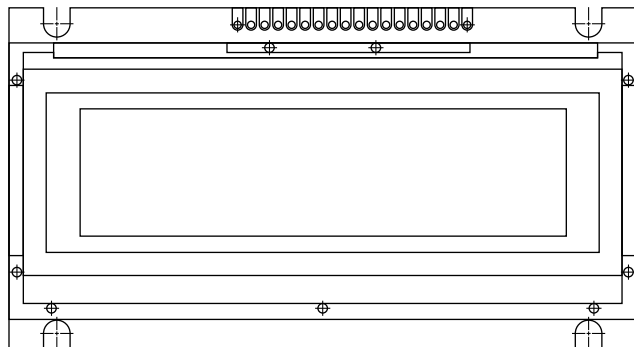


## 122 x 32 Graphic LCD



### FEATURES

- Type: graphic
- Display format: 122 x 32 dots
- Built-in controller: SBN1661G
- Duty cycle: 1/32
- 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 | 59.0 x 32.1    | mm   |
| Viewing area     | 52.0 x 15.0    |      |
| Dot size         | 0.345 x 0.345  |      |
| Dot pitch        | 0.375 x 0.375  |      |
| Mounting hole    | 50.0 x 29.12   |      |
| Character size   | n/a            |      |

| ABSOLUTE MAXIMUM RATINGS |                      |                |      |          |      |
|--------------------------|----------------------|----------------|------|----------|------|
| ITEM                     | SYMBOL               | STANDARD VALUE |      |          | UNIT |
|                          |                      | MIN.           | TYP. | MAX.     |      |
| Power supply             | $V_{DD}$ to $V_{SS}$ | 2.75           | 5.0  | 5.25     | V    |
| Input voltage            | $V_I$                | 0              | -    | $V_{DD}$ |      |

