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With the principle of "Quality Parts,Customers Priority,Honest Operation,and Considerate Service",our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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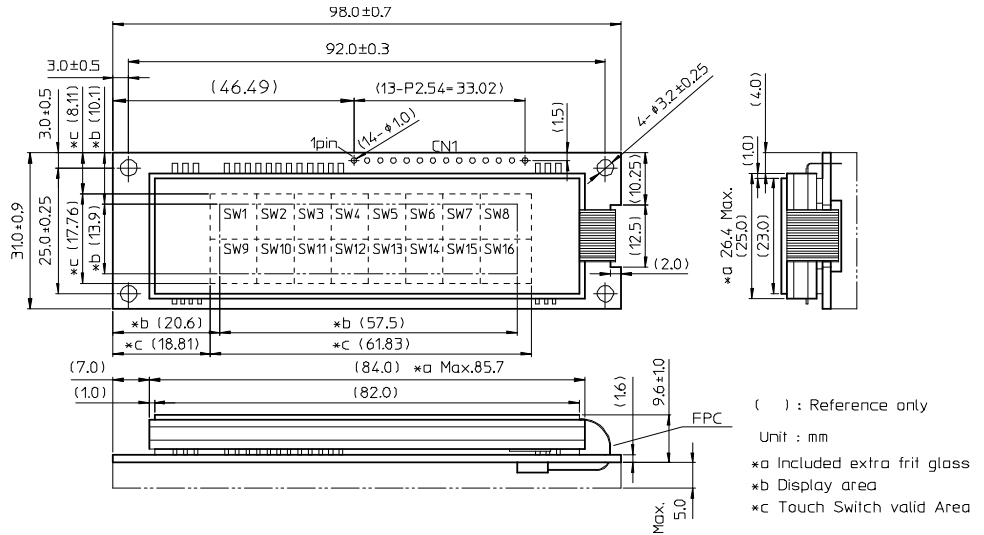
# GU128X32D-D903S

## SIMPLIFIED DATASHEET

### Features

VF Display Module equips 16 (8x2) Capacitive Touch Switches.

### Outline dimensions



### Get full specification



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### Specifications

#### Electrical Ratings

Note: Interface level is 3.3V C-MOS.

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	-	-	1.0	uADC	VIN=3.3V
SDA,SCL,/RESET	IIL-1	-	-	-0.5	mADC	VIN=0V
I2C Logic Input Voltage	VIH-1	2.5	-	-	VDC	-
SDA,SCL,/RESET	VIL-1	-	-	0.6	VDC	-
I2C Logic Output Voltage	VOL-1	-	-	0.5	VDC	IOL=0.5mA
I2C Logic Output Voltage	VOH-2	2.6	-	-	VDC	IOH=0.5mA
MBUSY,/TRDY	VOL-2	-	-	0.5	VDC	IOL=0.5mA
Logic Input Current RxD	IIH-2	-	-	1.0	uADC	VIN=3.3V
MOSI,SCK,/CS,HBUSY,/RESET	IIL-2	-	-	-0.5	mADC	VIN=0V
Logic Input Voltage RxD	VIH-2	2.5	-	-	VDC	-
MOSI,SCK,/CS,HBUSY,/RESET	VIL-2	-	-	0.6	VDC	-
Logic Output Voltage	VOH-3	2.6	-	-	VDC	IOH=0.5mA
TXD,MISO,MBUSY,/TRDY	VOL-3	-	-	0.5	VDC	IOL=0.5mA
Power Supply Current	ICC-1	-	230	300	mADC	All dots turned on
	ICC-2	-	140	180	mADC	All dots turned off
	ICC-3	-	7	9	mADC	Display power off
Power consumption		-	1.15	1.50	W	All dots turned on

#### Optical characteristics

Parameters	
Luminance	350 cd/m <sup>2</sup> Min. (700 cd/m <sup>2</sup> Typ.)
Color of illumination	Green (Bluish green)

#### Physical Specification

Parameters	
Number of Dots	4,096 (128 x 32)
Active area (XxY)	57.45 mm x 13.93 mm
Size of Dot (XxY)	0.30 mm x 0.29 mm
Pitch of Dot (XxY)	0.45 mm x 0.44 mm
Weight	approximately 38g

#### Environmental Specification

Parameters	
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)	392m/s <sup>2</sup> (40G) 9ms X-Y-Z, 3 times each direction

#### Interface

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

#### Pin Assignment

CN1: 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

CN1 : 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

CN1 : I2C 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 x 7 Alpha-numeric, Kana, International
	8 x 16 Alpha-numeric, Kana, International
	16 x 16 CJK
Number of digits & lin	5x7 dot font: 18/21 digits x 4 lines
	16x16 dot font: 8digits x 1line

#### Functions

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

