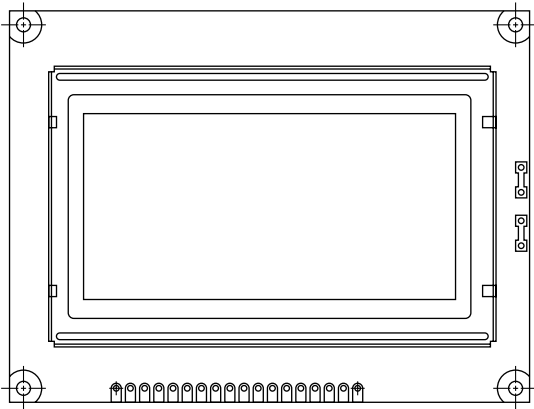


## 128 x 64 Graphic LCD



### FEATURES

- Type: Graphic/character
- Display format: 128 x 64 dots
- Built-in controller: ST7920
- Duty cycle: 1/32
- Character mode: Display BIG5 or GB chinese font (16 x 16 dots) and ASCII code (8 x 16 dots)
- + 5 V power supply
- LED can be driven by A and K
- N.V. option
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

| MECHANICAL DATA  |   |      |
|------------------|---|------|
| ITEM             | STANDARD VALUE                                | UNIT |
| Module Dimension | 93.0 x 70.0                                   | mm   |
| Viewing Area     | 72.0 x 40.0                                   |      |
| Dot Size         | 0.48 x 0.48                                   |      |
| Dot Pitch        | 0.52 x 0.52                                   |      |
| Mounting Hole    | 88.0 x 65.0                                   |      |
| Character Size   | 7.68 x 7.68 (BIG5/GB)/<br>3.84 x 7.68 (ASCII) |      |

| ABSOLUTE MAXIMUM RATINGS |                      |                |      |          |      |
|--------------------------|----------------------|----------------|------|----------|------|
| ITEM                     | SYMBOL               | STANDARD VALUE |      |          | UNIT |
|                          |                      | MIN.           | TYP. | MAX.     |      |
| Power Supply             | $V_{DD}$ to $V_{SS}$ | 4.75           | 5.0  | 5.25     | V    |
| Input Voltage            | $V_I$                | - 0.3          | -    | $V_{DD}$ |      |

**Note**

- $V_{SS} = 0$  V,  $V_{DD} = 5.0$  V

| ELECTRICAL CHARACTERISTICS   |                   |   |                |      |              |      |
|--|-------------------|---|----------------|------|--------------|------|
| ITEM   | SYMBOL            | CONDITION                               | STANDARD VALUE |      |              | UNIT |
|  |                   |   | MIN.           | TYP. | MAX.         |      |
| Input Voltage  | $V_{DD}$          | L level                                 | $0.7 V_{DD}$   | -    | $V_{DD}$     | V    |
|  | $V_{IO}$          | H level                                 | 0              | -    | $0.3 V_{DD}$ | V    |
| Supply Current   | $I_{DD}$          | $V_{DD} = +5$ V                         | -              | 3.6  | 3.9          | mA   |
| Recommended LC Driving Voltage for Normal Temperature Version Module | $V_{DD}$ to $V_0$ | - 20 °C                                 | 7.1            | 7.6  | 8.1          | V    |
|  |                   | 0 °C                                    | -              | -    | -            |      |
|  |                   | 25 °C                                   | 6.1            | 6.6  | 7.1          |      |
|  |                   | 50 °C                                   | -              | -    | -            |      |
|  |                   | 70 °C                                   | 5.0            | 5.5  | 6.0          |      |
| LED Forward Voltage  | $V_F$             | 25 °C                                   | -              | 4.2  | 4.6          | V    |
| LED Forward Current  | $I_F$             | 25 °C                                   | -              | 330  | 660          | mA   |
| EL Power Supply Current  | $I_{EL}$          | $V_{EL} = 110$ V <sub>AC</sub> , 400 Hz | -              | -    | 5.0          | mA   |

| OPTIONS       |          |            |          |          |           |           |     |    |      |
|---------------|----------|------------|----------|----------|-----------|-----------|-----|----|------|
| PROCESS COLOR |          |            |          |          |           | BACKLIGHT |     |    |      |
| TN            | STN Gray | STN Yellow | STN Blue | FSTN B&W | STN Color | None      | LED | EL | CCFL |
|               | x        | x          | x        | x        |           | x         | x   | x  |      |

For detailed information, please see the "Product Numbering System" document.

