

140x32 Dot Graphic VFD Module

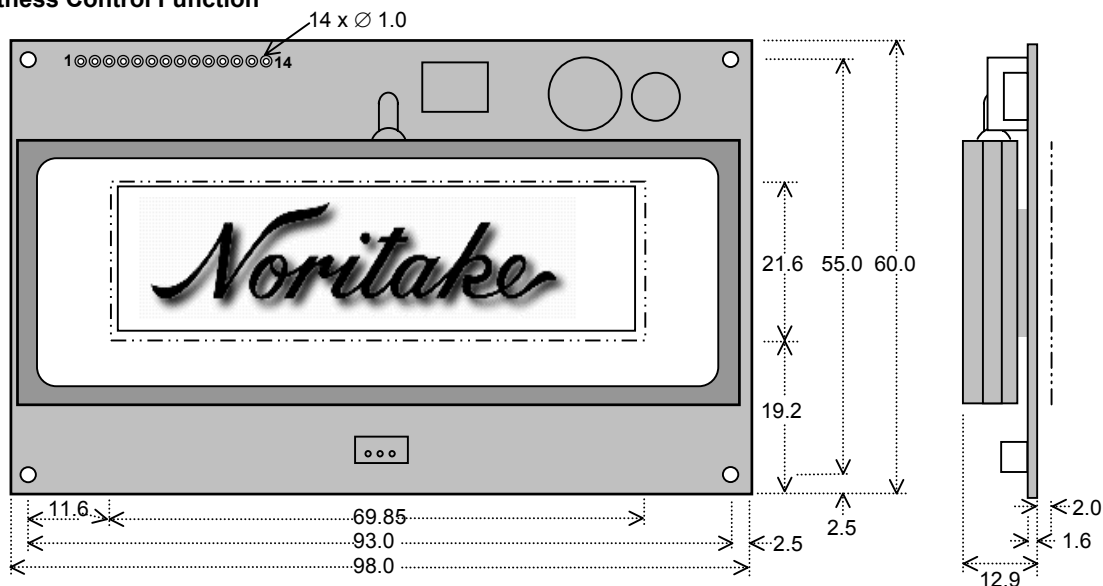
GU140x32F-7002

- ❑ 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
- ❑ 8 bit parallel & CMOS 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 8 bit parallel & CMOS syn. 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	0	P	P		
x1H	1	1	A	a		
x2H	"	2	B	b		
x3H	#	3	C	c		
x4H	\$	4	D	d		
x5H	%	5	E	e		
x6H	&	6	F	f		
x7H	'	7	G	g		
x8H	(	8	H	h		
x9H	)	9	I	i		
xAH	*	A	J	j		
xBH	+	B	K	k		
xCH	,	C	L	l		
xDH	-	D	M	m		
xEH	.	E	N	n		
xFH	/	F	O	o		

CHARACTER CODE (n=0)

	8	9	A	B	C	D	E	F
	x	x	x	x	x	x	x	x
x0H	0	0	P	P				
x1H	1	1	A	a				
x2H	"	2	B	b				
x3H	#	3	C	c				
x4H	\$	4	D	d				
x5H	%	5	E	e				
x6H	&	6	F	f				
x7H	'	7	G	g				
x8H	(	8	H	h				
x9H	)	9	I	i				
xAH	*	A	J	j				
xBH	+	B	K	k				
xCH	,	C	L	l				
xDH	-	D	M	m				
xEH	.	E	N	n				
xFH	/	F	O	o				

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