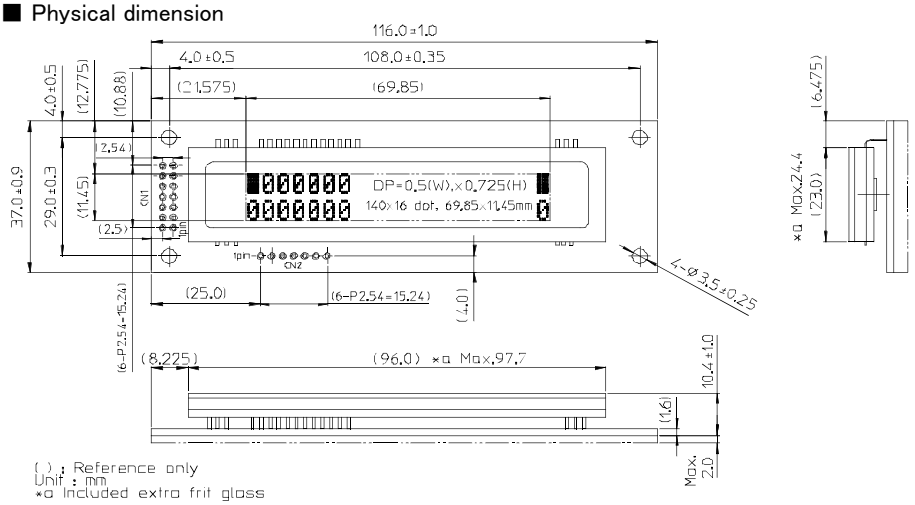
# GU140X16G-7003B

SIMPLIFIED DATASHEET

## ■ Features

VFD module with same size and shape as LCD module. LED backlight models are also available, for additional display effect.

## ■ 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 SIN, SCK, /CS, /RESET | IIL | – | – | −0.6 | mA | VIN=0V |
| 'H' Logic Input Current SIN, SCK, /CS, /RESET | IIH | – | – | 1.0 | μADC | VIN=5V |
| Logic Input Voltage | VIH | 0.8VCC | – | VCC | VDC | – |
| SIN, SCK, /CS, /RESET | VIL | 0 | – | 0.2VCC | VDC | – |
| Logic Output Voltage | VOH | 3.8 | – | VCC | VDC | IOH=−1.5mA |
| SBUSY | VOL | 0 | – | 0.6 | VDC | IOL=1.6mA |
| Power Supply Current 1 | ICC-1 | – | 240 | 300 | mADC | All dots ON |
| Power Supply Current 2 | ICC-2 | – | 200 | 250 | mADC | All dots OFF |
| Power Supply Current 3 | ICC-3 | – | 12 | 15 | mADC | Display power OFF |
| Power Consumption | | – | 1.2 | 1.5 | W | All dots ON |

### ■ Optical Specifications

| Parameter | |
|---|---|
| Luminance | 350 cd/m$^2$ Min. (700 cd/m$^2$ Typ.) |
| Color of illumination | Green (Blue-Green) |

### ■ Environmental Specifications

| Parameter | |
|---|---|
| Operating Temperature | −40 ~ +85 degrees celsius |
| Storage Temperature | −60 ~ +85 degrees (Under 168 hours)/−40 ~ +85 degrees (Or more) |
| 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) | 392m/s2 (40G) 9ms X-Y-Z, 3 times each direction |

### ■ Physical Specifications

| Parameter | |
|---|---|
| Number of Dots | 2,240 (140 x 16) |
| Display Area | 69.85 mm x 11.45 mm |
| Dot Size (X x Y) | 0.350 mm x 0.575 mm |
| Dot Pitch (X x Y) | 0.500 mm x 0.725 mm |
| Weight | About 40 g |

### ■ Interface

Sync/Asynchronous Serial, SPI(CMOS)

### ■ Pin Assignment

**(Synchronous)**

| Pin No. | Signal |
|---|---|
| 1 | VCC |
| 2 | SIN |
| 3 | GND |
| 4 | SBUSY |
| 5 | SCK |
| 6 | /RESET |
| 7 | NC |

(SPI)

| Pin No. | Signal |
|---|---|
| 1 | VCC |
| 2 | SIN |
| 3 | GND |
| 4 | SBUSY |
| 5 | SCK |
| 6 | /RESET |
| 7 | /CS |

**(Asynchronous)**

| Pin No. | Signal |
|---|---|
| 1 | VCC |
| 2 | SIN |
| 3 | GND |
| 4 | SBUSY |
| 5 | NC |
| 6 | /RESET |
| 7 | NC |

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

### ■ Selectable Font

| Parameter | | *ANK(Alphabet, Numeric, Kana) |
|---|---|---|
| Character font type | 5 x 7 | ANK, International |
| Character width | Fixed/Proportional character format 1&2 | |
| Character numbers | 20 x 2 by 5 x 7 dot ASCII | |
| | 23 x 2 by 5 x 7 dot Proportional | |

### ■ Functions

| Parameter |
|---|
| Control command |
| Scroll display action |
| Proportional Font function |
| User-Windows function |
| AND/OR/XOR Mixture display |
| Reverse display |
| Dot unit real-time bit image display |
| Download character function |
| Font Magnification function |
| etc. |

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