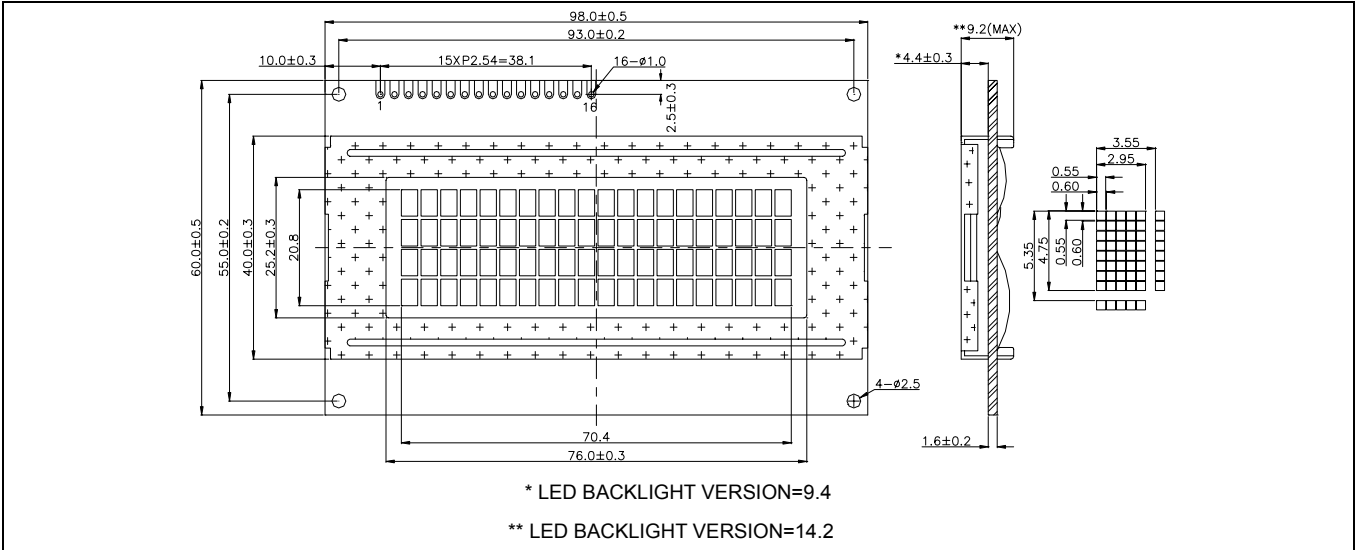


HY204XX01

20 CHAR X 4 LINE

1. EXTERNAL DIMENSION AND DISPLAY PATTERN



2. MECHANICAL DATA

| ITEM | SPECIFICATION | UNIT |
|-----------------------|--------------------------|------|
| Module Size (W×H×T) | 98.0×60.0×9.2 (LED:14.2) | mm |
| Viewing Area (W×H) | 76.0×25.2 | mm |
| Character Font (W×H) | 5×7 with Cursor | dots |
| Character Size (W×H) | 2.95×4.75 | mm |
| Character Pitch (W×H) | 3.55×5.35 | mm |
| Dot Size (W×H) | 0.55×0.55 | mm |

5. ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | MIN. | MAX. | UNIT |
|-------------------------|-------------------|---------------|----------------|------|
| Supply Voltage (Logic) | $V_{DD} - V_{SS}$ | -0.3 | 7.0 | V |
| Supply Voltage (Driver) | V_O | $V_{DD} - 12$ | $V_{DD} + 0.3$ | V |
| Input Voltage | V_{IN} | -0.3 | $V_{DD} + 0.3$ | V |

3. PIN CONFIGURATION

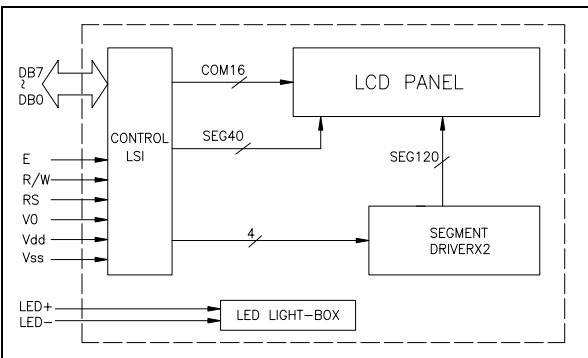
| PIN | SYMBOL | SIGNAL DESCRIPTION |
|--------|------------------------------------|--|
| 1 | V_{SS} | GND (0V) |
| 2 | V_{DD} | Power Supply |
| 3 | V_O | Supply Voltage LCD Driving |
| 4 | RS | Register Select Low = Instruction, High = Data |
| 5 | R/W | Read/Write Low = MPU to LCM, High = LCM to MPU |
| 6 | E | Enable R/W= Low : Data are talking over at falling edge R/W=High : Data can be read at E=1 |
| 7 ~ 14 | DB ₀ to DB ₇ | Data Bus-Software Selectable 4 or 8bit Mode |
| 15 | A | Anode of LED Unit |
| 16 | K | Cathode of LED Unit |

6. ELECTRICAL CHARACTERISTICS (Ta=25°C)

| ITEM | SYMBOL | CONDITION | SPEC. VALUE | | | UNIT |
|--------------------------|-------------------|----------------------|-----------------|-----------|------|----------|
| | | | MIN. | TYP. | MAX. | |
| Supply Voltage (Logic) | $V_{DD} - V_{SS}$ | | 4.5 | 5.0 | 5.5 | V |
| Supply Current (Logic) | I_{DD} | $V_{DD}=5V$ | - | 0.8 | 2.0 | mA |
| Input Voltage | "HIGH" | V_{IH} | - | 2.2 | - | V_{DD} |
| | "LOW" | V_{IL} | - | -0.3 | - | 0.6 |
| Output Voltage | "HIGH" | V_{OH} | $-I_{OH}=0.2mA$ | 2.4 | - | - |
| | "LOW" | V_{OL} | $I_{OL}=1.2mA$ | - | - | 0.4 |
| LCD Operating Voltage | $V_{DD} - V_O$ | $V_{DD}=5V, Ta=25°C$ | 4.2 | 4.4 (7.8) | 4.6 | V |
| Supply Voltage LCD Drive | I_O | | - | 1.0 | 1.5 | mA |

Note : () Value is high Reliability type

4. BLOCK DIAGRAM



7. BACKLIGHTING CHARACTERISTICS (Ta=25°C) LED

| ITEM | SYMBOL | CONDITION | MIN. | TYP. | MAX. | UNIT |
|-------------------|-----------|-------------|------|------|------|-------------------|
| Supply Voltage | V_{LED} | - | - | 4.0 | 4.2 | V |
| Power Consumption | P_{LED} | $I_F=180mA$ | - | 720 | - | mW |
| Luminous | I_V | $I_F=180mA$ | - | - | - | cd/m ² |