

MC122032CA6W-FPTLW-V2	122 x 32	LCD Module
Specification		
Version: 1		Date: 10/08/2022
Revision		
1	08/08/2022	First Issue

Display Features			
Resolution	122 x 32		
Appearance	Black on White		
Logic Voltage	5V		
Interface	Parallel		
Font Set	N/A		
Display Mode	Transflective		
LC Type	FSTN		
Module Size	59.00 x 29.30 x 5.50mm		
Operating Temperature	-20°C ~ +70°C		
Construction	COB	Box Quantity	Weight / Display
LED Backlight	White	...	...

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Display Accessories	
Part Number	Description
MDIB-CC1	The MDIB-CC1 is a interconnect board for standard pitch pinouts to fine pitch wires. Ideal for prototyping of TFT and COG LCDs.

Optional Variants	
Appearances	Voltage
Black on Yellow/Green	
Black on White	
Black on Grey	



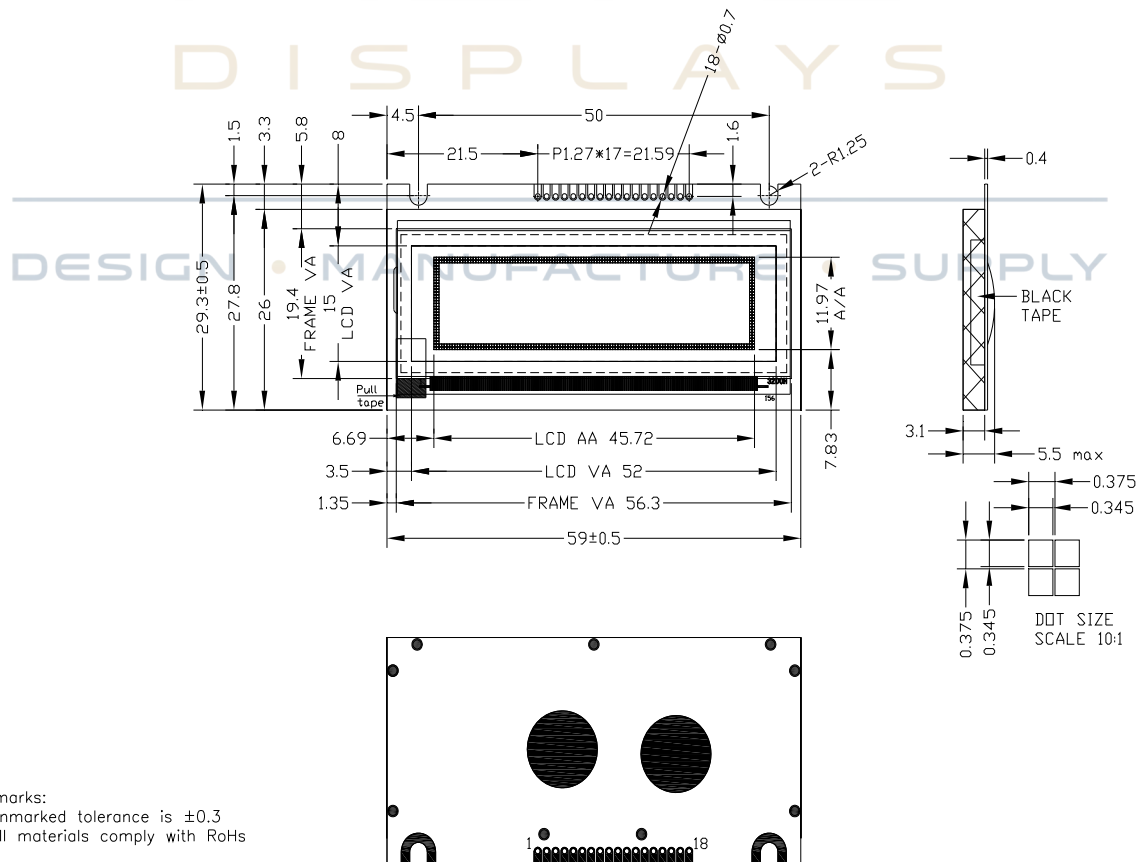
FUNCTIONS & FEATURES

- Driving Scheme : 1/32 Duty, 1/5Bias
- Viewing direction : 6 O'clock
- Power Supply Voltage : 5.0V
- LCD Operation Voltage : 4.35V
- Interface : 68-type Parallel
- RoHS Compliant

