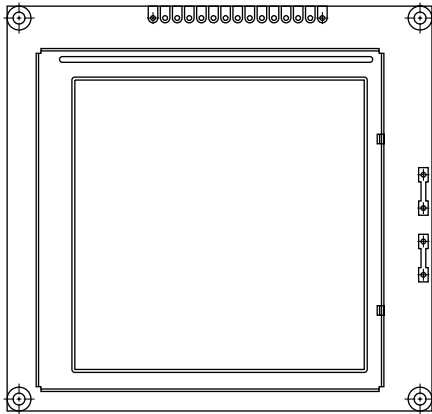


160 x 160 Graphic LCD



FEATURES

- Type: Graphic
- Display format: 160 x 160 dots
- Built-in controller: None
- Duty cycle: 1/160
- + 5 V power supply
- Compliant to RoHS directive 2002/95/EC


RoHS
COMPLIANT

| MECHANICAL DATA | | |
|------------------|----------------|------|
| ITEM | STANDARD VALUE | UNIT |
| Module Dimension | 89.2 x 85.0 | mm |
| Viewing Area | 62.0 x 62.0 | |
| Dot Size | 0.34 x 0.34 | |
| Dot Pitch | 0.38 x 0.38 | |
| Mounting Hole | 84.2 x 80.0 | |
| 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 | 5.52 | V |
| Input Voltage | V_I | 0 | - | V_{DD} | |

Note

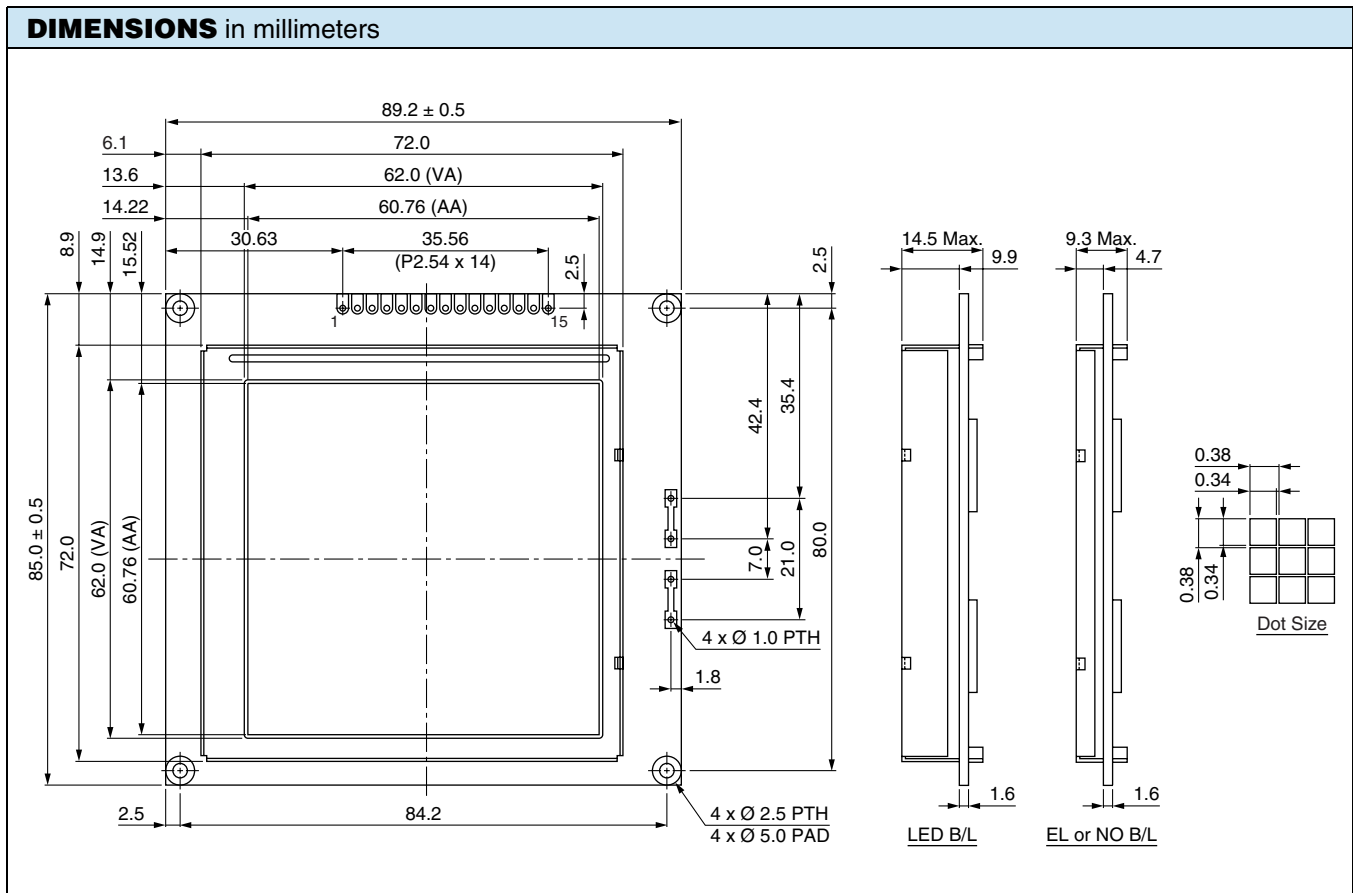
- $V_{SS} = 0$ V, $V_{DD} = 5.0$ V

| 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 | 3.0 | mA |
| Recommended LC Driving Voltage for Normal Temperature Version Module | V_{DD} to V_0 | -20 °C | 16.5 | 18.0 | 19.5 | V |
| | | 0 °C | 16.3 | 17.8 | 19.3 | |
| | | 25 °C | 15.5 | 17.0 | 18.5 | |
| | | 50 °C | 14.5 | 16.0 | 17.5 | |
| | | 70 °C | 14.3 | 15.8 | 17.3 | |
| LED Forward Voltage | V_F | 25 °C | - | 4.2 | 4.6 | V |
| LED Forward Current | I_F | 25 °C | - | 500 | 1000 | 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 | PIN NO. | FUNCTION |
| 1 | V _{SS} | | Ground |
| 2 | M | | Control signal for AC driving |
| 3 | FLM | | The FLM signal indicates the beginning of each display cycle |
| 4 | CL1 | | The CL1 latches the serial data in shift register |
| 5 | CL2 | | Clock signal for shifting the serial data |
| 6 | DB3 | | Data bus line |
| 7 | DB2 | | Data bus line |
| 8 | DB1 | | Data bus line |
| 9 | DB0 | | Data bus line |
| 10 | V _{EE} | | Power supply for LCD driving |
| 11 | V _{DD} | | Power supply (+ 5 V) |
| 12 | V ₀ | | Contrast adjustment |
| 13 | DISPOFF | | Control display off; 0: Off/1: On |
| 14 | A | | Power supply for |
| 15 | K | | Power supply for |





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