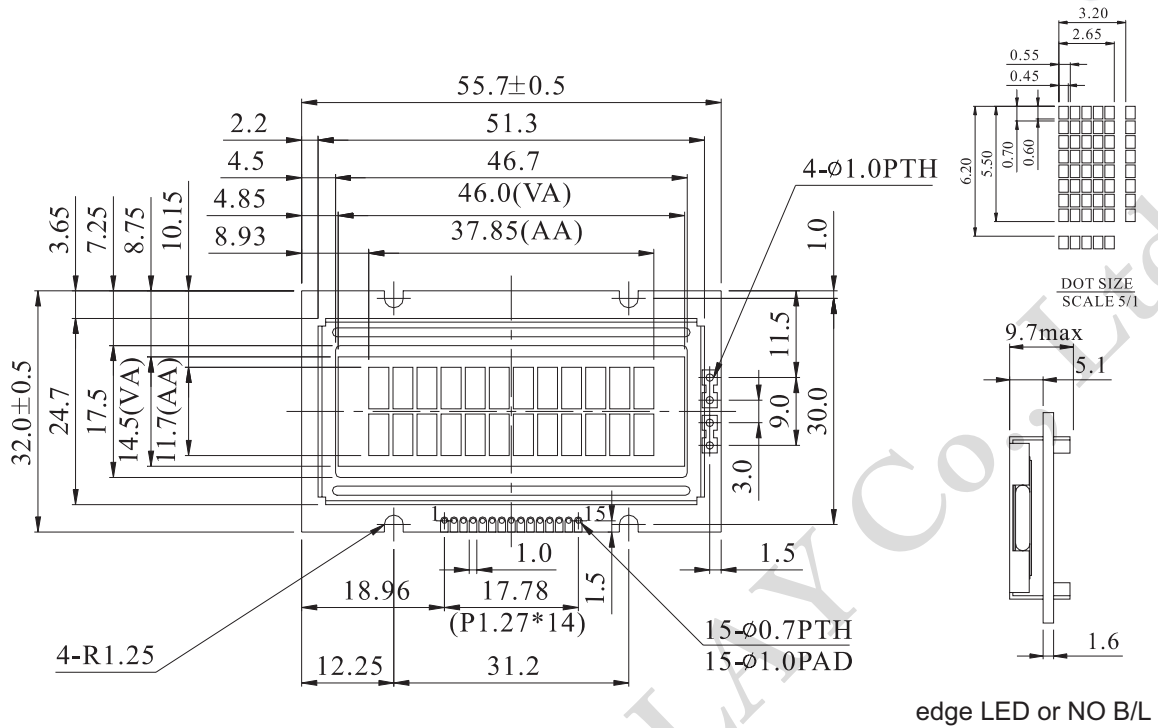




WH1202A 12x2 Character

Dimension drawing



Character type

Feature

1. 5x8 dots includes cursor
2. Built-in controller (ST 7066 or Equivalent)
3. +5V power supply
4. 1/16 duty cycle
5. LED to be driven by pin1, pin2, or A and K

Pin NO.	Symbol	Function
1	Vss	GND
2	Vdd	+ 5V
3	Vo	Contrast Adjustment
4	RS	H/L Register select signal
5	R/W	H/L Read / write signal
6	E	H→L Enable signal
7	DB0	H/L Data bus line
8	DB1	H/L Data bus line
9	DB2	H/L Data bus line
10	DB3	H/L Data bus line
11	DB4	H/L Data bus line
12	DB5	H/L Data bus line
13	DB6	H/L Data bus line
14	DB7	H/L Data bus line
15	A/Vee	4.2V for LED (RA=0Ω) /Negative Voltage output

Mechanical Data

Item	Standard Value	Unit
Module Dimension	55.7 x 32.0	mm
Viewing Area	46.0x14.5	mm
Mounting hole	31.2x 30.0	mm
Character Size	2.65 x 5.50	mm

Absolute Maximum Rating

Item	Symbol	Standard Value			Unit
		min.	typ.	max.	
Power Supply	VDD-VSS	-0.3	---	7.0	V
Input Voltage	VI	-0.3	---	VDD	V

Note : VSS=0 Volt, VDD=5.0 Volt.

Electrical Characteristics

Item	Symbol	Condition	Standard Value			Unit
			min.	typ.	max.	
Input Voltage	VDD	VDD=+5V	4.7	5.0	5.3	V
Supply Current	IDD	VDD=+5V	---	1.3	1.5	mA
Recommended LC Driving Voltage for Normal Temp. Version module	VDD-V0	-20°C	4.9	5.2	5.5	V
		0°C	4.5	4.8	5.1	
		25°C	4.1	4.4	4.7	
		50°C	3.8	4.2	4.4	
70°C	3.5	4.0	4.1			
LED Forward Voltage	VF	25°C	---	4.2	4.6	V
LED Forward Current	IF	25°C	---	40	80	mA

Display Character Address Code :

Display position	1	2	3	4	5	6	7	8	9	10	11	12
DD RAM Address	00	01										0C
DD RAM Address	40	41										4C

Coding System - LCM

1. **Brand Name:** WINSTAR DISPLAY CO., LTD.

2. **Display Type:** H - Character Type, G - Graphic Type
X - TAB Type, C - CSTN Type, O - COG Type

3. **Display Function:** Character-words per line, graphic-row dots. Ex, 16 words.

4. **Display Function:** Character-lines, graphic-column dots. Ex, 2 lines.

5. **Model's Series No.**

6. **Backlight Type:**

N - Without Backlight	R - LED, Red
B - EL, Blue	G - LED, Green
D - EL, Green	T - LED, White
W - EL, White	P - LED, Blue
Y - LED, Yellow Green	F - CCFL, White
A - LED, Amber	



7. **LCD Mode:**

- B - TN Positive, Gray
- N - TN Negative
- G - STN Positive, Gray
- Y - STN Positive, Yellow Green
- M - STN Negative, Blue
- F - FSTN Positive
- T - FSTN Negative
- H - HTN Positive, Gray
- I - HTN Negative, Black

8. **LCD Mode:**

- /Temperature Range
- /Viewing Direction
- A - Reflective, N.T., 6:00
- D - Reflective, N.T., 12:00
- G - Reflective, W.T., 6:00
- J - Reflective, W.T., 12:00
- B - Transflective, N.T., 6:00
- E - Transflective, N.T., 12:00
- H - Transflective, W.T., 6:00
- K - Transflective, W.T., 12:00
- C - Transmissive, N.T., 6:00
- F - Transmissive, N.T., 12:00
- I - Transmissive, W.T., 6:00
- L - Transmissive, W.T., 12:00

* N.T.: Normal Temperature
* W.T.: Wide Temperature

9. **Character:**

- JP/JT/JS/JN : English/ Japanese
- EP/ET/EE/EN : English/ European
- EC/ES : English/ European
- CT/CP : English/ Cyrillic
- HP/HS : Hebrew

Graphic:

- V : Negative Voltage
- T : Temperature Compensation
- N : Without Negative Voltage

10. **Special Mode:**

- Touch Panel, Pin/ Cable/ Connector, Backlight, Heater