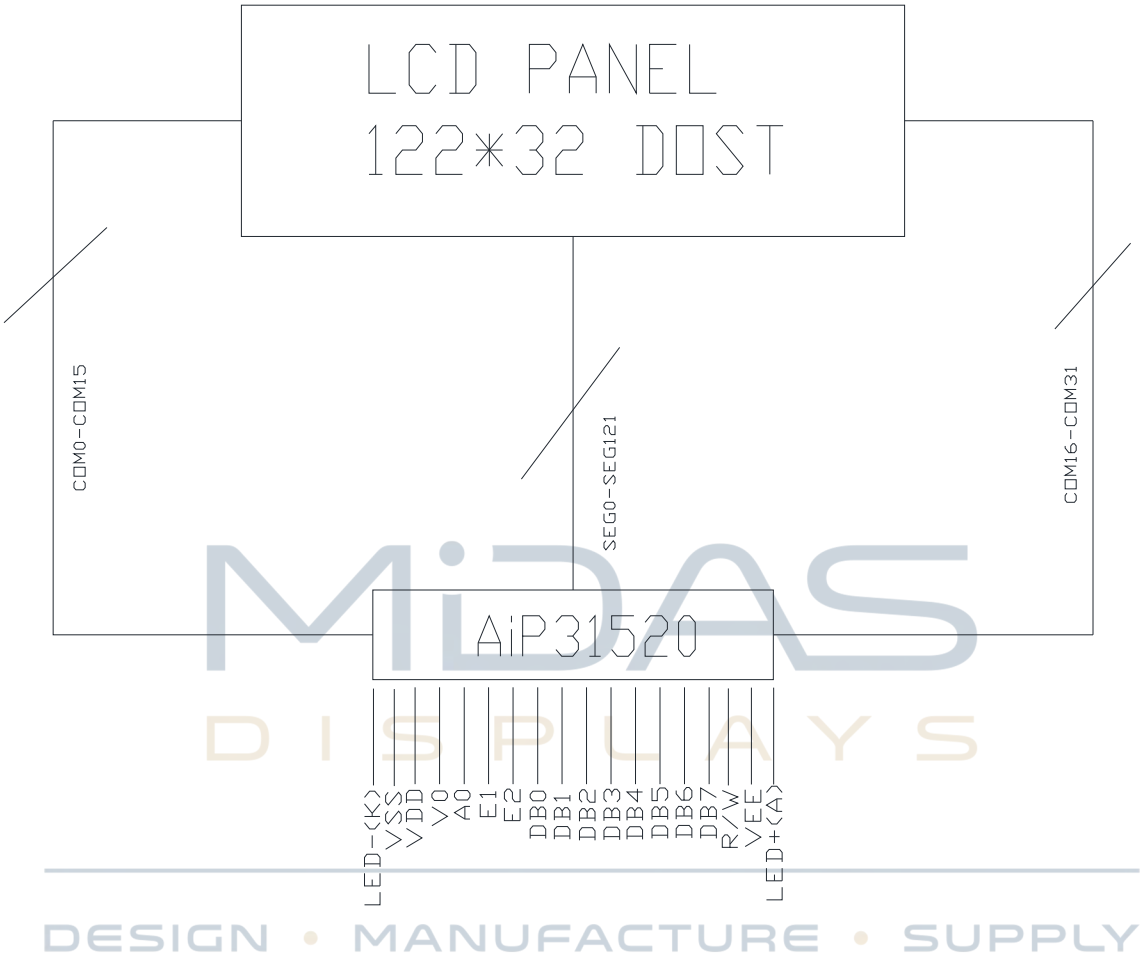
MECHANICAL SPECIFICATIONS

- Module Size : 59.00(L) x29.30(W) x5.5 (H)mm
- Viewing Area : 52.00(L) x15.00(W) mm
- Active Area : 45.72(L) x11.97 (W) mm
- Dot Pitch : 0.375(W) x 0.375(H) mm
- Dot Size : 0.345(W) x0.345 (H) mm
- Dot Gap : 0.030*0.030mm

