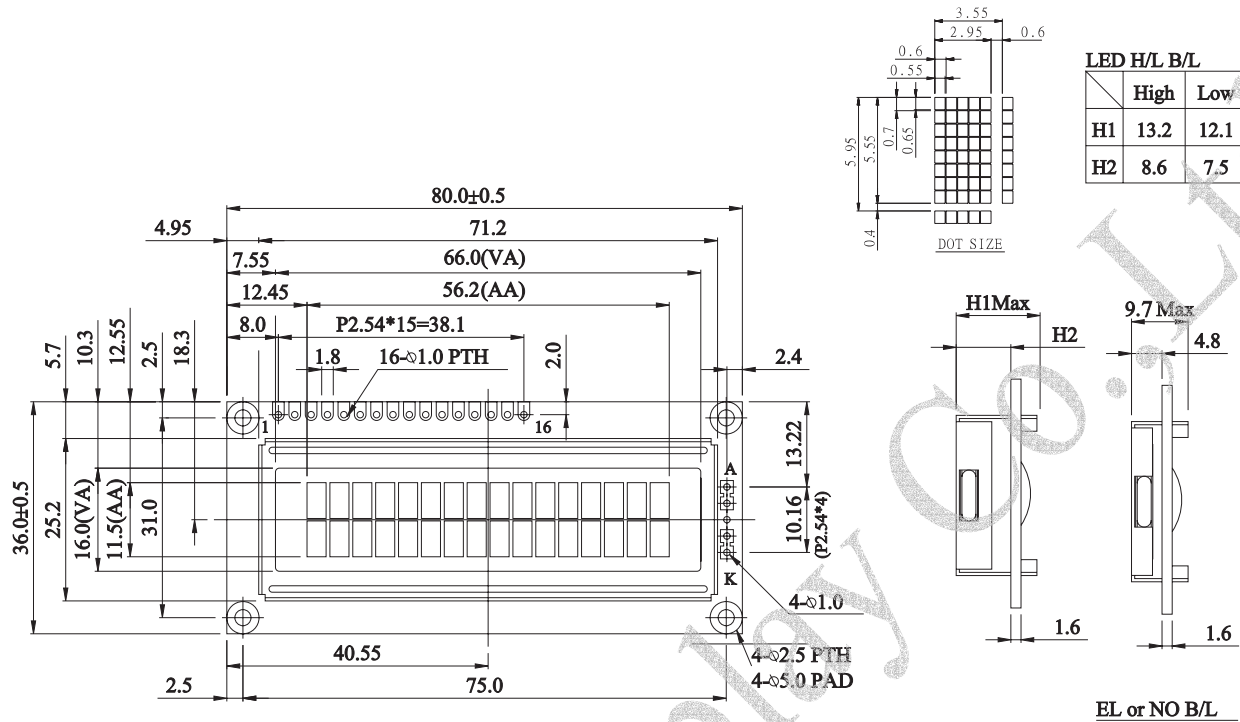


**WH1602B** Character 16x2**Dimension drawing**Character  
type**Feature**

1. 5x8 dots includes cursor
2. Built-in controller (KS 0066 or Equivalent)
3. +5V power supply (Also available for +3V)
4. 1/16 duty cycle
5. LED can be driven by pin1, pin2, pin15, pin16 or A and K
6. N.V. optional for +3V power supply
7. Optional: smaller character size (2.95x4.35mm)

**Mechanical Data**

| Item             | Standard Value | Unit |
|------------------|----------------|------|
| Module Dimension | 80.0x36.0      | mm   |
| Viewing Area     | 66.0x16.0      | mm   |
| Mounting hole    | 75.0x 31.0     | mm   |
| Character Size   | 2.96x5.56      | 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.

**Electronical 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           | ---            | 1.2  | 1.5  | mA   |
| Recommended LC Driving Voltage for Normal Temp. Version module | VDD-V0 | -20°C            | ---            | ---  | 5.2  | V    |
|  |        | 0°C              | ---            | ---  | 4.2  |      |
|  |        | 25°C             | ---            | 3.8  | ---  |      |
|  |        | 50°C             | 3.5            | ---  | ---  |      |
|  |        | 70°C             | 3.2            | ---  | ---  |      |
| LED Forward Voltage  | VF     | 25°C             | ---            | 4.2  | 4.6  | V    |
| LED Forward Current  | IF     | 25°C             | Array          | 100  | ---  | mA   |
|  |        |                  | Edge           | 20   | 40   |      |
| EL Power Supply Current  | IEL    | Vel=110VAC;400Hz | ---            | ---  | 5.0  | mA   |

