

## DV series

### DV-20100 20 characters x 1 lines

#### ■ Mechanical Data

| Item              | Standard Value                | Unit |
|-------------------|-------------------------------|------|
| Module Dimensions | 182.0(W) X 33.5(H) X 10.0 (D) | mm   |
| Viewing Area      | 154.0(W) X 16.5(H)            | mm   |
| Dot Size          | 1.30(W) X 1.30(H)             | mm   |
| Dot Pitch         | 1.35(W) X 1.35(H)             | mm   |

#### ■ Absolute Maximum Ratings

| Item                         | Symbol          | Standard Value |      |              | Unit |
|------------------------------|-----------------|----------------|------|--------------|------|
|                              |                 | Min.           | Typ. | Max.         |      |
| Supply Voltage for Logic     | $V_{dd}-V_{ss}$ | -0.3           | --   | 7.0          | V    |
| Supply Voltage for LCD Drive | $V_{dd}-V_{ee}$ | $V_{dd}-13.5$  | --   | $V_{dd}+0.3$ | V    |
| Input Voltage                | $V_I$           | -0.3           | --   | $V_{dd}+0.3$ | V    |
| Operation Temperature        | $T_{opr}$       | 0              | --   | 50           | °C   |
| Storage Temperature          | $T_{stg}$       | -20            | --   | 70           | °C   |

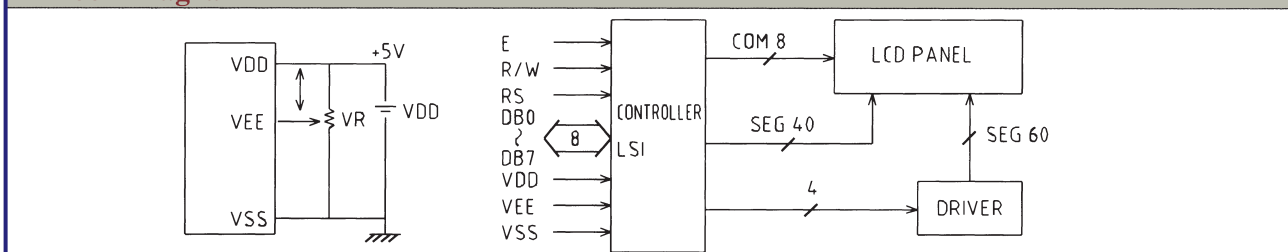
#### ■ Electrical Characteristics

| Item                  | Symbol   | Condition         | Standard Value |      |          | Unit |
|-----------------------|----------|-------------------|----------------|------|----------|------|
|                       |          |                   | Min.           | Typ. | Max.     |      |
| Input "High" Voltage  | $V_{IH}$ |                   | 2.2            | --   | $V_{dd}$ | V    |
| Input "Low" Voltage   | $V_{IL}$ | $-I_{OH}=0.205mA$ | 0              | --   | 0.6      | V    |
| Output "High" Voltage | $V_{OH}$ | $I_{OL}=1.2mA$    | 2.4            | --   | $V_{dd}$ | V    |
| Output "Low" Voltage  | $V_{OL}$ |                   | 0              | --   | 0.4      | V    |
| Supply Current        | $I_{dd}$ | $V_{dd}=5V$       | --             | 2.0  | 5.0      | mA   |

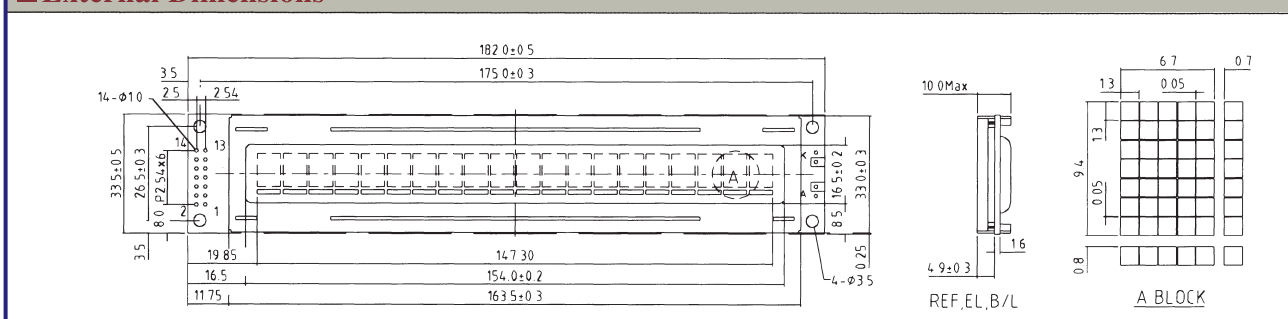
#### ■ Pin Assignment

| No. | Symbol   | Function        | No. | Symbol | Function      |
|-----|----------|-----------------|-----|--------|---------------|
| 1   | Vss      | GND,0V          | 8   | DB1    | Data Bus Line |
| 2   | $V_{DD}$ | +5V             | 9   | DB2    | Data Bus Line |
| 3   | $V_{EE}$ | For LCD Drive   | 10  | DB3    | Data Bus Line |
| 4   | RS       | Function select | 11  | DB4    | Data Bus Line |
| 5   | R/W      | Read/Write      | 12  | DB5    | Data Bus Line |
| 6   | E        | Enable signal   | 13  | DB6    | Data Bus Line |
| 7   | DB0      | Data bus line   | 14  | DB7    | Data Bus Line |

#### ■ Block Diagram



#### ■ External Dimensions



#### ■ Option

| LCD Type |    |   |   |   |   |   |   | Backlight Type |     |      | Built-in Control LSI |                        |  |
|----------|----|---|---|---|---|---|---|----------------|-----|------|----------------------|------------------------|--|
| S1       | S2 | W | N | R | F | M | H | EL             | LED | CCFL | Touch Panel          |                        |  |
| •        | •  |   |   | • | • |   |   | •              |     |      |                      | KS-0066U or equivalent |  |

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)