# LCD / LCM SPECIFICATION


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# RG12232C1

## General Specification

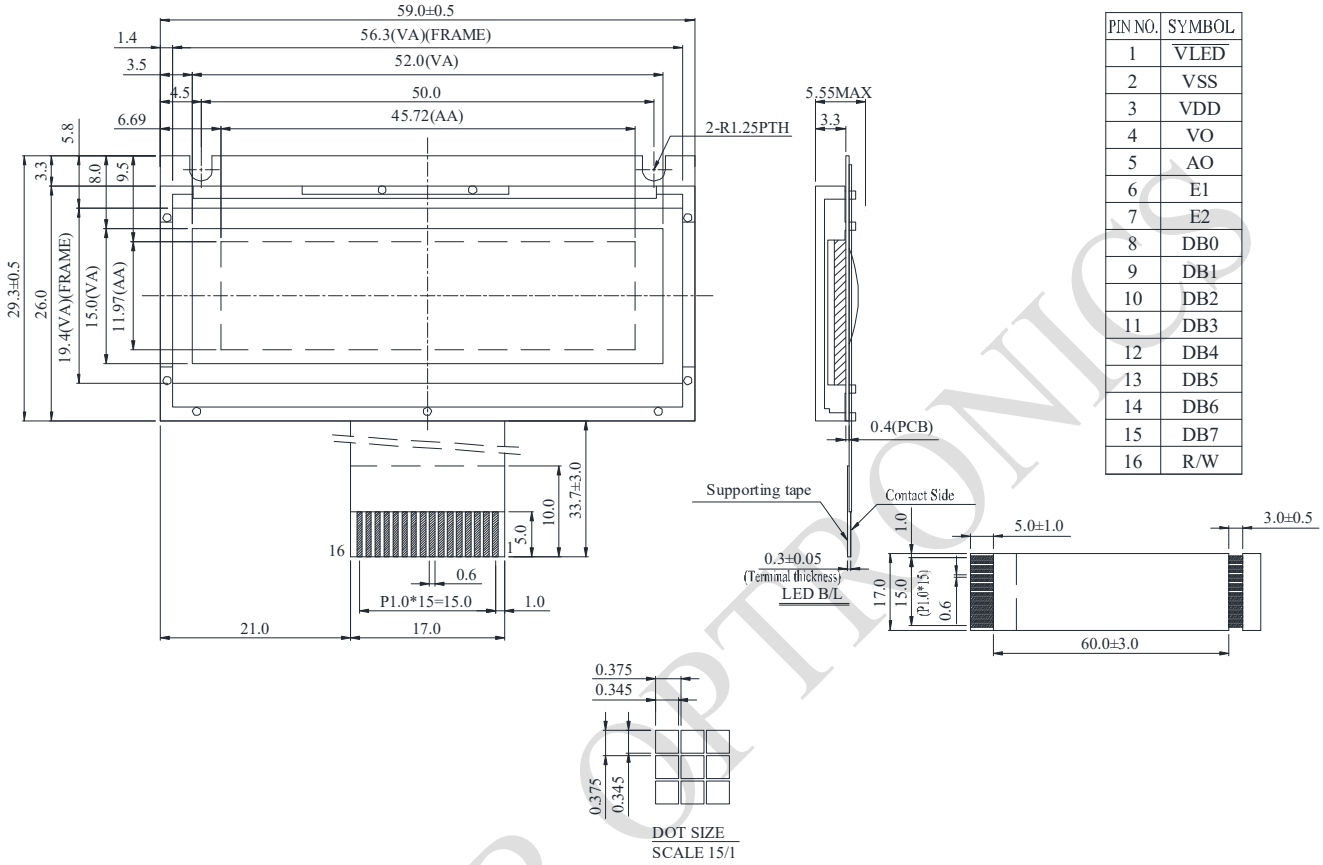
The Features is described as follow:

- Module dimension: 59.0 x 29.3 x 5.55 (max.) mm
- View area: 52.0 x 15.0mm
- Active area: 45.72 x 11.97 mm
- Number of dots: 122 x 32
- Dot size: 0.345 x 0.345 mm
- Dot pitch: 0.375 x 0.375 mm
- Duty: 1/32
- Backlight Type: LED
- IC: SBN1661G

# Interface Pin Function

| Pin No. | Symbol | Level | Description |
|---|---|---|---|
| 1 | VLED | — | Supply voltage for B/L - |
| 2 | VSS | 0V | Ground |
| 3 | VDD | 5.0 | Power Supply |
| 4 | $V_0$ | (Variable) | Operating voltage for LCD |
| 5 | A0 | H/L | H : Data L : Instruction |
| 6 | E1 | H/L | Chip select signal for IC1 ,active “ H “ |
| 7 | E2 | H/L | Chip select signal for IC2 , active “ H “ |
| 8 | DB0 | H/L | Data bus |
| 9 | DB1 | H/L | Data bus |
| 10 | DB2 | H/L | Data bus |
| 11 | DB3 | H/L | Data bus |
| 12 | DB4 | H/L | Data bus |
| 13 | DB5 | H/L | Data bus |
| 14 | DB6 | H/L | Data bus |
| 15 | DB7 | H/L | Data bus |
| 16 | R/W | H/L | H : Read ; L : Write |

# Contour Drawing




| PIN NO. | SYMBOL |
|---|---|
| 1 | VLED |
| 2 | VSS |
| 3 | VDD |
| 4 | VO |
| 5 | AO |
| 6 | E1 |
| 7 | E2 |
| 8 | DB0 |
| 9 | DB1 |
| 10 | DB2 |
| 11 | DB3 |
| 12 | DB4 |
| 13 | DB5 |
| 14 | DB6 |
| 15 | DB7 |
| 16 | R/W |

# Absolute Maximum Ratings

| Item | Symbol | Min | Typ | Max | Unit |
|---|---|---|---|---|---|
| Operating Temperature | $T_{OP}$ | -20 | — | +70 | ℃ |
| Storage Temperature | $T_{ST}$ | -30 | — | +80 | ℃ |
| Input Voltage | $V_I$ | -0.3 | — | $V_{DD}$+0.3 | V |
| Supply Voltage For Logic | $V_{DD}$-$V_{SS}$ | -0.3 | — | +6.0 | V |
| LCD bias voltage | $V_{LCD}$ | 3.5 | — | 13 | V |

# Electrical Characteristics

| Item | Symbol | Condition | Min | Typ | Max | Unit |
|---|---|---|---|---|---|---|
| Supply Voltage For Logic | $V_{DD}$-$V_{SS}$ | — | 4.5 | 5.0 | 5.5 | V |
| Supply Voltage For LCD | $V_{DD}$-$V_0$ | Ta=-20℃ | — | — | — | V |
| | | Ta=25℃ | 4.7 | 4.8 | 4.9 | V |
| | | Ta=+70℃ | — | — | — | V |
| Input High Volt. | $V_{IH}$ | $V_{DD}$ =5.0 | 3.0 | 5.0 | $V_{DD}$+0.5 | V |
| Input Low Volt. | $V_{IL}$ | — | 0 | 0.7 | 1.1 | V |
| Output High Volt. | $V_{OH}$ | — | $V_{DD}$-0.3 | — | $V_{DD}$ | V |
| Output Low Volt. | $V_{OL}$ | — | 0 | — | 0.3 | V |
| Supply Current | $I_{DD}$ | $V_{DD}$=5.0V | — | 0.7 | — | mA |