

OLED DISPLAY SPECIFICATION



RAYSTAR

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REX128128H

General Specification

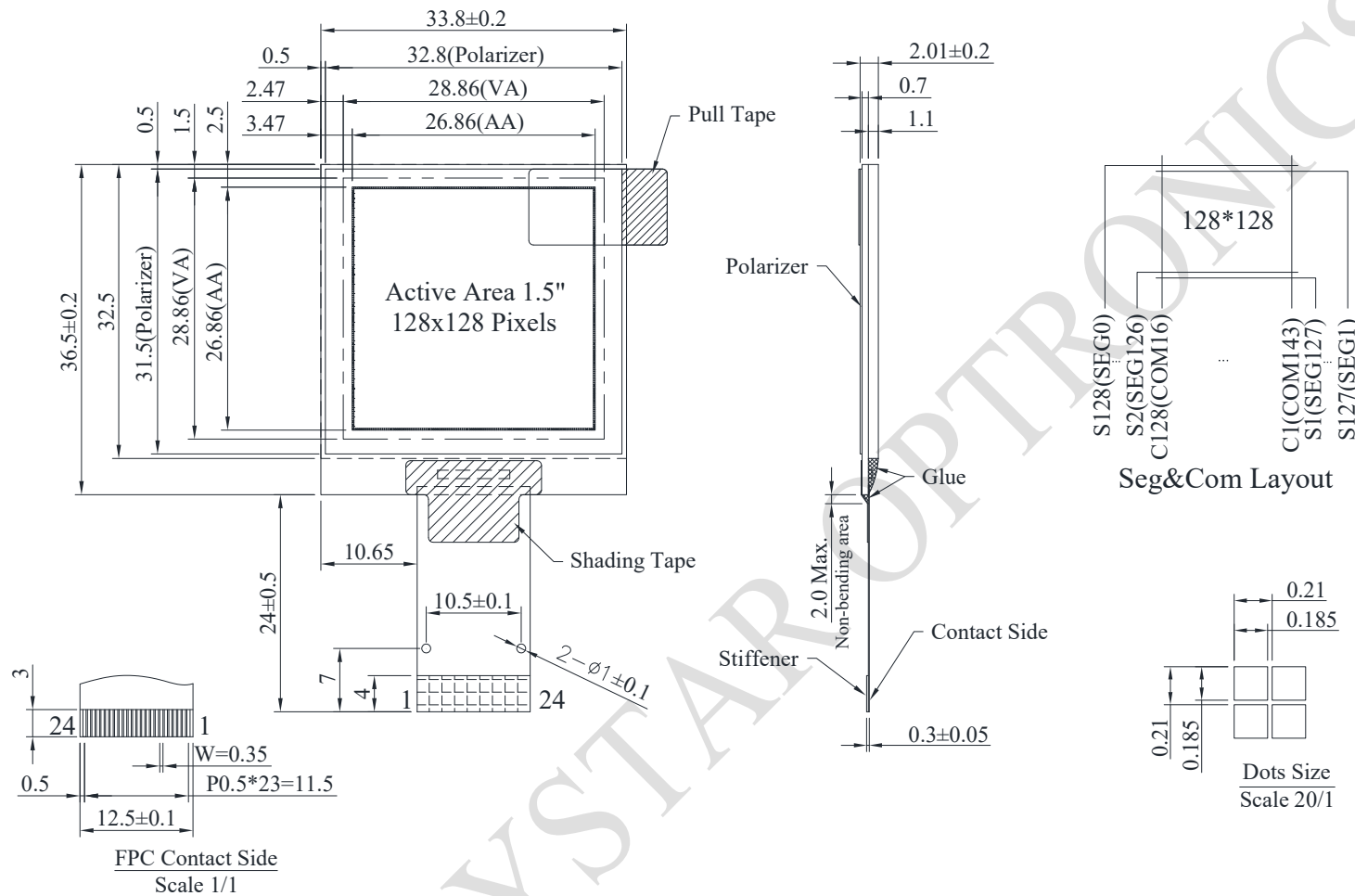
- Module dimension: 33.8× 36.5 × 2.01 mm
- Active area: 26.86 × 26.86 mm
- Dot Matrix: 128*128
- Pixel size: 0.185 × 0.185 mm
- Pixel pitch: 0.21 × 0.21 mm
- Display Mode : Passive Matrix
- Duty: 1/128 Duty
- Gray Scale:4 bits
- Display Color: Monochrome
- IC: CH1120
- Interface: 8080,SPI,I2C
- SIZE:1.5 inch

