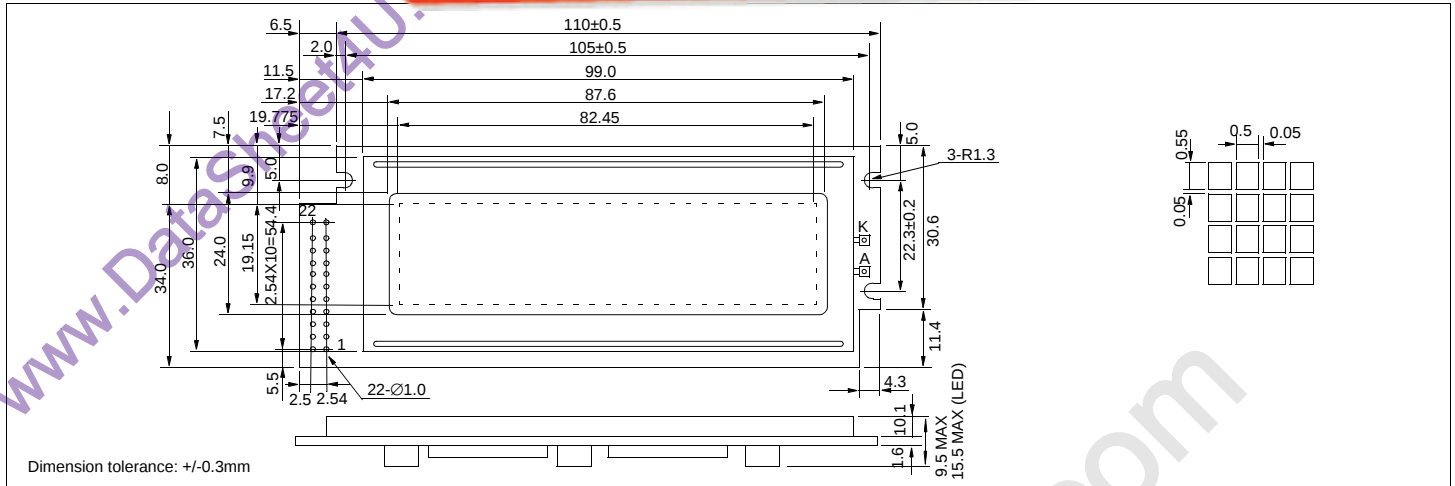


# HDM150GS32

## Dimensional Drawing

液晶之友 电话: 020-33819057  
Http://www.lcdfriends.com

150 x 32 Dots Graphic



### Features

Backlight.....EL or LED Optional  
Options.....Gray STN / Yellow STN  
Normal/Extended Temperature  
Bottom / Top Viewing  
Built-in Controller.....Toshiba T7932

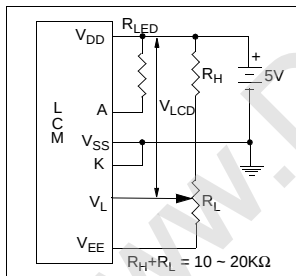
### Physical Data

Module Size.....(None or EL) 116.5W x 42.0H x 9.5T mm  
(LED) 116.5W x 42.0H x 15.5T mm  
Viewing Area Size.....87.6W x 24.0H mm  
Dot Pitch.....0.55W x 0.60H mm  
Dot Size.....0.50W x 0.55H mm  
Weight.....70g

### Absolute Maximum Ratings

| PARAMETER             | SYMBOL          | MIN | MAX | UNIT |
|-----------------------|-----------------|-----|-----|------|
| SUPPLY VOLTAGE        | $V_{DD}-V_{SS}$ | 0   | 6.5 | V    |
| INPUT VOLTAGE         | $V_{IN}$        | 0   | 6.5 | V    |
| OPERATING TEMPERATURE | $T_{OP}$        | 0   | 50  | °C   |
| STORAGE TEMPERATURE   | $T_{STG}$       | -20 | 60  | °C   |

### Power Supply



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

| PARAMETER            | SYM          | CONDITION      | MIN              | TYP | MAX      | UNIT |
|----------------------|--------------|----------------|------------------|-----|----------|------|
| OPERATING VOLTAGE    | $V_{DD}$     | -              | 4.5              | 5.0 | 5.5      | V    |
| POWER SUPPLY FOR LCD | $V_{DD}-V_L$ | -              | 6.2              | 7.2 | 8.2      | V    |
| INPUT HIGH VOLTAGE   | $V_{IH}$     | -              | $V_{DD}$<br>-2.2 | -   | $V_{DD}$ | V    |
| INPUT LOW VOLTAGE    | $V_{IL}$     | -              | 0                | -   | 0.8      | V    |
| OUTPUT HIGH VOLTAGE  | $V_{OH}$     | $I_{OH}=0.2mA$ | $V_{DD}$<br>-0.4 | -   | $V_{DD}$ | V    |
| OUTPUT LOW VOLTAGE   | $V_{OL}$     | $I_{OL}=1.2mA$ | 0                | -   | 0.4      | V    |
| LED CURRENT          | $I_{LED}$    | -              | -                | -   | 180      | mA   |
| POWER SUPPLY CURRENT | $I_{DD}$     | $V_{DD}=5.0V$  | -                | -   | 2.8      | mA   |
| DRIVE METHOD         | 1/32 Duty    |                |                  |     |          |      |

### Pin Connections

| PIN NO. | SYMBOL   | FUNCTION      |                          |
|---------|----------|---------------|--------------------------|
| 1       | $V_{SS}$ | 0V            | Ground                   |
| 2       | $V_{DD}$ | 5V            | Power supply for logic   |
| 3       | $V_L$    | -             | Operating voltage for LC |
| 4       | D/I      | H/L           | 1=Data, 0=Instruction    |
| 5       | R/W      | H/L           | 1=Read, 0=Write          |
| 6       | E        | H/H→L         | Enable                   |
| 7       | DB0      | H/L           | Data bus                 |
| 8       | DB1      | H/L           |                          |
| 9       | DB2      | H/L           |                          |
| 10      | DB3      | H/L           |                          |
| 11      | DB4      | H/L           |                          |
| 12      | DB5      | H/L           |                          |
| 13      | DB6      | H/L           |                          |
| 14      | DB7      | H/L           |                          |
| 15      | CS1      | H             | Chip select              |
| 16      | CS2      | H             |                          |
| 17      | CS3      | H             |                          |
| 18      | RESET    | L             | Reset                    |
| 19      | $V_{EE}$ | OUTPUT        | #                        |
| 20      | N/C      | No connection |                          |
| 21      | N/C      |               |                          |
| 22      | N/C      |               |                          |

# Has built-in inverter for negative power supply