



**WINSTAR Display Co.,Ltd.**  
**華凌光電股份有限公司**

## SPECIFICATION

**MODULE NO.: WO256128A-TDI#**

### General Specification

Item	Dimension	Unit
Number of dots	256 x 128	—
Module dimension	80.0 x 54.0 x 9.5	mm
View area	70.7 x 38.8	mm
Active area	66.54 x 33.26	mm
Dot size	0.24 x 0.24	mm
Dot pitch	0.26 x 0.26	mm
LCD type	FSTN Negative (Double film) Transmissive (In LCD production, It will occur slightly color difference. We can only guarantee the same color in the same batch.)	
Drive Method	1/128 DUTY, 1/12 BIAS	
View direction	6 o'clock	
Backlight Type	LED, White	
IC	ST75256	

# Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	$T_{OP}$	-20	—	+70	°C
Storage Temperature	$T_{ST}$	-30	—	+80	°C
MPU Interface Input Voltage	$V_{IN}$	-0.3	—	$V_{DD}+0.3$	V
Digital Power Supply Voltage	$V_{DD}-V_{SS}$	-0.3	—	4.0	V
LCD Power supply voltage	$V_0- XV_0$	-0.3	—	19.0	V

# Electrical Characteristics

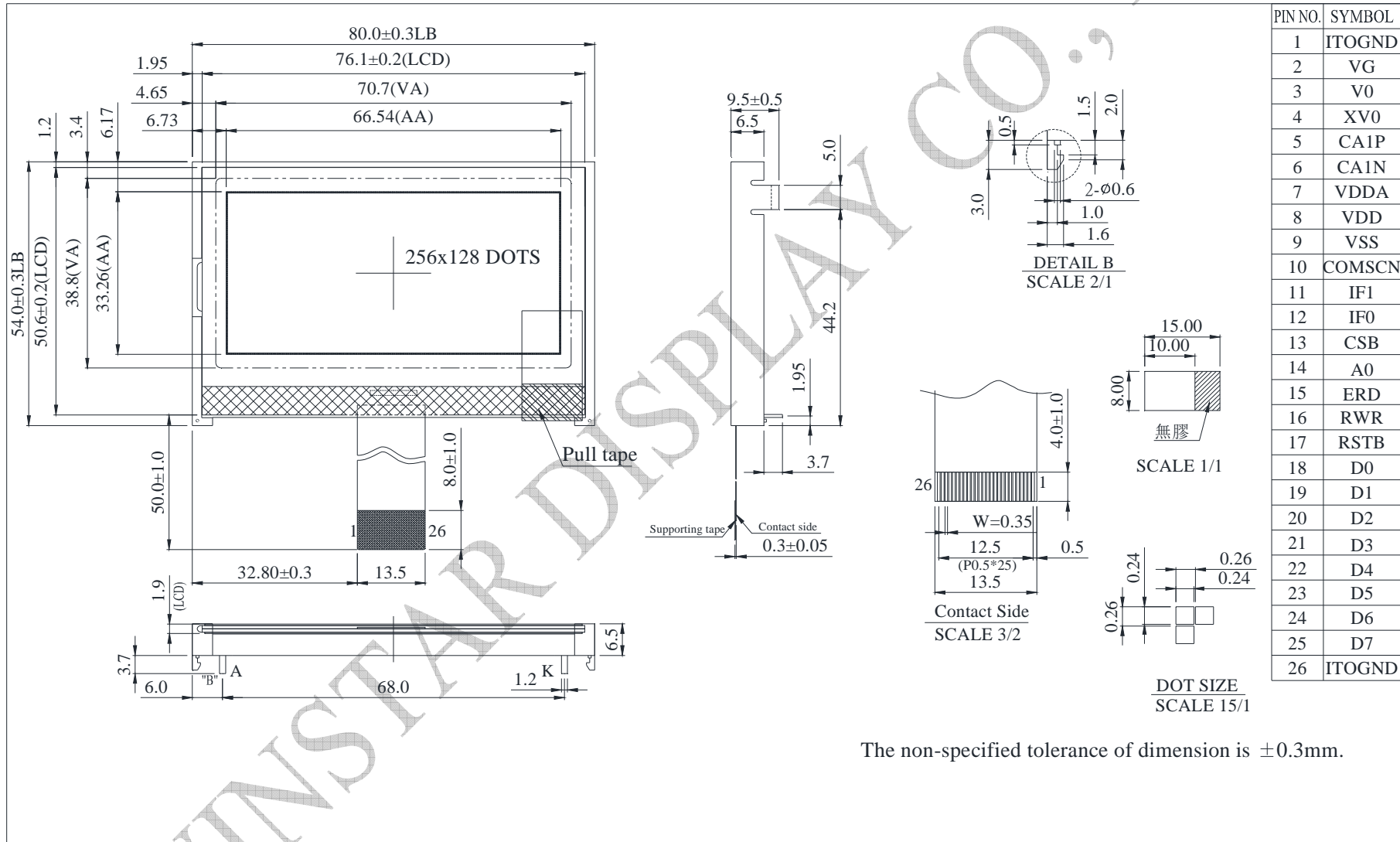
Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	3.0	3.3	3.6	V
Supply Voltage For LCM	$V_{OP}$	$T_a=-20^{\circ}C$	—	—	—	V
		$T_a=25^{\circ}C$	14.2	14.5	14.8	V
		$T_a=70^{\circ}C$	—	—	—	V
Input High Volt.	$V_{IH}$	—	$0.7 V_{DD}$	—	$V_{DD}$	V
Input Low Volt.	$V_{IL}$	—	$V_{SS}$	—	$0.3 V_{DD}$	V
Output High Volt.	$V_{OH}$	—	$0.8 V_{DD}$	—	$V_{DD}$	V
Output Low Volt.	$V_{OL}$	—	$V_{SS}$	—	$0.2 V_{DD}$	V
Supply Current	$I_{DD}$	$V_{DD}=3.3V$	—	1.5	—	mA

