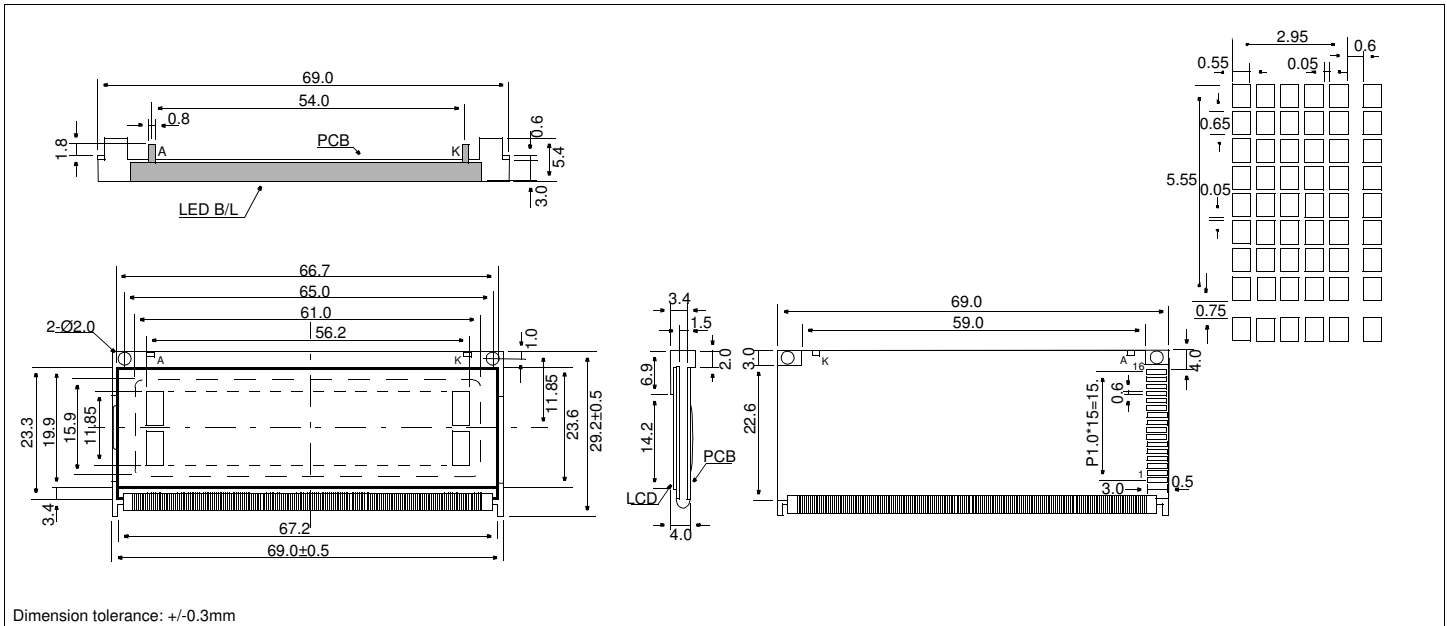


# HDM16216L-T

## Dimensional Drawing

16 Character x 2 Lines, Very Thin, LED Backlight



### Features

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

### Physical Data

Module Size.....69.0W x 29.2H x 6.5T mm  
 Viewing Area Size.....61.0W x 15.9H mm  
 Weight.....40g

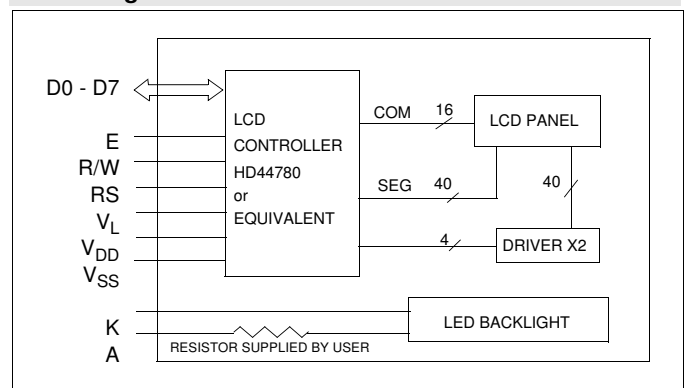
### Absolute Maximum Ratings

| PARAMETER              | SYMBOL          | MIN  | MAX          | UNIT |
|------------------------|-----------------|------|--------------|------|
| SUPPLY VOLTAGE         | $V_{DD}-V_{SS}$ | 0    | 7.0          | V    |
| SUPPLY VOLTAGE FOR LCD | $V_{DD}-V_L$    | -0.3 | 7.3          | V    |
| INPUT VOLTAGE          | $V_{IN}$        | -0.3 | $V_{DD}+0.3$ | V    |
| OPERATING TEMPERATURE  | $T_{OP}$        | 0    | 40           | °C   |
| STORAGE TEMPERATURE    | $T_{STG}$       | -20  | 60           | °C   |
| LED FORWARD CURRENT    | $I_F$           | -    | 100          | mA   |
| LED REVERSE VOLTAGE    | $V_R$           | -    | 8            | V    |
| LED POWER CONSUMPTION  | $P_D$           | -    | 500          | mW   |

### 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    | $V_{IL}$     | -                 | -0.3 | -   | 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 | $I_{DD}$     | $V_{DD}=5.0V$     | -    | 1.8 | -   | mA                |
| POWER SUPPLY FOR LCD | $V_{DD}-V_L$ | $T_A=25^{\circ}C$ | 3.9  | 4.2 | 4.5 | V                 |
| LED FORWARD VOLTAGE  | $V_F$        | $I_F=40mA$        | 3.9  | 4.2 | 4.5 | V                 |
| BRIGHTNESS           | L            | $I_F=40mA$        | -    | 4   | -   | cd/m <sup>2</sup> |
| DRIVE METHOD         | 1/16 Duty    |                   |      |     |     |                   |

### Block Diagram



### Pin Connections

| PIN NO. | SYMBOL   | LEVEL | FUNCTION                                   |
|---------|----------|-------|--------------------------------------------|
| 1       | $V_{SS}$ | -     | Power supply                               |
| 2       | $V_{DD}$ | -     |                                            |
| 3       | $V_L$    | -     |                                            |
| 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 back light                   |
| 16      | K        |       | Cathode for LED back light                 |