

## General Specification

Item	Dimension	Unit
Number of Characters	100*16 Dots	—
Module dimension	85.0 x 30.0 x 10.0(MAX)	mm
View area	66.0 x 16.0	mm
Active area	59.95 x 11.15	mm
Dot size	0.55 x 0.65	mm
Dot pitch	0.60x 0.70	mm
LCD type	OLED , Yellow	
Duty	1/16	

## Absolute Maximum Ratings

Item	Symbol	Min	Max	Unit	Notes
Operating Temperature	T <sub>OP</sub>	-40	+80	°C	
Storage Temperature	T <sub>ST</sub>	-40	+80	°C	
Input Voltage	V <sub>I</sub>	-0.3	VDD	V	
Supply Voltage For Logic	VDD-V <sub>SS</sub>	-0.3	5.3	V	

## Electrical Characteristics

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Voltage For Logic	VDD-VSS	—	3.0	5.0	5.3	V
Input High Volt.	VIH	—	0.9 VDD	—	VDD	V
Input Low Volt.	VIL	—	GND	—	0.1VDD	V
Output High Volt.	VOH	IOH=-0.5mA	0.8 VDD	—	VDD	V
Output Low Volt.	VOL	IOL=0.5mA	GND	—	0.2 VDD	V
Supply Current	IDD	VDD=5V	—	30	—	mA
CIE <sub>x</sub> (Yellow)		x,y(CIE1931)	0.44	0.48	0.52	
CIE <sub>y</sub> (Yellow)		x,y(CIE1931)	0.46	0.50	0.54	

## Optical Characteristics

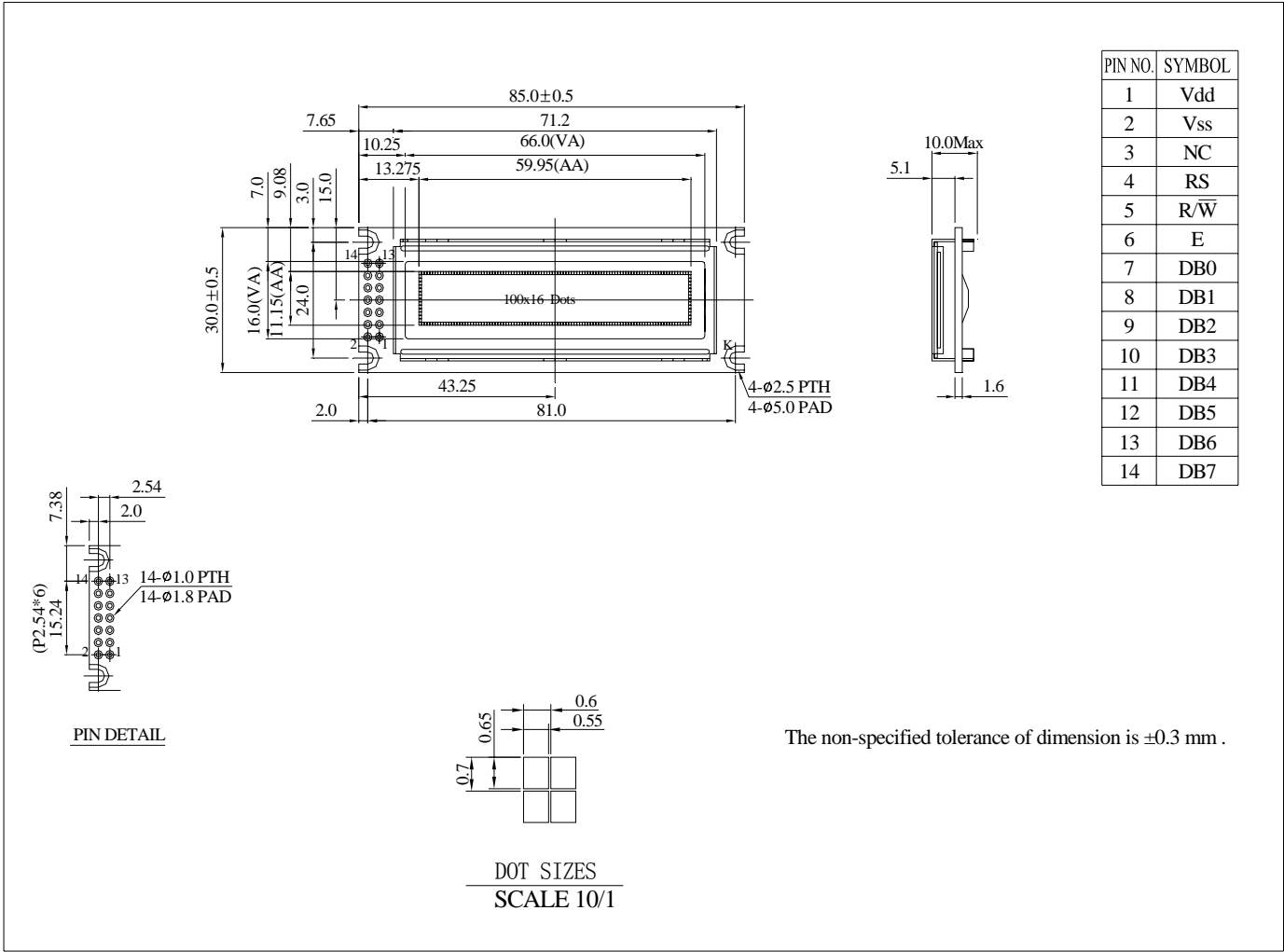
Item	Symbol	Condition	Min	Typ	Max	Unit
View Angle	(V) $\theta$		160			deg
	(H) $\phi$		160			deg
Contrast Ratio	CR	Dark	2000:1		—	—
Response Time	T rise	—		10		$\mu$ s
	T fall	—		10		$\mu$ s
Supply Voltage For Logic 5V 50% Check Board Brightness		With polarizer 150mW(5V*30mA)		125		nits Note1
Supply Voltage For Logic 3V 50% Check Board Brightness		With polarizer		80		nits

