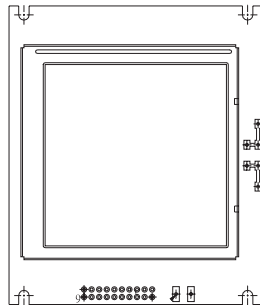


# 160 x 160 Dots Graphic LCD



## FEATURES

- Built-in controller (LC7981)
- 1/160 duty cycle
- N.V. optional
- + 5V power supply

| MECHANICAL DATA  |                |      |
|------------------|----------------|------|
| ITEM             | STANDARD VALUE | UNIT |
| Module Dimension | 85.0 x 100.0   | mm   |
| Viewing Area     | 62.0 x 62.0    | mm   |
| Dot Size         | 0.34 x 0.34    | mm   |
| Dot Pitch        | 0.38 x 0.38    | mm   |

| ABSOLUTE MAXIMUM RATING |         |                |      |      |      |
|-------------------------|---------|----------------|------|------|------|
| ITEM                    | SYMBOL  | STANDARD VALUE |      |      | UNIT |
|                         |         | MIN.           | TYP. | MAX. |      |
| Power Supply            | VDD-VSS | 4.75           | 5.0  | 5.25 | 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      | L level             | $0.7V_{DD}$    | —    | $V_{DD}$    | V    |
|                           | VIO      | H level             | —              | —    | $0.3V_{DD}$ | V    |
| Supply Current            | IDD      | VDD = 5V            | —              | 7.3  | 8.4         | mA   |
| Recommended LC Driving    | VDD - V0 | - 20°C              | 16.5           | 18.0 | 19.5        | V    |
| Voltage for Normal Temp.  |          | 25°C                | 15.5           | 17.0 | 18.5        |      |
| Version Module            |          | 60°C                | 14.5           | 16.0 | 17.5        |      |
| LED Forward Voltage       | VF       | 25°C                | —              | 4.2  | 4.6         | V    |
| LED Forward Current       | IF       | 25°C                | —              | 500  | 1000        | mA   |
| EL                        | IEL      | Vel = 110VAC; 400Hz | —              | —    | 5.0         | mA   |

| PIN NUMBER | SYMBOL | FUNCTION                   |
|------------|--------|----------------------------|
| 1          | FGND   | Frame Ground               |
| 2          | Vss    | Power Supply (GND)         |
| 3          | Vdd    | Power Supply (+ 5V)        |
| 4          | Vo     | Contrast Adjustment        |
| 5          | R/W    | Data Read/Write            |
| 6          | E      | Enable Signal              |
| 7          | CS     | Chip Select                |
| 8          | RS     | Data Instruction Select    |
| 9          | NC     | No Connection              |
| 10         | RST    | Reset Signal               |
| 11         | DB0    | H/L Data Bus Line          |
| 12         | DB1    | H/L Data Bus Line          |
| 13         | DB2    | H/L Data Bus Line          |
| 14         | DB3    | H/L Data Bus Line          |
| 15         | DB4    | H/L Data Bus Line          |
| 16         | DB5    | H/L Data Bus Line          |
| 17         | DB6    | H/L Data Bus Line          |
| 18         | DB7    | H/L Data Bus Line          |
| 19         | NC     | No Connection              |
| 20         | NC/Vee | NC/Negative Voltage Output |

**DIMENSIONS** in millimeters

