

OLED DISPLAY SPECIFICATION



RAYSTAR

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RET025664B

General Specification

The Features is described as follow:

- Module Dimension: $88.0 \times 27.8 \times 2.15$ mm
- Active Area: 76.778×19.178 mm
- Dot Matrix : 256×64
- Dot Size: 0.278×0.278 mm
- Dot Pitch: 0.3×0.3 mm
- Display Mode: Passive Matrix
- Duty: 1/64
- Gray Scale:4-bit
- Display Color: Monochrome
- IC: SSD1322 (COF)
- Interface: 6800, 8080, SPI
- Size: 3.12-inch

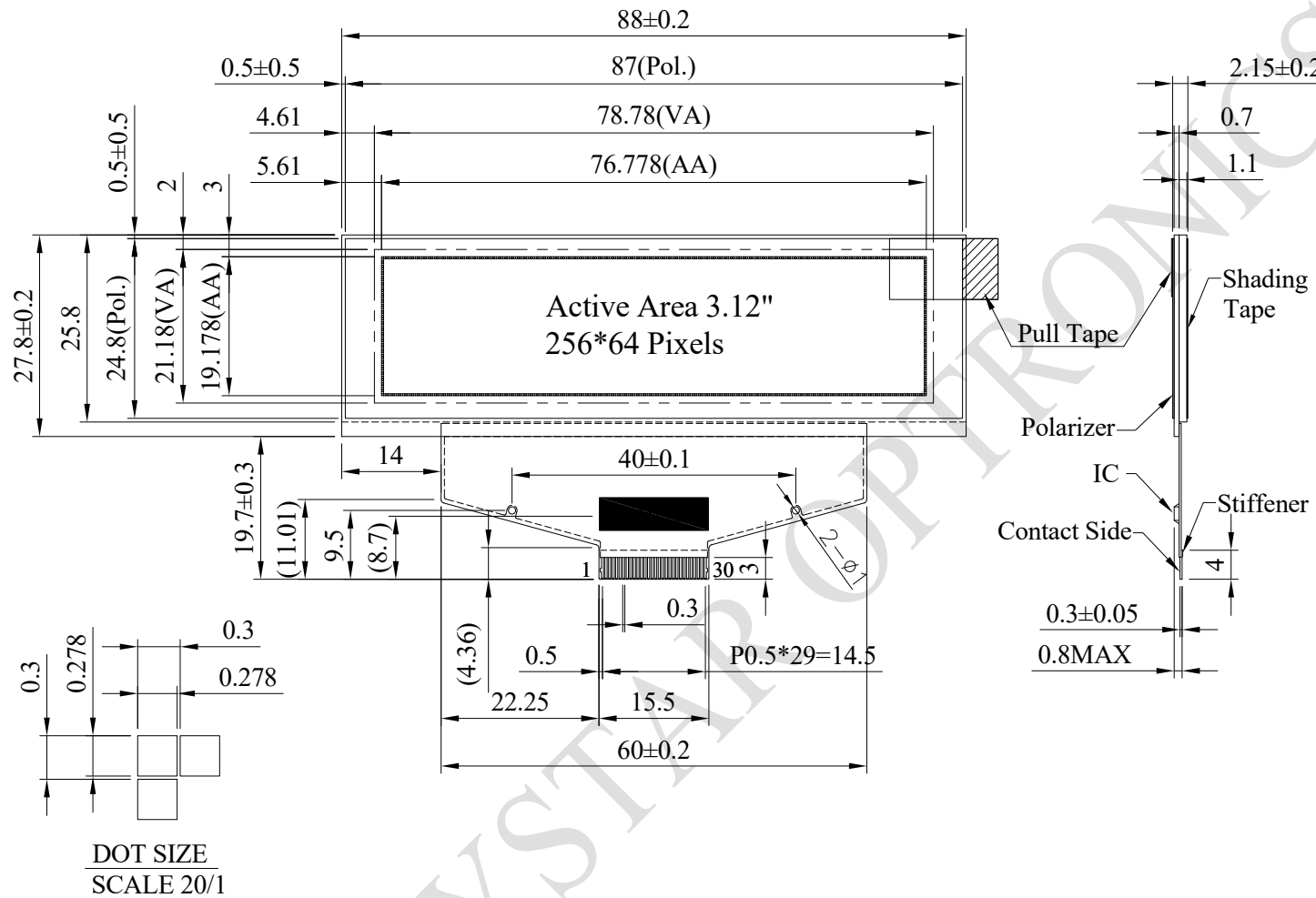
Interface Pin Function

Pin No.	Symbol	I/O	Function
1	N.C. (GND)	P	Ground
2	VSS	P	Ground.
3	VCC	P	Power supply for panel driving voltage. This is also the most positive power voltage supply pin.
4	VCOMH	P	COM signal deselected voltage level. A capacitor should be connected between this pin and VSS.
5	VLSS	P	Analog system ground pin.
6~13	D7~D0	I/O	Host Data Input/Output Bus These pins are 8-bit bi-directional data bus to be connected to the microprocessor's data bus. When serial mode is selected, D1 will be the serial data input SDIN and D0 will be the serial clock input SCLK.
14	E/RD#	I	Read/Write Enable or Read This pin is MCU interface input. When interfacing to a 68XX-series microprocessor, this pin will be used as the Enable (E) signal. Read/write operation is initiated when this pin is pulled high and the CS# is pulled low. When connecting to an 80XX-microprocessor, this pin receives the Read (RD#) signal. Data read operation is initiated when this pin is pulled low and CS# is pulled low. When serial mode is selected, this pin must be connected to VSS.
15	R/W#	I	Read/Write Select or Write This pin is MCU interface input. When interfacing to a 68XX-series microprocessor, this pin will be used as Read/Write (R/W#) selection input. Pull this pin to "High" for read mode and pull it to "Low" for write mode.

