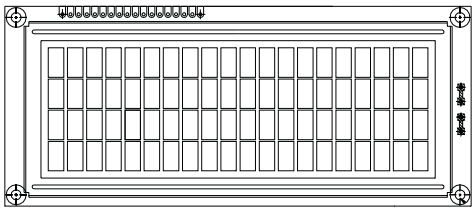
# 20 x 4 Character LCD



## FEATURES

- 5 x 8 dots with cursor
- Built-in controller (KS 0066 or Equivalent)
- + 5V power supply (Also available for + 3V)
- 1/16 duty cycle
- B/L to be driven by pin 1, pin 2 or pin 15, pin 16 or A and K (LED)
- N.V. optional for + 3V power supply

## MECHANICAL DATA

| ITEM | STANDARD VALUE | UNIT |
|---|---|---|
| Module Dimension | 146 x 62.5 | mm |
| Viewing Area | 123.5 x 43.0 | mm |
| Dot Size | 0.92 x 1.10 | mm |
| Character Size | 4.84 x 9.22 | mm |

## ABSOLUTE MAXIMUM RATING

| ITEM | SYMBOL | STANDARD VALUE | | | UNIT |
|---|---|---|---|---|---|
| | | MIN. | TYP. | MAX. | |
| Power Supply | VDD-VSS | - 0.3 | – | 7.0 | V |
| Input Voltage | VI | - 0.3 | – | VDD | V |

**NOTE:** VSS = 0 Volt, VDD = 5.0 Volt

## ELECTRICAL SPECIFICATIONS

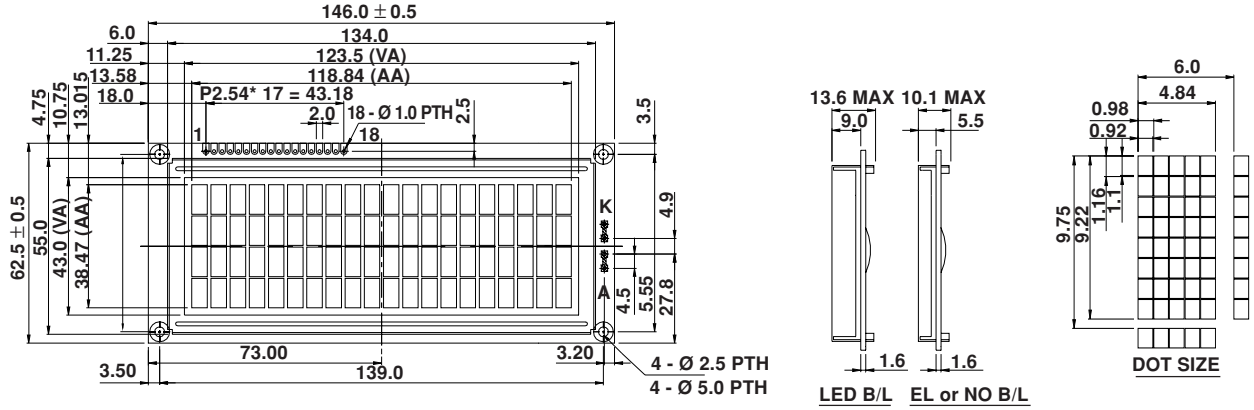
| ITEM | SYMBOL | CONDITION | STANDARD VALUE | | | UNIT |
|---|---|---|---|---|---|---|
| | | | MIN. | TYP. | MAX. | |
| Input Voltage | VDD | VDD = + 5V | 4.7 | 5.0 | 5.3 | V |
| | | VDD = + 3V | 2.7 | 3.0 | 5.3 | V |
| Supply Current | IDD | VDD = + 5V | – | 8.0 | 10.0 | mA |
| Recommended LC Driving Voltage for Normal Temp. Version Module | VDD - V0 | - 20°C | 5.0 | 5.1 | 5.7 | V |
| | | 0°C | 4.6 | 4.8 | 5.2 | |
| | | 25°C | 4.1 | 4.5 | 4.7 | |
| | | 50°C | 3.9 | 4.2 | 4.5 | |
| | | 70°C | 3.7 | 3.9 | 4.3 | |
| LED Forward Voltage | VF | 25°C | – | 4.2 | 4.6 | V |
| LED Forward Current | IF | 25°C | – | 540 | 1080 | mA |
| EL Power Supply Current | IEL | Vel = 110VAC:400Hz | – | – | 5.0 | mA |

## DISPLAY CHARACTER ADDRESS CODE:

| Display Position | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | – | – | 20 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DD RAM Address | 00 | 01 | | | | | | | | | | | | | | 13 |
| DD RAM Address | 40 | 41 | | | | | | | | | | | | | | 53 |
| DD RAM Address | 14 | 15 | | | | | | | | | | | | | | 27 |
| DD RAM Address | 54 | 55 | | | | | | | | | | | | | | 67 |

| PIN NUMBER | SYMBOL | FUNCTION |
|---|---|---|
| 1 | Vss | GND |
| 2 | Vdd | + 3V or + 5V |
| 3 | Vo | 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 | Power Supply for LED 4.2V |
| 16 | K | Power Supply for B/L (0V) |
| 17 | NC/Vee | NC or Negative Voltage Output |
| 18 | NC | No Connection |

## **DIMENSIONS** in millimeters



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