

MC42008A6W-SPR	4 x 20	8mm Character Height	LCD Module
Specification			
Version: 2		Date: 17/02/2022	
Revision			
1	02/04/2019	First Issue	
2	15/02/2022	Updated Drawing	

Display Features			
Character Count	4 x 20		
Appearance	Black on Yellow/Green		
Logic Voltage	5V		
Interface	Parallel		
Font Set	English / Japanese		
Display Mode	Reflective		
Character Height	9.22mm		
LC Type	STN		
Module Size	146.00 x 62.50 x 12.00 ^{MAX} mm		
Operating Temperature	-20°C ~ +70°C		
Construction	COB		
LED Backlight	TSB	Created By	Weight / Display
		WE	

* - For full design functionality, please use this specification in conjunction with the ST7066U + ST7063C display driver specification. (Provided Separately)

Display Accessories	
Part Number	Description
MCCMDB-16SIL	LCD Interconnect board, can be driven from either a PC or a single Board computer with a USB output.
MCCBL1A16SLIP-16DILS-150	16 Way, Single in-line to Dual In-line connector Cable.
MCCBL1A16SLIP-16SILS-150	16 Way, Single in-line to Single In-line connector Cable.
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		3V 3.3V

FEATURES

AVAILABLE OPTIONS	CHARACTERISTICS
DISPLAY FORMAT	20 Characters by 4 Lines
POLARIZER OPTIONS	Positive Reflective
BACKLIGHT TYPE OPTIONS	No Backlight
BACKLIGHT COLOR OPTIONS	No Backlight
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
SUGGESTED LED DRIVING MODE	No Backlight
CONTROLLER ▲1	ST7066U + ST7063C
FONT MAP CODE	E Version
DRIVING DUTY	1/16
DRIVING BIAS	1/5

▲1 Please ask for datasheet of the mentioned controller from Midas Displays or Midas Displays authorized distributors. You can find the related information including AC & DC characteristics, Write & Read Timing diagram, Instruction table and descriptions, DDRAM & CGRAM, Rest Function and so on from the datasheet of controller.

▲1 You can ask for the example of software program (C language) from Midas Displays or Midas Displays authorized distributors.

MECHANICAL SPECIFICATIONS

OVERALL SIZE	146.0W x 62.5H	mm	THICKNESS	max 12.0	mm
VIEWING AREA	123.0W x 42.5H	mm	HOLE-HOLE	139.0W x 55.5H	mm
CHARACTER SIZE	4.84W x 9.22H	mm	CHARACTER PITCH	1.16W x 0.53H	mm
DOT SIZE	0.92W x 1.10H	mm	DOT PITCH	0.06W x 0.06H	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

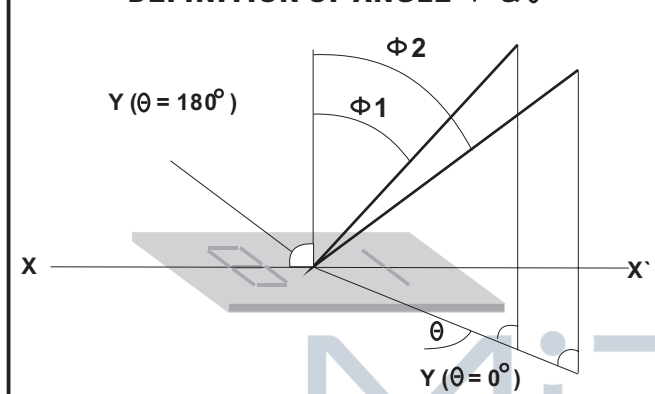
ELECTRONIC CHARACTERISTICS *

	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	INPUT VOLTAGE	V _{lcm} = V _{dd}	—	—	5.0	—	V
	SUPPLY CURRENT	I _{dd}	V _{dd} =5.0V	—	1.5	—	mA
	DRIVING VOLTAGE FOR LCD PANEL	V _{lcd} = (V _{dd} - V ₀)	-20°C	4.10	—	4.50	V
			0°C	—	—	—	
			25°C	4.30	4.50	4.80	
			50°C	—	—	—	
			70°C	4.30	—	4.70	

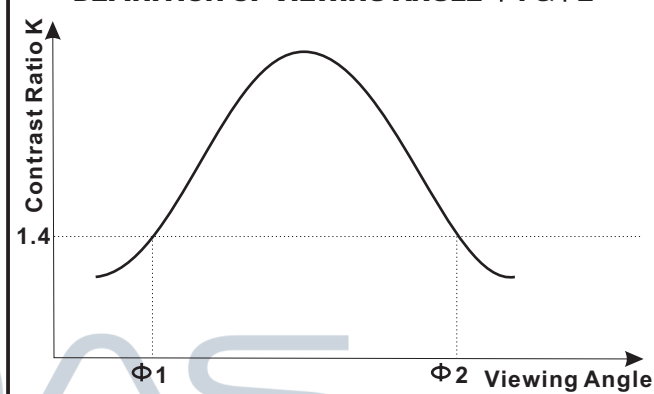
FOR STN/FSTN TYPE LCD Panel (TA=25 °C, Vlcd=5.0V ± 0.5V)