EXTERNAL DIMENSIONS



BLOCK DIAGRAM



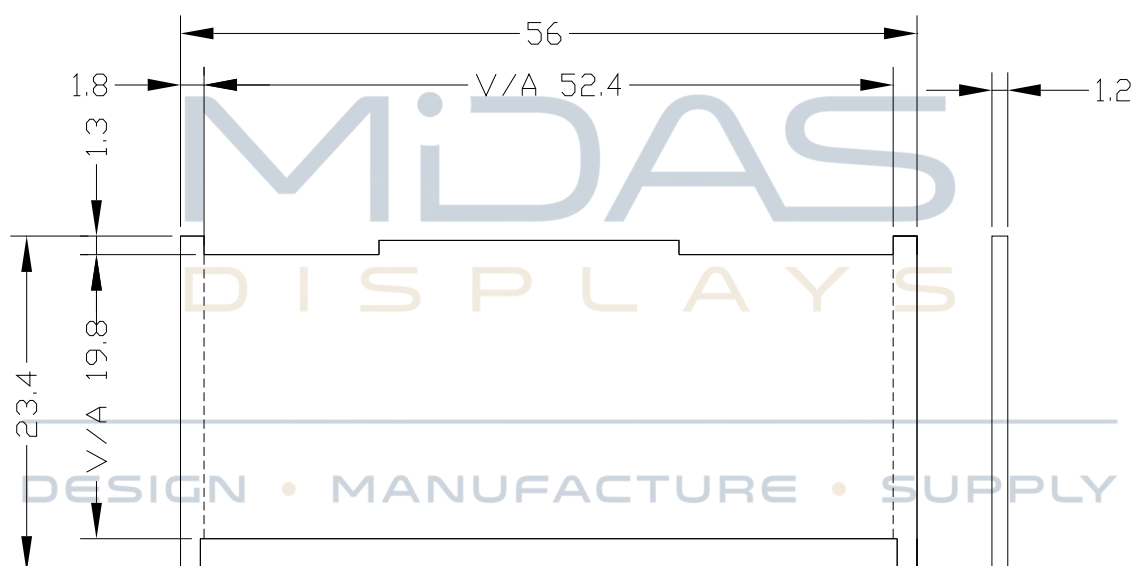
PIN ASSIGNMENT

Pin No.	Symbol	Level	Description
1	LED-(K)	—	Cathode of LED backlight
2	VSS	0V	Ground
3	VDD	5.0V	Power supply for logic; VLED+ supply.
4	Vo	(Variable)	Contrast adjust
5	A0	H/L	Input pin. Normally, the LSB of the MPU address bus is connected to this input pin to provide data/command selection. 0: Display control data on D7–D0 1: Display data on D7–D0
6	E1	H/L	Operation (data read/write) enable signal (U1)
7	E2	H/L	Operation (data read/write) enable signal (U2)
8	DB0	H/L	8-bit, tri-state, bi-directional I/O bus. Normally, connected to the data bus of an 8-/16-bit standard microcomputer.
9	DB1	H/L	
10	DB2	H/L	
11	DB3	H/L	
12	DB4	H/L	
13	DB5	H/L	
14	DB6	H/L	
15	DB7	H/L	
16	R/W	H/L	Chip interface with 68 family MPU: Read/Write control signal input pin. R/W = “H”:Read R/W = “L”:Write
17	VEE	—	Negative voltage output
18	NC	—	No connection

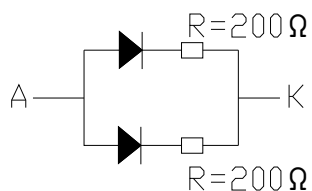


BACKLIGHT ELECTRICAL/OPTICAL SPECIFICATIONS

Item	Symbol	MIN.	TYP.	MAX.	Unit	Condition
Forward Curret	If	5*2	10*2	20*2	mA	Vf=5.0 V
Colour Coordinate	x	0.24	0.30	0.33		
	y	0.24	0.30	0.33		
Uniformity	Avg		70		%	
Luminance	Lv	400	600		cd/m ²	



Curcuit Diagram



REMARKS:
 1,UNMARKED TOLERANCE IS ± 0.3 ,
 2,COLOR: WHITE,
 3,THE MATERIAL COMPLY WITH ROHS.
 4,LED ON THE MODULE PCB



ABSOLUTE MAXIMUM RATINGS

Item	Symbol	Standard value	Unit
Power supply voltage	VDD	-0.3 ~ +8.0	V
LCD Driver voltage	VDD-V ₀	-0.3V to +16.5V	V
Input voltage	VIN	-0.3V to VDD+0.3V	V
Operating temperature	Topr	-20℃ to +70℃	℃
Storage temperature	Tsto	-30℃ to +80℃	℃

ELECTRICAL CHARACTERISTICS

1. DC CHARACTERISTICS

Item	Symbol	Standard Value			UNIT
		MIN	TYP	MAX	
Supply Voltage For Logic	V _{DD}	4.7	5.0	5.3	V
LCD Supply Voltage	V _{LCD}	4.05	4.35	4.65	
Current Consumption	I _{DD}	--	TBD	--	mA

