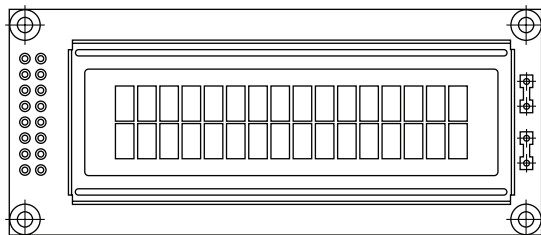


## 16 x 2 Character LCD



### FEATURES

- Type: Character
- Display format: 16 x 2 characters
- Built-in controller: KS 0066 (or equivalent)
- Duty cycle: 1/16
- 5 x 8 dots includes cursor
- + 5 V power supply
- LED can be driven by pin 1, pin 2, pin 15, pin 16 or A and K
- N.V. optional for + 3 V power supply
- Optional: Smaller character size (2.95 mm x 4.35 mm)
- Compliant to RoHS directive 2002/95/EC


**RoHS**  
COMPLIANT

### MECHANICAL DATA

| ITEM             | STANDARD VALUE | UNIT |
|------------------|----------------|------|
| Module Dimension | 85.0 x 36.0    | mm   |
| Viewing Area     | 66.0 x 16.0    |      |
| Dot Size         | 0.55 x 0.65    |      |
| Dot Pitch        | 0.60 x 0.70    |      |
| Mounting Hole    | 80.0 x 31.0    |      |
| Character Size   | 2.96 x 5.56    |      |

### ABSOLUTE MAXIMUM RATINGS

| ITEM          | SYMBOL               | STANDARD VALUE |      |          | UNIT |
|---------------|----------------------|----------------|------|----------|------|
|               |                      | MIN.           | TYP. | MAX.     |      |
| Power Supply  | $V_{DD}$ to $V_{SS}$ | - 0.3          | -    | 7.0      | 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  | $V_{DD}$          | $V_{DD} = + 5$ V                        | 4.7            | 5.0  | 5.3  | V    |
| Supply Current   | $I_{DD}$          | $V_{DD} = + 5$ V                        | -              | 1.2  | 1.5  | mA   |
| Recommended LC Driving Voltage for Normal Temperature Version Module | $V_{DD}$ to $V_0$ | - 20 °C                                 | -              | -    | 5.2  | V    |
|  |                   | 0 °C                                    | -              | -    | 4.2  |      |
|  |                   | 25 °C                                   | -              | 3.8  | -    |      |
|  |                   | 50 °C                                   | 3.5            | -    | -    |      |
|  |                   | 70 °C                                   | 3.2            | -    | -    |      |
| LED Forward Voltage  | $V_F$             | 25 °C                                   | -              | 4.2  | 4.6  | V    |
| LED Forward Current - Array  | $I_F$             | 25 °C                                   | -              | 100  | -    | mA   |
| LED Forward Current - Edge   |                   |   | -              | 20   | 40   |      |
| 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

