

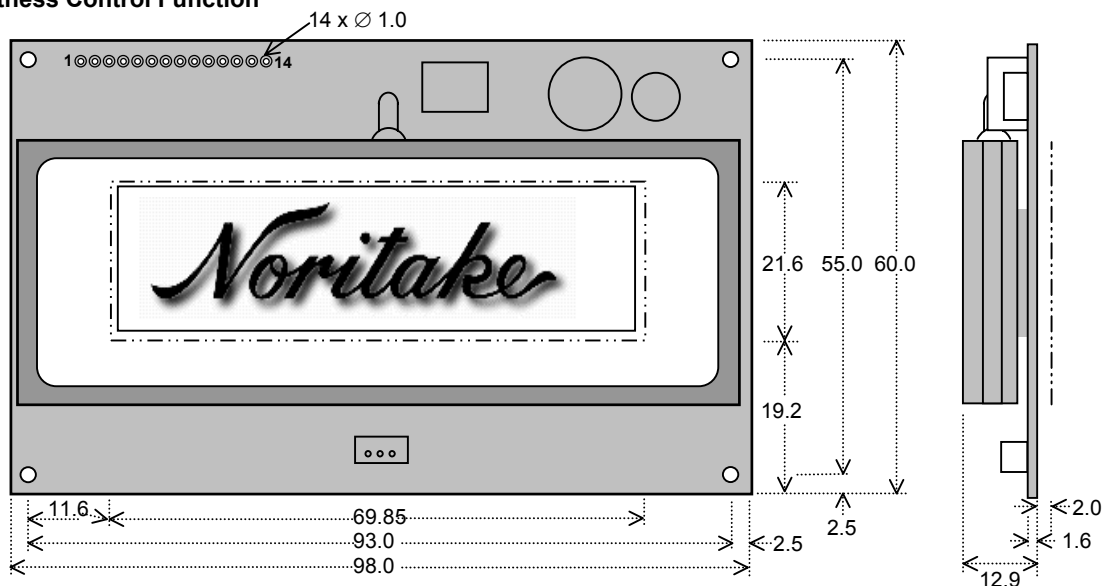
140x32 Dot Graphic VFD Module

GU140x32F-7003

- ❑ Character Graphic ,Transformerless display
- ❑ Size compatible with U-Version
- ❑ Operating Temp -40°C to +85°C
- ❑ Single 5V Supply with Power Save Mode
- ❑ Smooth vertical/Horizontal scroll
- ❑ Proportional and scalable fonts
- ❑ CMOS sync & Async Serial interface
- ❑ Screen saver & window definition function
- ❑ 8 Level Brightness Control Function

The module includes the Vacuum Fluorescent Display glass, driver and micro-controller ICs with refresh RAM, character generator and interface logic.
This module have CMOS Sync or asyn. Serial Interface.

The module can simultaneously display graphic pattern and / or characters on screen.



Dimensions in mm & subject to tolerances. Mounting holes 2.5mm dia.

ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Condition
Power Supply Voltage	Vcc	6.0 VDC Max.	GND=0V
Power Supply Current	Icc	400mADC typ.	Vcc=5V
Logic High Input	V _{IH}	0.8VCC min.	Vcc=5V
Logic Low Input	V _{IL}	0.2VCC max.	Vcc=5V
Logic High Output	V _{OH}	3.8VDC min.	I _{OH} = -1.5mA
Logic Low Output	V _{OL}	0.6VDC max.	I _{OL} = 1.6mA

The power on rise time should be less than 50ms. The inrush current at power on can be 2 x Icc.
The Icc current is 10mA maximum while in power down mode.

OPTICAL and ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
PCB size/Display area (in mm)	98.0x60.0/ 69.85x21.61
Dot Size/Pitch (XxY mm)	0.35x0.53/ 0.50x0.68
Luminance	700 cd/m ² (204 fL) Typ.
Color of Illumination	Blue-Green (Filter for more colors)
Operating Temperature	-40°C to +85°C
Storage Temperature	-40°C to +85°C
Operating Humidity (non condensing)	20 to 80% RH @ 25°C

Software Commands

Instruction	Code
Character display	20H-FFH
Cursor set	1FH 24H xL xH yL yH
Display clear	0CH
Initialize display	1BH 40H
Specify International font	1BH 52H n
Vertical scroll mode	1FH 02H
Horizontal scroll mode	1FH 03H
Brightness level Setting	1FH 58H n
Scroll Display Action	1FH 28H 61H 10H wL wH cL cH s
Display Blank	1FH 28H 61H 11H p t1 t2 c
Screen Saver	1FH 28H 61H 40H p
Bit Image Display group	1FH 28H 66H 11H xL xH
Font magnified Display	1FH 28H 67H 40H x y

Parallel interface connector

Pin	Sig	Pin	Sig
1	Gnd	2	Vcc
3	NC	4	RS
5	/W	6	/RD
7	D0	8	D1
9	D2	10	D3
11	D4	12	D5
13	D6	14	D7

Serial Connector

Pin	Asyn. Sig	Syn. Sig
1	Vcc	Vcc
2	SIN	SIN
3	Gnd	Gnd
4	SBUSY	SBUSY
5	NC	SCK
6	/ RESET	/ RESET

COMMON FONT

	2	3	4	5	6	7
	x	x	x	x	x	x
x0H	0	1	2	3	4	5
x1H	6	7	8	9	A	B
x2H	C	D	E	F	G	H
x3H	I	J	K	L	M	N
x4H	O	P	Q	R	S	T
x5H	U	V	W	X	Y	Z
x6H	[	\	^	_	`	~
x7H	{		}	~	~	~
x8H	~	~	~	~	~	~
x9H	~	~	~	~	~	~
xAH	~	~	~	~	~	~
xBH	~	~	~	~	~	~
xCH	~	~	~	~	~	~
xDH	~	~	~	~	~	~
xEH	~	~	~	~	~	~
xFH	~	~	~	~	~	~

CHARACTER CODE (n=0)

	8	9	A	B	C	D	E	F
	x	x	x	x	x	x	x	x
x0H	0	1	2	3	4	5	6	7
x1H	8	9	A	B	C	D	E	F
x2H	G	H	I	J	K	L	M	N
x3H	O	P	Q	R	S	T	U	V
x4H	W	X	Y	Z	[	\	^	_
x5H	`	~	~	~	~	~	~	~
x6H	~	~	~	~	~	~	~	~
x7H	~	~	~	~	~	~	~	~
x8H	~	~	~	~	~	~	~	~
x9H	~	~	~	~	~	~	~	~
xAH	~	~	~	~	~	~	~	~
xBH	~	~	~	~	~	~	~	~
xCH	~	~	~	~	~	~	~	~
xDH	~	~	~	~	~	~	~	~
xEH	~	~	~	~	~	~	~	~
xFH	~	~	~	~	~	~	~	~

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