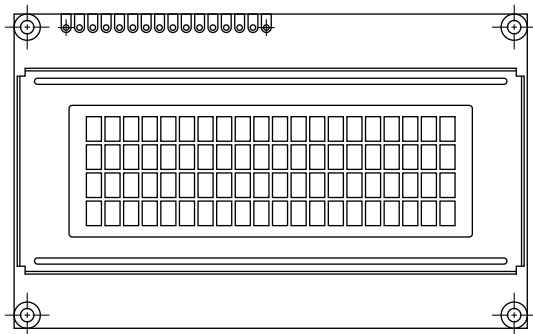


## 20 x 4 Character LCD



### 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
- LCD-020N004B: FCC connector
- LCD-020N004F: 7 colors LED option
- 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 | 98.0 x 60.0    | mm   |
| Viewing Area     | 77.0 x 25.2    |      |
| Dot Size         | 0.55 x 0.55    |      |
| Dot Pitch        | 0.60 x 0.60    |      |
| Mounting Hole    | 93.0 x 55.0    |      |
| Character Size   | 2.95 x 4.75    |      |

### 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               | 2.7            | -    | 5.3  | V    |
| Supply Current   | $I_{DD}$          | $V_{DD} = + 5$ V               | -              | 1.0  | 1.2  | mA   |
| Recommended LC Driving Voltage for Normal Temperature Version Module | $V_{DD}$ to $V_0$ | - 20 °C                        | 5.0            | 5.1  | 5.7  | V    |
|  |                   | 25 °C                          | 4.1            | 4.5  | 4.7  |      |
|  |                   | 70 °C                          | 3.7            | 3.9  | 4.6  |      |
| LED Forward Voltage  | $V_F$             | 25 °C                          | -              | 4.2  | 4.6  | V    |
| LED Forward Current - Array  | $I_F$             | 25 °C                          | -              | 280  | 560  | mA   |
| LED Forward Current - Edge   |                   |                                | -              | -    | -    |      |
| 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  |      |

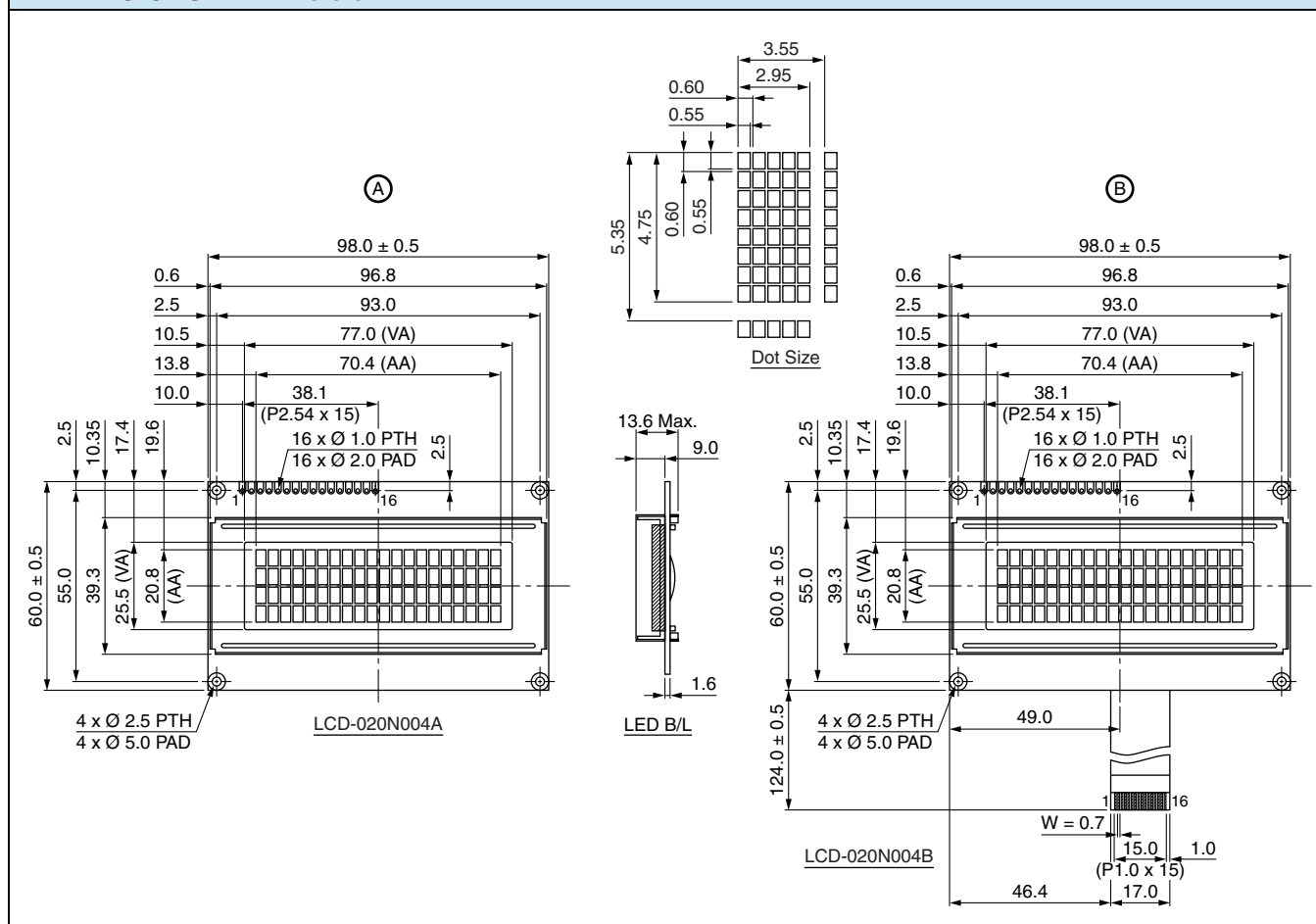
For detailed information, please see the "Product Numbering System" document.

### 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       | $V_{DD}$ | Supply voltage for logic   |
| 3       | $V_0$    | Contrast adjustment        |
| 4       | RS       | H: Data/L: Instruction     |
| 5       | R/W      | H: Read data/L: Write data |
| 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      | A        | + 4.2 V for LED            |
| 16      | K        | Power supply for B/L (-)   |

**DIMENSIONS** in millimeters




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