



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

MODULE NO.: WO240128B2

General Specification

Item	Dimension	Unit
Number of dots	240 x 128	—
Module dimension	140.0 x 84.0 x 9.7	mm
View area	114.0 x 64.0	mm
Active area	107.98 x 57.58	mm
Dot size	0.43 x 0.43	mm
Dot pitch	0.45 x 0.45	mm
Drive Method	1/128 Duty , 1/12 Bias	
Backlight Type	LED	
IC	ST7586S	

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T_{OP}	-20	—	+70	°C
Storage Temperature	T_{ST}	-30	—	+80	°C
Digital Power Supply Voltage	VDDI	-0.3	—	3.6	V
Analog Power supply voltage	VDDA	-0.3	—	3.6	V
LCD Power supply voltage	V0-XV0	-0.3	—	19	V
LCD Power supply voltage	VG	-0.3	—	5.5	V

Electrical Characteristics

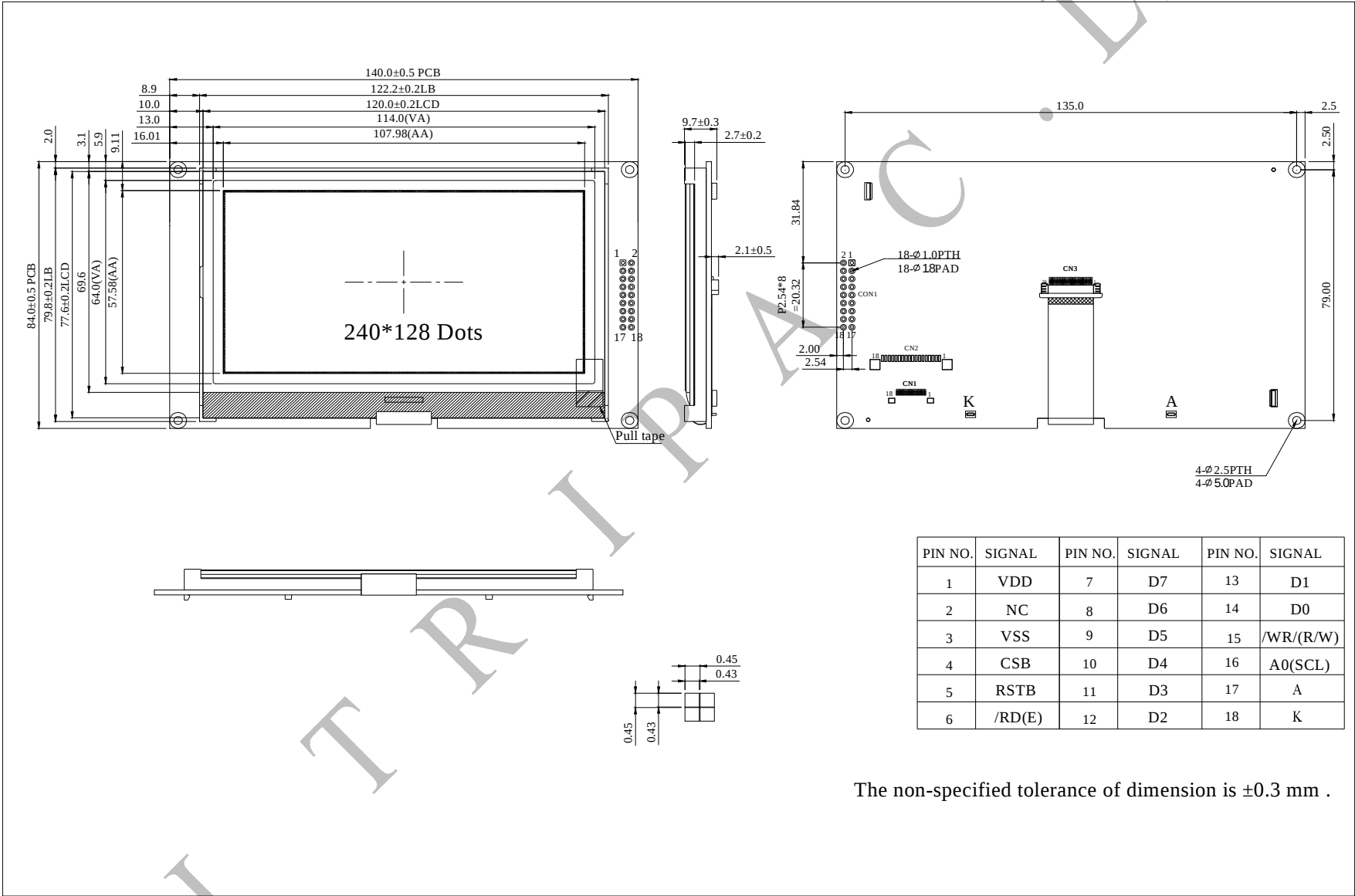
Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	3.0	3.3	3.6	V
Supply Voltage For LCM	VOP	$T_a=-20^{\circ}\text{C}$	—	—	—	V
		$T_a=25^{\circ}\text{C}$	14.8	15.0	15.2	V
		$T_a=+70^{\circ}\text{C}$	—	—	—	V
Input High Volt.	V_{IH}	—	$0.7V_{DD}$	—	V_{DD}	V
Input Low Volt.	V_{IL}	—	V_{SS}	—	$0.3 V_{DD}$	V
Output High Volt.	V_{OH}	—	$0.8 V_{DD}$	—	V_{DD}	V
Output Low Volt.	V_{OL}	—	V_{SS}	—	$0.2V_{DD}$	V
Supply Current	I_{DD}	$V_{DD}=3.3\text{V}$	—	2.0	4.0	mA