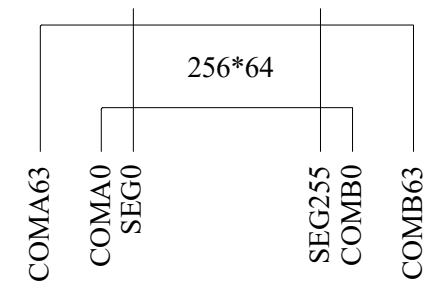
			When 80XX interface mode is selected, this pin will be the Write (WR#) input. Data write operation is initiated when this pin is pulled low and the CS# is pulled low. When serial mode is selected, this pin must be connected to VSS.									
16	BS0	I	Communicating Protocol Select These pins are MCU interface selection input. See the following table:									
17	BS1		<table><tr><th>BS[1:0]</th><th>Bus Interface Selection</th></tr><tr><td>00</td><td>4 line SPI</td></tr><tr><td>01</td><td>3 line SPI</td></tr><tr><td>10</td><td>8-bit 8080 parallel</td></tr><tr><td>11</td><td>8-bit 6800 parallel</td></tr></table> Note (1) 0 is connected to VSS (2) 1 is connected to VDDIO	BS[1:0]	Bus Interface Selection	00	4 line SPI	01	3 line SPI	10	8-bit 8080 parallel	11
BS[1:0]	Bus Interface Selection											
00	4 line SPI											
01	3 line SPI											
10	8-bit 8080 parallel											
11	8-bit 6800 parallel											
18	D/C#	I	Data/Command Control This pin is Data/Command control pin connecting to the MCU. When the pin is pulled HIGH, the content at D[7:0] will be interpreted as data. When the pin is pulled LOW, the content at D[7:0] will be interpreted as command.									
19	CS#	I	Data/Command Control This pin is the chip select input connecting to the MCU. The chip is enabled for MCU communication only when CS# is pulled LOW.									
20	RES#	I	This pin is reset signal input. When the pin is pulled LOW, initialization of the chip is executed. Keep this pin pull HIGH during normal operation.									
21	FR	O	This pin is No Connection pins. Nothing should be connected to this pin. This pin should be left open individually.									
22	IREF	I	Current Reference for Brightness Adjustment This pin is segment current reference pin. A resistor should be									

			connected between this pin and VSS. Set the current lower than 10uA.
23	N.C.	-	Reserved Pin The N.C. pin between function pins are reserved for compatible and flexible design.
24	VDDIO	P	Power Supply for I/O Pin It should be matched with the MCU interface voltage level.
25	VDD	P	Power Supply for Core Logic Circuit Power supply pin for core logic operation. A capacitor is required to connect between this pin and VSS
26	VCI	P	Power Supply for Operation VCI must always be equal to or higher than VDD and VDDIO.
27	VSL	P	Voltage Output Low Level for SEG Signal This is segment voltage reference pin. When external VSL is not used, this pin should be left open. When external VSL is used, this pin should connect with resistor and diode to ground.
28	VLSS	P	Ground of Analog Circuit These are the analog ground pins. They should be connected to VSS externally.
29	VCC	P	Power Supply for OLED Panel These are the most positive voltage supply pin of the chip. They must be connected to external source.
30	N.C. (GND)	P	Ground

Contour Drawing



PIN	SYMBOL	PIN	SYMBOL
1	NC(GND)	16	BS0
2	VSS	17	BS1
3	VCC	18	DC#
4	VCOMH	19	CS#
5	VLSS	20	RES#
6	D7	21	FR
7	D6	22	IREF
8	D5	23	NC
9	D4	24	VDDIO
10	D3	25	VDD
11	D2	26	VCI
12	D1	27	VSL
13	D0	28	VLSS
14	E/RD#	29	VCC
15	R/W#	30	NC(GND)



The non-specified tolerance of dimension is $\pm 0.3\text{mm}$.

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage for Operation	VCI	-0.3	4	V
Supply Voltage for Logic	VDD	-0.5	2.75	V
Supply Voltage for I/O Pins	VDDIO	-0.5	VCI	V
Supply Voltage for Display	VCC	-0.5	20	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	2.5	2.6	V
Power Supply for I/O Pins	VDDIO	—	1.65	3.0	VCI	V
Low Voltage Power Supply	VCI	—	2.4	3.0	3.5	V
Supply Voltage for Display	VCC	—	10	14.5	15	V
High Level Input	VIH	—	$0.8 \times VDDIO$	—	VDDIO	V
Low Level Input	VIL	—	0	—	$0.2 \times VDDIO$	V
High Level Output	VOH	—	$0.9 \times VDDIO$	—	VDDIO	V
Low Level Output	VOL	—	0	—	$0.1 \times VDDIO$	V
Display 50% Pixel on	ICC	VCC = 12V	—	24	32	mA
		VCC = 14.5V	—	32	42.5	mA