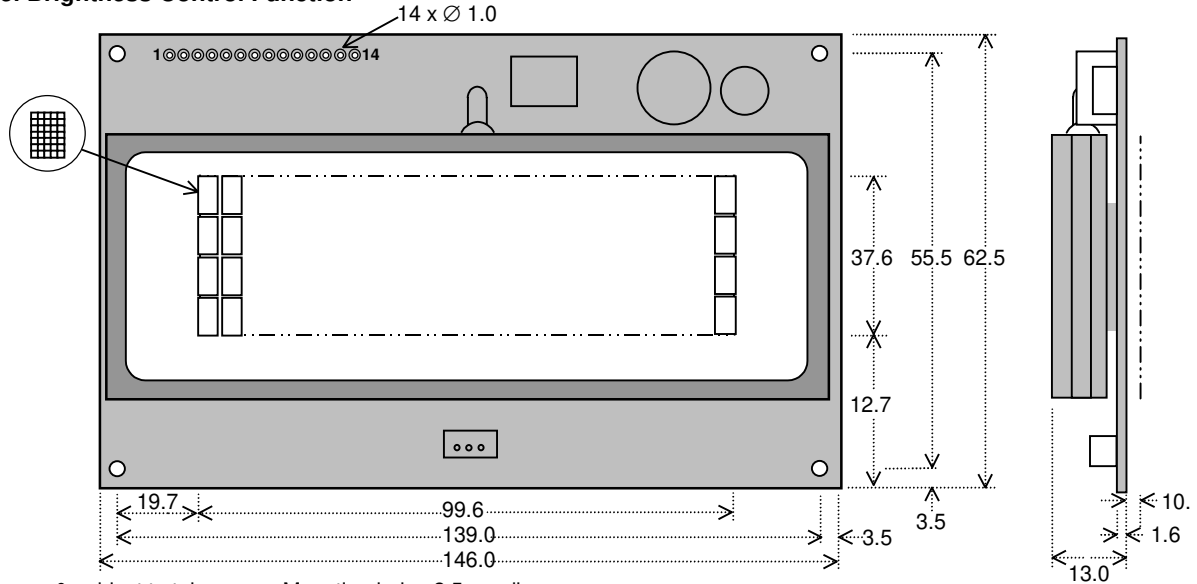


5X7 Dot Character VFD Module

CU20049SCP-B-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	Vcc	5.0VDC +/- 5%	GND=0V
Power Supply Current	Icc	650mADC typ.	Vcc=5V
Logic High Input	V _{IH}	2.2VDC min.	Vcc=5V
Logic Low Input	V _{IL}	0.6VDC max.	Vcc=5V
Logic High Output	V _{OH}	Vcc-0.6VDC min.	I _{OH} = -1.6mA
Logic Low Output	V _{OL}	Vss+0.6 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
Character Size/Pitch (XxY mm)	3.65x8.8/5.05x9.6
Dot Size/Pitch (XxY mm)	0.57x0.84/0.77x1.14
Luminance	700 cd/m ² (204 fL) Typ.
Colour of Illumination	GreenBlue-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	Vcc
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 (F)nable	10ns

CHARACTER FONT

h _{Ex}	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0
00	|	0	1	2	3	4	5	6	7	8	9	-	.	:	;	,
01	|	!	"	#	\$	%	&	'	(	)	*	+	=	>	?@	[
02	|	"	2	B	R	b	r	&	E	r	'	y	x	0		
03	|	#	3	C	S	c	s	e	a	R	j	'	t	e	.	.
04	|	\$	4	D	T	d	t	a	#	\	/	I	k	P	P	Q
05	|	%	5	E	U	e	u	E	O	.	'	'	1	0	U	
06	|	&	6	F	V	f	v	O	+	'	'	2	0	P	Z	
07	|	'	7	G	U	g	u	e	o	'	'	3	0	'	'	'
08	|	(	8	M	X	h	x	0	1	'	'	4	0	'	'	'
09	|	)	9	I	V	i	v	o	'	'	'	5	0	'	'	'
0A	|	*	:	J	Z	j	z	U	a	'	'	6	0	'	'	'
0B	|	+	=	K	K	<	>	a	'	'	'	7	0	'	'	'
0C	|	,	<	L	l	l	\	'	'	'	'	8	0	'	'	'
0D	|	-	=	M	m	m	'	'	'	'	'	9	0	'	'	'
0E	|	.	>	N	n	n	'	'	'	'	'	0	0	'	'	'
0F	|	/	?	0	_	o	+	'	'	'	'	1	0	'	'	'

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 JP3.1 and JP3.2 are linked. Pin 3 = /Reset.

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Subject to change without notice