



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



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## SPECIFICATION

**MODULE NO.:**

**WH1602D2**

### General Specification

| Item                 | Dimension                | Unit |
|----------------------|--------------------------|------|
| Number of Characters | 16 characters x 2Lines   | —    |
| Module dimension     | 85.0 x 30.0 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                      |      |
| IC                   | RW1063                   |      |
| Interface            | I2C                      |      |

# 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            | $V_{IN}$        | -0.3         | —   | $V_{DD}+0.3$ | V    |
| Supply Voltage For Logic | $V_{DD}-V_{SS}$ | -0.3         | —   | 5.5          | V    |
| Supply Voltage For LCD   | $V_{DD}-V_0$    | $V_{SS}-0.3$ | —   | $V_{SS}+7.0$ | 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    |
| Supply Voltage For LCD<br>*Note | $V_{DD}-V_0$    | $T_a=-20^{\circ}\text{C}$ | —             | —   | 5.2          | V    |
|                                 |                 | $T_a=25^{\circ}\text{C}$  | 3.6           | 3.7 | 3.8          | V    |
|                                 |                 | $T_a=70^{\circ}\text{C}$  | 3.2           | —   | —            | V    |
| Input High Volt.                | $V_{IH}$        | —                         | $0.7 V_{DD}$  | —   | $V_{DD}$     | V    |
| Input Low Volt.                 | $V_{IL}$        | —                         | -0.3          | —   | 0.6          | V    |
| Output High Volt.               | $V_{OH}$        | —                         | $0.75 V_{DD}$ | —   | —            | V    |
| Output Low Volt.                | $V_{OL}$        | —                         | —             | —   | $0.2 V_{DD}$ | V    |
| Supply Current                  | $I_{DD}$        | $V_{DD}=3.3\text{V}$      | —             | 1.2 | 1.5          | mA   |

# Interface Pin Function

| Pin No. | Symbol | Level      | Description                                                                                                                                  |
|---------|--------|------------|----------------------------------------------------------------------------------------------------------------------------------------------|
| 1       | VSS    | 0V         | Ground                                                                                                                                       |
| 2       | VDD    | 3.3V       | Supply Voltage for logic                                                                                                                     |
| 3       | VO     | (Variable) | Operating voltage for LCD                                                                                                                    |
| 4       | NC     | —          | No connection                                                                                                                                |
| 5       | NC     | —          | No connection                                                                                                                                |
| 6       | NC     | —          | No connection                                                                                                                                |
| 7       | SA0    | H/L        | In IIC interface ,DB1(SA1) and DB0(SA0) are used for Slave address, must be connect to VDD or VSS                                            |
| 8       | SA1    | H/L        |                                                                                                                                              |
| 9       | NC     | —          | No connection                                                                                                                                |
| 10      | NC     | —          | No connection                                                                                                                                |
| 11      | NC     | —          | No connection                                                                                                                                |
| 12      | CSB    | H/L        | In IIC serial mode, used as chip selection input.<br>When CSB = “Low”, selected<br>When CSB = “High”, not selected.<br>( Low access enable ) |
| 13      | SDA    | H/L        | serial input data                                                                                                                            |
| 14      | SCL    | H/L        | serial clock input                                                                                                                           |

# Contour Drawing

