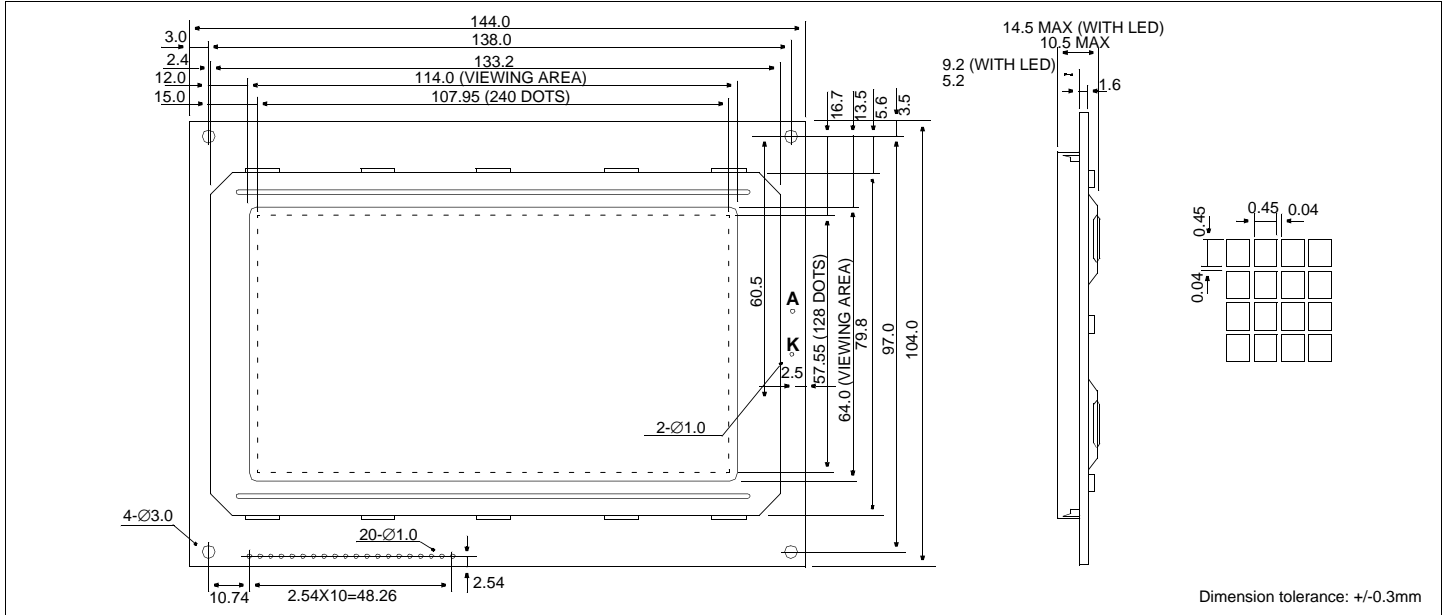


HDM 128GS24

240 X 128 Dots Graphic

Dimensional Drawing



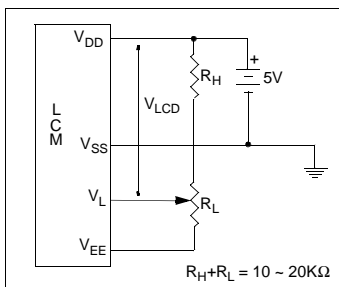
Features

- Backlight.....EL, LED or CCFL Optional
- Options.....Gray STN / Yellow STN
- Normal/Extended Temperature
- Bottom / Top Viewing
- Built-in Controller.....Toshiba T6963C

Physical Data

- Module Size.....144.0W x 104.0H x 12.5T mm
- Viewing Area Size.....114.0W x 64.0H mm
- Dot Pitch.....0.49W x 0.49H mm
- Dot Size.....0.45W x 0.45H mm
- Weight.....160g

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 | - | - | 17.5 | - | V |
| INPUT HIGH VOLTAGE | V _{IH} | - | V _{DD} -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} -0.4 | - | V _{DD} | V |
| OUTPUT LOW VOLTAGE | V _{OL} | I _{OL} =1.2mA | 0 | - | 0.4 | V |
| POWER SUPPLY CURRENT | I _{DD} | V _{DD} =5.0V | - | 13.0 | 20.0 | mA |
| DRIVE METHOD | 1/128 Duty | | | | | |

Absolute Maximum Ratings

| PARAMETER | SYMBOL | MIN | MAX | UNIT |
|-----------------------|----------------------------------|-----|-------|------|
| SUPPLY VOLTAGE | V _{DD} -V _{SS} | 0 | 7.0 | V |
| POWER SUPPLY FOR LCD | V _L | - | -30.0 | V |
| INPUT VOLTAGE | V _{IN} | 0 | 7.0 | V |
| LED FORWARD CURRENT | I _F | | 2250 | mA |
| OPERATING TEMPERATURE | T _{OP} | 0 | 50 | °C |
| STORAGE TEMPERATURE | T _{STG} | -20 | 60 | °C |

Pin Connections

| PIN NO. | SYMBOL | FUNCTION | |
|---------|-----------------|----------|-----------------------------|
| 1 | V _{SS} | 0V | Ground |
| 2 | V _{DD} | 5V | Power supply for logic |
| 3 | V _L | -12.5V | Operating voltage for LC |
| 4 | C/D | H/L | 1=Command, 0=Data |
| 5 | RD | L | Data read |
| 6 | WR | L | Data write |
| 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 | CE | L | Chip enable |
| 16 | RESET | L | Reset |
| 17 | V _{EE} | OUTPUT | # |
| 18 | MD2 | H/L | Column select 0=40, 1=32 |
| 19 | FS1 | H/L | Text cell size 0=8x8, 1=6x8 |
| 20 | N/C | - | No connection |

Has built-in inverter for negative power supply.