**Display Character Address Code :**

Display position

|                |    |    |   |   |   |   |   |   |   |    |    |    |    |    |    |    |
|----------------|----|----|---|---|---|---|---|---|---|----|----|----|----|----|----|----|
|                | 1  | 2  | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| DD RAM Address | 00 | 01 |   |   |   |   |   |   |   |    |    |    |    |    |    | 0F |
| DD RAM Address | 40 | 41 |   |   |   |   |   |   |   |    |    |    |    |    |    | 4F |

| Pin NO. | Symbol | Function                                    |
|---------|--------|---|
| 1       | Vss    | GND   |
| 2       | Vdd    | +3V or +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 |
| 16      | K      | Power supply for B/L (0V)                   |

|   |   |    |    |   |   |   |   |   |   |    |    |
|---|---|----|----|---|---|---|---|---|---|----|----|
|   | 2 |    | 4  |   |   | 6 |   | 8 |   |    | 10 |
| W | H | 16 | 02 | B | — | Y | G | B | — | JP | ** |
| 1 |   | 3  |    | 5 |   |   | 7 |   |   | 9  |    |

| NO | Code value                       |                      | Description                            |                    |                      |                    |                     |                                | Remark                      |      |  |  |
|----|----------------------------------|----------------------|--|--------------------|----------------------|--------------------|---------------------|--------------------------------|-----------------------------|------|--|--|
| 1  | W                                |                      | WINSTAR products                       |                    |                      |                    |                     |                                | Winstar Dispaly             |      |  |  |
| 2  | H,G,X,O                          |                      | H:Character ; G: Graphic ; X:TAB;O:COG |                    |                      |                    |                     |                                | LCM type                    |      |  |  |
| 3  | 08,16,20,24. ...                 |                      | Words per line                         |                    |                      |                    |                     |                                | Character                   |      |  |  |
|    | 122,128,240...                   |                      | Row dots                               |                    |                      |                    |                     |                                | Graphic                     |      |  |  |
| 4  | 01,02,04, ...                    |                      | Lines                                  |                    |                      |                    |                     |                                | Character                   |      |  |  |
|    | 32,64,128...                     |                      | Column dots                            |                    |                      |                    |                     |                                | Graphic                     |      |  |  |
| 5  | A~Z                              |                      | Serials number                         |                    |                      |                    |                     |                                | Model name                  |      |  |  |
| 6  | N                                |                      | Without backlight                      |                    |                      |                    |                     |                                | Backlight type              |      |  |  |
|    | B                                |                      | EL backlight , Blue                    |                    |                      |                    |                     |                                |                             |      |  |  |
|    | D                                |                      | EL backlight , Green                   |                    |                      |                    |                     |                                |                             |      |  |  |
|    | W                                |                      | EL backlight , White                   |                    |                      |                    |                     |                                |                             |      |  |  |
|    | Y                                |                      | LED backlight , Yellow-Green           |                    |                      |                    |                     |                                |                             |      |  |  |
|    | A                                |                      | LED backlight , Amber                  |                    |                      |                    |                     |                                |                             |      |  |  |
|    | R                                |                      | LED backlight , Red                    |                    |                      |                    |                     |                                |                             |      |  |  |
|    | G                                |                      | LED backlight , Green                  |                    |                      |                    |                     |                                |                             |      |  |  |
|    | T                                |                      | LED backlight , White                  |                    |                      |                    |                     |                                |                             |      |  |  |
|    | P                                |                      | LED backlight , Blue                   |                    |                      |                    |                     |                                |                             |      |  |  |
|    | F                                |                      | CCFL backlight , White                 |                    |                      |                    |                     |                                |                             |      |  |  |
| 7  | B                                |                      | STN positive , Gray                    |                    |                      |                    |                     |                                | LCD type                    |      |  |  |
|    | N                                |                      | TN negative , Black                    |                    |                      |                    |                     |                                |                             |      |  |  |
|    | G                                |                      | STN positive , Gray                    |                    |                      |                    |                     |                                |                             |      |  |  |
|    | Y                                |                      | STN positive Yellow-Green              |                    |                      |                    |                     |                                |                             |      |  |  |
|    | M                                |                      | STN negative , Blue                    |                    |                      |                    |                     |                                |                             |      |  |  |
|    | F                                |                      | FSTN positive White                    |                    |                      |                    |                     |                                |                             |      |  |  |
|    | T                                |                      | FSTN negative , Black                  |                    |                      |                    |                     |                                |                             |      |  |  |
|    | E                                |                      | ISTN negative                          |                    |                      |                    |                     |                                |                             |      |  |  |
| 8  | Temperature                      |                      | Normal temp,                           |                    |                      |                    | Wide temp,          |                                |                             |      | Polarizer type/<br>Temperature<br>range/<br>View direction |  |
|    | View angle                       |                      | 6:00                                   | 12:00              | 3:00                 | 9:00               | 6:00                | 12:00                          | 3:00                        | 9:00 |  |  |
|    | Reflective                       |                      | A                                      | D                  | M                    | P                  | G                   | J                              | S                           | V    |  |  |
|    | Transflective                    |                      | B                                      | E                  | N                    | Q                  | H                   | K                              | T                           | W    |  |  |
|    | Transmissive                     |                      | C                                      | F                  | O                    | R                  | I                   | L                              | U                           | X    |  |  |
| 9  | Character                        |                      |  |                    |                      |                    | Graphic             |                                |                             |      |  |  |
|    | English/<br>Japanese<br>European | English/<br>Japanese | English/<br>Europe                     | English/<br>Europe | English/<br>Cyrillic | English/<br>Hebrew | Negative<br>Voltage | Without<br>Negative<br>Voltage | Temperature<br>Compensation |      |  |  |
|    | JW                               | JP, JT               | EP,ET                                  | EC,ES              | CP,CT                | H2                 | V                   | N                              | T                           |      |  |  |
| 10 | * *                              |                      | Special Code                           |                    |                      |                    |                     |                                | Touch panel, Backlight      |      |  |  |