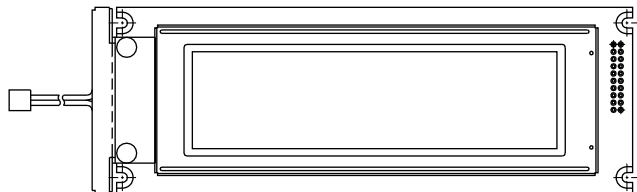


## 240 x 64 Graphic LCD



### FEATURES

- Type: Graphic
- Display format: 240 x 64 dots
- Built-in controller: RA6963
- Duty cycle: 1/64
- + 5 V power supply
- Built-in N.V.
- 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 | 180.0 x 65.0   | mm   |
| Viewing Area     | 133.0 x 39.0   |      |
| Dot Size         | 0.49 x 0.49    |      |
| Dot Pitch        | 0.53 x 0.53    |      |
| Mounting Hole    | 176.0 x 54.0   |      |
| 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              | -    | 0.3 $V_{DD}$ |           |
| Supply Current                                                       | $I_{DD}$          | $V_{DD} = + 5$ V                        | -              | 18.5 | 21.0         | mA        |
| Recommended LC Driving Voltage for Normal Temperature Version Module | $V_{DD}$ to $V_0$ | - 20 °C                                 | 13.0           | 13.5 | 14.1         | V         |
|                                                                      |                   | 0 °C                                    | 12.5           | 13.1 | 13.7         |           |
|                                                                      |                   | 25 °C                                   | 12.1           | 12.7 | 13.3         |           |
|                                                                      |                   | 50 °C                                   | 11.1           | 12.2 | 13.0         |           |
|                                                                      |                   | 70 °C                                   | 9.1            | 11.6 | 12.8         |           |
| LED Forward Voltage                                                  | $V_F$             | 25 °C                                   | -              | 4.2  | 4.6          | V         |
| LED Forward Current                                                  | $I_F$             | 25 °C                                   | -              | 450  | 900          | mA        |
| CCFL Forward Voltage                                                 | $V_F$             | 25 °C                                   | -              | 215  | 650          | $V_{RMS}$ |
| CCFL Forward Current                                                 | $I_F$             | 25 °C                                   | -              | -    | 5.0          | mA        |
| EL Power Supply Current                                              | $I_{EL}$          | $V_{EL} = 110$ V <sub>AC</sub> , 400 Hz | -              | -    | 5.0          | mA        |

### OPTIONS

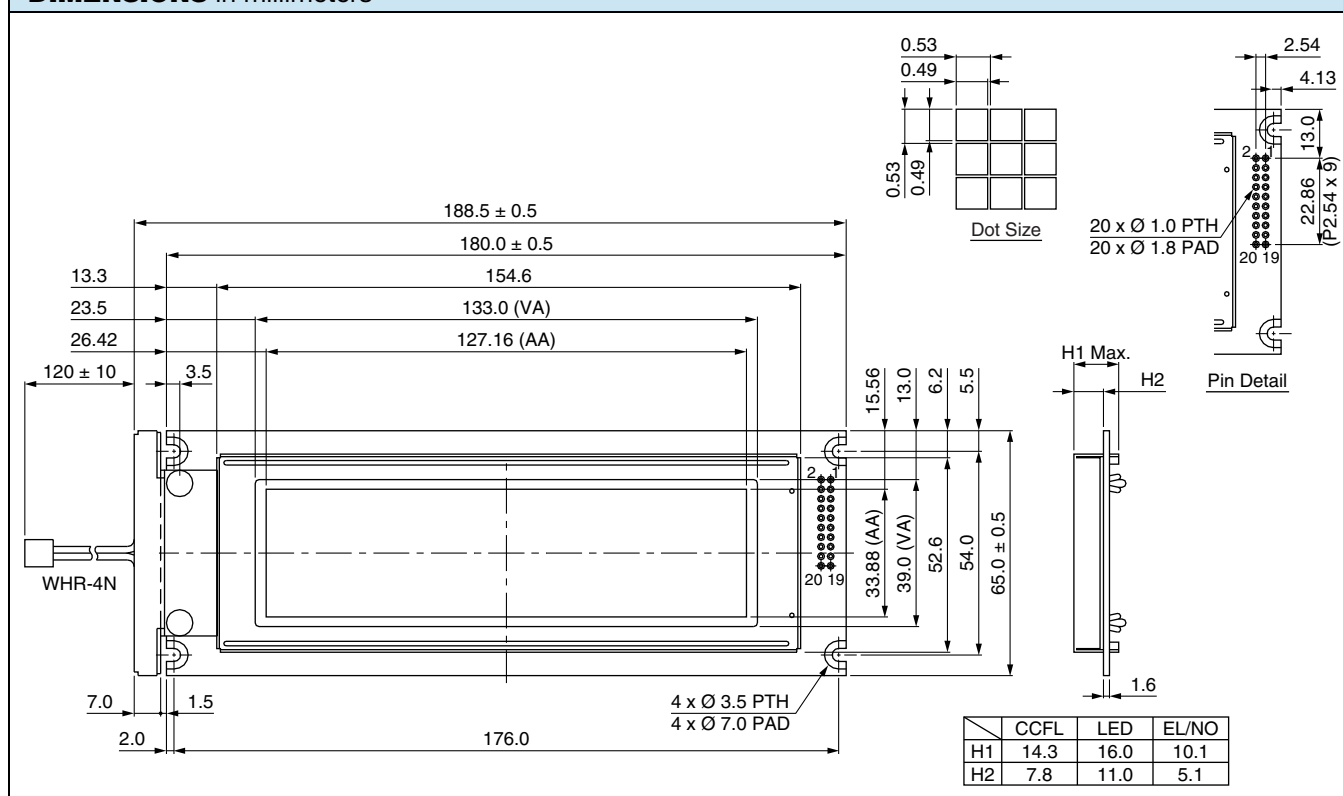
| PROCESS COLOR |          |            |          |          |           | BACKLIGHT |     |    |      |
|---------------|----------|------------|----------|----------|-----------|-----------|-----|----|------|
| TN            | STN GRAY | STN YELLOW | STN BLUE | FSTN B&W | STN COLOR | NONE      | LED | EL | CCFL |
|               | x        | x          | x        | x        |           | x         | x   | x  | x    |

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

## INTERFACE PIN FUNCTION

| PIN NO. | SYMBOL             | FUNCTION                                                                       |
|---------|--------------------|--------------------------------------------------------------------------------|
| 1       | FG                 | Frame ground                                                                   |
| 2       | V <sub>SS</sub>    | 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 read/write                                                        |
| 9       | V <sub>EE</sub>    | Negative voltage output                                                        |
| 10      | $\overline{RESET}$ | 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: FS = "H", 6 x 8 character font, FS = "L", 8 x 8 character font |
| 20      | NC                 | No connection                                                                  |

**DIMENSIONS** in millimeters





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