## DISPLAY CHARACTER ADDRESS CODE

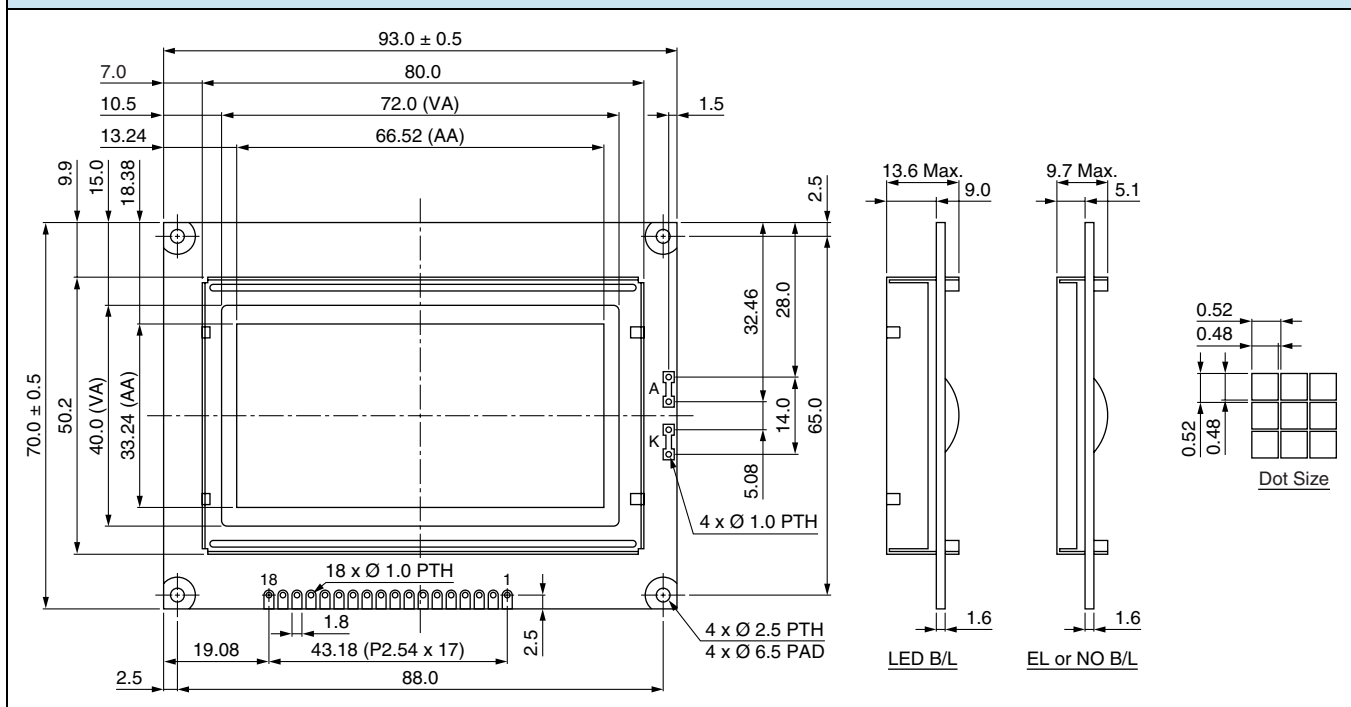
Display Position

|                |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |
|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
|                | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
| DD RAM Address | 80 | 81 | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 8A | 8B | 8C | 8D | 8E | 8F |
| DD RAM Address | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 9A | 9B | 9C | 9D | 9E | 9F |
| DD RAM Address | A0 | A1 | A2 | A3 | A4 | A5 | A6 | A7 | A8 | A9 | AA | AB | AC | AD | AE | AF |
| DD RAM Address | B0 | B1 | B2 | B3 | B4 | B5 | B6 | B7 | B8 | B9 | BA | BB | BC | BD | BE | BF |

## INTERFACE PIN FUNCTION

| PIN NO. | SYMBOL           | FUNCTION                       |
|---------|------------------|--------------------------------|
| 1       | V <sub>SS</sub>  | Ground                         |
| 2       | V <sub>DD</sub>  | Power supply (+ 5 V)           |
| 3       | V <sub>0</sub>   | Positive voltage input for LCD |
| 4       | RS               | Register select signal         |
| 5       | R/W              | Data read/write                |
| 6       | E                | H → L enable signal            |
| 7       | DB0              | Data bus line                  |
| 8       | DB1              | Data bus line                  |
| 9       | DB2              | Data bus line                  |
| 10      | DB3              | Data bus line                  |
| 11      | DB4              | Data bus line                  |
| 12      | DB5              | Data bus line                  |
| 13      | DB6              | Data bus line                  |
| 14      | DB7              | Data bus line                  |
| 15      | A                | Power supply for B/L           |
| 16      | K                | Power supply for B/L           |
| 17      | RST              | Reset LCD module               |
| 18      | V <sub>OUT</sub> | Positive voltage output        |

## DIMENSIONS in millimeters





## Disclaimer

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