



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

MODULE NO.: WO256128A-TFH#

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 Positive Transflective (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	$V_0- X_{V0}$	-0.3	—	19.0	V

Electrical Characteristics

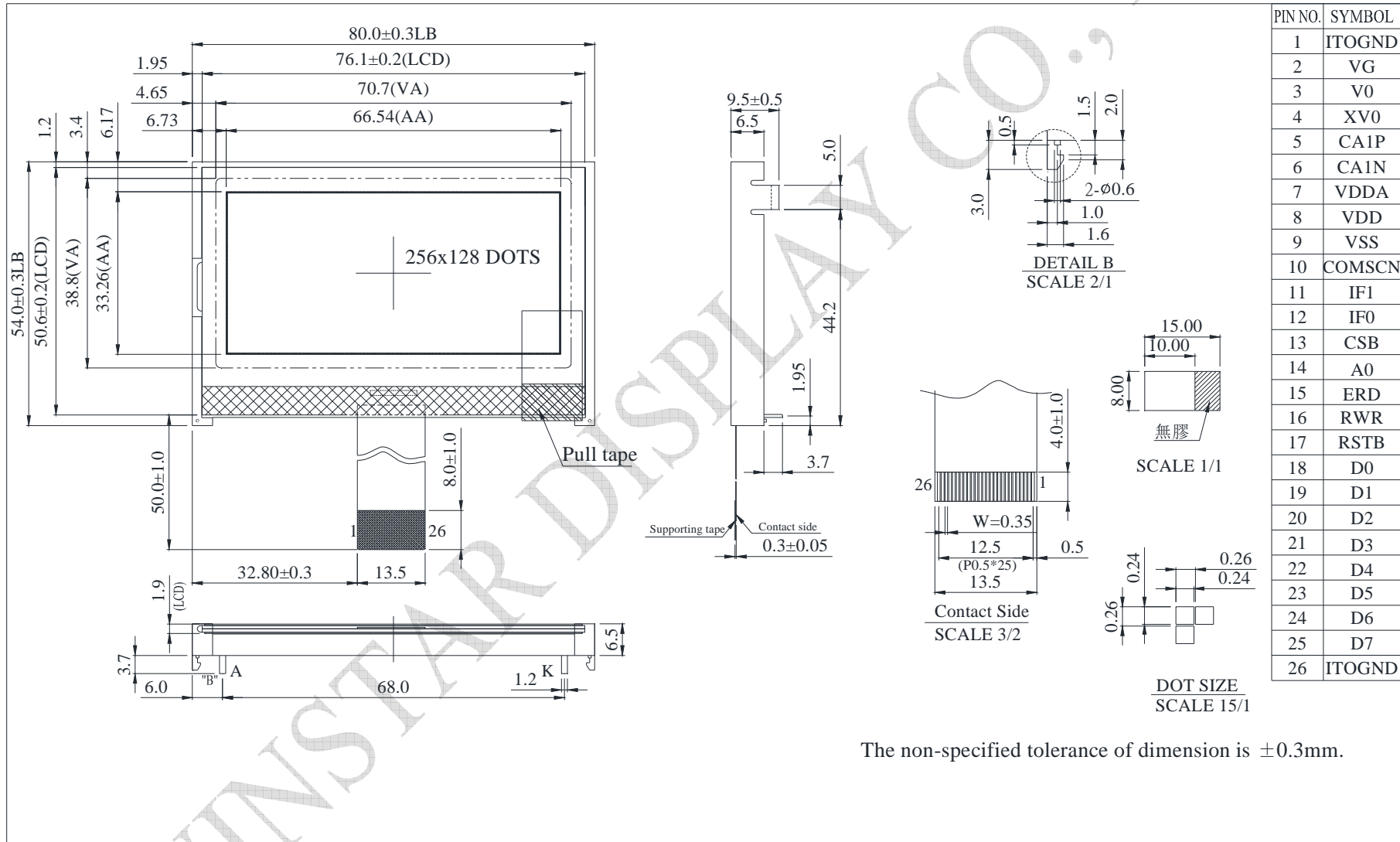
Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	3.0	3.3	3.6	V
Supply Voltage For LCM	V_{OP}	$T_a=-20^{\circ}C$	—	—	—	V
		$T_a=25^{\circ}C$	14.2	14.5	14.8	V
		$T_a=70^{\circ}C$	—	—	—	V
Input High Volt.	V_{IH}	—	$0.7 V_{DD}$	—	V_{DD}	V
Input Low Volt.	V_{IL}	—	V_{SS}	—	$0.3 V_{DD}$	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 Vop to be adjustable while programing 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 converte pin																					
6	CA1N	DC/DC Voltage converte 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



PIN NO.	SYMBOL
1	ITOGND
2	VG
3	V0
4	XV0
5	CA1P
6	CA1N
7	VDDA
8	VDD
9	VSS
10	COMSCN
11	IF1
12	IF0
13	CSB
14	A0
15	ERD
16	RWR
17	RSTB
18	D0
19	D1
20	D2
21	D3
22	D4
23	D5
24	D6
25	D7
26	ITOGND

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