

MC44005A6W-SPTLYI-V3	4 x 40	4.89mm 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 Yellow/Green		
Supply Voltage	5V		
Interface	I2C		
Font Set	English / Japanese		
Display Mode	Transflective		
Character Height	4.89mm		
LC Type	STN		
Module Size	190.00 x 54.00 x 13.00 mm		
Operating Temperature	-20°C ~ +70°C	Created By	Checked By
Construction	COB	CL	WE
LED Backlight	Yellow/Green	Box Quantity	Weight / Display

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	White on Blue Black on White 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	Yellow-Green color		
LCD PANEL OPTIONS	Yellow-Green STN		
VIEWING ANGLE OPTIONS	6:00 (Bottom)		
TEMPERATURE RANGE OPTIONS	-20°C ~ 70°C, Single Supply Voltage		
SUGGESTED DRIVING VOLTAGE	V_{lcm} = 5.0V V_{led} = 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)	V _{dd}	25°C	-0.3	—	7.0	V
POWER SUPPLY (LCD)	V ₀	25°C	V_{dd} -13.5	—	V_{dd} +0.3	V
INPUT VOLTAGE	V _{in}	25°C	-0.3	—	V_{dd} +0.3	V
OPERATING TEMPERATURE	V _{opr}	—	-20	—	70	°C
STORAGE TEMPERATURE	V _{stg}	—	-30	—	80	°C

ELECTRONIC CHARACTERISTICS *

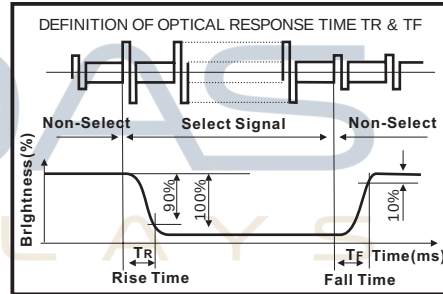
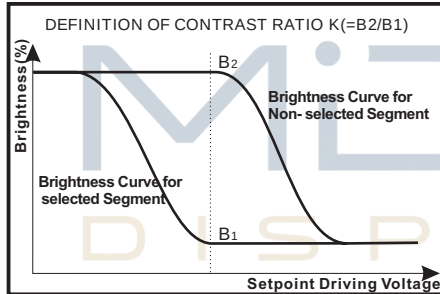
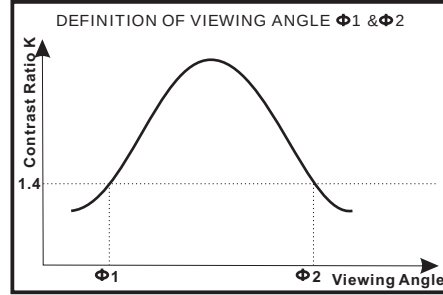
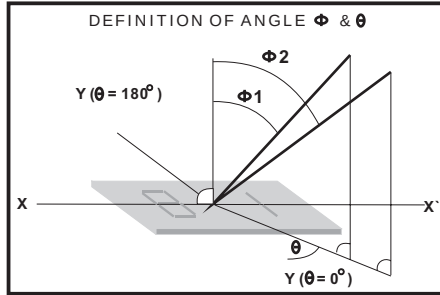
	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	INPUT VOLTAGE	V _{lcm} = V _{dd}	—	—	5.0	—	V
	SUPPLY CURRENT	I _{dd}	V_{dd}=5V	—	1.5	—	mA
	DRIVING VOLTAGE FOR LCD PANEL	V _{lcd} = (V _{dd} - V ₀)	-20°C	3.90	—	4.30	V
			0°C	—	—	—	
			25°C	4.20	—	4.70	
			50°C	—	—	—	
			70°C	4.20	—	4.80	