Interface Pin Function

Pin No.	Symbol	Description									
1	VDD	Power supply									
2	NC	No connection									
3	VSS	Ground									
4	CSB	Chip select input pin CSB="L": This chip is selected and the MPU interface is active CSB="H": This chip is not selected and the MPU interface is disabled (D[7:0] are high impedance)									
5	RSTB	Reset input pin. When RSTB is "L", internal initialization procedure is executed									
6	/RD(E)	Read / Write execution control pin. (This pin is only used in parallel interface) <table border="1"> <thead> <tr> <th>MPU Type</th><th>ERD</th><th>Description</th></tr> </thead> <tbody> <tr> <td>6800-series</td><td>E</td><td>Read / Write control input pin. R/W = "H": When E is "H", data bus is in output status. R/W = "L": The data are latched at the falling edge of the E signal.</td></tr> <tr> <td>8080-series</td><td>/RD</td><td>Read enable input pin. When /RD is "L", data bus is in output status.</td></tr> </tbody> </table> This pin is not used in serial interfaces and should be connected to VDD1	MPU Type	ERD	Description	6800-series	E	Read / Write control input pin. R/W = "H": When E is "H", data bus is in output status. R/W = "L": The data are latched at the falling edge of the E signal.	8080-series	/RD	Read enable input pin. When /RD is "L", data bus is in output status.
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8080-series	/RD	Read enable input pin. When /RD is "L", data bus is in output status.									
7~14	D7~D0	The bi-directional data bus of the MPU interface. When CSB is "H", they are high impedance If using serial interface: D0 is the SDA signal in 4-Line & 3-Line interface D1 is the A0 signal in 4-Line interface									
15	/WR/(R/W)	Read / Write execution control pin. (This pin is only used in parallel interface) <table border="1"> <thead> <tr> <th>MPU Type</th><th>RWR</th><th>Description</th></tr> </thead> <tbody> <tr> <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>8080-series</td><td>/WR</td><td>Write enable clock input pin. The data are latched at the rising edge of the /WR signal.</td></tr> </tbody> </table> This pin is not used in serial interfaces and should be connected to VDD1	MPU Type	RWR	Description	6800-series	R/W	Read / Write control input pin R/W = "H" : read R/W = "L" : write	8080-series	/WR	Write enable clock input pin. The data are latched at the rising edge of the /WR signal.
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16	A0(SCL)	The function of this pin is different in parallel and serial interface In parallel interface: A0 is register selection input A0 = "H": inputs on data bus are display data A0 = "L": inputs on data bus are command In serial interface: this pad will be used as SCL (serial-clock) input
17	A	LED+
18	K	LED-

Contour Drawing



PIN NO.	SIGNAL	PIN NO.	SIGNAL	PIN NO.	SIGNAL
1	VDD	7	D7	13	D1
2	NC	8	D6	14	D0
3	VSS	9	D5	15	/WR/(R/W)
4	CSB	10	D4	16	A0(SCL)
5	RSTB	11	D3	17	A
6	/RD(E)	12	D2	18	K

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