LCD / LCM SPECIFICATION



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

Represented by:

FIRST Components s.r.l.
www.first-components.com
sales@first-components.com
+39 0332 1888005

SPECIFICATION

MODULE NO.: WO12864-xxxP#FC

General Specification

Item	Dimension	Unit
Number of Dots	128 x 64 dots	—
Module dimension	55.2 x 39.8 x 6.0	mm
View area	45.2 x 27.0	mm
Active area	40.92 x 24.28	mm
Dot size	0.28 x 0.34	mm
Dot pitch	0.32 x 0.38	mm
Duty	1/65 , 1/9 Bias	
Backlight Type	LED	
IC	ST7567S	
Interface	6800/8080/4-Line SPI	

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Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T_{OP}	-20	—	+70	℃
Storage Temperature	T_{ST}	-30	—	+80	℃
Input Voltage	V_I	-0.3	—	V_{DD}+0.3	V
Digital Power Supply Voltage	V_{DD}-Vss	-0.3	—	4.0	V
LCD Power supply voltage	V0-XV0	-0.3	—	14.0	V

Electrical Characteristics

Item	Symbol	Condition	Min.	Typ.	Max.	Unit
Supply Voltage For Logic	V_{DD}-V_{SS}	—	2.7	3.0	3.3	V
Supply Voltage For LCD	V_{OP}	Ta=-20℃	—	—	—	V
		Ta=25℃	9.4	9.6	9.8	V
		Ta=70℃	—	—	—	V
Input High Volt.	V_{IH}	—	0.7 V_{DD}	—	V_{DD}	V
Input Low Volt.	V_{IL}	—	Vss	—	0.3V_{DD}	V
Output High Volt.	V_{OH}	—	0.8 V_{DD}	—	V_{DD}	V
Output Low Volt.	V_{OL}	—	Vss	—	0.2 V_{DD}	V
Supply Current	I_{DD}	V_{DD}=3.0V	—	—	1.5	mA

