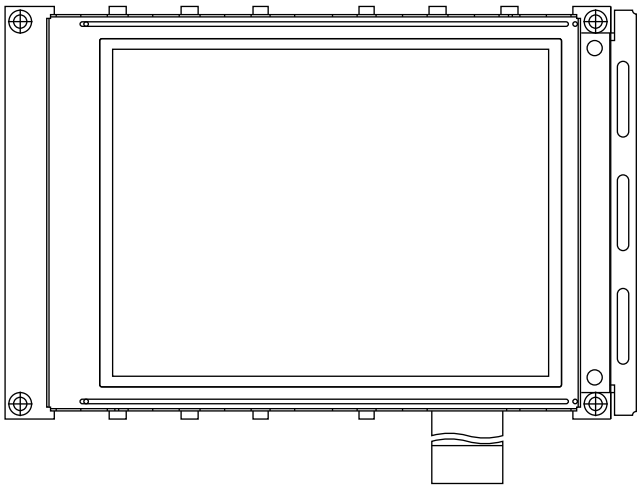
# 320 x 240 Graphic LCD



## FEATURES

- Type: graphic
- Display format: 320 x 240 dots
- Built-in controller: none
- Duty cycle: 1/240
- +5 V power supply
- Touch screen option (analog type)
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

Pb-free

RoHS COMPLIANT

## MECHANICAL DATA

| ITEM | STANDARD VALUE | UNIT |
|---|---|---|
| Module dimension | 160.0 x 109.0 | mm |
| Viewing area | 122.0 x 92.0 | |
| Dot size | 0.34 x 0.34 | |
| Dot pitch | 0.36 x 0.36 | |
| Mounting hole | 152.0 x 101.0 | |
| 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 | $V_{DD}$ | - | 2.7 | - | 5.5 | V |
| Supply current | $I_{DD}$ | $V_{DD}$ = +5.0 V | - | 7.5 | - | mA |
| Recommended LC driving voltage for normal temperature version module | $V_0$ to $V_{SS}$ | -20 °C | - | - | 26.1 | V |
| | | 25 °C | - | 23.8 | - | |
| | | 70 °C | 20.9 | - | - | |
| CCFL starting voltage | $V_{FLS}$ | 25 °C | - | 600 | - | $V_{RMS}$ |
| CCFL driving voltage | $V_{FLD}$ | 25 °C | - | 268 | - | $V_{RMS}$ |
| CCFL driving current | $I_{FLD}$ | $V_{FQ}$ = 450 $V_{RMS}$, 30 kHz | - | 5.0 | - | $mA_{RMS}$ |
| LED forward voltage | $V_F$ | 25 °C | - | 4.2 | 4.6 | V |
| LED forward current | $I_F$ | 25 °C | - | 180 | 360 | mA |
| EL power supply current | $I_{EF}$ | $V_{EL}$ = 110 $V_{AC}$, 400 Hz | - | - | 5.0 | mA |

## OPTIONS

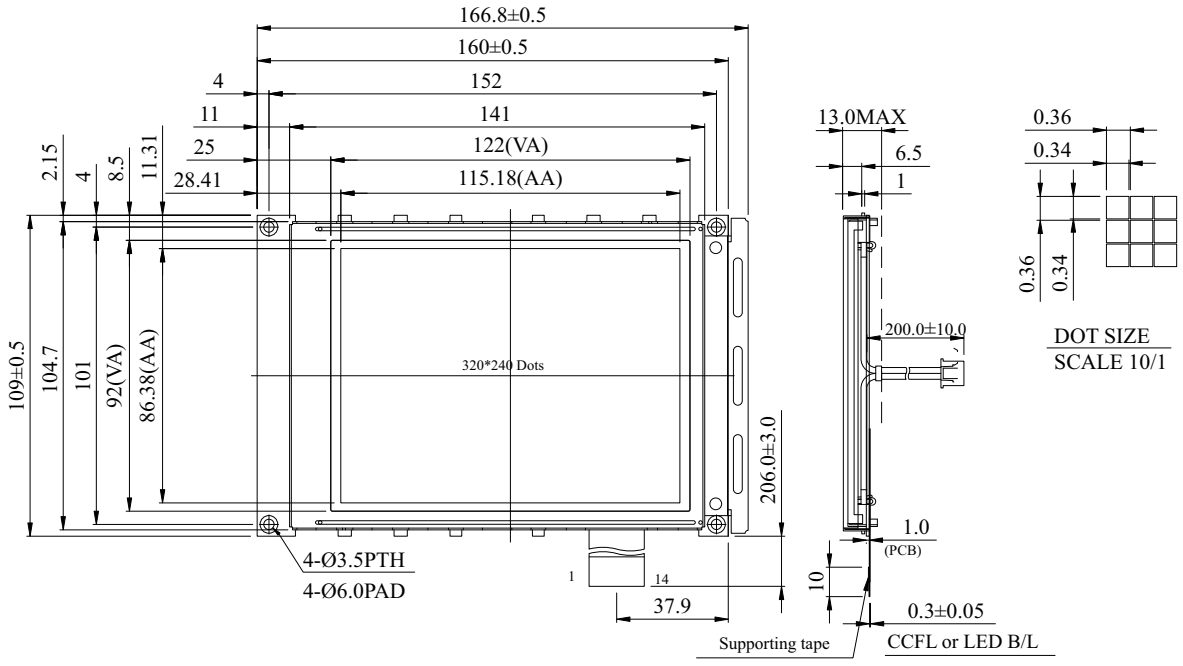
| PROCESS COLOR | | | | | | BACKLIGHT | | | |
|---|---|---|---|---|---|---|---|---|---|
| TN | STN GRAY | STN YELLOW | STN BLUE | FSTN B&W | STN COLOR | NONE | LED | EL | CCFL |
| - | x | x | x | x | - | x | x | x | x |

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

## INTERFACE PIN FUNCTION

| PIN NO. | SYMBOL | FUNCTION |
|---|---|---|
| 1 | DB0 | Date bus line |
| 2 | DB1 | Date bus line |
| 3 | DB2 | Date bus line |
| 4 | DB3 | Date bus line |
| 5 | $\overline{DISPOFF}$ | H: on / L: off |
| 6 | FRAME | First line marker |
| 7 | M (NC) | Frame reverse signal (alternate signal) |
| 8 | LP | Data latch |
| 9 | CP | Data shift |
| 10 | $V_{DD}$ | Power supply for logic |
| 11 | $V_{SS}$ | Ground |
| 12 | $V_{EE}$ | Power supply for LCD |
| 13 | $V_0$ | Operating voltage LCD driving |
| 14 | $F_{GND}$ | Frame ground |

## DIMENSIONS in millimeters



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