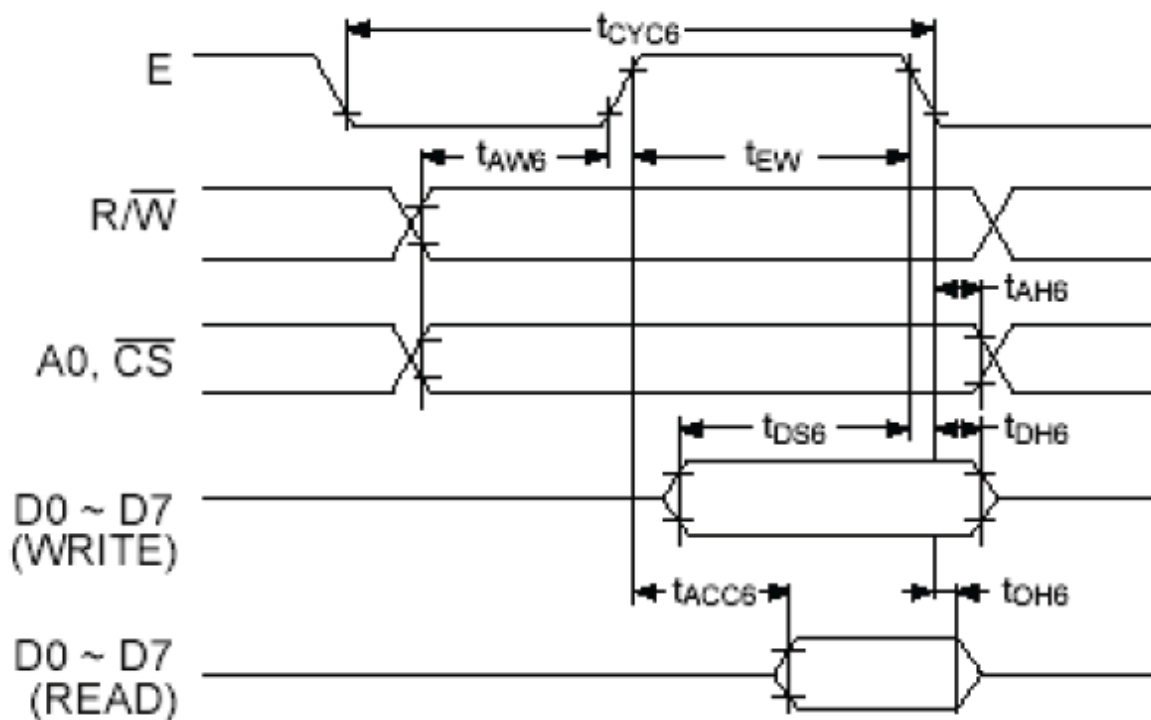
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2. AC CHARACTERISTICS

2-1. AC timing for interface with an 68-type microcontroller –

Parameter		Signal	Symbol	Condition	Min.	Max.	Unit
System cycle time		A0, $\overline{CS}$ R/ $\overline{W}$	t_{CYC6}	-	1000		
Address setup time			t_{AW6}		20	-	ns
Address hold time			t_{AH8}		10		
Data setup time		D0~D7	t_{DS6}		80	-	ns
Data hold time			t_{DH6}		10	-	
Output disable time			t_{OH6}	$C_L=100pF$	10	60	
Access time			t_{ACC6}		-	90	
Enable pulse width	Read	E	t_{EW}	-	100	-	ns
	Write				80	-	ns



COMMANDS

Command	Code											Function
	A0	$\overline{RD}$	$\overline{WR}$	D7	D6	D5	D4	D3	D2	D1	D0	
Display ON/OFF	0	1	0	1	0	1	0	1	1	1	0/1	Turns all display on or off, independently of display RAM data or internal status. 1:ON 0:OFF
Display start line	0	1	0	1	1	0	Display Start Address (0~31)				Specifies RAM line corresponding to uppermost line (COM0) of display.	
Set page address	0	1	0	1	0	1	1	1	0	Page (0~3)	Sets display RAM page in page address register.	
Set column address	0	1	0	0	Column Address (0~79)						Sets display RAM column address in column address register.	
Read status	0	0	1	BUSY	ADC	ON/OFF	RESET	0	0	0	0	Reads the following status: BUSY 1: Internal operation 0: Ready ADC 1: CW output(forward) 0: CCW output (reverse) ON/OFF 1: Display off 0: Display on RESET 1: Being reset 0: Normal
Write data	1	1	0	Write Data							Writes data from data bus into display RAM.	
Read data	1	0	1	Read Data							Reads data from display RAM onto data bus.	
Select ADC	0	1	0	1	0	1	0	0	0	0	0/1	Used to invert relationship of assignment between display RAM column addresses and segment

ACCEPT QUALITY LEVEL (AQL).

Inspection Plan: ANSI Z-1.4, Normal Inspection Level II, Single Sampling Plan.

RELIABILITY TEST

Operating life time: 50K hours
(at room temperature without direct irradiation of sunlight)
Reliability characteristics shall meet following requirements.

Test Item	Test Condition
High temperature storage	+80°C×96HR
Low temperature storage	-30°C×96HR
High temperature operation	+70°C×96HR
Low temperature operation	-20°C×96HR
High temperature, High humidity	60°C×90%RH×4 Weeks
Thermal shock	-20°C×30min → 25°C×10s → +70°C×30min ×5 Cycles
Vibration test	Frequency × Swing ×Time 40Hz×4mm×4hrs
Drop test	Height × no. of drop 1.0m×6 drops

MIDAS
DISPLAYS

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