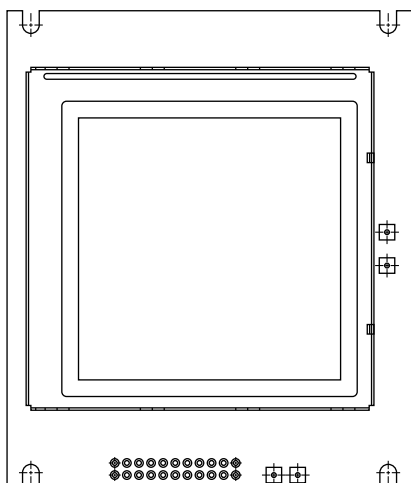


# 128 x 128 Graphic LCD



## FEATURES

- Type: Graphic
- Display format: 128 x 128 dots
- Built-in controller: RA6963
- Duty cycle: 1/128
- + 5 V power supply
- N.V. optional
- Material categorization: For definitions of compliance please see [www.vishay.com/doc?99912](http://www.vishay.com/doc?99912)


**RoHS**  
COMPLIANT

## MECHANICAL DATA

| ITEM             | STANDARD VALUE | UNIT |
|------------------|----------------|------|
| Module Dimension | 85.0 x 100.0   | mm   |
| Viewing Area     | 62.0 x 62.0    |      |
| Dot Size         | 0.40 x 0.40    |      |
| Dot Pitch        | 0.43 x 0.43    |      |
| Mounting Hole    | 75.0 x 94.0    |      |
| Character Size   | N/a            |      |

## ABSOLUTE MAXIMUM RATINGS

| ITEM          | SYMBOL               | STANDARD VALUE |      |          | UNIT |
|---------------|----------------------|----------------|------|----------|------|
|               |                      | MIN.           | TYP. | MAX.     |      |
| Power Supply  | $V_{DD}$ to $V_{SS}$ | 4.75           | 5.0  | 5.25     | V    |
| Input Voltage | $V_I$                | - 0.3          | -    | $V_{DD}$ |      |

### Note

- $V_{SS} = 0$  V,  $V_{DD} = 5.0$  V

## ELECTRICAL CHARACTERISTICS

| ITEM                                                                 | SYMBOL            | CONDITION                      | STANDARD VALUE |      |              | UNIT |
|----------------------------------------------------------------------|-------------------|--------------------------------|----------------|------|--------------|------|
|                                                                      |                   |                                | MIN.           | TYP. | MAX.         |      |
| Input Voltage                                                        | $V_{DD}$          | L level                        | $0.7 V_{DD}$   | -    | $V_{DD}$     | V    |
|                                                                      | $V_{IO}$          | H level                        | -              | -    | $0.3 V_{DD}$ | V    |
| Supply Current                                                       | $I_{DD}$          | $V_{DD} = + 5$ V               | -              | 1.5  | -            | mA   |
| Recommended LC Driving Voltage for Normal Temperature Version Module | $V_{DD}$ to $V_0$ | - 20 °C                        | -              | 18.0 | -            | V    |
|                                                                      |                   | 0 °C                           | -              | 17.5 | -            |      |
|                                                                      |                   | 25 °C                          | -              | 17.0 | -            |      |
|                                                                      |                   | 50 °C                          | -              | 16.0 | -            |      |
|                                                                      |                   | 70 °C                          | -              | 15.5 | -            |      |
| LED Forward Voltage                                                  | $V_F$             | 25 °C                          | -              | 4.2  | 4.6          | V    |
| LED Forward Current                                                  | $I_F$             | 25 °C                          | -              | 500  | -            | mA   |
| EL Power Supply Current                                              | $I_{EL}$          | $V_{EL} = 110 V_{AC}$ , 400 Hz | -              | -    | 5.0          | mA   |

