



**WINSTAR Display Co.,Ltd.**  
**華凌光電股份有限公司**

## SPECIFICATION

**MODULE NO.:**

**WH1602W**

### General Specification

| Item                 | Dimension                | Unit |
|----------------------|--------------------------|------|
| Number of Characters | 16 Characters x 2 Lines  | —    |
| Module dimension     | 80.0 x 36.0 x 13.5 (MAX) | mm   |
| View area            | 66.0 x 16.0              | mm   |
| Active area          | 56.20 x 11.5             | mm   |
| Dot size             | 0.55 x 0.65              | mm   |
| Dot pitch            | 0.60 x 0.70              | mm   |
| Character size       | 2.95 x 5.55              | mm   |
| Character pitch      | 3.55 x 5.95              | mm   |
| Duty                 | 1/16                     |      |
| Backlight Type       | LED white                |      |
| IC                   | ST7066U                  |      |
| Interface            | 6800                     |      |

## Absolute Maximum Ratings

| Item                     | Symbol          | Min      | Typ | Max      | Unit |
|--------------------------|-----------------|----------|-----|----------|------|
| Operating Temperature    | $T_{OP}$        | -20      | —   | +70      | °C   |
| Storage Temperature      | $T_{ST}$        | -30      | —   | +80      | °C   |
| Input Voltage            | $V_I$           | $V_{SS}$ | —   | $V_{DD}$ | V    |
| Supply Voltage For Logic | $V_{DD}-V_{SS}$ | -0.3     | —   | 7        | V    |
| Supply Voltage For LCD   | $V_{DD}-V_o$    | -0.3     | —   | 13       | V    |

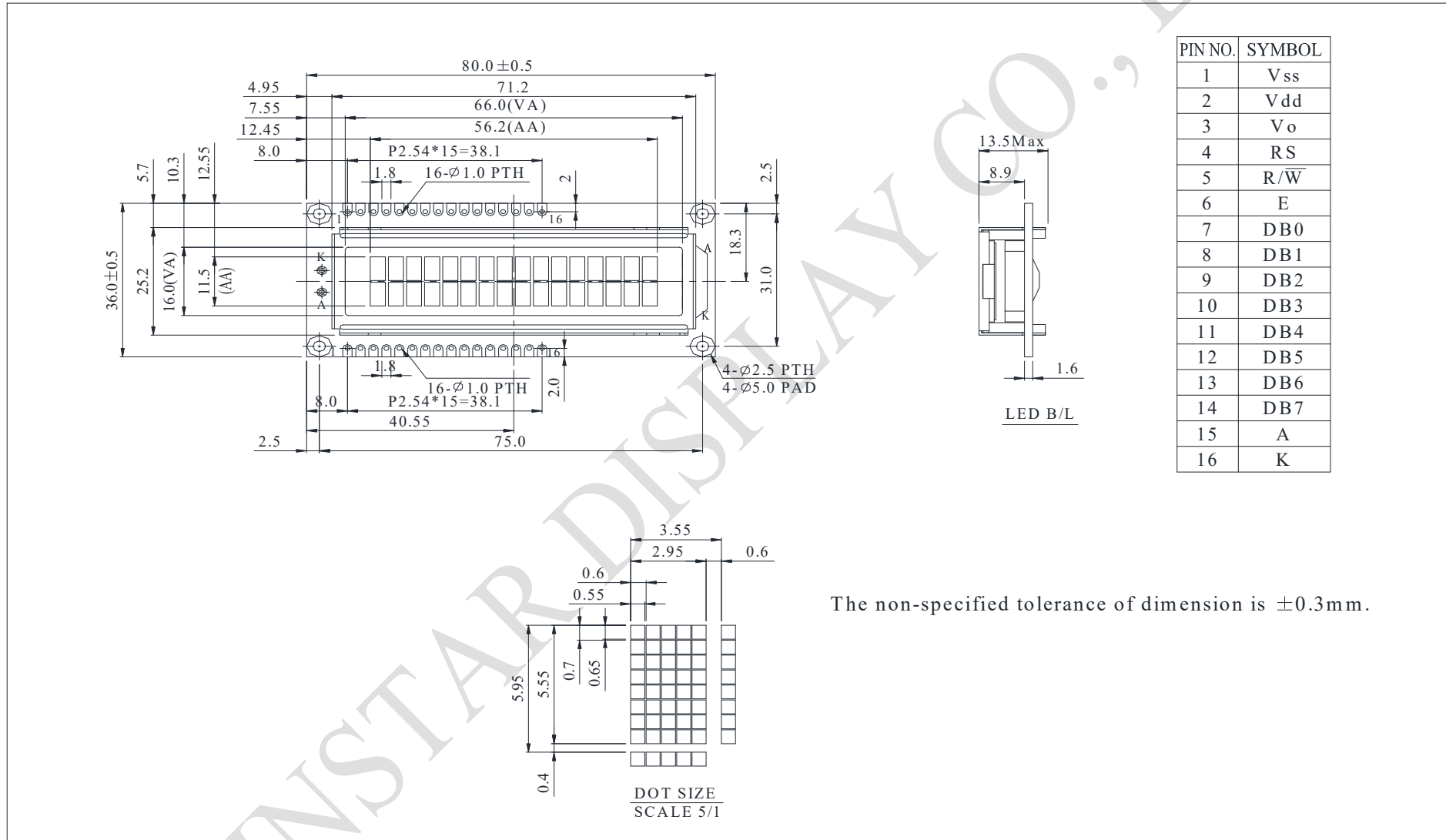
## Electrical Characteristics

| Item                     | Symbol          | Condition          | Min          | Typ | Max      | Unit |
|--------------------------|-----------------|--------------------|--------------|-----|----------|------|
| Supply Voltage For Logic | $V_{DD}-V_{SS}$ | —                  | 4.5          | 5.0 | 5.5      | V    |
| Supply Voltage For LCD   | $V_{DD}-V_o$    | $T_a=-20^{\circ}C$ | —            | —   | 5.2      | V    |
|                          |                 | $T_a=25^{\circ}C$  | 3.6          | 3.7 | 3.8      | V    |
|                          |                 | $T_a=70^{\circ}C$  | 3.2          | —   | —        | V    |
| Input High Volt.         | $V_{IH}$        | —                  | $0.7 V_{DD}$ | —   | $V_{DD}$ | V    |
| Input Low Volt.          | $V_{IL}$        | —                  | $V_{SS}$     | —   | 0.6      | V    |
| Output High Volt.        | $V_{OH}$        | —                  | 3.9          | —   | $V_{DD}$ | V    |
| Output Low Volt.         | $V_{OL}$        | —                  | 0            | —   | 0.4      | V    |
| Supply Current           | $I_{DD}$        | $V_{DD}=5.0V$      | 0.5          | 1.0 | 2.0      | mA   |

# Interface Pin Function

| Pin No. | Symbol          | Level      | Description                  |
|---------|-----------------|------------|------------------------------|
| 1       | V <sub>SS</sub> | 0V         | Ground                       |
| 2       | V <sub>DD</sub> | 5.0V       | Supply Voltage for logic     |
| 3       | VO              | (Variable) | Operating voltage for LCD    |
| 4       | RS              | H/L        | H: DATA, L: Instruction code |
| 5       | R/W             | H/L        | H: Read L: Write             |
| 6       | E               | H,H→L      | Chip 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               | —          | LED +                        |
| 16      | K               | —          | LED —                        |

# Contour Drawing



The non-specified tolerance of dimension is  $\pm 0.3$ mm.