



WINSTAR Display Co.,Ltd.
華凌光電股份有限公司

SPECIFICATION

MODULE NO.:

WH1602S

General Specification

| Item | Dimension | Unit |
|----------------------|-------------------------|------|
| Number of Characters | 16 Characters x 2 Lines | — |
| Module dimension | 59.0 x 29.3 x 5.5 (MAX) | mm |
| View area | 52.0 x 15.0 | mm |
| Active area | 46.7 x 9.84 | mm |
| Dot size | 0.45 x 0.54 | mm |
| Dot pitch | 0.50 x 0.59 | mm |
| Character size | 2.45 x 4.67 | mm |
| Character pitch | 2.95 x 5.17 | mm |
| Duty | 1/16 | |
| Backlight Type | LED | |
| 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 |

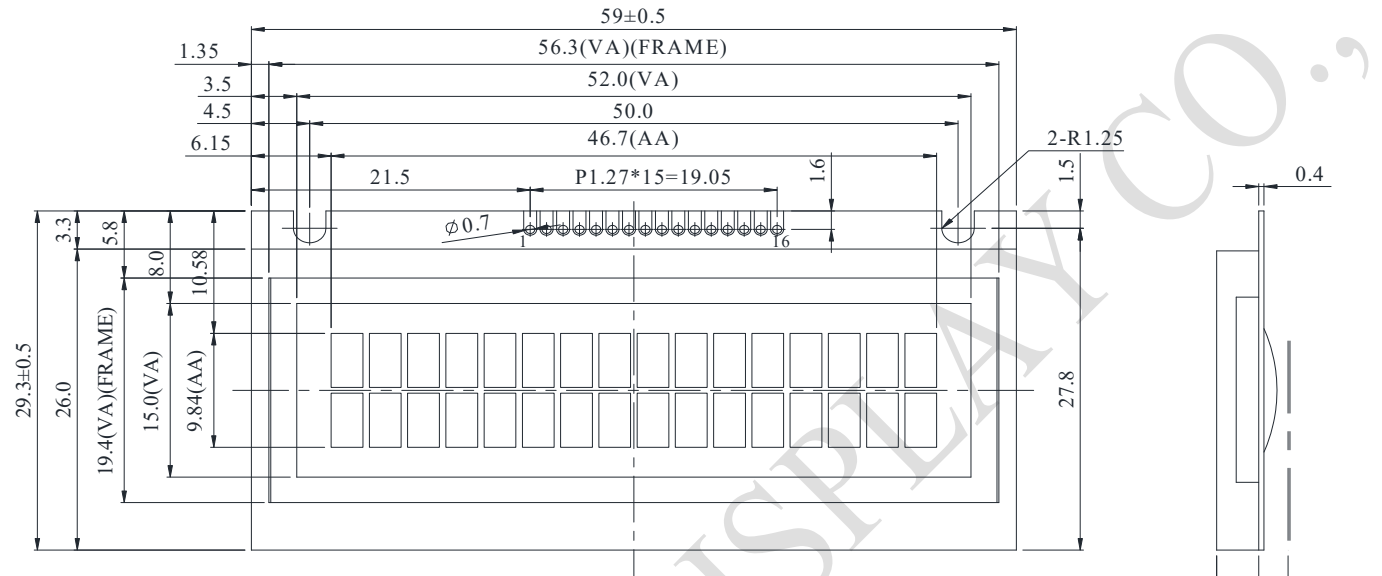
Electrical Characteristics

| 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 | $V_{DD}-V_o$ | $T_a=-20^{\circ}C$ | — | — | — | V |
| | | $T_a=25^{\circ}C$ | 3.6 | 3.7 | 3.8 | V |
| | | $T_a=70^{\circ}C$ | — | — | — | 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} | $V_{DD}=5.0V$ | 1.0 | 1.2 | 1.5 | mA |

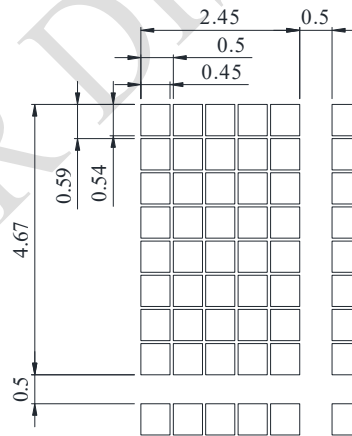
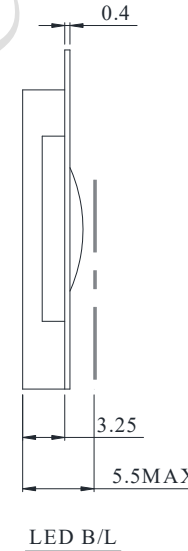
Interface Pin Function

| Pin No. | Symbol | Level | Description |
|---------|-----------------|------------|------------------------------|
| 1 | VLED(-) | — | Power supply for B/L(-) |
| 2 | V _{SS} | 0V | Ground |
| 3 | V _{DD} | 5.0V | Supply Voltage for logic |
| 4 | V _o | (Variable) | Operating voltage for LCD |
| 5 | RS | H/L | H: DATA, L: Instruction code |
| 6 | R/W | H/L | H: Read L: Write |
| 7 | E | H/L | Chip enable signal |
| 8 | DB0 | H/L | Data bus line |
| 9 | DB1 | H/L | Data bus line |
| 10 | DB2 | H/L | Data bus line |
| 11 | DB3 | H/L | Data bus line |
| 12 | DB4 | H/L | Data bus line |
| 13 | DB5 | H/L | Data bus line |
| 14 | DB6 | H/L | Data bus line |
| 15 | DB7 | H/L | Data bus line |
| 16 | NC | — | No connection |

Contour Drawing



| PIN NO. | SYMBOL |
|---------|---------|
| 1 | VLED(-) |
| 2 | VSS |
| 3 | VDD |
| 4 | VO |
| 5 | RS |
| 6 | R/W |
| 7 | E |
| 8 | DB0 |
| 9 | DB1 |
| 10 | DB2 |
| 11 | DB3 |
| 12 | DB4 |
| 13 | DB5 |
| 14 | DB6 |
| 15 | DB7 |
| 16 | NC |



DOT SIZE
SCALE 10/1

The non-specified tolerance of dimension is ±0.3 mm .