

# DG series

## DG-16032 160 x 32 Dots

### Mechanical Data

| Item         | Standard Value               | Unit |
|--------------|------------------------------|------|
| Module Size  | 116.5(W) x 44.0(H) x 14.0(T) | mm   |
| Viewing Area | 99.0(W) x 24.0(H)            | mm   |
| Dot Pixels   | 160 x 32                     | dots |
| Dot Size     | 0.55 x 0.55                  | mm   |
| Dot Pitch    | 0.59 x 0.59                  | mm   |

### Absolute Maximum Ratings

| Item                         | Symbol          | Standard Value |      |              | Unit |
|------------------------------|-----------------|----------------|------|--------------|------|
|                              |                 | Min.           | Typ. | Max.         |      |
| Supply Voltage for Logic     | $V_{DD}-V_{SS}$ | 0              | --   | 8.0          | V    |
| Supply Voltage for LCD Drive | $V_{DD}-V_{EE}$ | 0              | --   | 16.5         | V    |
| Input Voltage                | $V_I$           | $V_{SS}-0.3$   | --   | $V_{DD}+0.3$ | V    |
| Operation Temperature        | Topr            | 0              | --   | 50           | °C   |
| Storage Temperature          | Tstg            | -20            | --   | 70           | °C   |

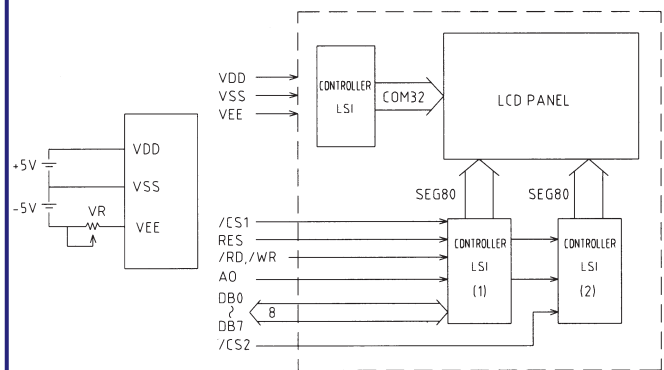
### Electrical Characteristics

| Item                                    | Symbol          | Condition            | Standard Value      |      |                     | Unit |
|---|-----------------|----------------------|---------------------|------|---------------------|------|
|   |                 |                      | Min.                | Typ. | Max.                |      |
| LCD Supply Voltage                      | $V_{DD}-V_{SS}$ | --                   | 4.5                 | 5.0  | 5.5                 | V    |
| LCD Driver Circuit Power Supply Voltage | $V_{DD}-V_{EE}$ | --                   | --                  | 7.0  | --                  | V    |
| Input Voltage                           | $V_{IH}$        | --                   | $0.7 \times V_{DD}$ | --   | $V_{DD}$            | V    |
| Input Voltage                           | $V_{IL}$        | --                   | $V_{SS}$            | --   | $0.3 \times V_{DD}$ | V    |
| Output Voltage                          | $V_{OH}$        |                      |                     |      |                     |      |
| Output Voltage                          | $V_{OL}$        |                      |                     |      |                     |      |
| Input Leakage Current                   | $I_{LI}$        |                      |                     |      |                     |      |
| Supply Current                          | $I_{DD}$        | $V_{DD}-V_{SS}=5.0V$ | --                  | 1.5  | 4.0                 | mA   |
| EL Backlight                            | $I_{EL}$        |                      |                     |      |                     |      |

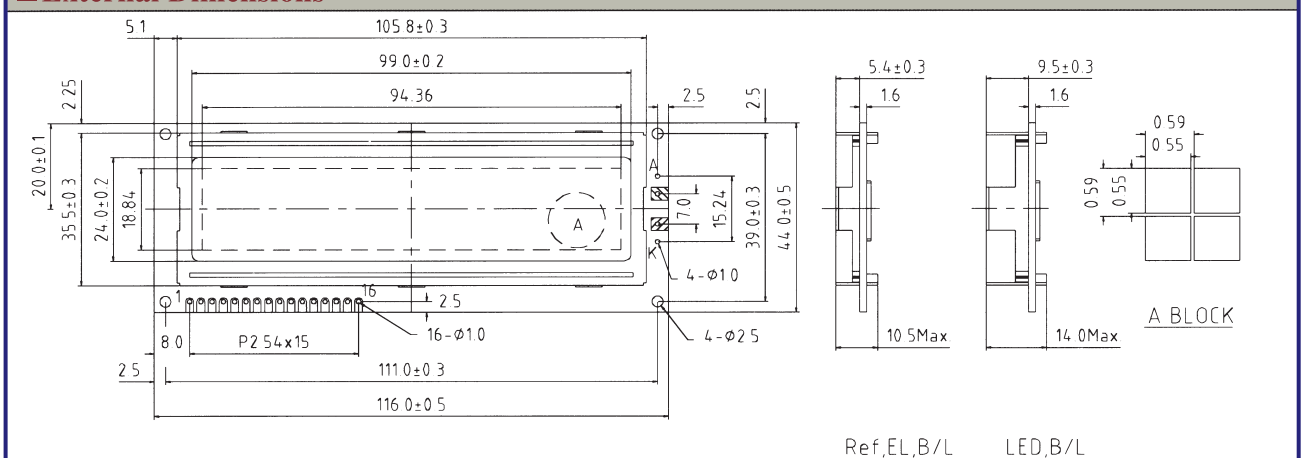
### Pin Assignment

| No.  | Symbol   | Level | Function                            |
|------|----------|-------|-------------------------------------|
| 1    | AO       | H/L   | L: Instruction H: Data              |
| 2    | /CS2     | L     | Chip Enable Active L                |
| 3    | /CS1     | L     | Chip Enable Active L                |
| 4    | /RD(E)   | H/L   | /RD For 80 Series ,E for 68Series   |
| 5    | /WR(R/W) | H/L   | /WR For 80 Series ,R/W for 68Series |
| 6    | $V_{DD}$ | --    | Power Supply for Circuit            |
| 7    | $V_{SS}$ | --    | Ground                              |
| 8~15 | DB0~DB7  | H/L   | Data Bus Line                       |
| 16   | RES      | H/L   | H TOL=80 Series L TOL=68 Series     |
| 17   | $V_{EE}$ | --    | Power Supply for LCD                |
| 18   | N/C      | --    |                                     |

### Block Diagram



### External Dimensions



Ref,EL,B/L LED,B/L

### Option

| LCD Type |    |   |   |   |   |   |   | Backlight Type |     |      | Built-in Control LSI |         |  |
|----------|----|---|---|---|---|---|---|----------------|-----|------|----------------------|---------|--|
| S1       | S2 | W | N | R | F | M | H | EL             | LED | CCFL | Touch Panel          | SED1520 |  |
| •        | •  |   |   | • | • |   | • | •              | •   |      |                      |         |  |

Remarks: S1 : yellow-green STN LCD , S2 : gray STN LCD , W : black & white LCD , N : negative type LCD , R : reflective type LCD , F : transfective type LCD , M : transmissive type LCD , H : extended temperature type LCD (-20°C ~ 70°C)