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

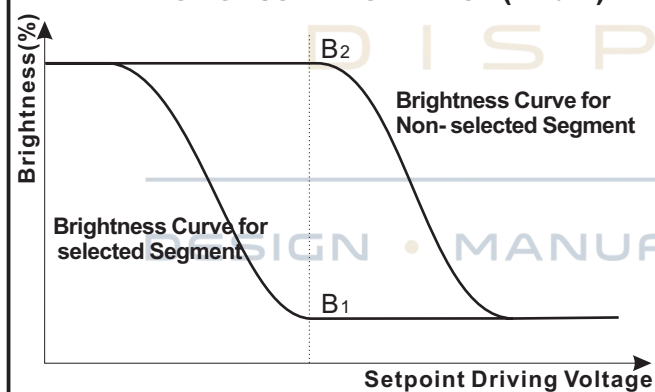
DEFINITION OF ANGLE Φ & θ



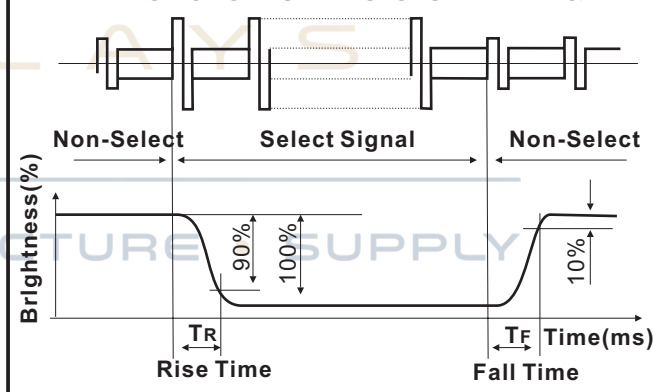
DEFINITION OF VIEWING ANGLE $\Phi 1$ & $\Phi 2$



DEFINITION OF CONTRAST RATIO K(=B2/B1)



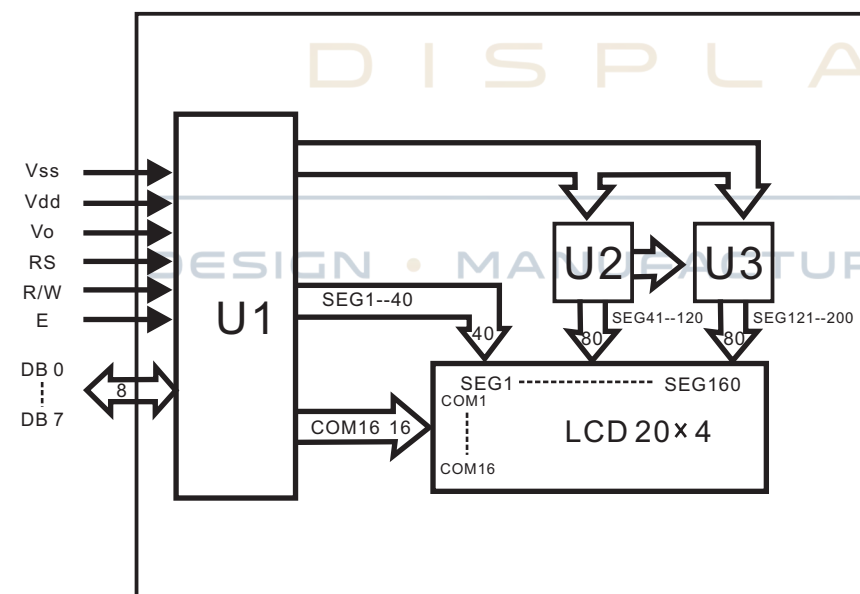
DEFINITION OF OPTICAL RESPONSE TIME TR & TF



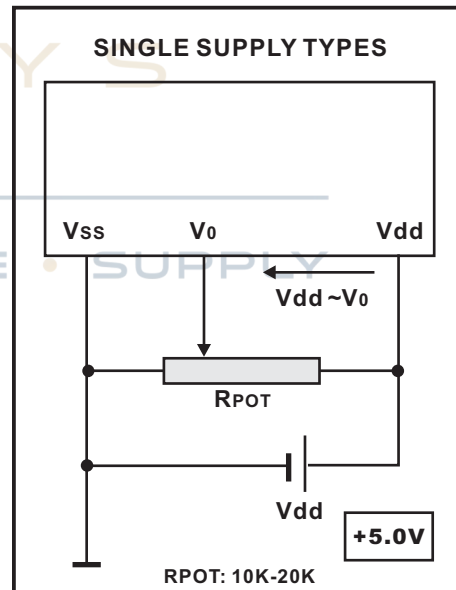
PIN ASSIGNMENT

PIN	SYMBOL	DESCRIPTION	REMARKS
1	Vss	GND	
2	Vdd	Power supply for LCM	5.0V
3	V0	Contrast Adjust	
4	RS	Register Select Signal	
5	R/W	Data Read / Write	
6	E	Enable Signal	
7	DB0	Data bus line	
8	DB1	Data bus line	
9	DB2	Data bus line	
10	DB3	Data bus line	
11	DB4	Data bus line	
12	DB5	Data bus line	
13	DB6	Data bus line	
14	DB7	Data bus line	
15	NC	No connection	
16	NC	No connection	

BLOCK DIAGRAM



POWER SUPPLY DIAGRAM



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

