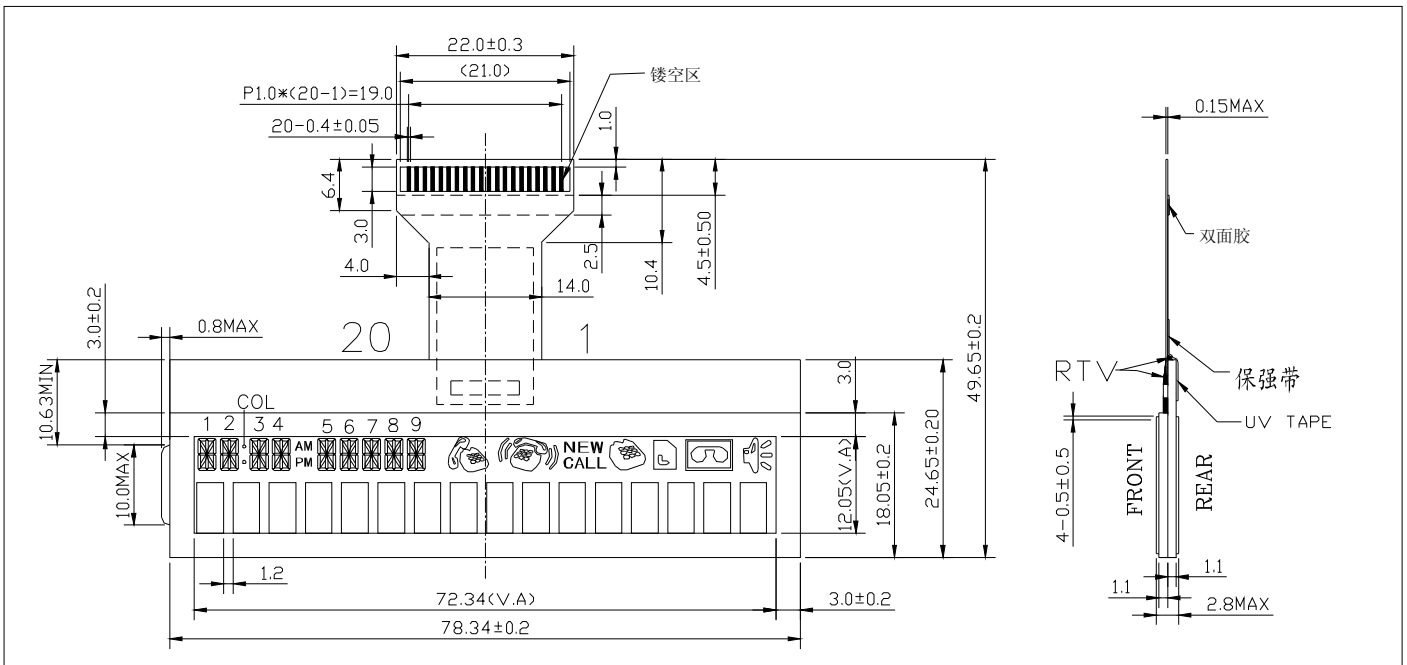
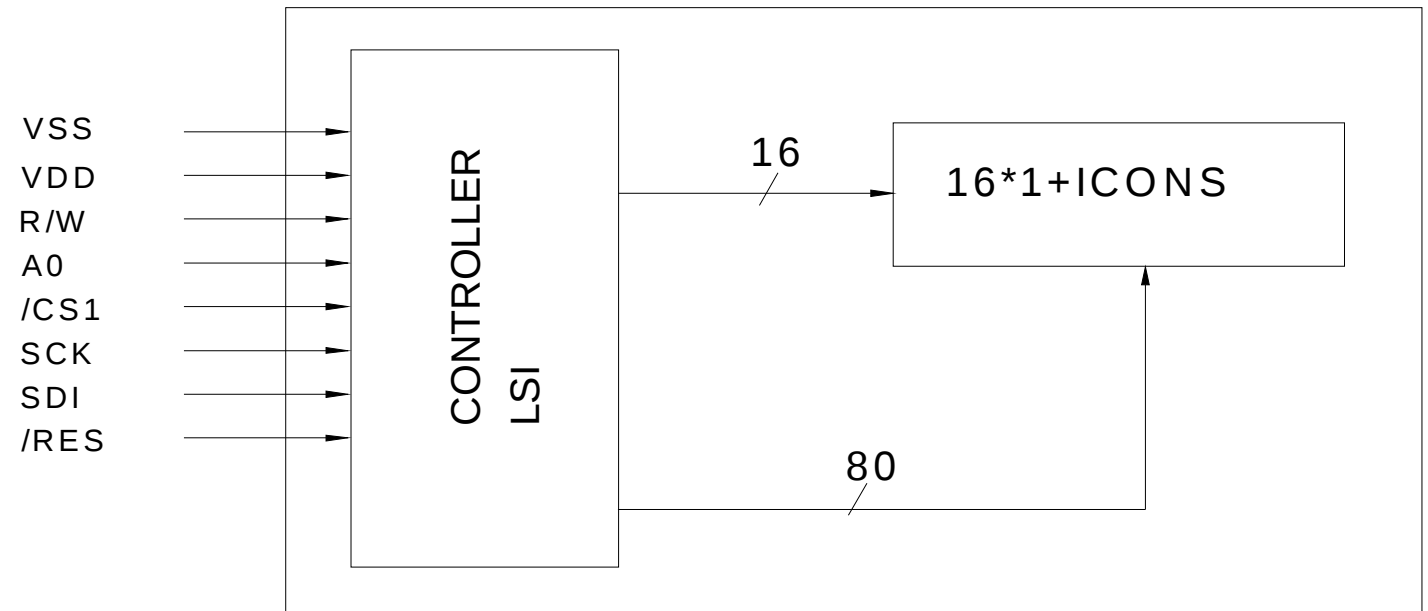




