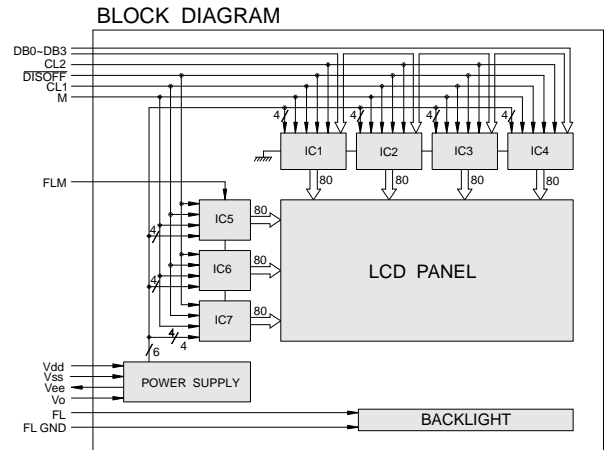
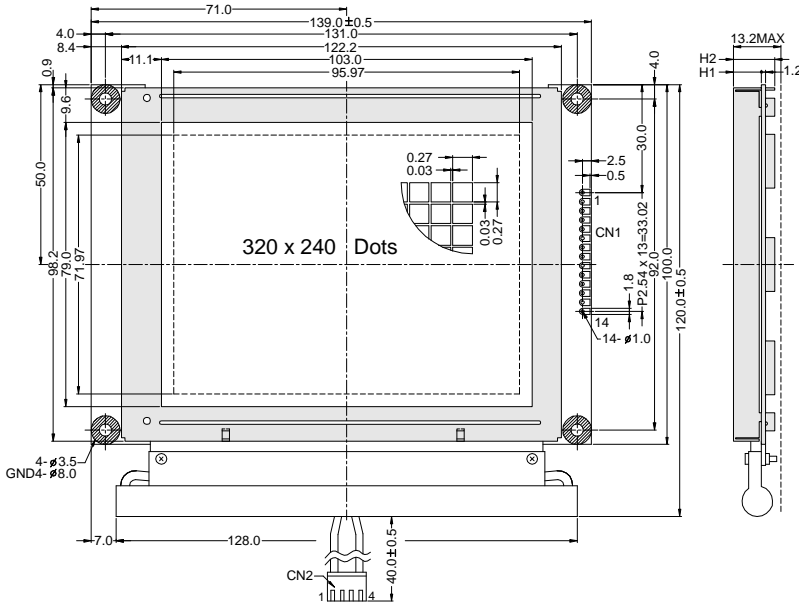


**OUTLINE DIMENSION & BLOCK DIAGRAM**



The tolerance unless classified ± 0.3mm

| MECHANICAL SPECIFICATION |               |          |            |
|--------------------------|---------------|----------|------------|
| Overall Size             | 139.0 x 120.0 | Module   | H2 / H1    |
| View Area                | 103.0 x 79.0  | W/O B/L  | - / -      |
| Dot Size                 | 0.27 x 0.27   | EL B/L   | - / -      |
| Dot Pitch                | 0.30 x 0.30   | CCFL B/L | 7.8 / 11.5 |

| PIN ASSIGNMENT |         |                         |
|----------------|---------|-------------------------|
| Pin no.        | Symbol  | Function                |
| 1              | FLM     | Shift direction select  |
| 2              | CL1     | Colck signal input      |
| 3              | CL2     | Colck signal input      |
| 4              | M       | Command / Data select   |
| 5              | Vo      | Contrast adjust         |
| 6              | Vdd     | Power supply (+)        |
| 7              | Vss     | Power supply (GND)      |
| 8              | Vee     | Negative voltage output |
| 9              | DB0     | Data bus line           |
| 10             | DB1     | Data bus line           |
| 11             | DB2     | Data bus line           |
| 12             | DB3     | Data bus line           |
| 13             | DISPOFF | Clumn output control    |
| 14             | N.C.    | No connection           |

| ABSOLUTE MAXIMUM RATING          |           |           |      |         |       |       |      |   |
|----------------------------------|-----------|-----------|------|---------|-------|-------|------|---|
| Item                             | Symbol    | Condition | Min. | Max.    | Units |       |      |   |
| Supply for logic voltage         | Vdd-Vss   | 25°C      | -0.3 | 7.0     | V     |       |      |   |
| LCD driving supply voltage       | Vdd-Vee   | 25°C      | 0    | 35.0    | V     |       |      |   |
| Input voltage                    | Vin       | 25°C      | -0.3 | Vdd+0.3 | V     |       |      |   |
| ELECTRICAL CHARACTERISTICS       |           |           |      |         |       |       |      |   |
| Item                             | Symbol    | Condition | Min. | Typical | Max.  | Units |      |   |
| Power supply voltage             | Vdd-Vss   | 25°C      | 4.5  | -       | 5.5   | V     |      |   |
| LCD operation voltage            | Vop       | Top       | N    | W       | N     | W     | V    |   |
|                                  |           | -20°C     | -    | -       | -     | -     | V    |   |
|                                  |           | 0°C       | -    | -       | 30    | -     | 31.2 | V |
|                                  |           | 25°C      | 22.8 | -       | 24    | -     | 25.2 | V |
|                                  |           | 50°C      | 18.8 | -       | 20    | -     | -    | V |
| 70°C                             | -         | -         | -    | -       | -     | V     |      |   |
| LCM current consumption (No B/L) | Idd       | Vdd=5V    | -    | 3.5     | 7     | mA    |      |   |
| Backlight current consumption    | LED/edge  | VB/L=4.2V | -    | -       | -     | mA    |      |   |
|                                  | LED/array | VB/L=4.2V | -    | -       | -     | mA    |      |   |

**REMARK**

LCD option: STN, TN, FSTN

Backlight Option: LED,EL Backlight feature, other Specs not available on catalog is under request.

