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MC44005A6W-FPTLWI-V3	4 x 40	4.89 mm Character Height	LCD Module
Specification			
Version: 1		Date: 22/03/2025	
Revision			
1	20/03/2025	First Issue	

Display Features	
Character Count	4 x 40
Appearance	Black on White
Supply Voltage	5V
Interface	I2C
Font Set	English / Japanese
Display Mode	Transflective
Character Height	4.89 mm
LC Type	FSTN
Module Size	190.00 x 54.00 x 13.00 mm
Operating Temperature	-20°C ~ +70°C
Construction	COB
LED Backlight	White

RoHS compliant

Created By	Checked By
CL	WE
Box Quantity	Weight / Display
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Display Accessories	
Part Number	**Description**
MCCMDB-16SILDIL	LCD Interconnect board, can be driven from either a PC or a single Board computer with a USB output.
MDIB-CC1	Interconnect board for standard pitch pinouts to fine pitch wires. Providing pinouts for 2.54 pinout. 1.27, 1, 0.845, 0.8, 0.7, 0.65, 0.62, 0.6, 0.5 & 0.3 pads.

Optional Variants		
Fonts	**Appearances**	**Voltage**
English/Euro English/Cyrillic	Black on Yellow/ Green White on Blue Black on RGB	3V 3.3V

FEATURES

AVAILABLE OPTIONS	CHARACTERISTICS	CODE	No.
DISPLAY FORMAT	**40 Characters by 4 Lines**		
POLARIZER OPTIONS	**Positive Transflective**		
BACKLIGHT TYPE OPTIONS	**Edge Type LED Backlight (Long life span version)**		
BACKLIGHT COLOR OPTIONS	**White color**		
LCD PANEL OPTIONS	**FSTN**		
VIEWING ANGLE OPTIONS	**6:00 (Bottom)**		
TEMPERATURE RANGE OPTIONS	**-20℃ ~ 70℃, Single Supply Voltage**		
SUGGESTED DRIVING VOLTAGE	**Vlcm = 5.0V Vled = 5.0V**		
SUGGESTED LED DRIVING MODE	**PIN17: LED+, PIN18:LED-**		
CONTROLLER	**IIC controller**		
FONT MAP CODE	**E Version**		
DRIVING DUTY	**1/16**		
DRIVING BIAS	**1/5**		

MECHANICAL SPECIFICATIONS

OVERALL SIZE	**190.0W x 54.0H**	**mm**	THICKNESS	**max 13.0**	**mm**
VIEWING AREA	**147.0W x 29.5H**	**mm**	HOLE-HOLE	**183.0W x 47.0H**	**mm**
CHARACTER SIZE	**2.78W x 4.89H**	**mm**	CHARACTER PITCH	**0.75W x 1.20H**	**mm**
DOT SIZE	**0.50W x 0.55H**	**mm**	DOT PITCH	**0.07W x 0.07H**	**mm**

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
POWER SUPPLY (LOGIC)	Vdd	25℃	**-0.3**	**—**	**7.0**	**V**
POWER SUPPLY (LCD)	V0	25℃	**Vdd -13.5**	**—**	**Vdd +0.3**	**V**
INPUT VOLTAGE	Vin	25℃	**-0.3**	**—**	**Vdd +0.3**	**V**
OPERATING TEMPERATURE	Vopr	—	**-20**	**—**	**70**	**℃**
STORAGE TEMPERATURE	Vstg	—	**-30**	**—**	**80**	**℃**

ELECTRONIC CHARACTERISTICS*

	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	INPUT VOLTAGE	Vlcm = Vdd	**—**	**—**	**5.0**	**—**	**V**
	SUPPLY CURRENT	Idd	**Vdd=5V**	**—**	**1.5**	**—**	**mA**
	DRIVING VOLTAGE FOR LCD PANEL	Vlcd = (Vdd - V0)	**-20℃**	**3.90**	**—**	**4.30**	**V**
			0℃	**—**	**—**	**—**	
			25℃	**4.20**	**—**	**4.70**	
			50℃	**—**	**—**	**—**	
			70℃	**4.20**	**—**	**4.80**	

