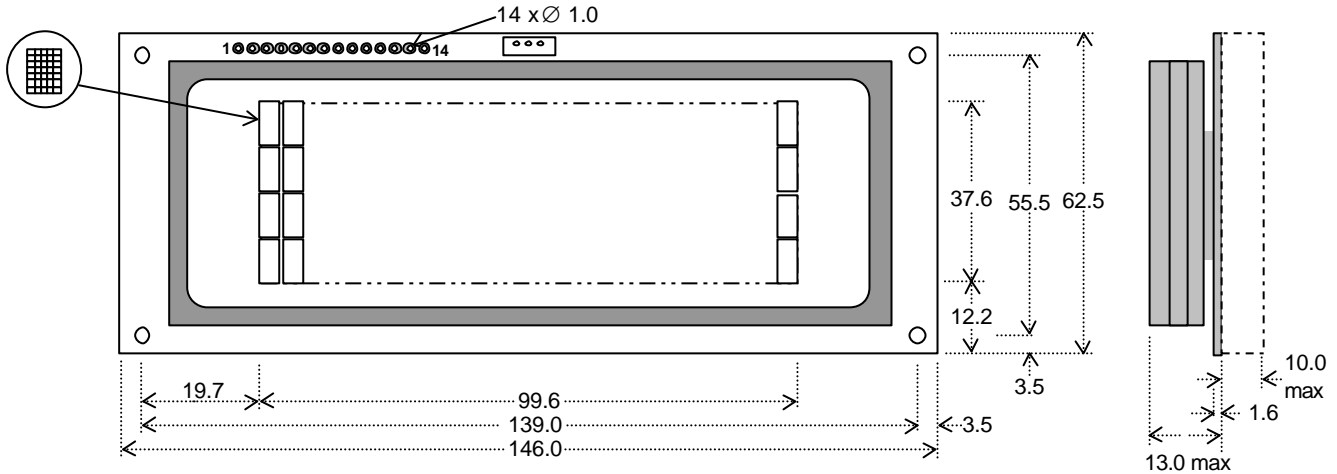


5X7 Dot Character VFD Module

CU20049SCPB-W2J

- ❑ 4 X 20 Characters 9mm High
- ❑ LCD Compatible Design
- ❑ Operating Temp -40°C to +85°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}	650mADC typ.	V _{CC} =5V
Logic High Input	V _{IH}	2.2VDC min.	V _{CC} =5V
Logic Low Input	V _{IL}	0.6VDC max	V _{CC} =5V
Logic High Output	V _{OH}	V _{CC} -0.6VDC min.	I _{OH} = -1.6mA
Logic Low Output	V _{OL}	V _{SS} +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 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)	3.65 x 8.8/5.05 x 9.6
Dot Size/Pitch (XxY mm)	0.57 x 0.84/0.77 x 1.14
Luminance	700 cd/m ² (204 fL) Typ.
Colour of Illumination	Blue-Green (Filter for more colours)
Operating Temperature	-40°C to +85°C
Storage Temperature	-50°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	666ns
(E)nable Pulse Width	300ns
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	a	P	\	F	A	F		-	9	E	0	P	
01		!	1	A	Q	a	q	A	a	e	.	7	†	4	0	9
02		"	2	B	R	b	r	A	E	E	r	†	†	†	†	†
03		#	3	C	S	c	s	A	R	R	†	†	†	†	†	†
04		\$	4	D	T	d	t	A	†	†	†	†	†	†	†	†
05		%	5	E	U	e	u	E	0	.	†	†	†	†	†	†
06		&	6	F	V	f	v	0	†	†	†	†	†	†	†	†
07		'	7	G	W	g	w	0	†	†	†	†	†	†	†	†
08		(8	H	X	h	x	0	†	†	†	†	†	†	†	†
09)	9	I	Y	i	y	0	†	†	†	†	†	†	†	†
0A		*	†	J	Z	j	z	0	†	†	†	†	†	†	†	†
0B		†	†	K	k	†	†	†	†	†	†	†	†	†	†	†
0C		†	†	L	†	†	†	†	†	†	†	†	†	†	†	†
0D		†	†	=	M	†	†	†	†	†	†	†	†	†	†	†
0E		†	†	>	N	†	†	†	†	†	†	†	†	†	†	†
0F		†	†	/	†	†	†	†	†	†	†	†	†	†	†	†

JUMPER LINKS

Interface M68/i80

When jumper link JP2 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 JP4.2 and JP4.3 are linked. Pin 3 = /Reset.

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