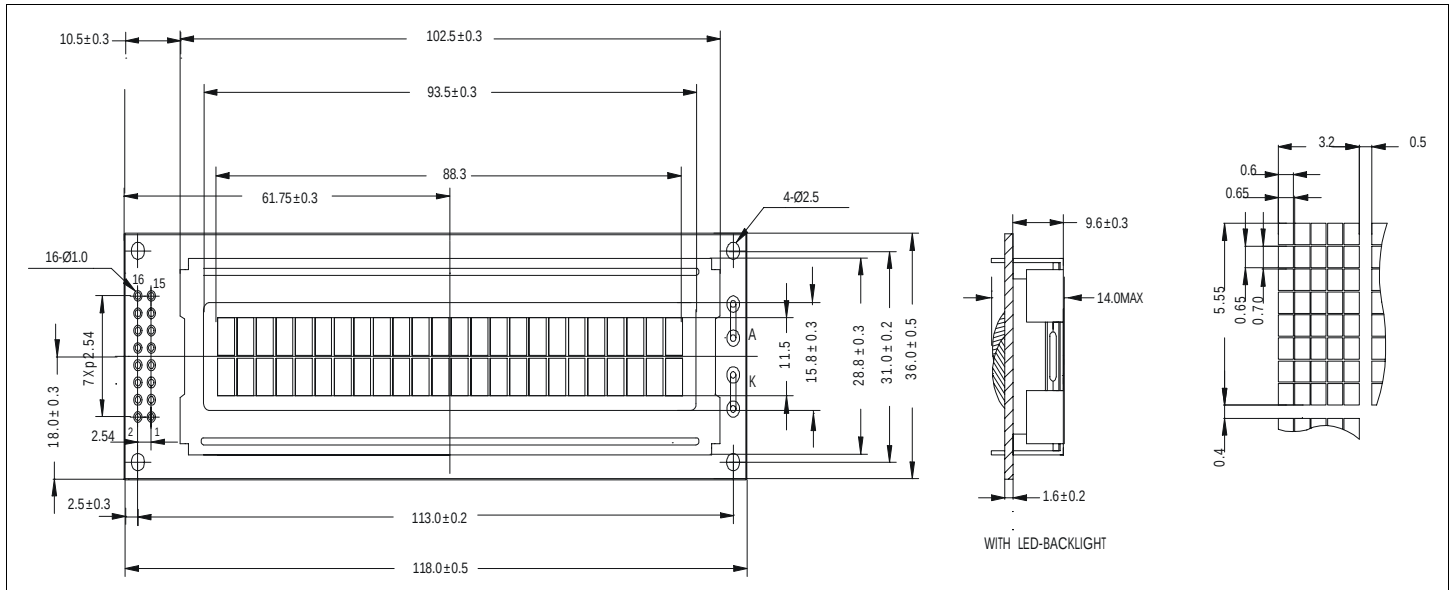


# HDM24216L-2

## Dimensional Drawing

24 Characters x 2 Lines LED Backlight



### Features

Character Format ..... 5x7 Dots with Cursor  
Backlight.....LED  
Options.....Gray STN/Yellow STN, 12 o'Clock/6 o'Clock View  
Normal/Extended Temperature  
Normal/Negative Displays

### Physical Data

Module Size.....118.0W x 36.0H x 14.0T mm  
Viewing Area Size.....93.5W x 15.8H mm  
Weight.....45g

