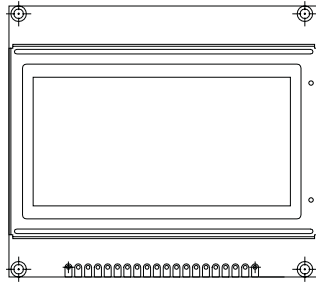


# 128 x 64 Dots Graphic LCD



## FEATURES

- Built-in controller (KS0108 - KS0108 or Equivalent)
- + 5V power supply
- 1/64 duty cycle
- N.U. option

## MECHANICAL DATA

| ITEM             | STANDARD VALUE | UNIT |
|------------------|----------------|------|
| Module Dimension | 80.0 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 | 4.75           | 5.0  | 5.25 | V    |
| Input Voltage | VI      | - 0.3          | —    | VDD  | V    |

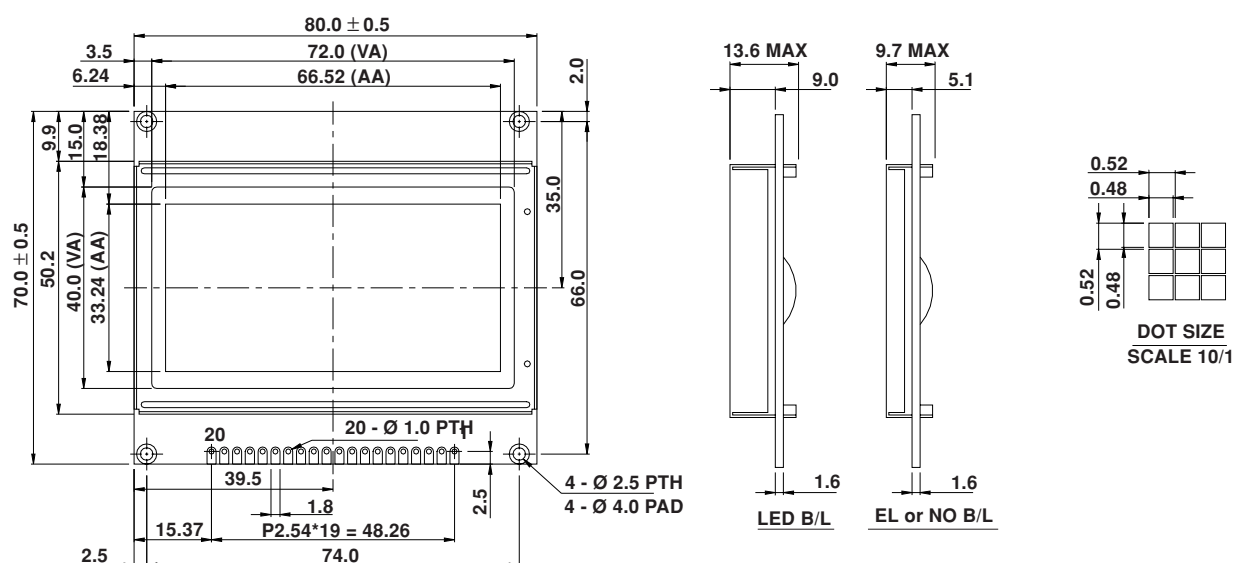
**NOTE:** VSS = 0 Volt, VDD = 5.0 Volt

## ELECTRICAL SPECIFICATIONS

| ITEM                                            | SYMBOL | CONDITION         | STANDARD VALUE     |      |                    | UNIT |
|-------------------------------------------------|--------|-------------------|--------------------|------|--------------------|------|
|                                                 |        |                   | MIN.               | TYP. | MAX.               |      |
| Input Voltage                                   | VDD    | L level           | 0.7V <sub>DD</sub> | —    | V <sub>DD</sub>    | V    |
|                                                 | VIO    | H level           | 0                  | —    | 0.3V <sub>DD</sub> | V    |
| Supply Current                                  | IDD    | VDD = 5V          | —                  | 3.6  | 3.9                | mA   |
| Recommended LC Driving Voltage for Normal Temp. | VDD-V0 | 0°C               | 9.7                | 10.2 | 10.7               | V    |
| Version Module                                  |        | 25°C              | 8.9                | 9.4  | 9.9                |      |
|                                                 |        | 50°C              | 8.6                | 9.1  | 9.6                |      |
| LED Forward Voltage                             | VF     | 25°C              | —                  | 4.2  | 4.6                | V    |
| LED Forward Current                             | IF     | 25°C              | —                  | 300  | 660                | mA   |
| EL Power Supply Current                         | IEL    | Vel =110VAC;400Hz | —                  | —    | 5.0                | mA   |

| PIN NUMBER | SYMBOL | FUNCTION                    |
|------------|--------|-----------------------------|
| 1          | Vss    | GND                         |
| 2          | Vdd    | Power Supply (+ 5V)         |
| 3          | Vo     | Contrast Adjustment         |
| 4          | D/L    | Data/Instruction            |
| 5          | R/W    | Data Read/Write             |
| 6          | E      | H → L Enable Signal         |
| 7          | DB0    | Data Bus Line               |
| 8          | DB1    | Data Bus Line               |
| 9          | DB2    | Data Bus Line               |
| 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         | CS1    | Chip Select for IC1         |
| 16         | CS2    | Chip Select for IC2         |
| 17         | RST    | Reset                       |
| 18         | Vee    | Negative Voltage Output     |
| 19         | A      | Power Supply for LED (4.2V) |
| 20         | K      | Power Supply for LED (0V)   |

## DIMENSIONS in millimeters





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