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## GU256X64C-D903M

SIMPLIFIED DATASHEET

## Features

256x64 pixel graphic VFD Module equips 16(8x2) Capacitive Touch Switches.
(Mutual Capacitive Type)

Get full specification


■Outline dimensions


## Specification

| ■ Electrical Ratings | Note: Logic input I/O is 3.3V C-MOS level. |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Parameter | Symbo | Min. | Typ. | Max. | Unit | Condition |
| Power Supply Voltage | VCC | 4.75 | 5.00 | 5.25 | VDC |  |
| - Electrical Characteristic Please refer to a full specification for Characteristics of I/O ort. |  |  |  |  |  |  |
| Parameter | Symbo | Min. | Typ. | Max. | Unit | Condition |
| I2C Logic Input Current | IIH-1 | - | - | 1 | uA | VIN=3.3V |
| SDA,SCL,/RESET | IIL-1 | - | - | -0.5 | mA | VIN=0V |
| 12C Logic Input Voltage | VIH-1 | 2.7 | - | - | VDC | - |
| SDA,SCL,/RESET | VIL-1 | - | - | 0.6 | VDC | - |
| 12C Logic Output Voltage S | VOL-1 | - | - | 0.8 | VDC | $10 \mathrm{~L}=2 \mathrm{~mA}$ |
| 12C Logic Output Voltage | VOH-2 | 2.6 | - | - | VDC | $10 \mathrm{H}=-0.5 \mathrm{~mA}$ |
| MBUSY,/TRDY | VOL-2 | - | - | 0.9 | VDC | $1 \mathrm{OL}=1 \mathrm{~mA}$ |
| Logic Input Current RxD | IIH-2 | - | - | 1 | uA | $\mathrm{VIN}=3.3 \mathrm{~V}$ |
| MOSI,SCK,/CS,HBUSY,/RESET | IIL-2 | - | - | -0.5 | mA | VIN=0V |
| Logic Input Voltage RXD | VIH-2 | 2.7 | - | - | VDC | - |
| MOSI,SCK,/CS,HBUSY,/RESET | VIL-2 | - | - | 0.6 | VDC | - |
| Logic Output Voltage | VOH-3 | 2.6 | - | - | VDC | $1 \mathrm{OH}=-0.5 \mathrm{~mA}$ |
| TXD,MISO,MBUSY,/TRDY | VOL-3 | - | - | 0.9 | VDC | $1 \mathrm{LL}=1.0 \mathrm{~mA}$ |
| Output permission current | \|IIOH/L| |  |  | $\pm 3$ | mA | Per port( $8 \mathrm{l} / \mathrm{O}$ ) |
| Power Supply Current | ICC-1 | - | 440 | 570 | mADC | All dots turned on |
|  | ICC-2 | - | 220 | 285 | mADC | All dots turned off |
|  | ICC-3 | - | 30 | 40 | mADC | Display power off |
| Power consumption |  |  | 2.2 | 2.85 | W | All dots turned on |

## Optical characteristics

Parameters

| Luminance | $300 \mathrm{~cd} / \mathrm{m}^{2}$ Min. ( $600 \mathrm{~cd} / \mathrm{m}^{2}$ Typ.) |
| :--- | :--- |
| Color of illumination | Green (Bluish green) |

## Physical Specification

Parameters
Number of Dots
Active area (XxY)
Size of Dot (XxY)
Pitch of $\operatorname{Dot}(X x Y)$
Weight

16,384 (256x64)
$83.08 \mathrm{~mm} \times 20.68 \mathrm{~mm}(\mathrm{XxY})$
$0.2 \mathrm{~mm} \times 0.2 \mathrm{~mm}$ ( X x Y)
$0.325 \mathrm{~mm} \times 0.325 \mathrm{~mm}(\mathrm{XxY})$
approximately 67 g

## Environmental Specification

Parameters

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

- Host Interface

Asynchronous Serial, SPI and I2C (Logic level is 3.3V for all)

## ■Pin Assignment

CN2: Asynchronous Serial

| Pin No. | Signal | Pin No. | Signal |
| :---: | :--- | :---: | :--- |
| 1 | VCC | 8 | TXD |
| 2 | RXD | 9 | /TRDY |
| 3 | GND | 10 | GND |
| 4 | MBUSY | 11 | P00 |
| 5 | IC | 12 | P01 |
| 6 | RESET | 13 | P02 |
| 7 | HBUSY | 14 | P03 |


| CN2: SPI Interface |  |  |  |
| :---: | :---: | :---: | :---: |
| Pin No. | Signal | Pin No. | Signal |
| 1 | VCC | 8 | MISO |
| 2 | MOSI | 9 | /TRDY |
| 3 | GND | 10 | GND |
| 4 | MBUSY | 11 | P00 |
| 5 | SCK | 12 | P01 |
| 6 | /RESET | 13 | P02 |
| 7 | /CS | 14 | P03 |
| CN2 : 12C Interface |  |  |  |
| Pin No. | Signal | Pin No. | Signal |
| 1 | VCC | 8 | IC |
| 2 | SDA | 9 | /TRDY |
| 3 | GND | 10 | GND |
| 4 | MBUSY | 11 | P00 |
| 5 | SCL | 12 | P01 |
| 6 | /RESET | 13 | P02 |
| 7 | IC | 14 | P03 |

■ Character Fonts
Parameters
Font tables $5 \times 7$ Alpha-numeric, Kana, International $8 \times 16$ Alpha-numeric, Kana, International $16 \times 16$ CJK
Number of digits \& lin $5 \times 7$ dot font: $36 / 42$ digits $\times 8$ lines(Fixed width)
$16 \times 16$ dot font: 16digits $\times 4$ line

## - Functions

Characters and Graphics display, Control command,
Macro \& P Macro, I/O port,
Touch Switch with Calibration, etc.