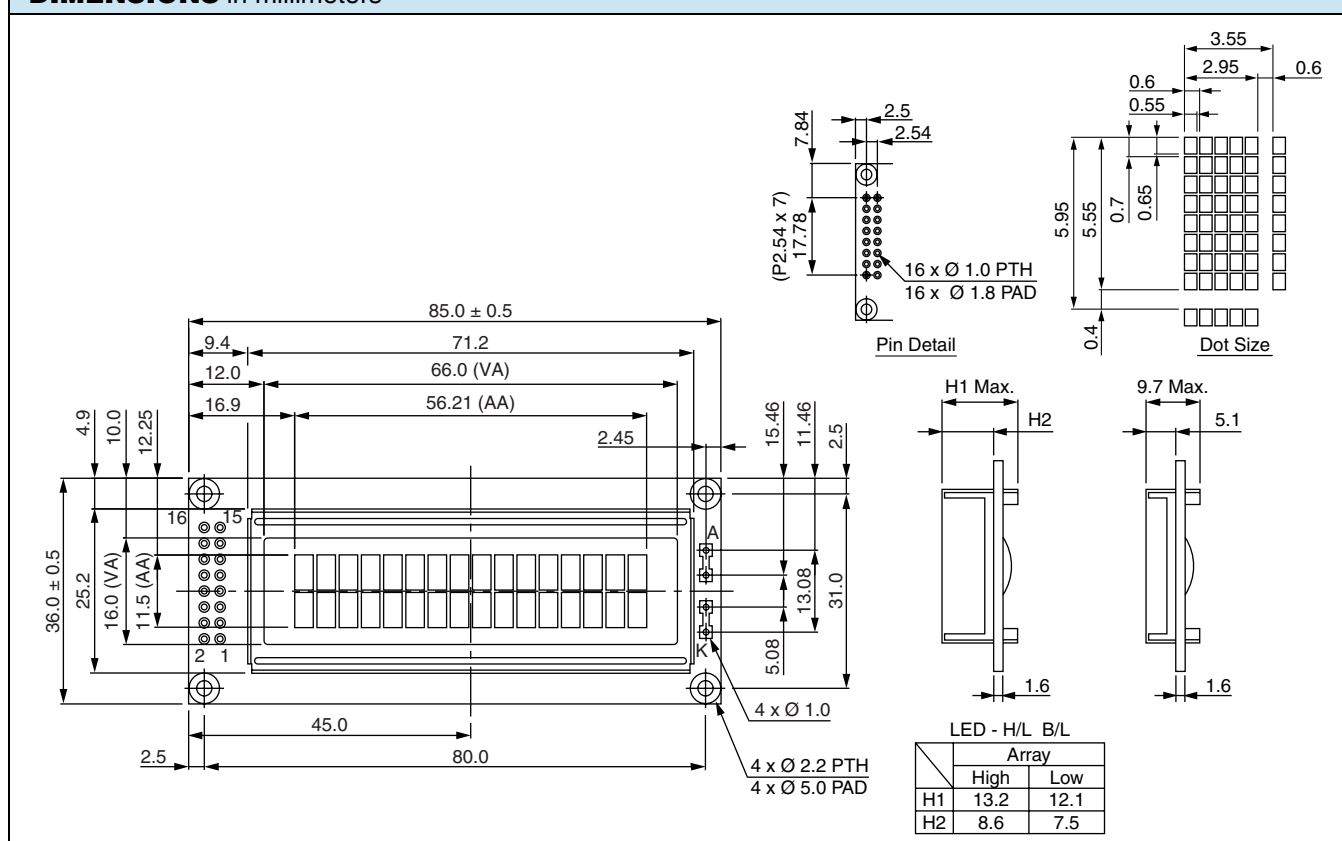
Display Position

|                | 1  | 2  | 3  | 4  | 5  | 6  | 7  | 8  | 9  | 10 | 11 | 12 | 13 | 14 | 15 | 16 |
|----------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| DD RAM Address | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 0A | 0B | 0C | 0D | 0E | 0F |
| DD RAM Address | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 4A | 4B | 4C | 4D | 4E | 4F |

## INTERFACE PIN FUNCTION

| PIN NO. | SYMBOL           | FUNCTION   |
|---------|------------------|--|
| 1       | $V_{SS}$         | Ground   |
| 2       | $V_{DD}$         | + 3 V or + 5 V   |
| 3       | $V_0$            | Contrast adjustment  |
| 4       | RS               | H/L register select signal                                   |
| 5       | $R/\overline{W}$ | H/L read/write signal  |
| 6       | E                | H → L 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      | $A/V_{EE}$       | + 4.2 V for LED ( $R_A = 0 \Omega$ )/negative voltage output |
| 16      | K                | Power supply for B/L (0 V)                                   |

## DIMENSIONS in millimeters





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