



RAYSTAR

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RX12864D3

General Specification

The Features is described as follow:

- Module dimension: 80.0x 54.0 x9.5 mm
- View area: 70.7 x 38.8 mm
- Active area: 66.52 x 33.24 mm
- Number of dots: 128 x 64
- Dot size: 0.48 x 0.48 mm
- Dot pitch: 0.52 x 0.52 mm
- Duty: 1/64 , 1/9 Bias
- Backlight Type: LED
- IC: ST7565P

Interface Pin Function

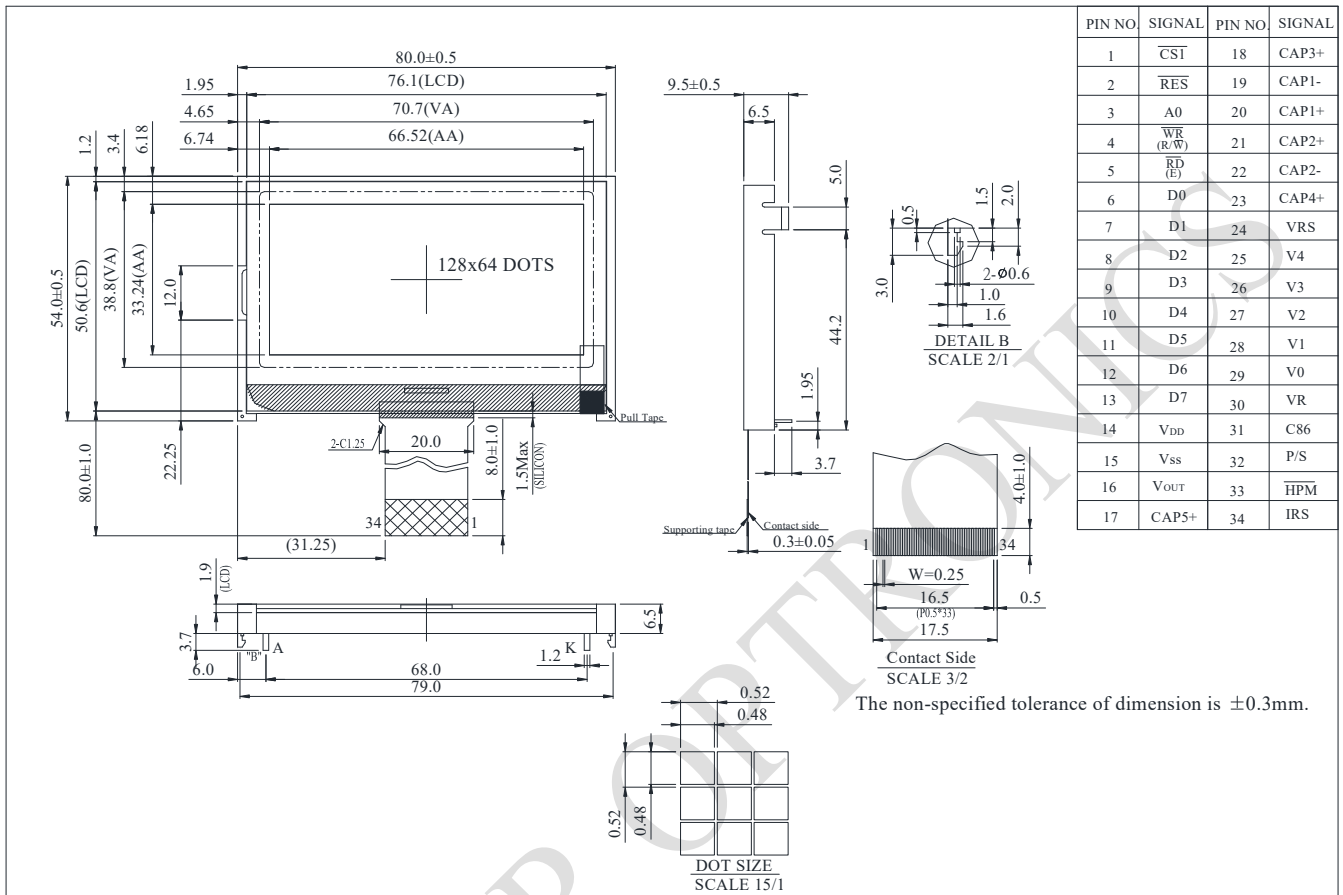
Pin No.	Symbol	Level	Description
1	/CS1	I	The chip select signal
2	/RES	I	When RES is set to "L", the setting are initialized.
3	A0	I	This is connect to the least significant bit of the normal MPU address bus, and it determines whether the data bits are data or command. A0 = "H": Indicates that D0 to 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"> 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. 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.
5	/RD(E)	I	<ul style="list-style-type: none"> 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". When connected to 6800 series MPU, this pin is treated as the "E" signal of the 6800 MPU and is HIGH-active. 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	CAP5+	O	DC/DC voltage converter
18	CAP3+		
19	CAP1-		
20	CAP1+		
21	CAP2+		

22	CAP2-																	
23	CAP4+																	
24	VRS	Power Supply	This is the internal-output VREG power supply for the LCD power supply voltage regulator.															
25	V4	Power Supply	This is a multi-level power supply for the liquid crystal drive.															
26	V3																	
27	V2																	
28	V1																	
29	V0																	
30	VR	I	Output voltage regulator terminal. Provides the voltage between VSS and V0 through a resistive voltage divider. IRS = "L" : the V0 voltage regulator internal resistors are not used. IRS = "H" : the V0 voltage regulator internal resistors are used.															
31	C86	I	This is the MPU interface selection pin. C86 = "H": 6800 Series MPU interface. C86 = "L": 8080 Series MPU interface															
32	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 1451 1348 1646"> <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)														
33	/HPM	I	This is the power control terminal for the power supply circuit for liquid crystal drive. /HPM = "H": Normal mode /HPM = "L": High power mode															

34	IRS	I	<p>This terminal selects the resistors for the V0 voltage level adjustment.</p> <p>IRS = "H": Use the internal resistors</p> <p>IRS = "L": Do not use the internal resistors. The V0 voltage level is regulated by an external resistive voltage divider attached to the VR terminal</p>
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Contour Drawing



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}	$T_a=-20^{\circ}\text{C}$	10.0	10.2	10.4	V
		$T_a=25^{\circ}\text{C}$	9.8	10.0	10.2	V
		$T_a=70^{\circ}\text{C}$	9.6	9.8	10.0	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}	—	0.8 V_{DD}	—	V_{DD}	V
Output Low Volt.	V_{OL}	—	V_{SS}	—	0.2 V_{DD}	V
Supply Current (No include LED Backlight)	I_{DD}	—		0.6	1	mA