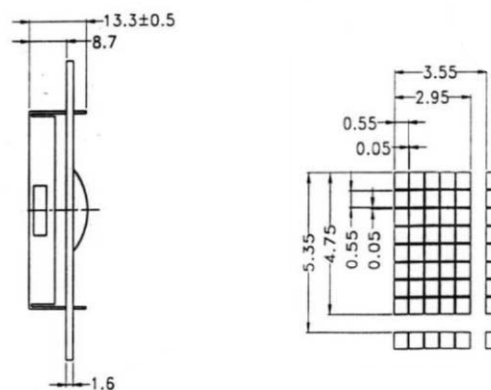
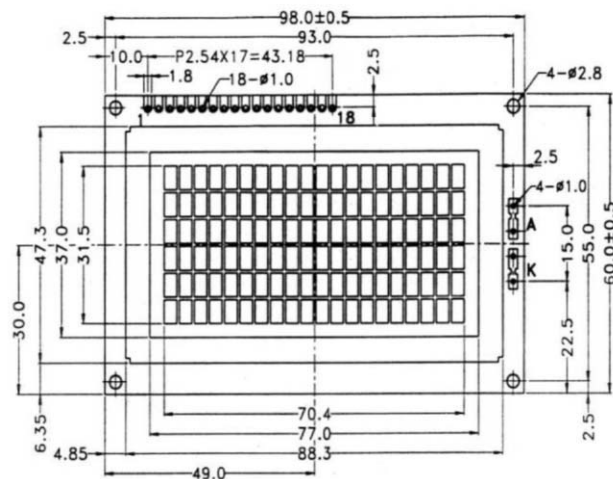




Dimensions [mm]

Dot Size

### MECHANICAL DATA

| Parameter              | Width x Height x Depth | Unit |
|------------------------|------------------------|------|
| Outline Dimensions     | 98 x 60 x 13.3         | mm   |
| Effective viewing area | 77 x 37                | mm   |
| Dot Size               | 0.55 x 0.55            | mm   |
| Dot Pitch              | 0.60 x 0.60            | mm   |
| Character Matrix       | 5 x 7                  | dots |
| Character Size         | 2.95 x 4.15            | mm   |
| Character Pitch        | 3.55 x 5.35            | mm   |
| Weight                 | Approximate 70         | g    |

### ABSOLUTE MAXIMUM RATINGS

| Parameter              | Symbol   | Min. | Max.           | Unit |
|------------------------|----------|------|----------------|------|
| Supply Voltage (Logic) | $V_{DD}$ | -0.3 | 7.0            | V    |
| Input Voltage Range    | $V_i$    | -0.3 | $V_{DD} + 0.3$ | V    |
| Operating Temperature  | $T_{OP}$ | -20  | 70             | °C   |
| Storage Temperature    | $T_{ST}$ | -30  | 80             | °C   |

### ELECTRICAL CHARACTERISTICS

| Condition: $T_a = 25^\circ\text{C}$ , $V_{DD} = 2.7 \sim 5.5\text{ V}$ , $V_{SS} = 0\text{ V}$ |           |              |     |              |      |
|------------------------------------------------------------------------------------------------|-----------|--------------|-----|--------------|------|
| Parameter                                                                                      | Symbol    | Min.         | Typ | Max.         | Unit |
| Input Voltage HIGH                                                                             | $V_{INH}$ | $0.7 V_{DD}$ | --- | $V_{DD}$     | V    |
| Input Voltage LOW                                                                              | $V_{INL}$ | -0.3         | --- | $0.2 V_{DD}$ | V    |
| Supply Voltage (Logic)                                                                         | $V_{DD}$  | 2.7          | --- | 5.5          | mA   |
| Supply Current                                                                                 | $I_{DD}$  | ---          | 1.1 | ---          | mA   |

### LED BACKLIGHT (STANDARD COLOR GREEN)

| Parameter      | Symbol | Min. | Typ | Max. | Unit |
|----------------|--------|------|-----|------|------|
| Supply Voltage | $V_F$  | ---  | 4.2 | 4.6  | V    |
| Supply Current | $I_F$  | ---  | 420 | 1000 | mA   |
| Lamp Style     | ---    | ---  | 04  | ---  | ---  |
| LED Segments   | ---    | ---  | 42  | ---  | pcs  |

### PIN TABLE

| Pin     | Symbol                             | Signal Description                                                                                                            |
|---------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------|
| 1       | $V_{SS}$                           | GND (0 V)                                                                                                                     |
| 2       | $V_{DD}$                           | Power Supply (5 V)                                                                                                            |
| 3       | $V_0$                              | Operating Voltage (LCD Driver)                                                                                                |
| 4       | RS                                 | Register Select - LOW = Instruction, High = Data                                                                              |
| 5       | R / $\bar{W}$                      | Read / Write<br>LOW = MPU to LCM, HIGH = LCM to MPU                                                                           |
| 6       | E1                                 | Enable 1<br>R / $\bar{W}$ = LOW: Data are taking over at falling edge of E<br>R / $\bar{W}$ = HIGH: Data can be read at E = 1 |
| 7 to 14 | DB <sub>0</sub> to DB <sub>7</sub> | Data Bus - Software selectable 4 or 8 Bit Mode                                                                                |
| 15      | E2                                 | Enable 2                                                                                                                      |
| 16      | $V_{EE}$                           | not connected                                                                                                                 |
| 17      | + $V_{LED}$                        | Anode of LED Unit                                                                                                             |
| 18      | - $V_{LED}$                        | Cathode of LED Unit                                                                                                           |

### ADDITIONAL INFORMATION

- ◆ Display Connector Type - without LED: 1 x 14
- ◆ Display Connector Type - with LED: See Drawing
- ◆ Controller Type - KS 0073 (2) or compatible

### BLOCK DIAGRAM

