



RAYSTAR

RAYSTAR Optronics, Inc.  
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# 曜凌光電股份有限公司 Raystar Optronics, Inc.

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## RX12864B

### General Specification

The Features is described as follow:

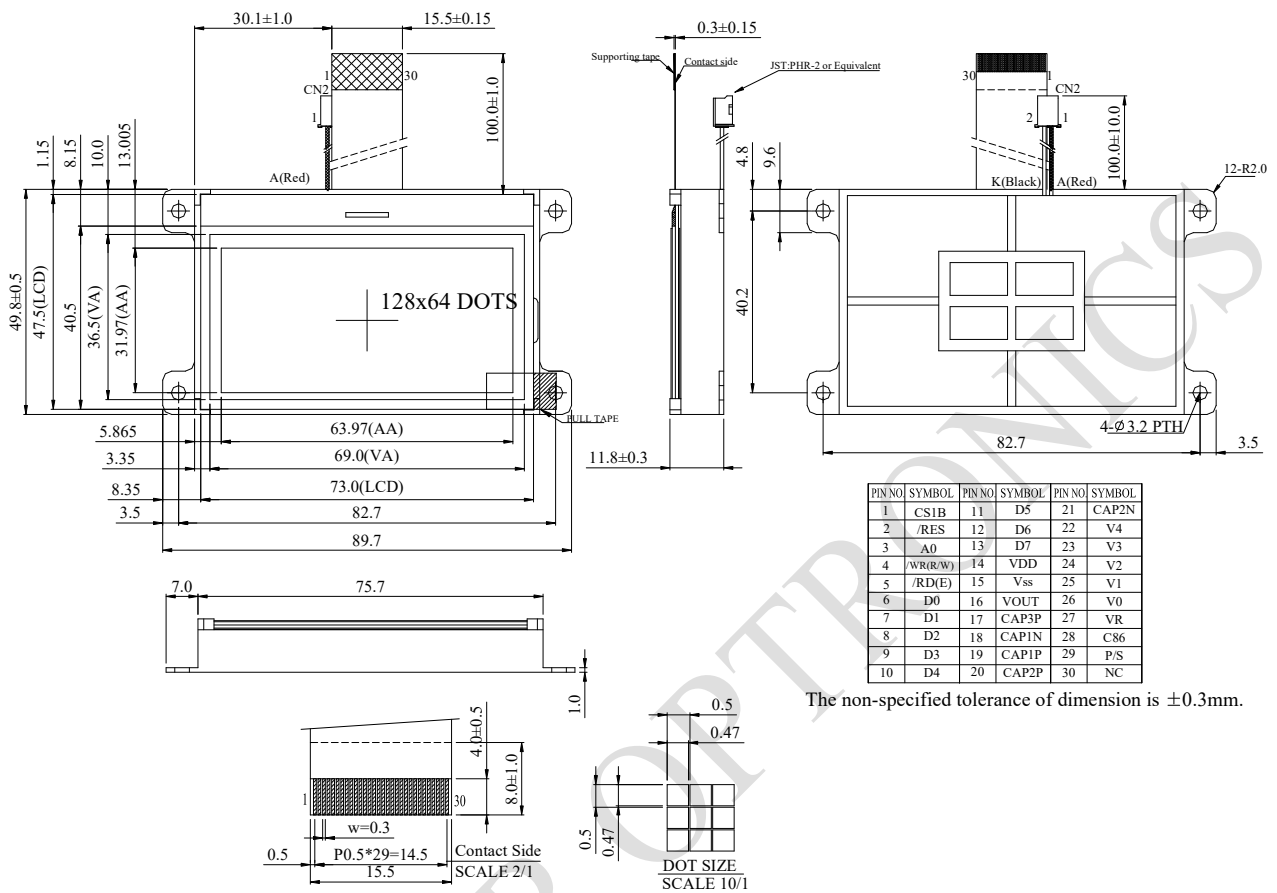
- Module dimension: 89.7x 49.8 x12.1 (max.) mm
- View area: 69.0 x 36.5 mm
- Active area: 63.97 x31.97 mm
- Number of dots: 128 x 64
- Dot size: 0.47 x0.47 mm
- Dot pitch: 0.5 x 0.5 mm
- Duty: 1/65 , 1/9 Bias
- Backlight Type: LED
- IC: ST7565P

