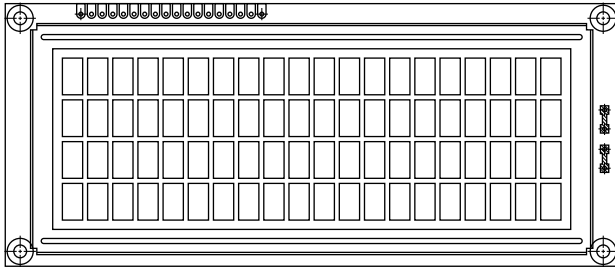


20 x 4 Character LCD



FEATURES

- Type: Character
- Display format: 20 x 4 characters
- Built-in controller: ST 7066 (or equivalent)
- Duty cycle: 1/16
- 5 x 8 dots includes cursor
- + 5 V power supply (also available for + 3 V)
- LED can be driven by pin 1, pin 2, pin 15, pin 16 or A and K
- N.V. optional for + 3 V power supply
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


RoHS
COMPLIANT

| MECHANICAL DATA | | |
|------------------|----------------|------|
| ITEM | STANDARD VALUE | UNIT |
| Module Dimension | 146.0 x 62.5 | mm |
| Viewing Area | 123.5 x 43.0 | |
| Dot Size | 0.92 x 1.10 | |
| Dot Pitch | 0.98 x 1.16 | |
| Mounting Hole | 139.0 x 55.5 | |
| Character Size | 4.84 x 9.22 | |

| ABSOLUTE MAXIMUM RATINGS | | | | | |
|--------------------------|----------------------|----------------|------|----------|------|
| ITEM | SYMBOL | STANDARD VALUE | | | UNIT |
| | | MIN. | TYP. | MAX. | |
| Power Supply | V_{DD} to V_{SS} | - 0.3 | - | 7.0 | V |
| Input Voltage | V_I | - 0.3 | - | V_{DD} | |

Note

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

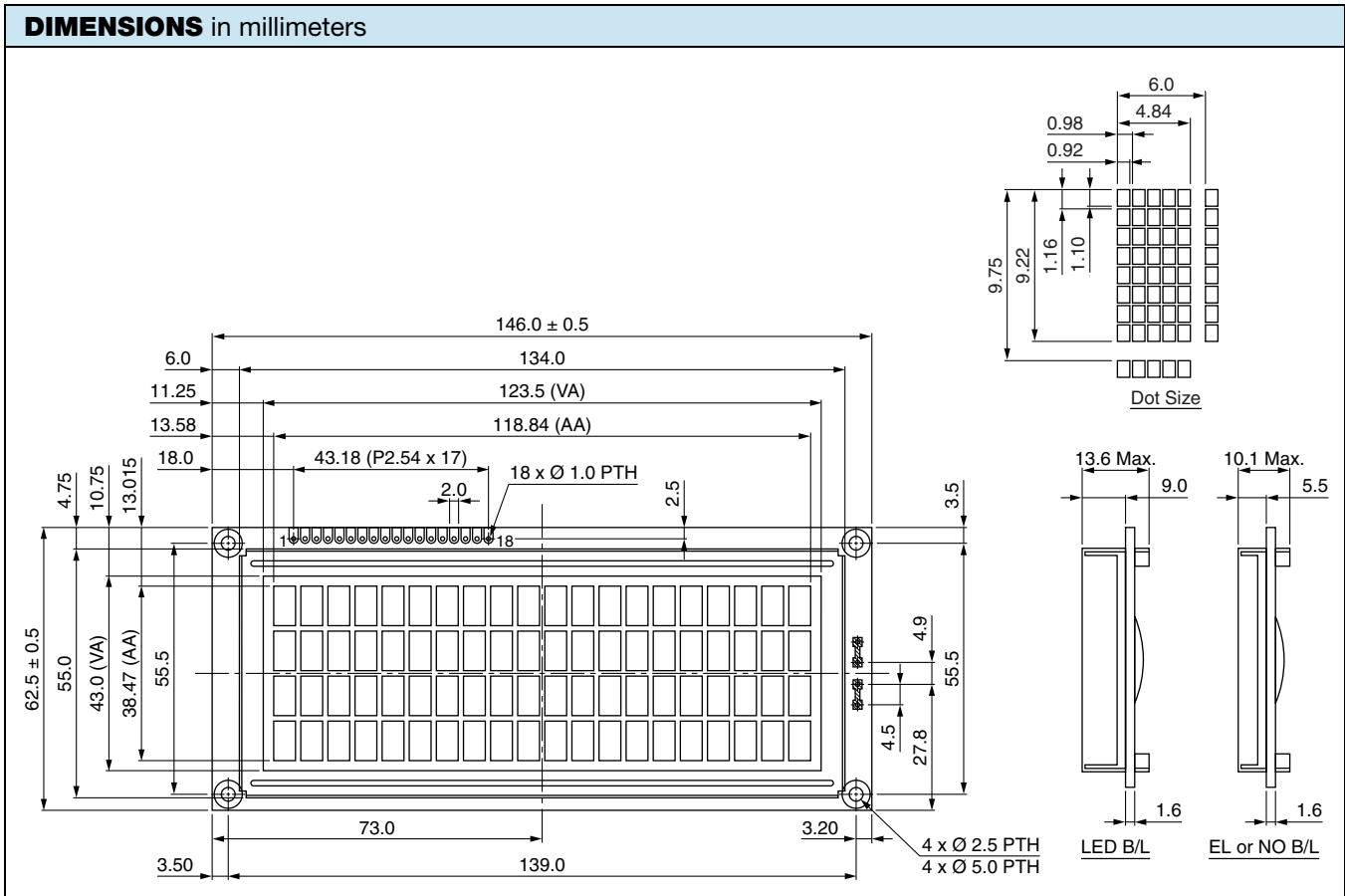
| ELECTRICAL CHARACTERISTICS | | | | | | |
|--|-------------------|---|----------------|------|------|------|
| ITEM | SYMBOL | CONDITION | STANDARD VALUE | | | UNIT |
| | | | MIN. | TYP. | MAX. | |
| Input Voltage | V_{DD} | $V_{DD} = + 5$ V | 4.7 | 5.0 | 5.3 | V |
| | | $V_{DD} = + 3$ V | 2.7 | 3.0 | 5.3 | |
| Supply Current | I_{DD} | $V_{DD} = + 5$ V | - | 8.0 | 10.0 | mA |
| Recommended LC Driving Voltage for Normal Temperature Version Module | V_{DD} to V_0 | - 20 °C | 5.0 | 5.1 | 5.7 | V |
| | | 0 °C | 4.6 | 4.8 | 5.2 | |
| | | 25 °C | 4.1 | 4.5 | 4.7 | |
| | | 50 °C | 3.9 | 4.2 | 4.5 | |
| | | 70 °C | 3.7 | 3.9 | 4.3 | |
| LED Forward Voltage | V_F | 25 °C | - | 4.2 | 4.6 | V |
| LED Forward Current | I_F | 25 °C | - | 540 | 1080 | 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 | x | |