* All data are recorded from TEST REPORT #FSYP027800114

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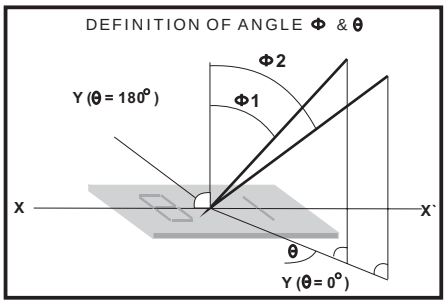
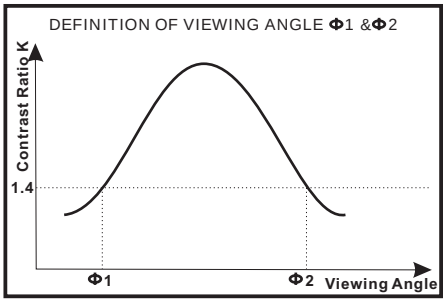
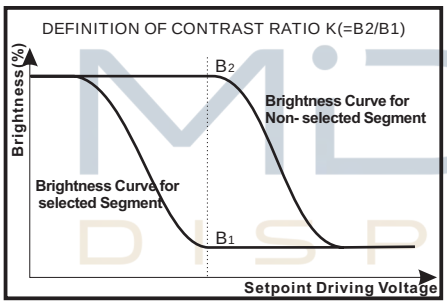
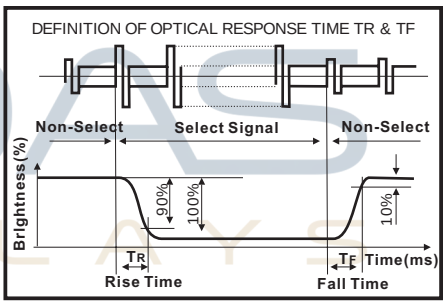
LCD CHARACTERISTICS

FOR STN/**FSTN** TYPE LCD **Panel** (TA=25°C, V**lcd**=5.0V ± 0.5V)							
	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	VIEWING ANGLE	Φ2 − Φ1	K=4	40	—	—	deg
		θ		60			
	CONTRAST RATIO	K	—	6	—	—	—
	RESPONSE TIME(RISE)	TR	—	—	150	250	ms
	RESPONSE TIME(FALL)	TF	—	—	150	250	ms









LED CHARACTERISTICS

	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	LED FORWARD VOLTAGE	Vf	25°C	2.6	—	3.0	V
	LED FORWARD CURRENT	If	25°C	—	50	—	mA
	LED REVERSE CURRENT	Ir	25°C Vr=5.0V	—	—	100	μA
	LED COLOR RANGE	X coordinate	25°C If = 50mA	0.26	—	0.30	—
		Y coordinate		0.27	—	0.31	—
	LED BRIGHTNESS (WITHOUT LCD)	Lv	25°C If = 50mA	—	420	—	cd/m²
	LED BRIGHTNESS UNIFORMITY	Lvmin/Lvmax	25°C If = 50mA	70	—	—	Ratio
	LED LIFE TIME	—	25°C If = 50mA	20K	—	—	Hours

YOUR ATTENTION: It is constant current (not constant voltage) that should be applied when driving LED backlight. Therefore, this data is very important!

∗ For operation above 25 C,The Ifm Ifp & Pd must be derated,the Curent derating is -0.36*10mA/ C for DC drive and -0.86*10 mA/ C for Pulse drive,
the power dissipation is -75*10 mW/ C The product working current must not be more than 60% of the Ifm ir Ifp according to the working temperature.