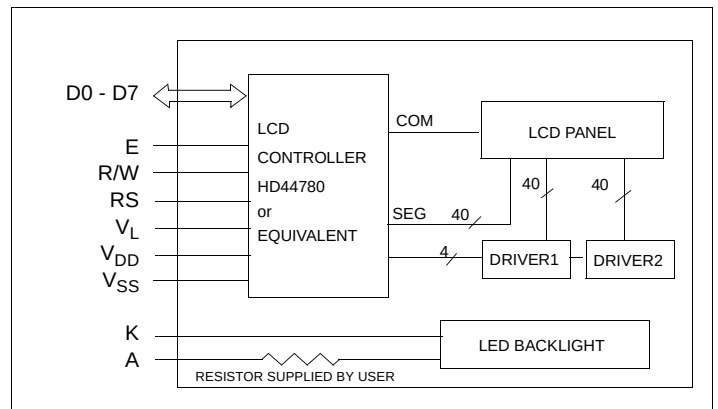
### Absolute Maximum Ratings

| PARAMETER              | SYMBOL          | MIN      | MAX      | UNIT |
|------------------------|-----------------|----------|----------|------|
| SUPPLY VOLTAGE         | $V_{DD}-V_{SS}$ | 0        | 7.0      | V    |
| SUPPLY VOLTAGE FOR LCD | $V_{DD}-V_L$    | 0        | 12.0     | V    |
| INPUT VOLTAGE          | $V_{IN}$        | $V_{SS}$ | $V_{DD}$ | V    |
| OPERATING TEMPERATURE  | $T_{OP}$        | 0        | 50       | °C   |
| STORAGE TEMPERATURE    | $T_{STG}$       | -20      | 70       | °C   |

### Electrical Characteristics (VDD=5.0±0.25V 25°C)

| PARAMETER            | SYM          | CONDITION         | MIN | TYP  | MAX | UNIT              |
|----------------------|--------------|-------------------|-----|------|-----|-------------------|
| INPUT HIGH VOLTAGE   | $V_{IH}$     | -                 | 2.2 | -    | -   | V                 |
| INPUT LOW VOLTAGE    | $V_{IL}$     | -                 | -   | -    | 0.6 | V                 |
| OUTPUT HIGH VOLTAGE  | $V_{OH}$     | $I_{OH}=0.2mA$    | 2.4 | -    | -   | V                 |
| OUTPUT LOW VOLTAGE   | $V_{OL}$     | $I_{OL}=1.2mA$    | -   | -    | 0.4 | V                 |
| POWER SUPPLY CURRENT | $I_{DD}$     | $V_{DD}=5.0V$     | -   | 1.38 | -   | mA                |
| POWER SUPPLY FOR LCD | $V_{DD}-V_L$ | $T_A=25^{\circ}C$ | 4.2 | 4.7  | 5.2 | V                 |
| LED FORWARD VOLTAGE  | $V_F$        | $I_F=150mA$       | -   | 4.2  | 4.6 | V                 |
| LED FORWARD CURRENT  | $I_F$        | $V_F=4.2V$        | -   | 150  | 300 | mA                |
| BRIGHTNESS           | L            | -                 | -   | 185  | -   | cd/m <sup>2</sup> |
| DRIVE METHOD         | 1/16 Duty    |                   |     |      |     |                   |

### Block Diagram



### Pin Connections

| PIN NO. | SYMBOL          | LEVEL | FUNCTION                                   |              |
|---------|-----------------|-------|--------------------------------------------|--------------|
| 1       | V <sub>SS</sub> | -     | 0V                                         | Power supply |
| 2       | V <sub>DD</sub> | -     | 5V                                         |              |
| 3       | V <sub>L</sub>  | -     | -                                          |              |
| 4       | RS              | H/L   | H: Data input<br>L: Instruction data input |              |
| 5       | R/W             | H/L   | H: Data read<br>L: Data write              |              |
| 6       | E               | H,H→L | Enable signal                              |              |
| 7       | D0              | H/L   | Data bus                                   |              |
| 8       | D1              | H/L   |                                            |              |
| 9       | D2              | H/L   |                                            |              |
| 10      | D3              | H/L   |                                            |              |
| 11      | D4              | H/L   |                                            |              |
| 12      | D5              | H/L   |                                            |              |
| 13      | D6              | H/L   |                                            |              |
| 14      | D7              | H/L   |                                            |              |
| 15      | A               |       | Anode for LED Backlight                    |              |
| 16      | K               |       | Cathode for LED Backlight                  |              |

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