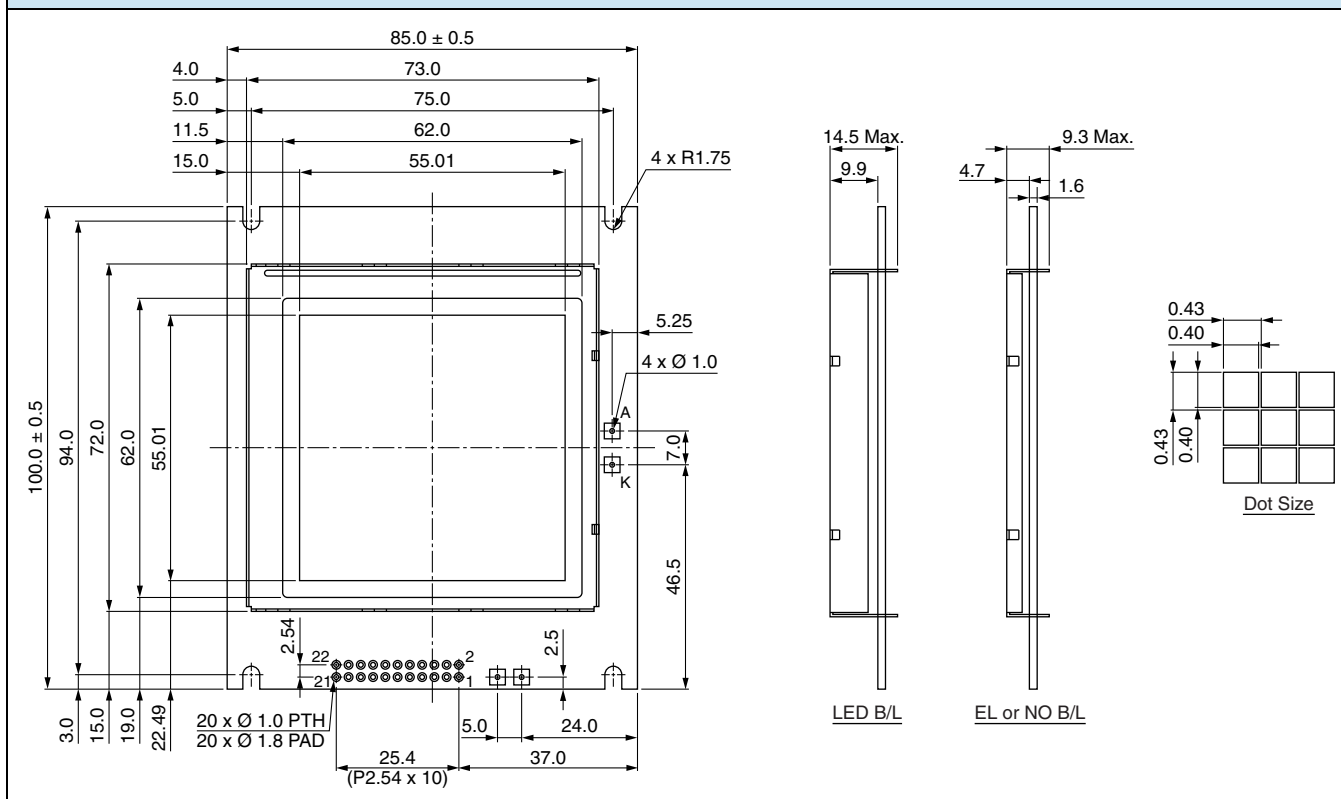
## OPTIONS

| PROCESS COLOR |          |            |          |          |           | BACKLIGHT |     |    |      |
|---------------|----------|------------|----------|----------|-----------|-----------|-----|----|------|
| TN            | STN Gray | STN Yellow | STN Blue | FSTN B&W | STN Color | None      | LED | EL | CCFL |
|               | x        | x          | x        | x        |           | x         | x   | x  |      |

For detailed information, please see the "Product Numbering System" document.

**INTERFACE PIN FUNCTION**

| PIN NO. | SYMBOL             | FUNCTION                           |
|---------|--------------------|------------------------------------|
| 1       | FGND               | Frame ground                       |
| 2       | GND                | Power supply (ground)              |
| 3       | V <sub>DD</sub>    | Power supply (+ 5 V)               |
| 4       | V <sub>0</sub>     | Contrast adjustment                |
| 5       | $\overline{WR}$    | Data write                         |
| 6       | $\overline{RD}$    | Data read                          |
| 7       | $\overline{CE}$    | Chip enable                        |
| 8       | C/ $\overline{D}$  | Command/data select                |
| 9       | NC                 | No connection                      |
| 10      | $\overline{RST}$   | Reset signal                       |
| 11      | DB0                | Data bus line                      |
| 12      | DB1                | Data bus line                      |
| 13      | DB2                | Data bus line                      |
| 14      | DB3                | Data bus line                      |
| 15      | DB4                | Data bus line                      |
| 16      | DB5                | Data bus line                      |
| 17      | DB6                | Data bus line                      |
| 18      | DB7                | Data bus line                      |
| 19      | FS                 | Font selection                     |
| 20      | NC/V <sub>EE</sub> | NC/negative voltage output         |
| 21      | A                  | Power supply for LED B/L (+ 4.2 V) |
| 22      | K                  | Power supply for LED B/L (0 V)     |

**DIMENSIONS** in millimeters




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