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

| DISPLAY CHARACTER ADDRESS CODE | | | | | | | | | | | | | | | | | | | | |
|--------------------------------|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|----|
| Display Position | | | | | | | | | | | | | | | | | | | | |
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 |
| DD RAM Address | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 09 | 0A | 0B | 0C | 0D | 0E | 0F | 10 | 11 | 12 | 13 |
| DD RAM Address | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 49 | 4A | 4B | 4C | 4D | 4E | 4F | 50 | 51 | 52 | 53 |
| DD RAM Address | 14 | 15 | 16 | 17 | 18 | 19 | 1A | 1B | 1C | 1D | 1E | 1F | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 |
| DD RAM Address | 54 | 55 | 56 | 57 | 58 | 59 | 5A | 5B | 5C | 5D | 5E | 5F | 60 | 61 | 62 | 63 | 64 | 65 | 66 | 67 |

| INTERFACE PIN FUNCTION | | |
|------------------------|------------------|-------------------------------|
| PIN NO. | SYMBOL | FUNCTION |
| 1 | V_{SS} | Ground |
| 2 | V_{DD} | + 3 V or + 5 V |
| 3 | V_0 | Contrast adjustment |
| 4 | RS | H/L register select signal |
| 5 | R/\overline{W} | H/L read/write signal |
| 6 | E | H → L enable signal |
| 7 | DB0 | H/L data bus line |
| 8 | DB1 | H/L data bus line |
| 9 | DB2 | H/L data bus line |
| 10 | DB3 | H/L data bus line |
| 11 | DB4 | H/L data bus line |
| 12 | DB5 | H/L data bus line |
| 13 | DB6 | H/L data bus line |
| 14 | DB7 | H/L data bus line |
| 15 | A | Power supply for LED (4.2 V) |
| 16 | K | Power supply for B/L (0 V) |
| 17 | NC/ V_{EE} | NC or negative voltage output |
| 18 | NC | NC connection |





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JONHON

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