## Interface Pin Function

Pin No.	Symbol	I/O	Description
1	/CS1B	I	This is the chip select signal.
2	/RES	I	When RES is set to "L", the setting are initialized.
3	A0	I	This is connect to the least significant bit of the normal MPU address bus, and it determines whether the data bits are data or command. A0 = "H": Indicates that D0 to D7 are display data. A0 = "L": Indicates that D0 to D7 are control data.
4	/WR(R/W)	I	<ul style="list-style-type: none"> <li>When connected to 8080 series MPU, this pin is treated as the "/WR" signal of the 8080 MPU and is LOW-active. The signals on the data bus are latched at the rising edge of the /WR signal.</li> <li>When connected to 6800 series MPU, this pin is treated as the "R/W" signal of the 6800 MPU and decides the access type : When R/W = "H": Read. When R/W = "L": Write.</li> </ul>
5	/RD(E)	I	<ul style="list-style-type: none"> <li>When connected to 8080 series MPU, this pin is treated as the "/RD" signal of the 8080 MPU and is LOW-active. The data bus is in an output status when this signal is "L".</li> <li>When connected to 6800 series MPU, this pin is treated as the "E" signal of the 6800 MPU and is HIGH-active.</li> </ul> This is the enable clock input terminal of the 6800 Series MPU.
6~13	D0~ D7	I/O	Data bus line
14	VDD	Power Supply	Power supply
15	VSS	Power Supply	Ground
16	VOUT	O	DC/DC voltage converter. Connect a capacitor between this terminal and vss or VDD
17	CAP3P	O	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1N terminal.
18	CAP1N	O	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1P terminal.

19	CAP1P	O	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP1N terminal.															
20	CAP2P	O	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP2N terminal.															
21	CAP2N	O	DC/DC voltage converter. Connect a capacitor between this terminal and the CAP2P terminal.															
22~26	V4~ V0	Power Supply	This is a multi-level power supply for the liquid crystal drive.															
27	VR	I	Output voltage regulator terminal. Provides the voltage between VSS and V0 through a resistive voltage divider.															
28	C86	I	This is the MPU interface selection pin. C86 = "H": 6800 Series MPU interface. C86 = "L": 8080 Series MPU interface															
29	P/S	I	This is the parallel data input/serial data input switch terminal. P/S = "H": Parallel data input. P/S = "L": Serial data input. The following applies depending on the P/S status: <table border="1" data-bbox="598 1003 1348 1200"> <thead> <tr> <th>P/S</th> <th>Data/Command</th> <th>Data</th> <th>Read/Write</th> <th>Serial Clock</th> </tr> </thead> <tbody> <tr> <td>"H"</td> <td>A0</td> <td>D0 to D7</td> <td>/RD, /WR</td> <td>X</td> </tr> <tr> <td>"L"</td> <td>A0</td> <td>SI (D7)</td> <td>Write only</td> <td>SCL (D6)</td> </tr> </tbody> </table> When P/S = "L", D0 to D5 fixed "H". /RD (E) and /WR (R/W) are fixed to either "H" or "L". With serial data input, It is impossible read data from RAM	P/S	Data/Command	Data	Read/Write	Serial Clock	"H"	A0	D0 to D7	/RD, /WR	X	"L"	A0	SI (D7)	Write only	SCL (D6)
P/S	Data/Command	Data	Read/Write	Serial Clock														
"H"	A0	D0 to D7	/RD, /WR	X														
"L"	A0	SI (D7)	Write only	SCL (D6)														
30	NC	-	No connection.															

# Contour Drawing



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

## Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	$T_{OP}$	-20	—	+70	°C
Storage Temperature	$T_{ST}$	-30	—	+80	°C
Power Supply Voltage	VDD	-0.3	—	3.6	V
Power supply voltage (VDD standard)	V0, VOUT	-0.3	—	14.5	V
Power supply voltage (VDD standard)	V1, V2, V3, V4	-0.3	—	V0+0.3	V

## Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	2.7	—	3.3	V
Supply Voltage For LCM	$V_0-V_{SS}$	Ta=-20°C	9.5	9.8	10.5	V
		Ta=25°C	9.2	9.45	9.7	V
		Ta=70°C	8.95	9.2	9.45	V
Input High Volt.	$V_{IH}$	—	0.8 $V_{DD}$	—	$V_{DD}$	V
Input Low Volt.	$V_{IL}$	—	$V_{SS}$	—	0.2 $V_{DD}$	V
Output High Volt.	$V_{OH}$	$I_{OUT}=-0.5mA$	0.8 $V_{DD}$	—	$V_{DD}$	V
Output Low Volt.	$V_{OL}$	$I_{OUT}=0.5mA$	$V_{SS}$	—	0.2 $V_{DD}$	V
Supply Current(No include LED Backlight)	$I_{DD}$	—	—	0.60	2.0	mA