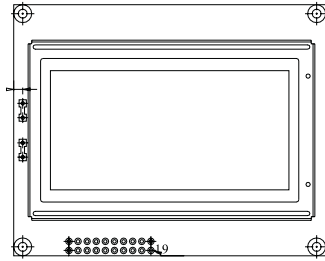


# 128 x 64 Dots Graphic LCD



## FEATURES

- Built-in controller (T6963C)
- + 5V power supply
- 1/64 duty cycle
- Built-in N.V

| MECHANICAL DATA  |                |      |
|------------------|----------------|------|
| ITEM             | STANDARD VALUE | UNIT |
| Module Dimension | 87.0 x 70.0    | mm   |
| Viewing Area     | 72.0 x 40.0    | mm   |
| Dot Size         | 0.48 x 0.48    | mm   |
| Dot Pitch        | 0.52 x 0.52    | mm   |

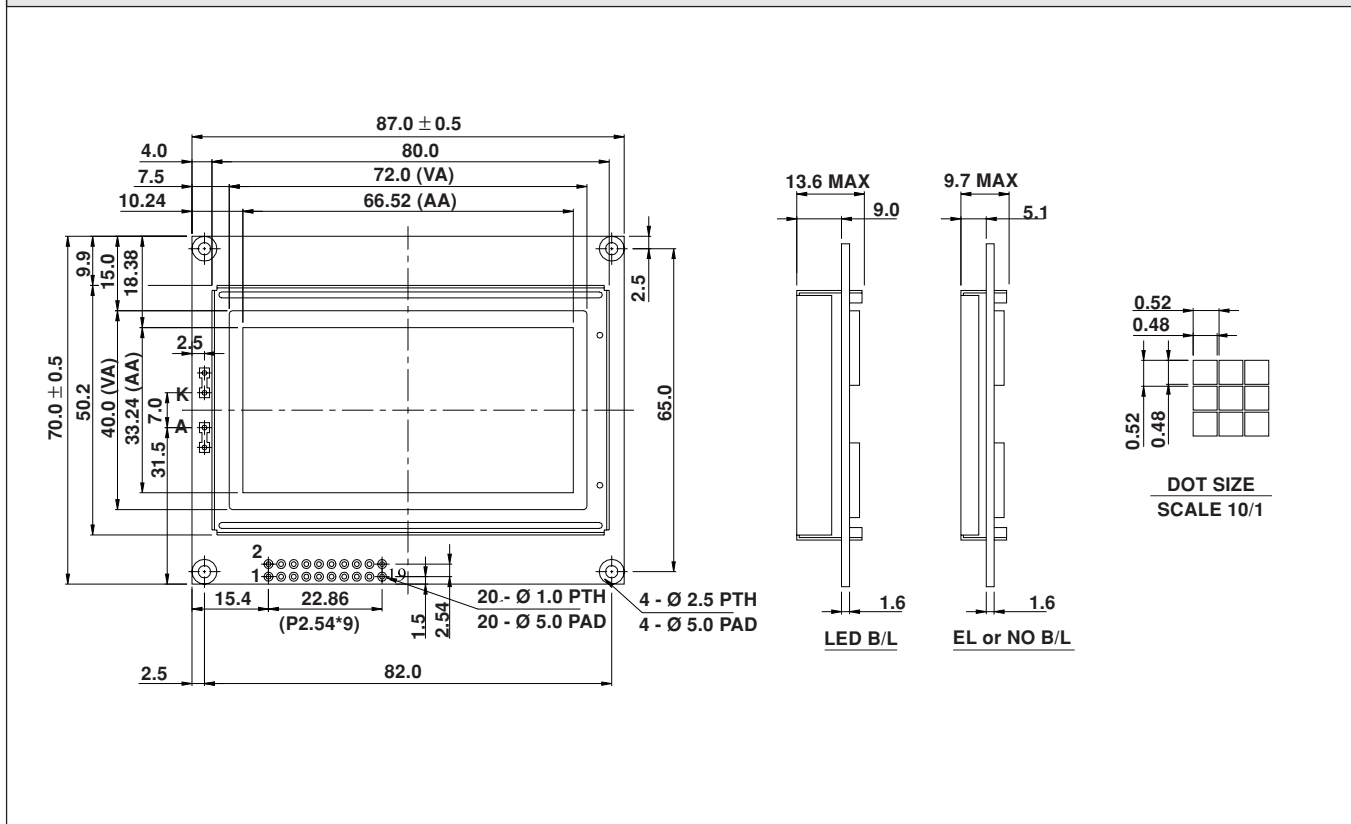
| ABSOLUTE MAXIMUM RATING |         |                |      |      |      |
|-------------------------|---------|----------------|------|------|------|
| ITEM                    | SYMBOL  | STANDARD VALUE |      |      | UNIT |
|                         |         | MIN.           | TYP. | MAX. |      |
| Power Supply            | VDD-VSS | 4.5            | 5.0  | 5.5  | 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              | -    | $0.3V_{DD}$ | V    |
| Supply Current   | IDD    | VDD = 5V            | -              | 9.7  | -           | mA   |
| Recommended LC Driving Voltage for Normal Temp. Version Module | VDD-V0 | 0°C                 | 9.4            | 9.9  | 10.4        | V    |
|  |        | 25°C                | 9.4            | 9.6  | 10.4        |      |
|  |        | 50°C                | 8.7            | 9.2  | 9.7         |      |
| LED Forward Voltage  | VF     | 25°C                | -              | 4.2  | -           | V    |
| LED Forward Current  | IF     | 25°C Array High     | -              | 480  | -           | mA   |
| EL Power Supply Current  | IEL    | Vel = 110VAC; 400Hz | -              | -    | 5.0         | mA   |

| PIN NUMBER | SYMBOL           | FUNCTION                        |
|------------|------------------|---------------------------------|
| 1          | Vss              | Power Supply (0V)               |
| 2          | Vdd              | Power Supply (+ 5V)             |
| 3          | Vo               | Power Supply for LCD Driver     |
| 4          | C/D              | Command/Data Read/Write         |
| 5          | $\overline{RD}$  | Data Read                       |
| 6          | $\overline{WR}$  | Data Write                      |
| 7          | DB0              | Data Bus Line                   |
| 8          | DB1              | Data Bus Line                   |
| 9          | DB2              | Controller Reset                |
| 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         | $\overline{CE}$  | Chip Enable                     |
| 16         | $\overline{RST}$ | Controller Reset                |
| 17         | Vee              | Negative Voltage                |
| 18         | Md2              | Power Supply for LED B/L (0V)   |
| 19         | FSI              | Font Select                     |
| 20         | HLT              | Power Supply for LED B/L (+ 5V) |

## DIMENSIONS in millimeters





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