Interface Pin Function

No.	Symbol	Function															
1	ESD_GND	This pin should be connected to GND.															
2	VPP	This is the most positive voltage supply pin of the chip. It should be supplied externally.															
3	VCOMH	This is a pin for the voltage output high level for common signals. A capacitor should be connected between this pin and GND.															
4	VDD	Power supply for logic															
5	NC	No connection															
6	IM1	These are the MPU interface mode select pins. <table><tr><td></td><td>8080</td><td>3-wire SPI</td><td>4-wire SPI</td><td>I2C</td></tr><tr><td>IM1</td><td>1</td><td>0</td><td>0</td><td>1</td></tr><tr><td>IM2</td><td>1</td><td>1</td><td>0</td><td>0</td></tr></table>		8080	3-wire SPI	4-wire SPI	I2C	IM1	1	0	0	1	IM2	1	1	0	0
	8080	3-wire SPI	4-wire SPI	I2C													
IM1	1	0	0	1													
IM2	1	1	0	0													
7	IM2	These pins must be connected to "H" or "L".															
8	VSS	Ground for logic and analog. This pin should be connected to GND externally.															
9	IREF	This is a segment current reference pin. A resistor should be connected between this pin and GND.															
10	CSB	This pin is the chip select input. When CSB = "L", then the chip select becomes active, and data/command I/O is enabled. When in I2C interface, this pin is not used, so it must be connected to "L".															
11	RESB	This is a reset signal input pin. When RESB is set to "L", the settings are initialized. The reset operation is performed by the RESB signal level. This pin internal pull high.															
12	A0	This is the Data/Command control pin 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 pin serves as SA0 to distinguish the different address of OLED driver. When in 3-wire interface, this pin is not used, so it must be connected to "L".															
13	WRB	This is a MPU interface input pin. When connected to an 8080 MPU, this is active LOW. This pin connects to the 8080 MPU WR signal. The signals on the data bus are latched at the rising edge of the WR signal. When in 3-wire.4-wire & I2C interface, this pin is not used, so it must be connected to "L".															

14	RDB	This is a MPU interface input pin. When connected to an 8080 series MPU, it is active LOW. This pin is connected to the RD signal of the 8080 series MPU, and the data bus is in an output status when this signal is "L". When in 3-wire.4-wire & I2C interface, this pin is not used, so it must be connected to "L".
15	D0	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(SPI) and I2C is selected, then D0 serves as the serial clock input pin (SCL) and D1 serves as the serial data input pin (SI). At this time, D2 to D7 are set to high impedance. D7~D2 is recommended to connect the VDD or GND. It is also allowed to leave D7~D2 unconnected.
16	D1	
17	D2	
18	D3	
19	D4	
20	D5	
21	D6	
22	D7	
23	VPP	This is the most positive voltage supply pin of the chip. It should be supplied externally.
24	ESD_GND	This pin should be connected to GND.

Contour Drawing



PIN	SYMBOL
1	ESD_GND
2	VPP
3	VCOMH
4	VDD
5	NC
6	IM1
7	IM2
8	VSS
9	IREF
10	CSB
11	RESB
12	A0
13	WRB
14	RDB
15	D0
16	D1
17	D2
18	D3
19	D4
20	D5
21	D6
22	D7
23	VPP
24	ESD_GND

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

Absolute Maximum Ratings

Parameter	Symbol	Min	Max	Unit
Supply Voltage for Logic	VDD	-0.3	3.5	V
Supply Voltage for Display	VPP	-0.3	15.0	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	—	1.65	3.0	3.3	V
Supply Voltage for Display	VPP	—	8.0	12.0	12.5	V
High Level Input	VIH	—	0.8×VDD	—	VDD	V
Low Level Input	VIL	—	GND	—	0.2×VDD	V
High Level Output	VOH	—	0.8×VDD	—	VDD	V
Low Level Output	VOL	—	GND	—	0.1×VDD	V
Display 50% Pixel on	IPP	VPP = 12V	—	20	30	mA