

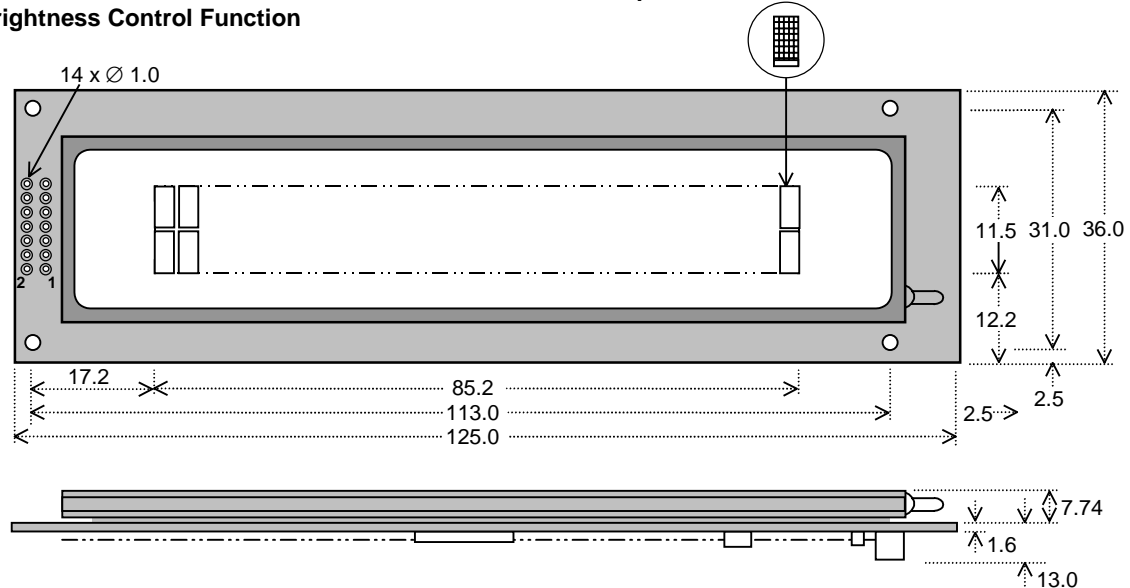
5X7 Dot Character VFD Module

CU24025ECPB-U1J

- ❑ 2 X 24 Characters 5mm High
- ❑ LCD Compatible Design
- ❑ Operating Temp -20°C to +70°C
- ❑ Single 5V Supply with Power Save Mode
- ❑ High Brightness Blue Green Display
- ❑ Selectable 4/8 bit M68/i80 Interface
- ❑ ASCII + Extended Character Font
- ❑ 8 User Definable Character RAM
- ❑ 4 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.

The high speed 8 bit parallel interface is 5V CMOS compatible suitable for connection to a host CPU bus which can be set to M68 or i80 series interface by a solder link on the module. Brightness control and power down functions are provided. A full data sheet is available.



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

ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Condition
Power Supply Voltage	V _{CC}	5.0VDC +/- 5%	GND=0V
Power Supply Current	I _{CC}	155mADC typ.	V _{CC} =5V
Logic High Input	V _{IH}	2.0VDC min.	V _{CC} =5V
Logic Low Input	V _{IL}	0.8VDC max.	V _{CC} =5V
Logic High Output	V _{OH}	V _{CC} -0.4VDC min.	I _{OH} = -1.6mA
Logic Low Output	V _{OL}	0.4VDC 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 I_{CC}. The I_{CC} current is 10mA maximum while in power down mode.

OPTICAL and ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
Character Size/Pitch (XxY mm)	2.4 x 4.7/3.6 x 6.1
Dot Size/Pitch (XxY mm)	0.4 x 0.5/0.5 x 0.7
Luminance	700 cd/m ² (204 fL) Typ.
Colour of Illumination	Blue-Green (Filter for more colours)
Operating Temperature	-20°C to +70°C
Storage Temperature	-40°C to +85°C
Operating Humidity (non condensing)	20 to 80% RH @ 25°C

SOFTWARE COMMANDS

Instruction	R/W	RS	D0-D7
Clear Display	L	L	01H
Cursor Return Home	L	L	02H-03H
Entry Mode Set	L	L	04H-07H
Display ON/OFF	L	L	08H-0FH
Cursor/Display Shift	L	L	10H-1FH
Function Set	L	L	20H-3FH
Brightness Set	L	H	00H-03H
Set CG RAM Addr.	L	L	40H-7FH
Set DD RAM Addr.	L	L	80H-E7H
Read BUSY/Addr.	H	L	00H-FFH
Write Data to RAM	L	H	00H-FFH
Read Data from RAM	H	H	00H-FFH

PIN CONNECTIONS

Pin	Sig	Pin	Sig
1	GND	2	V _{CC}
3	(FNC)	4	RS
5	R/W #	6	E #
7	D0	8	D1
9	D2	10	D3
11	D4	12	D5
13	D6	14	D7

TIMING PARAMETERS (min)

(E)nable Cycle Time	1000ns
(E)nable Pulse Width	450ns
Hold after (E)nable	10ns

CHARACTER FONT

H _E X	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
00			0	0	P	`	P	A	F	-	9	E	0	P		
01			1	A	Q	a	a	A	a	.	7	7	4	a	9	
02			"	2	B	R	b	r	Δ	E	r	イ	ウ	×	B	θ
03			#	3	C	S	c	s	Δ	R	」	0	7	E	c	∞
04			\$	4	D	T	d	t	Δ	#	\	I	ト	ト	μ	Ω
05			%	5	E	U	e	u	E	o	.	7	7	1	c	0
06			&	6	F	V	f	v	0	+	7	カ	ニ	ヨ	P	Σ
07			'	7	G	U	g	u	Δ	7	7	7	7	9	π	
08			(8	H	X	h	x	Δ	1	4	7	7	7	Σ	
09)	9	I	Y	i	y	Δ	7	7	7	7	7	Σ	
0A			*	:	J	Z	j	z	U	Δ	7	7	7	7	Σ	
0B			+	:	K	L	k	l	U	Δ	7	7	7	7	Σ	
0C			,	<	L	#	1	1	\	Δ	7	7	7	7	Σ	
0D			-	=	M	I	m	>	#	Δ	7	7	7	7	Σ	
0E			.	>	N	^	n	Δ	7	7	7	7	7	7	Σ	
0F			△	/	?	0	_	o	+	Δ	7	7	7	7	Σ	

JUMPER LINKS

Interface M68/i80
When jumper link MPU is soldered, these inputs change to i80 series CPU control lines.
Pin 5= /WR Pin 6 = /RD

Pin 3 (Fnc) Input

This is normally open circuit.
If pads R19 are linked.
Pin 3 = /Reset.

CONTACT

Noritake Sales Office Tel Nos
Nagoya Japan: +81 (0)52-561-9867
Canada: +1-416-291-2946
Chicago USA: +1-847-439-9020
Munchen (D): +49 (0)89-3214-290
Itron UK: +44 (0)1493 601144
Rest Europe: +49 (0)61-0520-9220
www.noritake-elec.com

Subject to change without notice.
IUK Doc Ref: 01091 Iss:3 20CT00

NORITAKE ITRON VFD MODULES

2x24, 5mm Dot Character