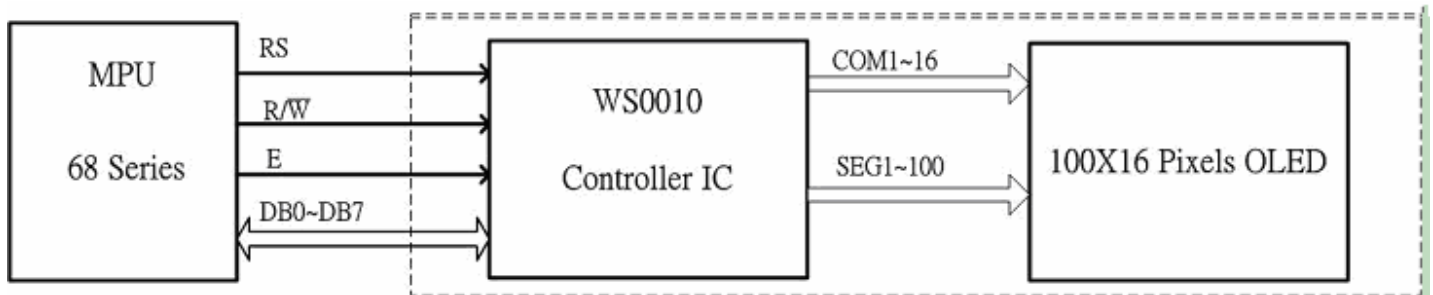
Notes: 1. When random texts pattern is running , averagely , at any instance , about 1/2 of pixels will be on.  
2. You can to use the display off mode to make long life.

## Interface Pin Function

Pin No.	Symbol	Level	Description
1	VDD	5.0V	Supply Voltage for logic
2	VSS	0V	Ground
3	NC	—	
4	RS	H/L	H: DATA, L: Instruction code
5	R/W	H/L	H: Read(MPU→Module) L: Write(MPU→Module)
6	E	H,H→L	Chip enable signal
7	DB0	H/L	Data bit 0
8	DB1	H/L	Data bit 1
9	DB2	H/L	Data bit 2
10	DB3	H/L	Data bit 3
11	DB4	H/L	Data bit 4
12	DB5	H/L	Data bit 5
13	DB6	H/L	Data bit 6
14	DB7	H/L	Data bit 7

## Counter Drawing & Block Diagram





Address Format	DB7	DB6	DB5	DB4	DB3	DB2	DB1	DB0
GXA(Graphic X-axis Address	1	ADD6	ADD5	ADD4	ADD3	ADD2	ADD1	ADD0
GYA(Graphic Y-axis Address	0	1	0	0	0	0	0	CGA0

	1	2	3	4	.....	.....	97	98	99	100
CGA=0	GXA=10000000	GXA=10000000	GXA=10000001	GXA=10000010			GXA=11100000	GXA=11100001	GXA=11100010	GXA=11100011
	GYA=01000001	GYA=01000000	GYA=01000000	GYA=01000000	.....	.....	GYA=01000000	GYA=01000000	GYA=01000000	GYA=01000000
CGA=1	GXA=10000000	GXA=10000001	GXA=10000010	GXA=10000011			GXA=11100000	GXA=11100001	GXA=11100010	GXA=11100011
	GYA=01000001	GYA=01000001	GYA=01000001	GYA=01000001	.....	.....	GYA=01000001	GYA=01000001	GYA=01000001	GYA=01000001

## OLED Lifetime

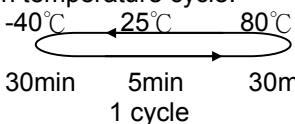
ITEM	Conditions	Typ	Remark
Operating Life Time	Ta=25°C /Initial 50% check board brightness 125nits	100,000 Hrs	Note

Notes:

1. Simulation pattern for operation test: interchanging with 50% checkboard  
The brightness decay does not exceed 50%
2. You can use the display off mode to make long life.
3. The average operating lifetime at room temperature is estimated by the accelerated operation at high temperature conditions.

## Reliability

### Content of Reliability Test

Environmental Test			
Test Item	Content of Test	Test Condition	Applicable Standard
High Temperature storage	Endurance test applying the high storage temperature for a long time.	80°C 240hrs	—
High Temperature Operation	Endurance test applying the electric stress (Voltage & Current) and the thermal stress to the element for a long time.	80°C 240hrs	—
Low Temperature Operation	Endurance test applying the electric stress under low temperature for a long time.	-40°C 240hrs	—
High Temperature/ Humidity Storage	Endurance test applying the high temperature and high humidity storage for a long time.	60°C,90%RH 240hrs	—
Temperature Cycle	Endurance test applying the low and high temperature cycle. 	-40°C/80°C 100 cycles	—
Mechanical Test			
Vibration test	Endurance test applying the vibration during transportation and using.	10~22Hz→1.5mmp-p 22~500Hz→1.5G Total 0.5hrs	—
Shock test	Constructional and mechanical endurance test applying the shock during transportation.	50G Half sign wave 11 msdc 3 times of each direction	—
Atmospheric pressure test	Endurance test applying the atmospheric pressure during transportation by air.	115mbar 40hrs	—
Others			
Static electricity test	Endurance test applying the electric stress to the terminal.	VS=800V,RS=1.5kΩ CS=100pF 1 time	—

\*\*\*Supply voltage for logic system=5V. Supply voltage for LCD system =Operating voltage at 25°C