**Winstar Display Co., LTD**
華凌光電股份有限公司
住址: 407 台中市中清路 163 號
No.163 Chung Ching RD.,
Taichune, Taiwan, R.O.C
WEB: http://www.winstar.com.tw
E-mail: sales@winstar.com.tw
Tel:886-4-24262208 Fax：886-4-24262207

# SPECIFICATION

**CUSTOMER ：**

**MODULE NO.: WH1602B-TMI-ET#070**

| **APPROVED BY:** ( FOR CUSTOMER USE ONLY ) | **PCB VERSION:** | **DATA:** |
|---|---|---|

| SALES BY | APPROVED BY | CHECKED BY | PREPARED BY |
|---|---|---|---|
| | | | |

| VERSION | DATE | REVISED PAGE NO. | SUMMARY |
|---|---|---|---|
| 0 | 2012/7/30 | | First issue |

Represented by:
FIRST Components s.r.l.
www.first-components.com
technical@first-components.com
+39 0332 1888005

# 2.Precautions in use of LCD Modules

(1)Avoid applying excessive shocks to the module or making any alterations or modifications to it.
(2)Don't make extra holes on the printed circuit board, modify its shape or change the components of LCD module.
(3)Don't disassemble the LCM.
(4)Don't operate it above the absolute maximum rating.
(5)Don't drop, bend or twist LCM.
(6)Soldering: only to the I/O terminals.
(7)Storage: please storage in anti-static electricity container and clean environment.
(8) Winstar have the right to change the passive components, including R3,R6 & backlight adjust resistors. (Resistors,capacitors and other passive components will have different appearance and color caused by the different supplier.)
(9)Winstar have the right to change the PCB Rev. (In order to satisfy the supplying stability, management optimization and the best product performance...etc, under the premise of not affecting the electrical characteristics and external dimensions, Winstar have the right to modify the version.)

# 3.General Specification

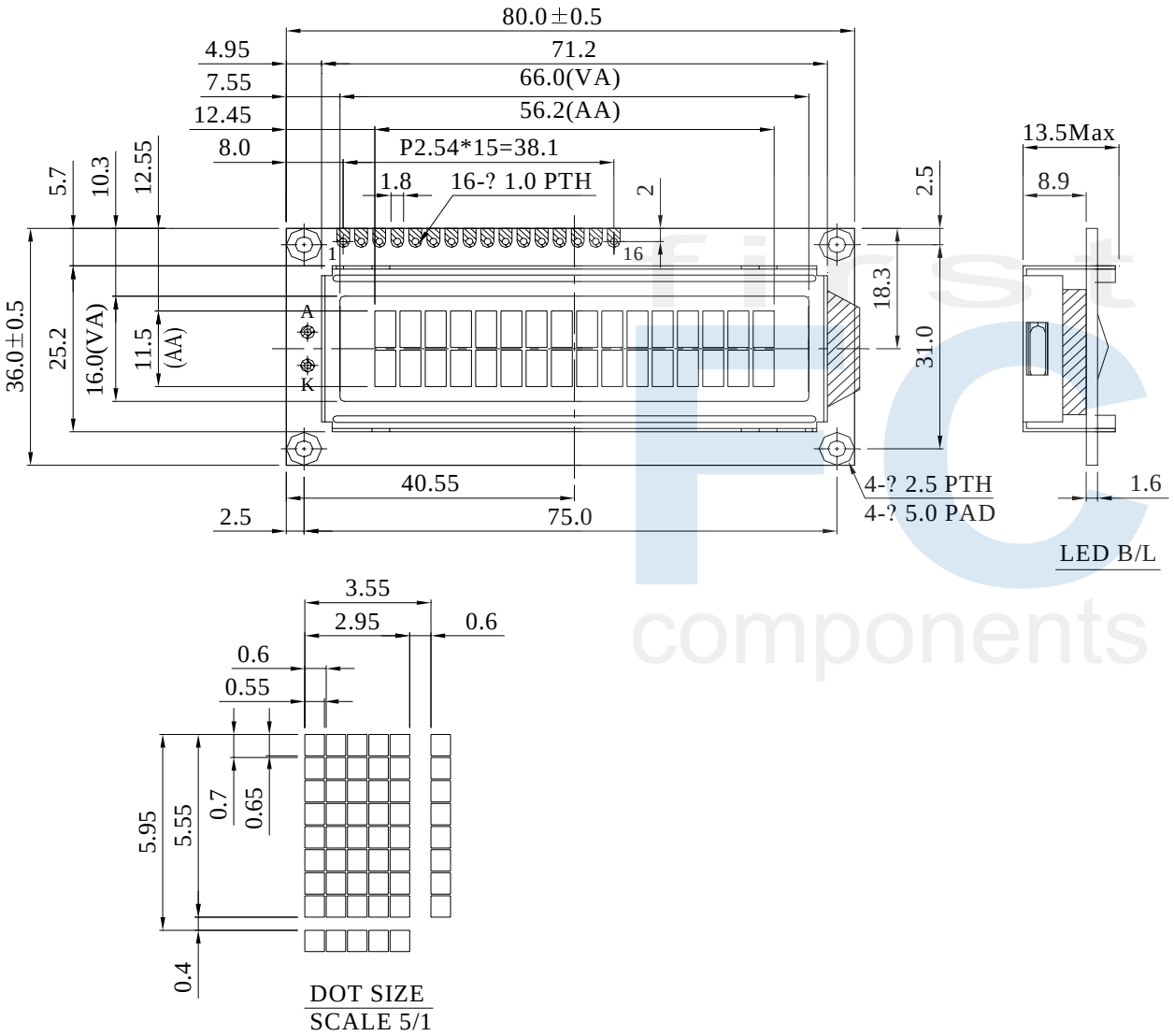
| Item | Dimension | Unit |
|---|---|---|
| Number of Characters | 16 characters x 2 Lines | — |
| Module dimension | 80.0 x 36.0 x 13.5(MAX) | mm |
| View area | 66.0 x 16.0 | mm |
| Active area | 56.20 x 11.5 | mm |
| Dot size | 0.55 x 0.65 | mm |
| Dot pitch | 0.60 x 0.70 | mm |
| Character size | 2.95 x 5.55 | mm |
| Character pitch | 3.55 x 5.95 | mm |
| LCD type | STN Negative, Blue Transmissive<br>(In LCD production, It will occur slightly color difference. We can only guarantee the same color in the same batch.) | |
| Duty | 1/16 | |
| View direction | 6 o'clock | |
| Backlight Type | LED white | |

# 7.Interface Pin Function

| Pin No. | Symbol | Level | Description |
|---|---|---|---|
| 1 | $V_{SS}$ | 0V | Ground |
| 2 | $V_{DD}$ | 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(MPU→Module) L: Write(MPU→Module) |
| 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 | K | — | LED— |
| 16 | A | — | LED+ |

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# 8.Contour Drawing &Block Diagram




| PIN NO. | SYMBOL |
|---|---|
| 1 | Vss |
| 2 | Vdd |
| 3 | Vo |
| 4 | RS |
| 5 | R/$\overline{W}$ |
| 6 | E |
| 7 | DB0 |
| 8 | DB1 |
| 9 | DB2 |
| 10 | DB3 |
| 11 | DB4 |
| 12 | DB5 |
| 13 | DB6 |
| 14 | DB7 |
| 15 | K |
| 16 | A |

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