### Note

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

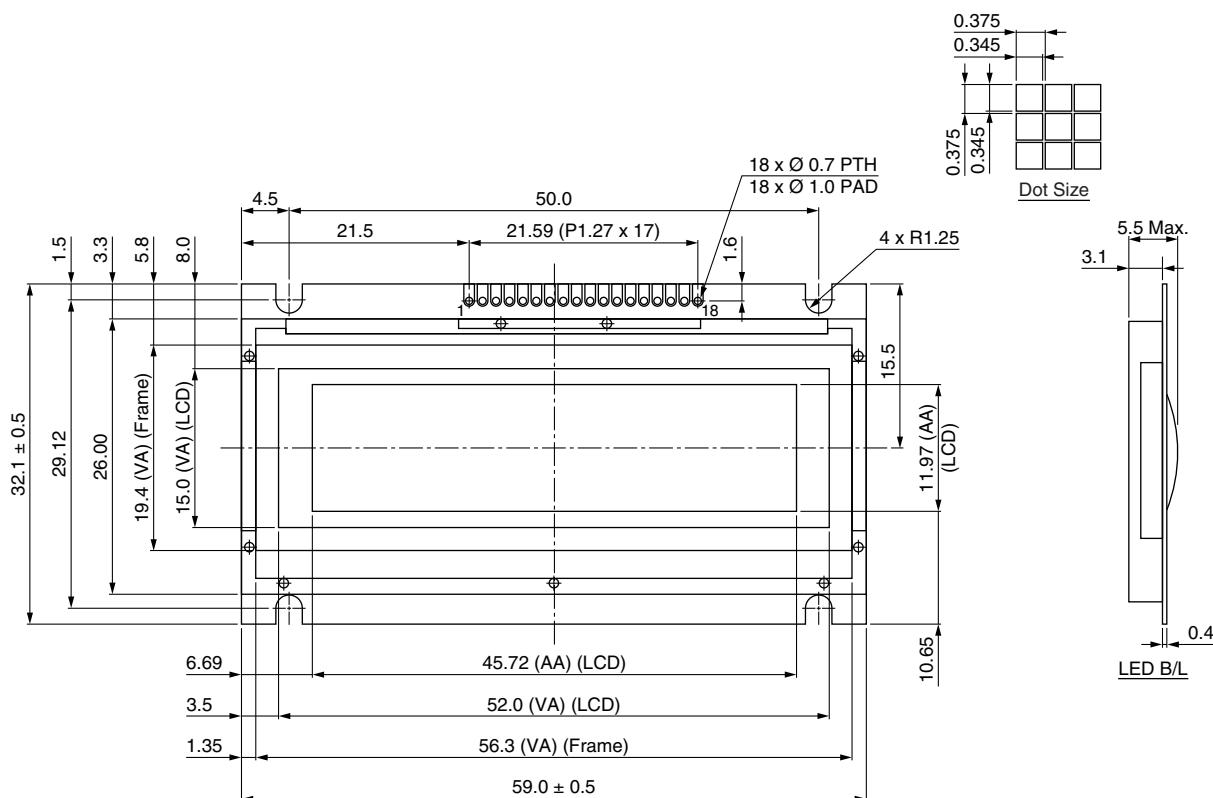
| ELECTRICAL CHARACTERISTICS                                           |                   |                                         |                |      |      |      |
|----------------------------------------------------------------------|-------------------|-----------------------------------------|----------------|------|------|------|
| ITEM                                                                 | SYMBOL            | CONDITION                               | STANDARD VALUE |      |      | UNIT |
|                                                                      |                   |                                         | MIN.           | TYP. | MAX. |      |
| Input voltage                                                        | $V_{DD}$          | $V_{DD} = +5$ V                         | 4.5            | 5.0  | 5.5  | V    |
| Supply current                                                       | $I_{DD}$          | $V_{DD} = +5$ V                         | -              | 1.0  | 1.4  | mA   |
| Recommended LC driving voltage for normal temperature version module | $V_{DD}$ to $V_0$ | -20 °C                                  | 5.3            | 5.5  | 5.7  | V    |
|                                                                      |                   | 0 °C                                    | 5.1            | 5.3  | 5.5  |      |
|                                                                      |                   | 25 °C                                   | 4.7            | 4.9  | 5.1  |      |
|                                                                      |                   | 50 °C                                   | 4.3            | 4.6  | 4.9  |      |
|                                                                      |                   | 70 °C                                   | 4.1            | 4.4  | 4.7  |      |
| LED forward voltage                                                  | $V_F$             | 25 °C                                   | -              | 4.2  | 4.6  | V    |
| LED forward current                                                  | $I_F$             | 25 °C                                   | -              | 40   | -    | mA   |
| EL power supply current                                              | $I_{EL}$          | $V_{EL} = 110$ V <sub>AC</sub> , 400 Hz | -              | -    | -    | 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  | -    |

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

**INTERFACE PIN FUNCTION**

| PIN NO. | SYMBOL             | FUNCTION                                                            |
|---------|--------------------|---------------------------------------------------------------------|
| 1       | K                  | Power supply for backlight                                          |
| 2       | V <sub>SS</sub>    | Ground                                                              |
| 3       | V <sub>DD</sub>    | Supply voltage for logic                                            |
| 4       | V <sub>0</sub>     | Operating voltage for LCD                                           |
| 5       | A <sub>0</sub>     | H: date / L: instruction                                            |
| 6       | E1                 | Enable chip 1                                                       |
| 7       | E2                 | Enable chip 2                                                       |
| 8       | DB0                | Data bus line                                                       |
| 9       | DB1                | Data bus line                                                       |
| 10      | DB2                | Data bus line                                                       |
| 11      | DB3                | Data bus line                                                       |
| 12      | DB4                | Data bus line                                                       |
| 13      | DB5                | Data bus line                                                       |
| 14      | DB6                | Data bus line                                                       |
| 15      | DB7                | Data bus line                                                       |
| 16      | R / $\overline{W}$ | H: D0 to D7 are display date / L: D0 to D7 are display control date |
| 17      | V <sub>EE</sub>    | Negative voltage output (built-in)                                  |
| 18      | A                  | Power supply for backlight                                          |

**DIMENSIONS** in millimeters




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