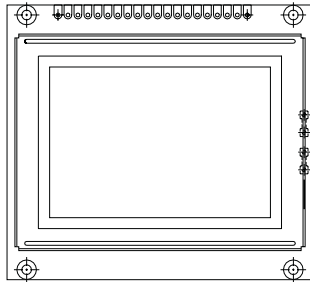


# 128 x 64 Dots Graphic LCD



## FEATURES

- Built-in controller (KS0107 - KS0108 re Equivalent)
- + 5V power supply
- 1/64 duty cycle
- N.V. Built-in

| MECHANICAL DATA  |                    |      |
|------------------|--------------------|------|
| ITEM             | STANDARD VALUE     | UNIT |
| Module Dimension | 78.0 x 70.0 x 12.1 | mm   |
| Viewing Area     | 62.0 x 44.0        | mm   |
| Dot Size         | 0.42 x 0.58        | mm   |
| Dot Pitch        | 0.44 x 0.60        | mm   |

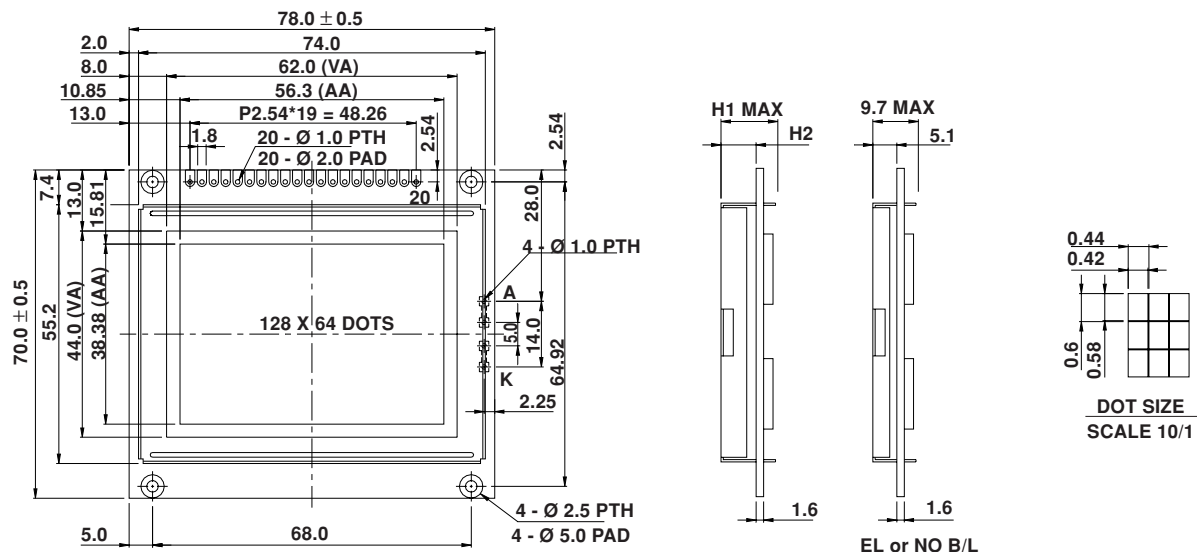
| ABSOLUTE MAXIMUM RATING |         |                |      |      |      |
|-------------------------|---------|----------------|------|------|------|
| ITEM                    | SYMBOL  | STANDARD VALUE |      |      | UNIT |
|                         |         | MIN.           | TYP. | MAX. |      |
| 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            | –              | 3.5  | –           | 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                | 9.4            | 9.2  | 9.7         |      |    |
| LED Forward Voltage  | VF     | 25°C                | –              | 4.2  | 4.6         | V    |    |
| LED Forward Current  | IF     | 25°C Array          | High           | –    | 480         | 960  | mA |
|  |        | 25°C Array          | Low            | –    | 140         | 280  | mA |
| EL Power Supply Current  | IEL    | Vel = 110VAC; 400Hz | –              | –    | 5.0         | mA   |    |

| PIN NUMBER | SYMBOL                  | FUNCTION                           |
|------------|-------------------------|------------------------------------|
| 1          | $\overline{\text{CS1}}$ | Chip Select for IC1                |
| 2          | $\overline{\text{CS2}}$ | Chip Select for IC2                |
| 3          | Vss                     | GND                                |
| 4          | Vdd                     | Power Supply (+ 5V)                |
| 5          | Vo                      | Contrast Adjustment                |
| 6          | D/I                     | Data/Instruction                   |
| 7          | R/W                     | Data Read/Write                    |
| 8          | E                       | H →L Enable Signal                 |
| 9          | DB0                     | Data Bus Line                      |
| 10         | DB1                     | Data Bus Line                      |
| 11         | DB2                     | Data Bus Line                      |
| 12         | DB3                     | Data Bus Line                      |
| 13         | DB4                     | Data Bus Line                      |
| 14         | DB5                     | Data Bus Line                      |
| 15         | DB6                     | Data Bus Line                      |
| 16         | DB7                     | Data Bus Line                      |
| 17         | $\overline{\text{RST}}$ | Reset                              |
| 18         | Vee                     | Negative Voltage-5V Output         |
| 19         | A                       | Power Supply for LED Backlight (+) |
| 20         | K                       | Power Supply for LED Backlight (-) |

**DIMENSIONS** in millimeters



| LED-H/L B/L |      |      |
|-------------|------|------|
|             | HIGH | LOW  |
| H1          | 14.3 | 12.1 |
| H2          | 9.7  | 7.5  |



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