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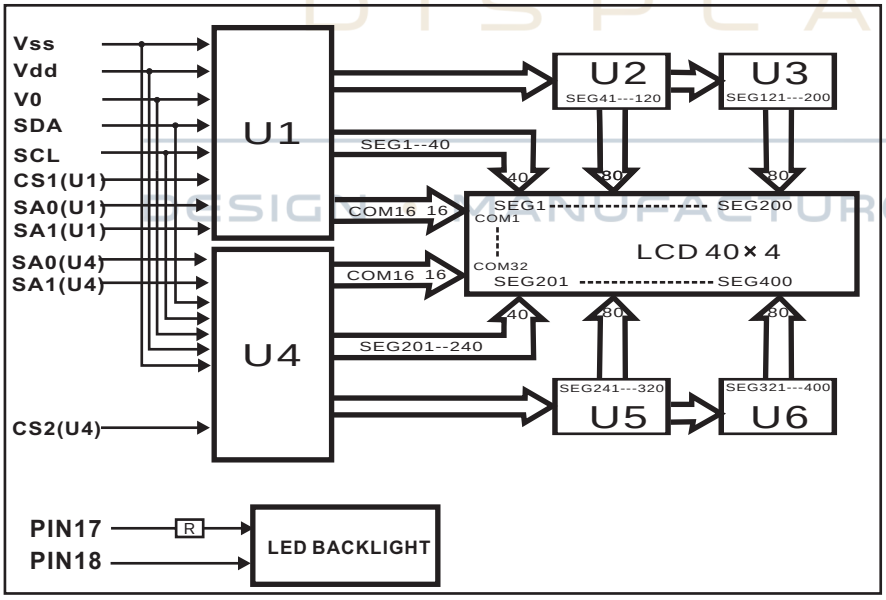
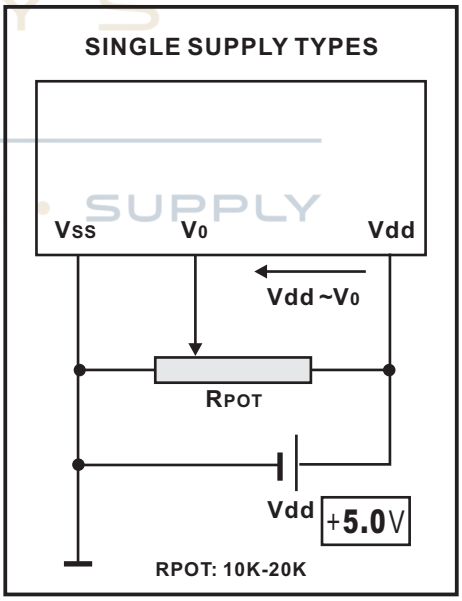
PIN ASSIGNMENT

PIN	SYMBOL	DESCRIPTION	REMARKS
1	SCL	Serial clock input	
2	SDA	Serial input data	
3	CS1(U1)	Chip select	
4	NC	No connection	
5	SA1(U4)	Slave address	
6	SA0(U4)	Slave address	
7	SA1(U1)	Slave address	
8	SA0(U1)	Slave address	
9	NC	No connection	
10	NC	No connection	
11	NC	No connection	
12	V0	Contrast Adjust	
13	Vss	GND	
14	Vdd	Power supply for LCM	5.0V
15	CS2(U4)	Chip select	
16	NC	No connection	
17	LED+	Power supply for BKL	5.0V
18	LED-	Power supply for BKL	

BLOCK DIAGRAM



POWER SUPPLY DIAGRAM



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Upper 4bit / Lower 4bit	LLLL	LLLH	LLHL	LLHH	LHLL	LHLH	LHHL	LHHH	HLLL	HLLH	HLHL	HLHH	HHLL	HHLH	HHHL	HHHH
LLLL	CG RAM (1)															
LLLH	(2)															
LLHL	(3)															
LLHH	(4)															
LHLL	(5)															
LHLH	(6)															
LHHL	(7)															
LHHH	(8)															
HLLL	(1)															
HLLH	(2)															
HLHL	(3)															
HLHH	(4)															
HHLL	(5)															
HHLH	(6)															
HHHL	(7)															
HHHH	(8)															