Please kindly consider to design the  $V_{op}$  to be adjustable while programming the software to match LCD contrast tolerance.

# Interface Pin Function

Pin No.	Symbol	Description																					
1	ITOGND	ESD PIN																					
2	VG	Power of SEG-drivers																					
3	V0	Positive operating voltage of COM-drivers																					
4	XV0	Negative operating voltage of COM-drivers																					
5	CA1P	DC/DC Voltage convert pin																					
6	CA1N	DC/DC Voltage convert pin																					
7	VDDA	+3.3V																					
8	VDD	+3.3V																					
9	VSS	ground																					
10	COMSCN	Set scan directing of COM																					
11	IF1	<table border="1"> <thead> <tr> <th colspan="3">These pins select interface operation mode.</th> </tr> <tr> <th>IF1</th> <th>IF0</th> <th>MPU interface type</th> </tr> </thead> <tbody> <tr> <td>L</td> <td>L</td> <td>4-line serial interface</td> </tr> <tr> <td>L</td> <td>H</td> <td>IIC serial interface</td> </tr> <tr> <td>H</td> <td>L</td> <td>8-bit 6800 parallel interface</td> </tr> <tr> <td>H</td> <td>H</td> <td>8-bit 8080 parallel interface</td> </tr> <tr> <td colspan="3">Note: Refer to "Parallel / Serial Interface" for detailed information.</td> </tr> </tbody> </table>	These pins select interface operation mode.			IF1	IF0	MPU interface type	L	L	4-line serial interface	L	H	IIC serial interface	H	L	8-bit 6800 parallel interface	H	H	8-bit 8080 parallel interface	Note: Refer to "Parallel / Serial Interface" for detailed information.		
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12	IF0																						
13	CSB	Chip select input pin																					
14	A0	Whether the access is related to data or command																					
15	ERD	Read or write enable terminal																					
16	RWR	Read/Write execution control pin																					
17	RSTB	Reset input pin																					
18~25	D0~D7	Data bus line																					
26	ITOGND	ESD PIN																					

# Contour Drawing



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