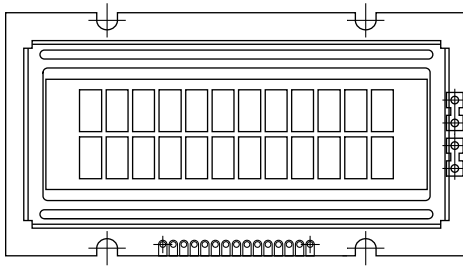


12 x 2 Character LCD



FEATURES

- Type: Character
- Display format: 12 x 2 characters
- Built-in controller: ST 7066 (or equivalent)
- Duty cycle: 1/16
- 5 x 8 dots includes cursor
- + 5 V power supply
- LED can be driven by pin 1, pin 2, or A and K
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912


**RoHS
COMPLIANT**

| MECHANICAL DATA | | |
|------------------|----------------|------|
| ITEM | STANDARD VALUE | UNIT |
| Module Dimension | 55.7 x 32.0 | mm |
| Viewing Area | 46.0 x 14.5 | |
| Dot Size | 0.45 x 0.60 | |
| Dot Pitch | 0.55 x 0.70 | |
| Mounting Hole | 31.2 x 30.0 | |
| Character Size | 2.65 x 5.50 | |

| 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 |
| Supply Current | I_{DD} | $V_{DD} = +5$ V | - | 1.3 | 1.5 | mA |
| Recommended LC Driving Voltage for Normal Temperature Version Module | V_{DD} to V_0 | - 20 °C | 4.9 | 5.2 | 5.5 | V |
| | | 0 °C | 4.5 | 4.8 | 5.1 | |
| | | 25 °C | 4.1 | 4.4 | 4.7 | |
| | | 50 °C | 3.8 | 4.2 | 4.4 | |
| | | 70 °C | 3.5 | 4.0 | 4.1 | |
| LED Forward Voltage | V_F | 25 °C | - | 4.2 | 4.6 | V |
| LED Forward Current | I_F | 25 °C | - | 40 | 80 | 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.

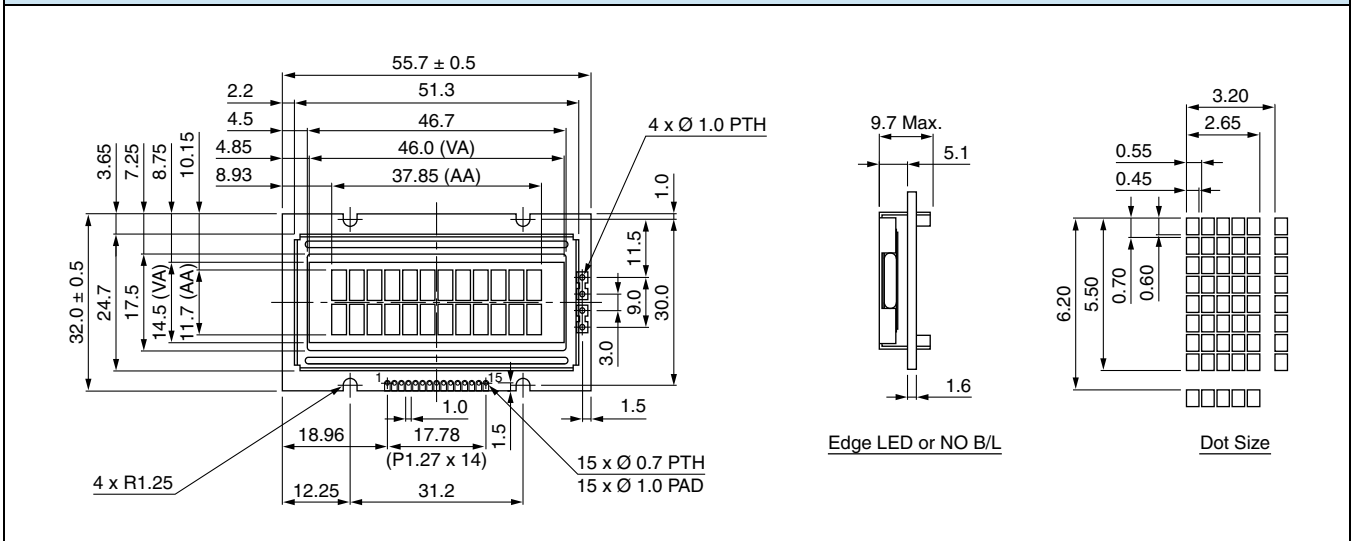
DISPLAY CHARACTER ADDRESS CODE

Display Position

| | | | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|----|----|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
| DD RAM Address | 00 | 01 | 02 | 03 | 04 | 05 | 06 | 07 | 08 | 0A | 0B | 0C |
| DD RAM Address | 40 | 41 | 42 | 43 | 44 | 45 | 46 | 47 | 48 | 4A | 4B | 4C |

INTERFACE PIN FUNCTION

| PIN NO. | SYMBOL | FUNCTION |
|---------|-------------------|--|
| 1 | V _{SS} | Ground |
| 2 | V _{DD} | + 5 V |
| 3 | V ₀ | Contrast adjustment |
| 4 | RS | H/L register select signal |
| 5 | R/ \bar{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/V _{EE} | 4.2 V for LED (R _A = 0 Ω)/negative voltage output |

DIMENSIONS in millimeters




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