

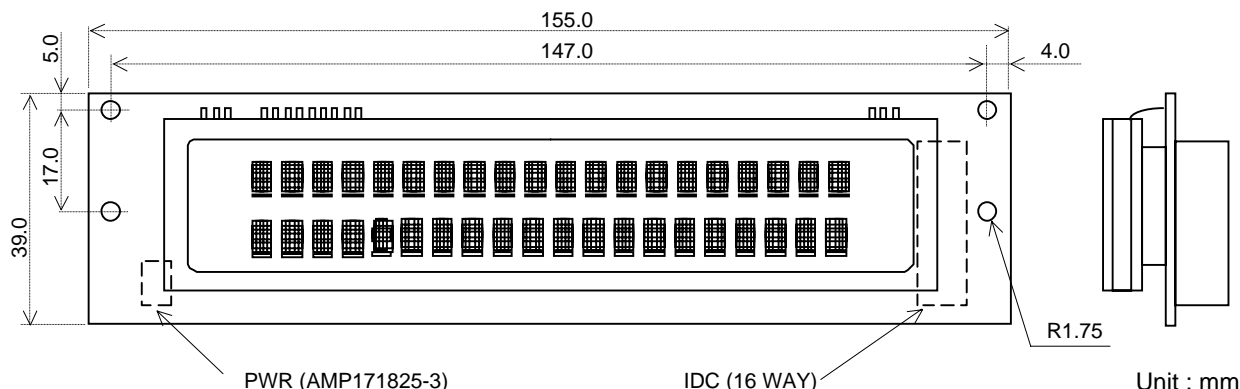
5X7 Dot Character VFD Module

CU20026-TW200A

Ref: MC-035 May 2004

- 2 line of 20 Character 6mm High
- High Speed Parallel/Serial Interface
- Operating temp -40°C to +85°C
- Single 5V Supply
- High Brightness Blue Green Display
- ASCII, Katakana & Extended Character Font
- 16 User Definable Character RAM

The module includes the Vacuum Fluorescent Display glass, driver and micro-controller lcs 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 19,200 with or without parity. Two character font table can be hardware or software selected. User defined character and many control commands are available.



ELECTRICAL SPECIFICATION

Parameter	Symbol	Value	Condition
Power Supply Voltage	VCC	5.0VDC	GND=0V
Power Supply Current	ICC	290mADC typ.	VCC=5V
Logic High Input	VIH	0.8VDC min. Vcc max.	VCC=5V
Logic Low Input	VIL	0VDC min. 0.3VDC max.	VCC=5V
Logic High Output	VOH	VCC-1.5VDC min.	IOH=-2.0mA
Logic Low Output	VOL	1.5 DC max.	IOH=2.0mA

OPTICAL and ENVIRONMENTAL SPECIFICATIONS

Parameter	Value
PCB Size (X x Y mm)	155.0 x 147.0
Display Area (X x Y mm)	100.2 x 16.0
Character size (X x Y mm)	3.3 x 5.05 for 5x7dot, 3.3 x 6.05 Including UL
Luminance	350 cd/m ² Min.
Color of Illumination	Blue Green, (Filter for more colors)
Operating Temperature	-40°C to +85°C
Operating Humidity	20 to 80 % RH (non condensing)

SOFTWARE COMMANDS (Popular codes, more included)

Instruction	D0-D7	Instruction	D0-D7
Back Space	08H	International Font	18H
Horizontal Tab	09H	Katakana Font	19H
Line Feed	0AH	Escape	1BH
Form Feed	0CH	Send User Font	+43H
Carriage Return	0DH	Position Cursor	+48H
Clear Display	0EH	Softwaer Reset	+49H
Increment Write Mode	11H	Luminance	+4CH
Vertical Scroll Mode	12H	Flickrless Wite	+53H
Underline Cursor On	14H	Cursor Blink Speed	+54H
5x7 Block Cursor On	15H	Character Data	20H+
Cursor Off	16H	User Character Data	00H+

TIMING PARAMETERS (min)

