

MD41605A6W-FPTLWS	4 x 16	5mm Character Height	LCD Module
Specification			
Version: 1		Date: 04/10/2021	
Revision			
1	02/10/2021	First Issue	

Display Features			
Character Count	4 x 16		
Appearance	Black on White		
Logic Voltage	5V		
Interface	SPI		
Font Set	English / Japanese		
Display Mode	Transflective		
Character Height	4.76mm		
LC Type	FSTN		
Module Size	87.00 x 60.00 x 14.50 mm		
Operating Temperature	-20°C ~ +70°C		
Construction	COB		
LED Backlight	White		
		Box Quantity	Weight / Display

* - For full design functionality, please use this specification in conjunction with the RW1063 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.

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
DISPLAY FORMAT	16 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°C ~ 70°C, Single Supply Voltage
SUGGESTED DRIVING VOLTAGE	V _{lcm} = 5.0V V _{led} = 5.0V
SUGGESTED LED DRIVING MODE	PIN15: LED+, PIN16: LED-
CONTROLLER	RW1063
FONT MAP CODE	E Version
DRIVING DUTY	1/16
DRIVING BIAS	1/5

MECHANICAL SPECIFICATIONS

OVERALL SIZE	87.0W x 60.0H	mm	THICKNESS	max 14.5	mm
VIEWING AREA	61.8W x 25.2H	mm	HOLE-HOLE	82.0W x 55.0H	mm
CHARACTER SIZE	2.96W x 4.76H	mm	CHARACTER PITCH	0.59W x 0.59H	mm
DOT SIZE	0.56W x 0.56H	mm	DOT PITCH	0.04W x 0.04H	mm

ABSOLUTE MAXIMUM RATINGS

ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
POWER SUPPLY (LOGIC)	V _{dd}	25°C	-0.3	—	5.5	V
POWER SUPPLY (LCD)	V _{lcd}	25°C	V _{ss} +7.0	—	V _{ss} -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

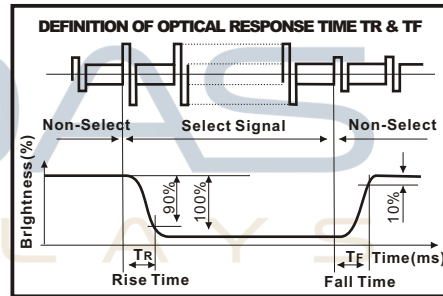
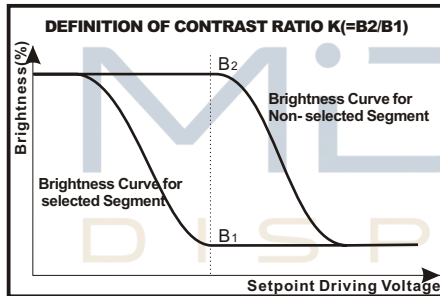
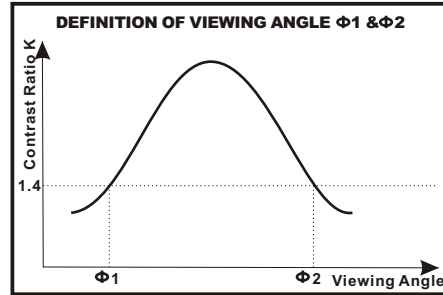
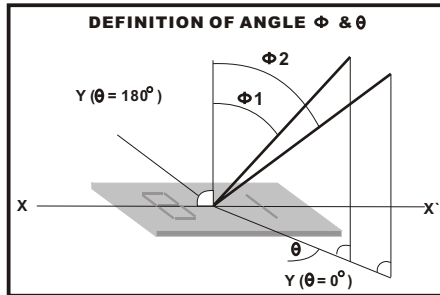
ELECTRONIC CHARACTERISTICS

	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 _O)	-20°C	4.30	—	4.75	V
			0°C	4.20	—	4.65	
			25°C	4.10	4.40	4.55	
			50°C	3.95	—	4.45	
			70°C	3.80	—	4.40	

LCD CHARACTERISTICS

FOR STN/FSTN TYPE LCD Panel ($T_A=25^{\circ}\text{C}$, $V_{lcd}=5.0\text{V} \pm 0.5\text{V}$)