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Interface Pin Function

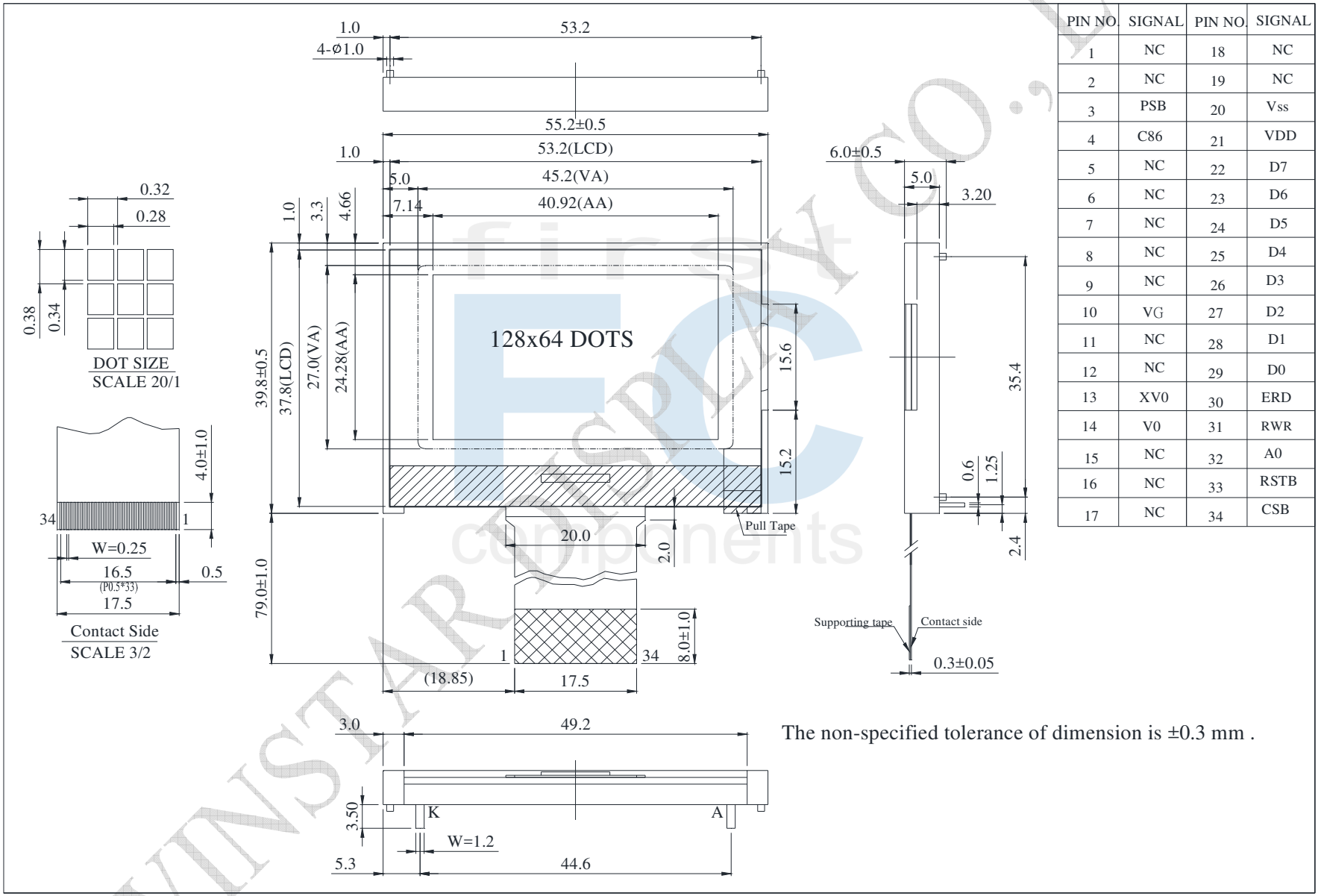
<table>
<tr><th>Pin No.</th><th>Symbol</th><th>Description</th></tr>
<tr><td>1</td><td>NC</td><td>No connection</td></tr>
<tr><td>2</td><td>NC</td><td>No connection</td></tr>
<tr><td>3</td><td>PSB</td><td>Interface selection</td></tr>
<tr><td>4</td><td>C86</td><td>C86 selects the microprocessor type in parallel interface mode</td></tr>
<tr><td>5~9</td><td>NC</td><td>No connection</td></tr>
<tr><td>10</td><td>VG</td><td>VG is the LCD driving voltage for segment circuits.</td></tr>
<tr><td>11</td><td>NC</td><td>No connection</td></tr>
<tr><td>12</td><td>NC</td><td>No connection</td></tr>
<tr><td>13</td><td>XV0</td><td>XV0 is the LCD driving voltage for common circuits at positive frame.</td></tr>
<tr><td>14</td><td>V0</td><td>V0 is the LCD driving voltage for common circuits at negative frame</td></tr>
<tr><td>15~19</td><td>NC</td><td>No connection</td></tr>
<tr><td>20</td><td>VSS</td><td>Ground</td></tr>
<tr><td>21</td><td>VDD</td><td>Power supply</td></tr>
<tr><td>22~29</td><td>D7~D0</td><td>8-bit bi-directional data bus. Connect to the data bus of 8-bit microprocessor. When CSB is non-active (CSB=“H”), D[7:0] pins are high impedance.</td></tr>
<tr><td>30</td><td>ERD</td><td>
<table>
<tr><th>C86</th><th>MPU Type</th><th>ERD</th><th>Description</th></tr>
<tr><td>H</td><td>6800 series</td><td>E</td><td>Read/Write control input pin.
R/W=”H”: When E is “H”, D[7:0] are in output mode.
R/W=”L”: Signals on D[7:0] are latched at the falling edge of E signal.</td></tr>
<tr><td>L</td><td>8080 series</td><td>/RD</td><td>Read enable input pin.
When /RD is “L”, D[7:0] are in output mode.</td></tr>
</table>
</td></tr>
</table>

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<table>
<tr><td>31</td><td>RWR</td><td>
<table>
<tr><th>C86</th><th>MPU Type</th><th>RWR</th><th>Description</th></tr>
<tr><td>H</td><td>6800 series</td><td>R/W</td><td>Read/Write control input pin.
R/W="H": read.
R/W="L": write.</td></tr>
<tr><td>L</td><td>8080 series</td><td>/WR</td><td>Write enable input pin.
Signals on D[7:0] will be latched at the rising edge of /WR signal.</td></tr>
</table>
</td></tr>
<tr><td>32</td><td>A0</td><td>It determines whether the access is related to data or command</td></tr>
<tr><td>33</td><td>RSTB</td><td>Hardware reset input pin</td></tr>
<tr><td>34</td><td>CSB</td><td>Chip select input pin.</td></tr>
</table>

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Contour Drawing



PIN NO.	SIGNAL	PIN NO.	SIGNAL
1	NC	18	NC
2	NC	19	NC
3	PSB	20	Vss
4	C86	21	VDD
5	NC	22	D7
6	NC	23	D6
7	NC	24	D5
8	NC	25	D4
9	NC	26	D3
10	VG	27	D2
11	NC	28	D1
12	NC	29	D0
13	XV0	30	ERD
14	V0	31	RWR
15	NC	32	A0
16	NC	33	RSTB
17	NC	34	CSB

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

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