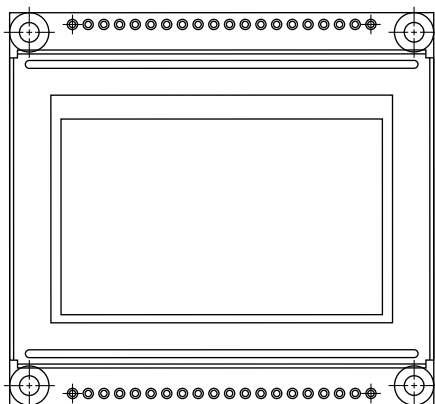


# 128 x 64 Graphic LCD



## FEATURES

- Type: graphic
- Display format: 128 x 64 dots and 4 icons
- Built-in controller: NT7107, NT7108
- Duty cycle: 1/64
- +5 V power supply
- EL backlight (built-in EL inverter)
- N.V. built-in
- 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 | 54.0 x 50.0 x 7.5 | mm   |
| Viewing area     | 43.5 x 29.0       |      |
| Dot size         | 0.28 x 0.35       |      |
| Dot pitch        | 0.32 x 0.39       |      |
| Mounting hole    | 49.0 x 45.0       |      |
| Character size   | n/a               |      |

| ABSOLUTE MAXIMUM RATINGS |                      |                |      |          |      |
|--------------------------|----------------------|----------------|------|----------|------|
| ITEM                     | SYMBOL               | STANDARD VALUE |      |          | UNIT |
|                          |                      | MIN.           | TYP. | MAX.     |      |
| Power supply             | $V_{DD}$ to $V_{SS}$ | 2.8            | 5.0  | 5.5      | V    |
| Input voltage            | $V_I$                | -0.3           | -    | $V_{DD}$ |      |

### Note

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

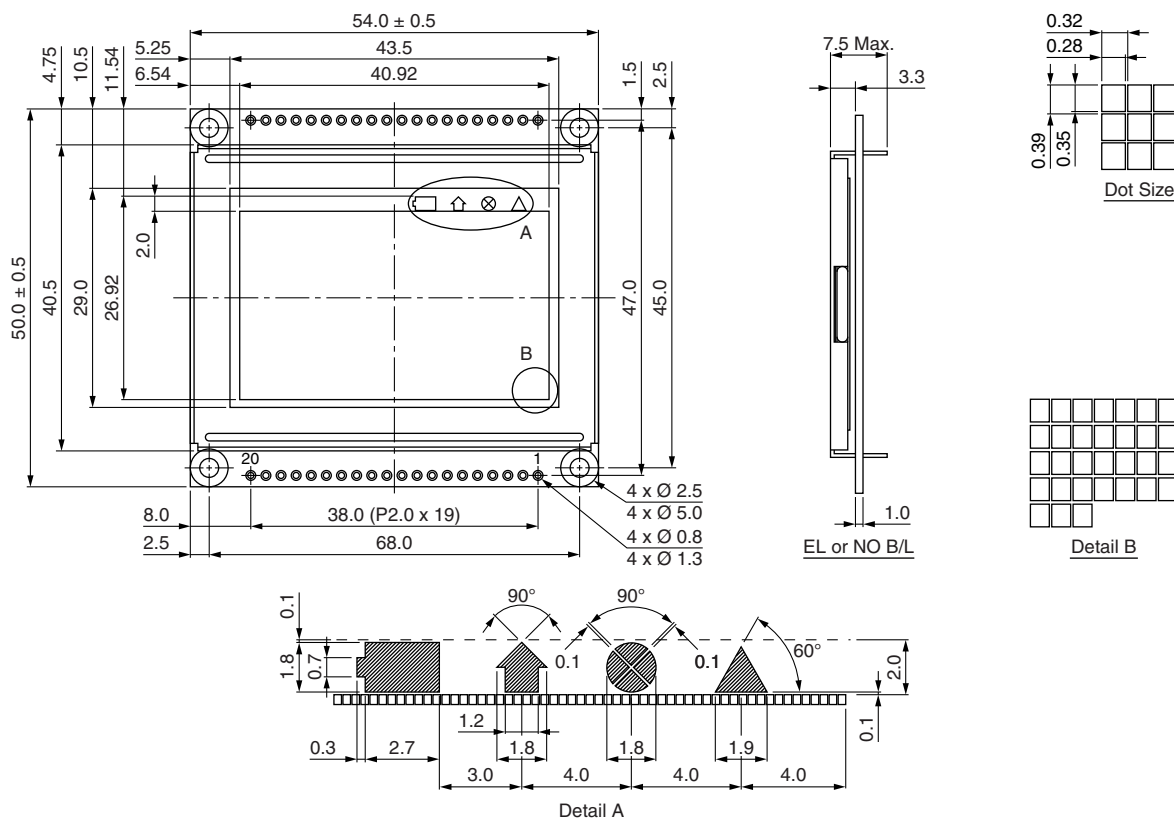
| ELECTRICAL CHARACTERISTICS                                           |                   |                                         |                |      |              |      |
|----------------------------------------------------------------------|-------------------|-----------------------------------------|----------------|------|--------------|------|
| 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                         | -              | 10.0 | -            | mA   |
| Recommended LC driving voltage for normal temperature version module | $V_{DD}$ to $V_0$ | -20 °C                                  | 9.3            | 9.5  | 9.8          | V    |
|                                                                      |                   | 0 °C                                    | 9.1            | 9.3  | 9.6          |      |
|                                                                      |                   | 25 °C                                   | 8.3            | 8.5  | 8.8          |      |
|                                                                      |                   | 50 °C                                   | 7.2            | 7.3  | 7.8          |      |
|                                                                      |                   | 70 °C                                   | 7.0            | 7.1  | 7.6          |      |
| EL power supply current                                              | $I_{EL}$          | $V_{EL} = 110$ V <sub>AC</sub> , 400 Hz | -              | -    | 30.0         | 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  | -    |

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

**INTERFACE PIN FUNCTION**

| PIN NO. | SYMBOL           | FUNCTION                                                                                       |
|---------|------------------|------------------------------------------------------------------------------------------------|
| 1       | $V_{SS}$         | Power supply (0 V)                                                                             |
| 2       | $V_{DD}$         | Power supply                                                                                   |
| 3       | $V_0$            | Power supply for LCD driver                                                                    |
| 4       | $D / \bar{I}$    | Register selection input / H: data / L: instruction (write) / busy flag address counter (read) |
| 5       | $R / \bar{W}$    | Data read / write                                                                              |
| 6       | E                | 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 enable for D2 (segment 1 to 64)                                                           |
| 16      | CS2              | Chip enable for D3 (segment 65 to 128)                                                         |
| 17      | $\overline{RST}$ | Reset signal                                                                                   |
| 18      | $V_{EE}$         | Power supply for LCD driving                                                                   |
| 19      | BL+              | Enable (on / off) for EL backlight                                                             |
| 20      | BL-              | No connection                                                                                  |

**DIMENSIONS** in millimeters




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