	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 $I_f = 15\text{mA}$	2.6	—	3.0	V
	LED FORWARD CURRENT	I_f	25°C	—	15	—	mA
	LED REVERSE CURRENT	I_r	25°C $V_r=5.0\text{V}$	—	—	30	μA
	LED COLOR RANGE	X coordinate	25°C $I_f = 15\text{mA}$	0.26	—	0.30	—
		Y coordinate		0.27	—	0.31	—
	LED BRIGHTNESS (WITHOUT LCD)	L_v	25°C $I_f = 15\text{mA}$	—	200	—	cd/m^2
	LED BRIGHTNESS UNIFORMITY	L_{vmin}/L_{vmax}	25°C $I_f = 15\text{mA}$	70	—	—	Ratio
	LED LIFE TIME	—	25°C $I_f = 15\text{mA}$	20K	—	—	Hours

Power supply for BKL

Power supply for BKL

POWER SUPPLY

SINGLE

SEG1--40

40

30

SEG41--120

40

SEG121--160

Vss

SEG1-----SEG16

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SEG1--40

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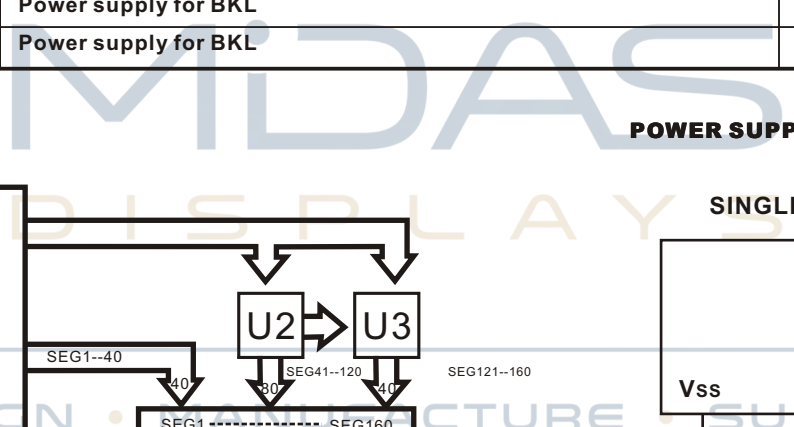
SEG41--120

40

SEG121--160

Vss

SEG1-----SEG16



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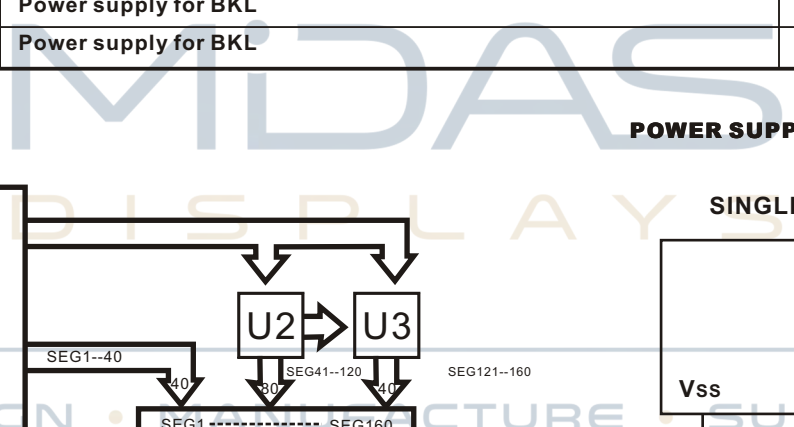
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SEG41--120

40

SEG121--160

Vss



Upper 4bit Lower 4bit		LLLL	LL LH	LL HL	LL HH	LH LL	LH LH	LH HL	LH HH	HLLL	HLLH	HLHL	HLHH	HHLL	HH LH	HH HL	HHHH
LLLL	CG RAM (1)																
LL LH	(2)																
LL HL	(3)																
LL HH	(4)																
LH LL	(5)																
LH LH	(6)																
LH HL	(7)																
LH HH	(8)																
HLLL	(1)																
HLLH	(2)																
HLHL	(3)																
HLHH	(4)																
HHLL	(5)																
HHLH	(6)																
HHHL	(7)																
HHHH	(8)																