Data Set Up To Write	100ns
Write Pulse Width	160ns
Hold After Write	10ns

CHARACTER FONTS

	International Font																Additional Katakana Font																							
	00	10	20	30	40	50	60	70	80	90	A0	B0	C0	D0	E0	F0	80	90	A0	B0	C0	D0	E0	F0																
00				00P`	01E`	02E`	03#	04A	05A	06A	07A	08A	09A	0AA	0BA	0CA	0DA	0EA	0FA	0GA	0HA	0IA	0JA	0KA	0LA	0MA	0NA	0OA	0PA	0QA	0RA	0SA	0TA	0UA	0VA	0WA	0XA	0YA	0ZA	
10				!1A	!2A	!3A	!4A	!5A	!6A	!7A	!8A	!9A	!AA	!BA	!CA	!DA	!EA	!FA	!GA	!HA	!IA	!JA	!KA	!LA	!MA	!NA	!OA	!PA	!QA	!RA	!SA	!TA	!UA	!VA	!WA	!XA	!YA	!ZA		
20				"2B	"3B	"4B	"5B	"6B	"7B	"8B	"9B	"AB	"BB	"CB	"DB	"EB	"FB	"GB	"HB	"IB	"JB	"KB	"LB	"MB	"NB	"OB	"PB	"QB	"RB	"SB	"TB	"UB	"VB	"WB	"XB	"YB	"ZB			
30				#3C	#4C	#5C	#6C	#7C	#8C	#9C	#AC	#BC	#CC	#DC	#EC	#FC	#GC	#HC	#IC	#JC	#KC	#LC	#MC	#NC	#OC	#PC	#QC	#RC	#SC	#TC	#UC	#VC	#WC	#XC	#YC	#ZC				
40				\$4D	\$5D	\$6D	\$7D	\$8D	\$9D	\$AD	\$BD	\$CD	\$DD	\$ED	\$FD	\$GD	\$HD	\$ID	\$JD	\$KD	\$LD	\$MD	\$ND	\$OD	\$PD	\$QD	\$RD	\$SD	\$TD	\$UD	\$VD	\$WD	\$XD	\$YD	\$ZD					
50				%5E	%6E	%7E	%8E	%9E	%AE	%BE	%CE	%DE	%EE	%FE	%GE	%HE	%IE	%JE	%KE	%LE	%ME	%NE	%OE	%PE	%QE	%RE	%SE	%TE	%UE	%VE	%WE	%XE	%YE	%ZE						
60				&6F	&7F	&8F	&9F	&AF	&BF	&CF	&DF	&EF	&FF	&GF	&HF	&IF	&JF	&KF	&LF	&MF	&NF	&OF	&PF	&QF	&RF	&SF	&TF	&UF	&VF	&WF	&XF	&YF	&ZF							
70				'7G	'8G	'9G	'AG	'BG	'CG	'DG	'EG	'FG	'GG	'HG	'IG	'JG	'KG	'LG	'MG	'NG	'OG	'PG	'QG	'RG	'SG	'TG	'UG	'VG	'WG	'XG	'YG	'ZG								
80				(8H	(9H	(AH	(BH	(CH	(DH	(EH	(FH	(GH	(HH	(IH	(JH	(KH	(LH	(MH	(NH	(OH	(PH	(QH	(RH	(SH	(TH	(UH	(VH	(WH	(XH	(YH	(ZH									
90)9I)0I)1I)2I)3I)4I)5I)6I)7I)8I)9I)AI)BI)CI)DI)EI)FI)GI)HI)II)JI)KI)LI)MI)NI)OI)PI)QI)RI)SI)TI)UI)VI)WI)XI)YI)ZI
A0				*#J	*2J	*3J	*4J	*5J	*6J	*7J	*8J	*9J	*AJ	*BJ	*CJ	*DJ	*EJ	*FJ	*GJ	*HJ	*IJ	*KJ	*LJ	*MJ	*NJ	*OJ	*PJ	*QJ	*RJ	*SJ	*TJ	*UJ	*VJ	*WJ	*XJ	*YJ	*ZJ			
B0				+*K	+1K	+2K	+3K	+4K	+5K	+6K	+7K	+8K	+9K	+AK	+BK	+CK	+DK	+EK	+FK	+GK	+HK	+IK	+JK	+LK	+MK	+NK	+OK	+PK	+QK	+RK	+SK	+TK	+UK	+VK	+WK	+XK	+YK	+ZK		
C0				,<L	,1L	,2L	,3L	,4L	,5L	,6L	,7L	,8L	,9L	,AL	,BL	,CL	,DL	,EL	,FL	,GL	,HL	,IL	,JL	,KL	,LL	,ML	,NL	,OL	,PL	,QL	,RL	,SL	,TL	,UL	,VL	,WL	,XL	,YL	,ZL	
D0				-#M	-1M	-2M	-3M	-4M	-5M	-6M	-7M	-8M	-9M	-AM	-BM	-CM	-DM	-EM	-FM	-GM	-HM	-IM	-JM	-KM	-LM	-MM	-NM	-OM	-PM	-QM	-RM	-SM	-TM	-UM	-VM	-WM	-XM	-YM	-ZM	
E0				.>N	.1N	.2N	.3N	.4N	.5N	.6N	.7N	.8N	.9N	.AN	.BN	.CN	.DN	.EN	.FN	.GN	.HN	.IN	.JN	.KN	.LN	.MN	.NN	.ON	.PN	.QN	.RN	.SN	.TN	.UN	.VN	.WN	.XN	.YN	.ZN	
F0				/?O	/1O	/2O	/3O	/4O	/5O	/6O	/7O	/8O	/9O	/AO	/BO	/CO	/DO	/EO	/FO	/GO	/HO	/IO	/JO	/KO	/LO	/MO	/NO	/OO	/PO	/QO	/RO	/SO	/TO	/UO	/VO	/WO	/XO	/YO	/ZO	

IDC DATA CONNECTOR

Pin	Sig	Pin	Sig
1	D7	9	WR
2	D6	10	CS
3	D5	11	Sin/Test
4	D4	12	BUSY
5	D3	13	GND(0V)
6	D2	14	GND(0V)
7	D1	15	Vcc(5V)
8	D0	16	Vcc(5V)

PCB JUMPERS (O)PEN (L)INK

Baud	J2	J1	J0
19200	O	O	O
9600	O	O	L
4800	O	L	O
2400	O	L	L
1200	L	O	O
Parity	J4	J3	
EVEN	O	O	
ODD	O	L	
NONE	L	L/O	

3 PIN POWER CONNECTOR

Pin	Sig
1	VCC (5V)
2	SIN / TEST
3	GND (0V)

Mates with AMP171822-3

Please inquire for full specification.

** Subject to change without notice **

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