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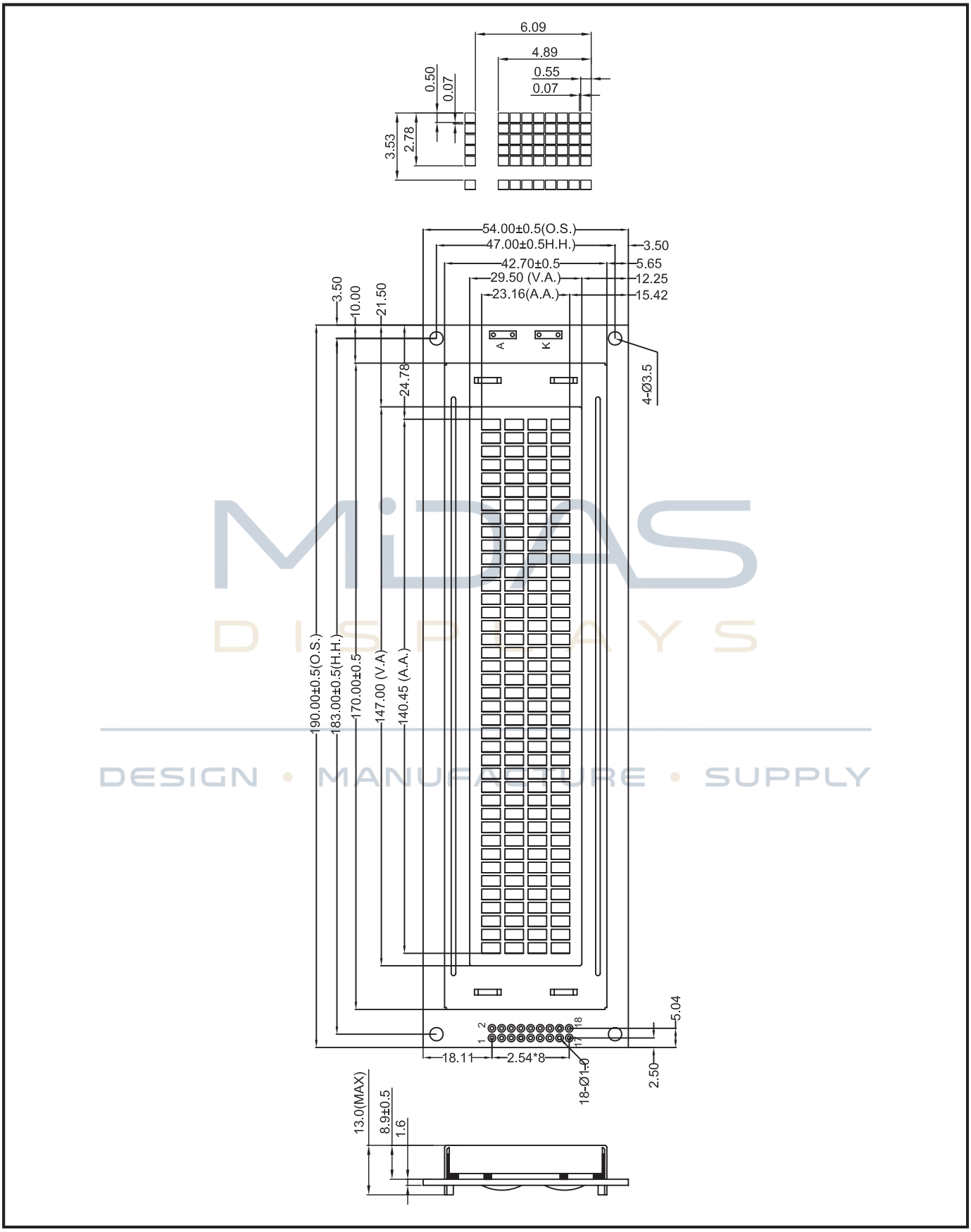
DESIGN MANUFACTURE SUPPLY



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