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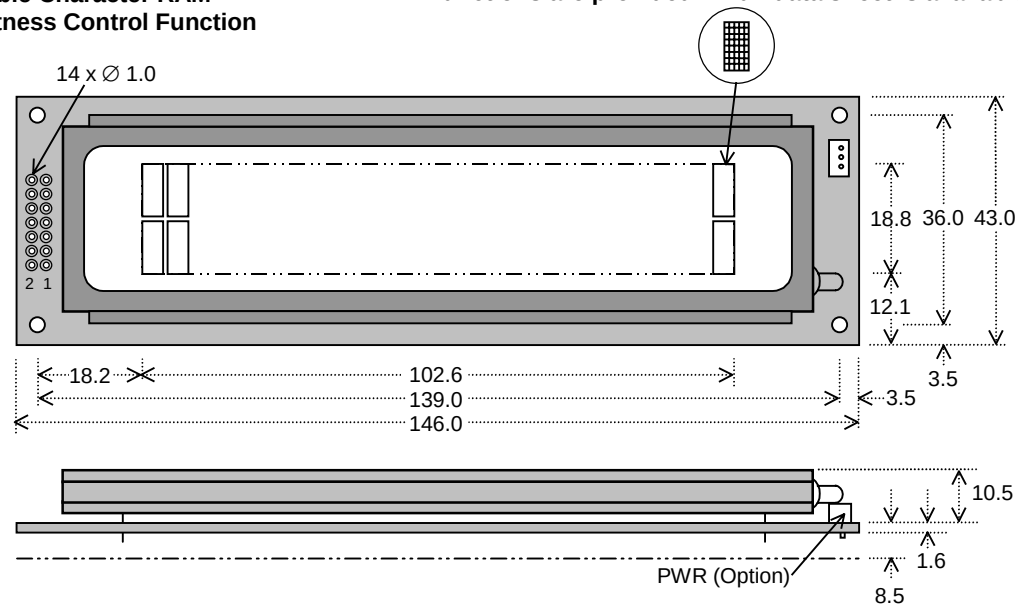
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5X7 Dot Character VFD Module CU20029ECPB-U1J

- **2 X 20 Characters 9mm High**
- **LCD Compatible Design**
- **Operating Temp -20ºC to +70ºC**
- **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}	400mADC typ.	Vcc=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}	Vcc-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 Icc current is 10mA maximum while in power down mode.

OPTICAL and ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
Character Size/Pitch (XxY mm)	3.8 x 9.2/5.2 x 9.6
Dot Size/Pitch (XxY mm)	0.6 x 0.97/0.80 x 1.17
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/$\overline{W}$	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/$\overline{W}$ #	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



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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