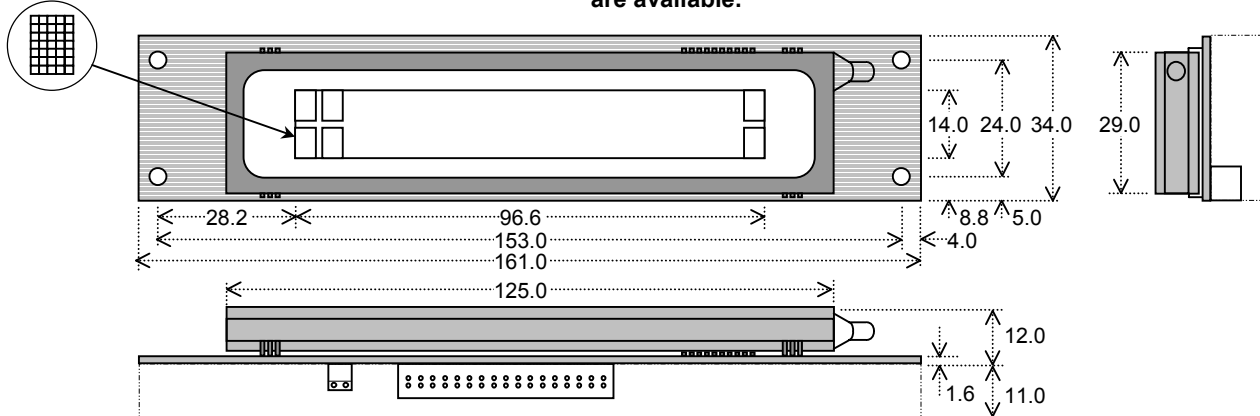


# 5X7 Dot Character VFD Module

# CU20026SCP-B-T30A

- ❑ 2 line of 20 Characters 5mm High
- ❑ High Speed Parallel/Serail Interface
- ❑ Operating Temp -20°C to +70°C
- ❑ Single 5V Supply
- ❑ High Brightness Blue Green Display
- ❑ 2 Character Fonts
- ❑ User Definable Character RAM

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. The asynchronous serial interface accepts baud rates up to 9,600. Two character font tables can be hardware selected. A user defined character and many control commands are available.



Dimensions in mm & subject to tolerances. Mounting holes 3.5mm dia.

## ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Condition
Power Supply Voltage	V <sub>CC</sub>	5.0VDC +/- 5%	GND=0V
Power Supply Current	I <sub>CC</sub>	0.4ADC typ.	V <sub>CC</sub> =5V
Logic High Input	V <sub>IH</sub>	2.0VDC min.	V <sub>CC</sub> =5V
Logic Low Input	V <sub>IL</sub>	0.8VDC max.	V <sub>CC</sub> =5V
Logic High Output	V <sub>OH</sub>	3.5VDC min.	I <sub>OH</sub> = -1.0mA
Logic Low Output	V <sub>OL</sub>	0.4VDC max.	I <sub>OL</sub> = 1.6mA

The power on rise time should be less than 50ms. The inrush current at power on can be 2 x I<sub>CC</sub>.

## OPTICAL and ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
Character Size/Pitch (XxY mm)	3.5 x 5.0/4.9 x 8.0
Dot Size/Pitch (XxY mm)	0.5 x 0.5/0.75 x 0.75
Luminance	1000 cd/m <sup>2</sup> (291 Fl) Typ.
Colour of Illumination	Blue-Green (Filter for additional colours)
Operating Temperature	-20°C to +70°C
Storage Temperature	-40°C to +85°C
Operating Humidity	0 to 85% RH @ 25°C

## SOFTWARE COMMANDS

Instruction	D0-D7	Instruction	D0-D7
100% Luminance	01H	Scroll write	12H
75% Luminance	02H	Cursor On	13H
50% Luminance	03H	Cursor Off	14H
25% Luminance	04H	Cursor Flashing	15H
Back Space	08H	Underline Cursor	16H
Horizontal Tab	09H	Block Cursor	17H
Line Feed	0AH	Inverse Cursor	18H
Clear Display	0CH	User Defined Character	1AH
Carriage Return	0DH	ESCAPE	1BH
Normal Write	11H		

## TIMING PARAMETERS (min)

Data Set Up To Write	10ns
Write Pulse Width	100ns
Hold After Write	25ns

## 2 PIN POWER CONNECTOR

Pin	Sig
1	V <sub>CC</sub> (5V)
2	GND (0V)

## INTERFACING

Function	/CS	/WR	A0	/BL	T0
Character Data Write	0	0→1	0	X	X
Command Data Write	0	0→1	1	X	X
Blanking	X	X	X	0	X
Test Mode	X	X	X	X	0

## CHARACTER FONTS

G57180																G57181															
00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0	A0	B0	C0	D0	E0	F0										
00																E	A	T	A												
01	!	1	Q	Q	a	9	4	B		7	7	4				R	E	P													
02	"	2	B	R	b	r	r	r		4	0	7				A	B	C													
03	#	3	C	S	c	s	s	s		6	1	0	7			O	T														
04	\$	4	D	T	d	t	t	t		1	0	7				O	I	Y													
05	%	5	E	U	e	u	u	u		h		1	1			S	E														
06	&	6	F	V	f	v	v	v		0	7	0				S	E	X													
07	'	7	G	W	g	w	w	w		1	7	0				O	K	L													
08	(	8	H	X	h	x	x	x		1	7	0				A	C	4													
09	)	9	I	Y	i	y	y	y		2	1	0				N	W														
0A	*	:	J	Z	j	z	z	z		3	1	0				C	N	W													
0B	+	:	K	L	k	l	l	l		0	6					K	C														
0C	,	<	L	*	l	*	*	*		2	7	0				T	W														
0D	-	=	M	N	m	n	n	n		x	0	1				M	E														
0E	.	>	N	^	n	^	^	^		1	4					H	O														
0F	/	?	O	^	o	^	^	^		0	2					O	N														

## IDC DATA CONNECTOR

Pin	Sig	Pin	Sig
1	D7	2	GND (0V)
3	D6	4	GND (0V)
5	D5	6	GND (0V)
7	D4	8	GND (0V)
9	D3	10	GND (0V)
11	D2	12	GND (0V)
13	D1	14	GND (0V)
15	D0	16	GND (0V)
17	/WR	18	GND (0V)
19	A0	20	GND (0V)
21	NC	22	GND (0V)
23	/CS	24	GND (0V)
25	T0	26	GND (0V)
27	BUSY	28	GND (0V)
29	/BL	30	GND (0V)
31	NC	32	GND (0V)
33	RXD	34	GND (0V)

NC = No Connection

Subject to change without notice.  
Detailed specification on request.  
IUK Doc Ref:03888 Iss:1 15Apr02

## PCB JUMPERS (OPEN/LINK x-don't care)

Baud	J3	J2	J1	J0
300	O	O	O	X
300	O	O	L	X
300	O	L	O	X
600	O	L	L	X
1200	L	O	O	X
2400	L	O	L	X
4800	L	L	O	X
9600	L	L	L	X

## Character Table Selection

	J3	J2	J1	J0
G57181	X	X	X	L
G57180	X	X	X	O
Factory	L	L	L	L

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