## 1.0 DIMENSIONAL DRAWING



## 2.0 BLOCK DIAGRAM



## 3.0 ELECTRICAL CHARACTERISTICS (Ta=25 °C, VDD=5.0V±0.25V )

| Item                      | Symbol | Condition  | Min. | Typ. | Max. | UNIT |
|---------------------------|--------|------------|------|------|------|------|
| Supply Voltage (Logic)    | VDD    | 25°C       | 2.2  | 3.3  | 3.75 | V    |
| LCD Operation Voltage     | Vop    | 25°C(FSTN) | --   | 6.0  | --   | V    |
| Supply Current (Logic)    | IDD    | VDD=5.0V   | --   | --   | 1.0  | mA   |
| Backlight Forward Voltage | VF     | 25°C       | --   | --   | --   | V    |

## 4.0 ABSOLUTE MAXIMUM RATINGS

| Item                   | Symbol  | Test Condition | Standard Value |         |      |
|------------------------|---------|----------------|----------------|---------|------|
|                        |         |                | Min.           | Max.    | Unit |
| Supply Voltage (Logic) | VDD-VSS | 25°C           | -0.3           | 7.0     | V    |
| Supply Voltage (LCD)   | VDD-VO  |                | -0.3           | 17.0    | V    |
| Input Voltage          | VIN     |                | -0.3           | VDD+0.3 | V    |
| Operating Temp.        | TOPR    | -              | -10            | 60      | °C   |
| Storage Temp.          | TSTG    | -              | -20            | 70      | °C   |

## 5.0 PIN ASSIGNMENT

| Pin No. | Symbol | Level | Function                                                                     |
|---------|--------|-------|------------------------------------------------------------------------------|
| 1       | R/W    | H/L   | Read/Write selection<br>H: Read operation L: Write operation                 |
| 2       | A0     | H/L   | Enable signal. Read data when E is "H", write data at the falling edge of E. |
| 3       | /CS1   |       | Chip selection                                                               |
| 4       | SCK    |       | Clock input pin                                                              |
| 5       | SDI    |       | Data input pin                                                               |
| 6       | /RES   |       | Reset signal, active "L"                                                     |
| 7       | VSS    |       | GND                                                                          |
| 8~12    | V0~V4  |       | Connect to 1.0uF à VSS                                                       |
| 13      | VOU    |       | Connect to 2.2uF à VSS                                                       |
| 14      | C2+    |       | Connect to 2.2uF à C2-                                                       |
| 15      | C2-    |       | --                                                                           |
| 16      | C4     |       | Connect to 2.2uF à VSS                                                       |
| 17      | C3     |       | Connect to 2.2u à C1-                                                        |
| 18      | C1-    |       | --                                                                           |
| 19      | C1+    |       | Connect to 2.2u à C1-                                                        |
| 20      | VDD    |       | Recommend : +3.3V                                                            |

Remark:

1. LCD option: TN,STN,FSTN.
2. Standard module.
3. Backlight option: LED,EL backlight feature, other specs not available on catalog is under request.