах	Unit
Supply Voltage for Logic	VDD1	-0.3	3.6	V
Supply Voltage for Display	VPP	-0.3	14.5	V
Operating Temperature	TOP	-40	+80	°C
Storage Temperature	TSTG	-40	+85	°C

#### **Electrical Characteristics**

#### **DC Electrical Characteristics**

ltem	Symbol	Condition	Min	Тур	Мах	Unit
Supply Voltage for Logic	VDD1		1.65	3.0	3.3	V
Supply Voltage for Display	VPP	X	6.4	13.0	13.5	V
High Level Input	VIH	5	0.8×VDD1	_	VDD1	V
Low Level Input	VIL	- 1	VSS	_	0.2×VDD1	V
High Level Output	VOH	_	0.8×VDD1	_	VDD1	V
Low Level Output	VOL	_	VSS	_	0.2×VDD1	V
Display 50% Pixel on	IPP	VPP =13V	_	22	33	mA