* All data are recorded from TEST REPORT #FSYP027800112

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	$\Phi 2 - \Phi 1$	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	V _f	25°C I _f = 2*15mA	2.6	—	3.0	V
	LED FORWARD CURRENT	I _f	25°C	—	30	—	mA
	LED REVERSE CURRENT	I _r	25°C V _r =5.0V	—	—	60	μA
	LED PEAK WAVE LENGTH	λ _p	25°C I _f = 2*15mA	569	—	575	nm
	LED BRIGHTNESS (WITHOUT LCD)	L _v	25°C I _f = 2*15mA	—	310	—	cd/m ²
	LED BRIGHTNESS UNIFORMITY	L _{vmin} /L _{vmax}	25°C I _f = 2*15mA	70	—	—	Ratio
	LED LIFE TIME	—	25°C I _f = 2*15mA	20K	—	—	Hours

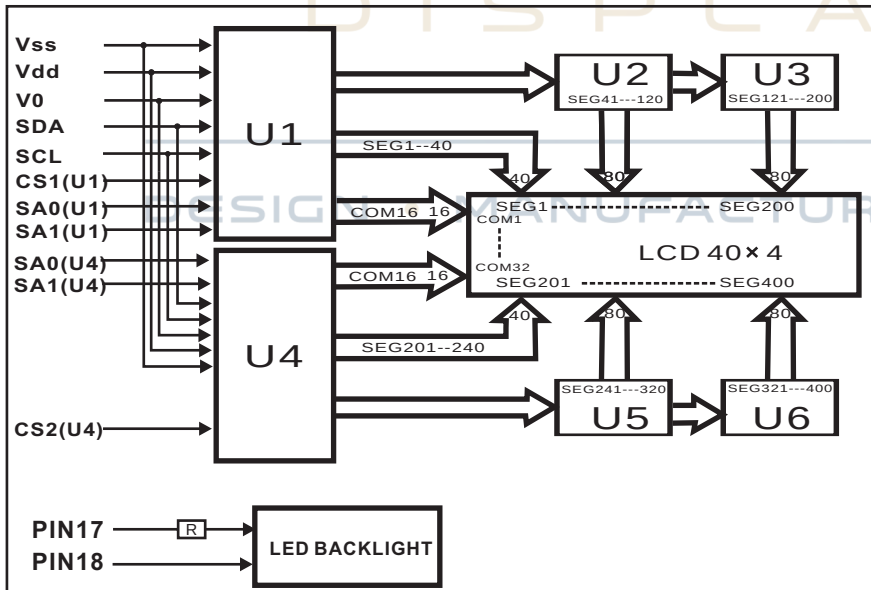
▲ YOUR ATTENTION: It is constant current (not constant voltage) that should be applied when driving LED backlight. Therefore, this data is very important!

* For operation above 25 °C, The I_{fm} I_{fp} & P_d must be derated, the Current derating is -0.36*6mA/ °C for DC drive and -0.86*6 mA/ °C for Pulse drive, the power dissipation is -75*6 mW/ °C The product working current must not be more than 60% of the I_{fm} or I_{fp} according to the working temperature.

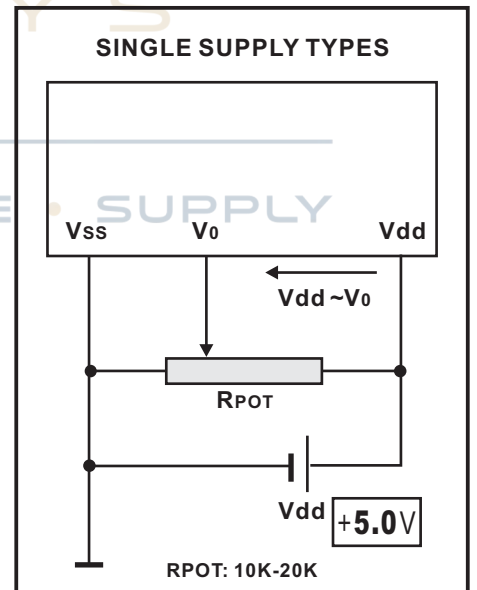
PIN ASSIGNMENT

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



Upper 4bit Lower 4bit	LLLL	LLHH	LLHL	LLHH	LHLL	LHLH	LHHL	LHHH	HLLL	HLLH	HLHL	HLHH	HHLL	HHLH	HHHL	HHHH
LLLL	CG RAM (1)															
LLHH	(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)															

