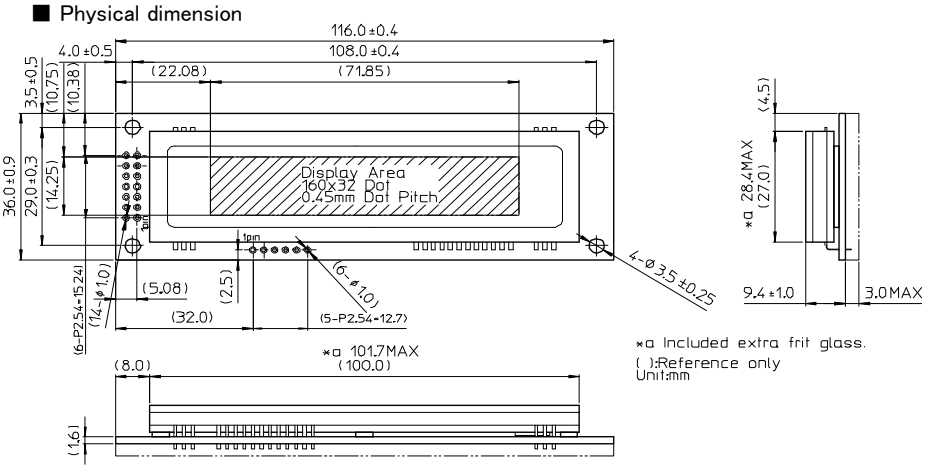
# GU160X32D-7000

SIMPLIFIED DATASHEET

## ■ Features

160x32 dots high-density type. Same PCB size as current 140x16 dot / 20 line x 2 character models. Use instead of 2x20 LCD or GU140X16G, to increase display function without changing case size.

## ■ Physical dimension




## Specifications

### ■ Electrical Ratings

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|---|---|---|---|---|---|---|
| Power supply voltage | VCC | 4.75 | 5.00 | 5.25 | VDC | – |

### ■ Electrical Characteristics

| Parameter | Symbol | Min. | Typ. | Max. | Unit | Condition |
|---|---|---|---|---|---|---|
| 'L' Logic Input Current | | | | | | |
| D0-D7,/WR,/RD | IIL1 | – | – | −0.15 | mA | VIN=0V |
| /RESET | IIL2 | – | – | −0.6 | mA | VIN=0V |
| 'H' Logic Input Current | | | | | | |
| D0-D7,/WR,/RD,/RESET | IIH | – | – | 1.0 | μADC | VIN=5V |
| Logic Input Voltage | VIH | 0.8VCC | – | VCC | VDC | – |
| D0-D7,/WR,/RD,/RESET | VIL | 0 | – | 0.2VCC | VDC | – |
| Logic Output Voltage | VOH | 3.8 | – | VCC | VDC | IOH=−1.5mA |
| D7(Busy flag), PBUSY | VOL | 0 | – | 0.6 | VDC | IOL=1.6mA |
| Logic input resistance | | | | | | |
| SIN | RIN | 3 | – | – | KΩ | – |
| Logic Input Voltage | VIH | 3.0 | – | +15 | VDC | – |
| SIN | VIL | −15 | – | 0.5 | VDC | – |
| Logic Output Voltage | VOH | 4.0 | – | VCC | VDC | RL=3KΩ |
| SBUSY | VOL | 0 | – | 0.5 | VDC | RL=3KΩ |
| Power Supply Current 1 | ICC-1 | – | 360 | 470 | mADC | All dots ON |
| Power Supply Current 2 | ICC-2 | – | 290 | 380 | mADC | All dots OFF |
| Power Supply Current 3 | ICC-3 | – | 35 | 50 | mADC | Display power OFF |
| Power Consumption | | – | 1.80 | 2.35 | W | All dots ON |

### ■ Optical Specifications

| Parameter | |
|---|---|
| Number of Dots | 5,120 (160 x 32) |
| Character numbers | 22 x 4 / Max26 x 4 by 5 x 7 dot ANK |
| | 10 x 2 by 16 x 16 dot 2-byte character |
| Display Area | 71.85 mm x 14.25 mm |
| Dot Size (X x Y) | 0.3 mm x 0.3 mm |
| Dot Pitch (X x Y) | 0.45 mm x 0.45 mm |
| Luminance | 350 cd/$m^2$ Min. (500 cd/$m^2$ Typ.) |
| Color of illumination | Green (Blue-Green) |

### ■ Environmental Specifications

| Parameter | |
|---|---|
| Operating Temperature | −40 ~ +85 degrees celsius |
| Storage Temperature | −40 ~ +85 degrees celsius |
| Operating Humidity | 20 ~ 80% R.H. (non-condensing) |
| Storage Humidity | 20 ~ 80% R.H. (non-condensing) |
| Vibration (non-operating) | 10-55-10Hz, all amplitude 1mm, 30 minutes, X-Y-Z |
| Shock (non-operating) | 392$m/s^2$ (40G) 9ms X-Y-Z, 3 times each direction |

### ■Character display

| Parameter | *ANK(Alphabet, Numeric, Kana) |
|---|---|
| Character font type | 5x7 ANK, International font |
| Character width | Fixed/Proportional character format 1&2 |
| Attribution | Character magnify, Reverse |
| Weight | About 49 g |

### ■ Interface

Parallel(CMOS), Asynchronous Serial (RS232)

### ■ Pin Assignment (Parallel)

| Pin No. | Signal | Pin No. | Signal |
|---|---|---|---|
| 1 | GND | 2 | Vcc |
| 3 | NC | 4 | RS |
| 5 | /WR | 6 | /RD |
| 7 | D0 | 8 | D1 |
| 9 | D2 | 10 | D3 |
| 11 | D4 | 12 | D5 |
| 13 | D6 | 14 | D7(PBUSY) |

(Asynchronous Serial )

| Pin No. | Signal |
|---|---|
| 1 | Vcc |
| 2 | SIN |
| 3 | GND |
| 4 | SBUSY |
| 5 | NC |
| 6 | /RESET |

| Baud Rate Setting |
|---|
| 9600bps |
| 19200bps |
| 38400bps* |
| 115200bps |
| (*:Default setting) |

### ■ Functions

| Parameter |
|---|
| Control command |
| Scroll display action |
| Proportional Font function |
| User-Windows function |
| AND/OR/XOR Mixture display |
| Reverse display |
| Bit image display |
| Character download function |
| etc. |

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