



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

MODULE NO.:WO320240G-TFH-V#

General Specification

ITEM	STANDARD VALUE	UNIT
Number of dots	320x240	—
Outline dimension	94.7 x 83.3 x 9.8max	mm
View area	81.4 x 61.0	mm
Active area	76.785 x 57.11	mm
Dot size	0.223 x 0.225	mm
Dot pitch	0.238 x 0.24	mm
Duty	1/240	
Backlight	LED	
Driver IC	NT7712+NT7711*2	

Absolute Maximum Ratings

Item	Symbol	Min	Typ	Max	Unit
Operating Temperature	T_{OP}	-20	—	+70	°C
Storage Temperature	T_{ST}	-30	—	+80	°C
Supply Voltage For Logic	VDD	-0.3	—	5.5	V
Supply Voltage For LCD Drive	VLCD	-0.3	—	36	V

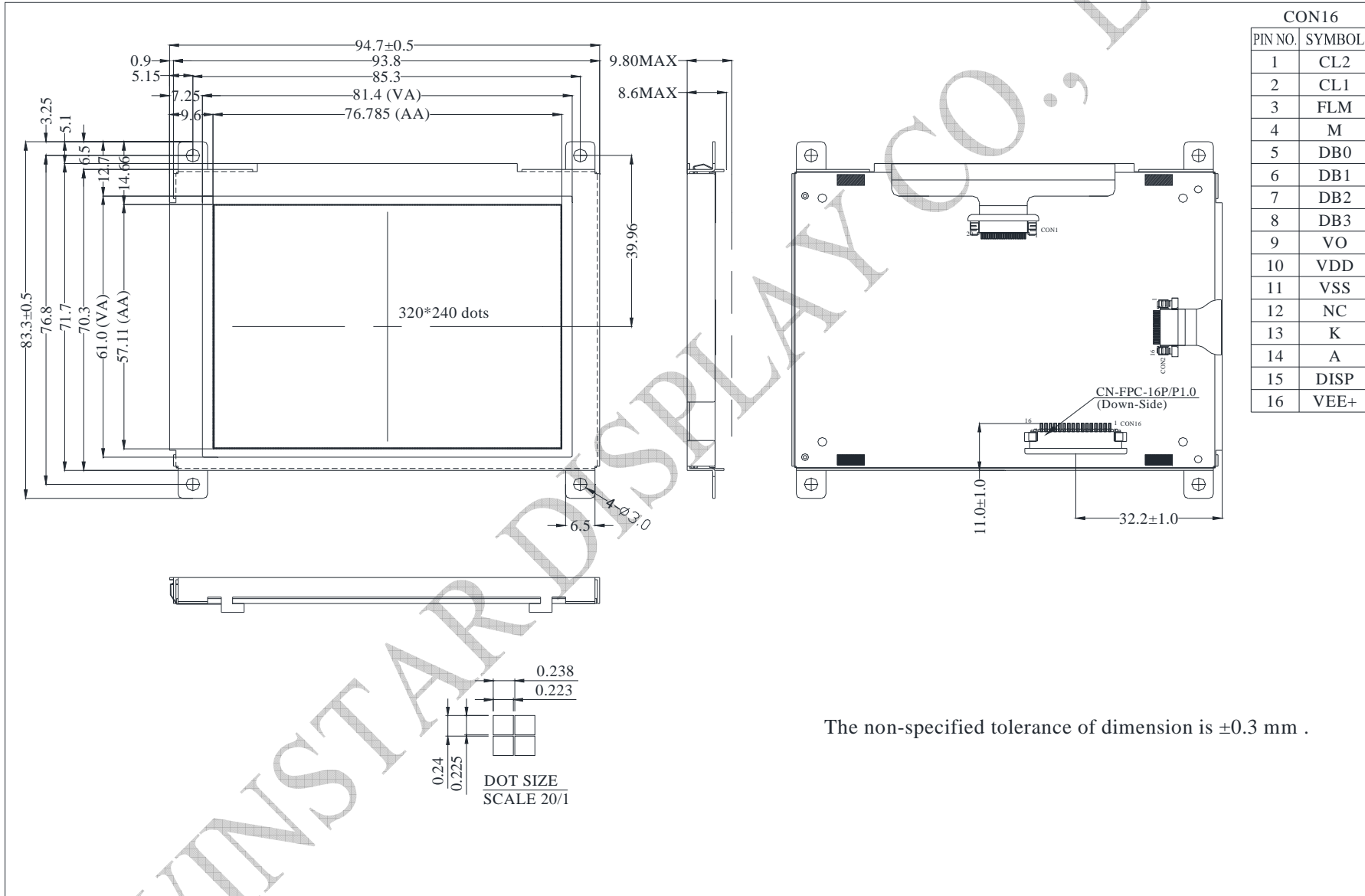
Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	$V_{DD}-V_{SS}$	—	3.0	3.3	3.6	V
	$V_{DD}-V_{SS}$	—	4.7	5.0	5.3	V
Supply Voltage For LCD *Note	V_{OP}	$T_a=-20^{\circ}C$	—	—	—	V
		$T_a=25^{\circ}C$	22.7	23.0	23.3	V
		$T_a=70^{\circ}C$	—	—	—	V
Input High Volt.	V_{IH}	—	$0.8V_{DD}$	—	V_{DD}	V
Input Low Volt.	V_{IL}	—	0	—	$0.2V_{DD}$	V
Output High Volt.	V_{OH}	—	$V_{DD}-0.4$	—	—	V
Output Low Volt.	V_{OL}	—	—	—	0.4	V
Supply Current	I_{DD}	$V_{DD}=3.3V$	—	45.0	70.0	mA
	I_{DD}	$V_{DD}=5.0V$	—	33.0	50.0	mA

Interface Pin Function

Pin No.	Symbol	Level	Description
1	CL2	H to L	Data shift pulse
2	CL1	H to L	Data latch pulse
3	FLM	H/L	Scan start-up signal
4	NC		No connection
5	DB0	H/L	Display data, bit0
6	DB1	H/L	Display data, bit1
7	DB2	H/L	Display data, bit2
8	DB3	H	Display data, bit3
9	V _O	(Variable)	Power supply for LCD(+V)
10	V _{DD}	3.3V	Power supply for Logic
11	V _{SS}	0V	Ground
12	NC		No connection
13	K	0V	Ground for LED
14	A		Power supply for LED+
15	DISP		Display OFF
16	VEE		Positive Voltage output

Contour Drawing & Block Diagram



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