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MC42005A6W-BNMLWS-V2	4 x 20	5mm Character Height	LCD Module
Specification			
Version: 1		Date: 20/10/2016	
Revision			

Display Features	
Character Count	4 x 20
Appearance	White on Blue
Logic Voltage	5V
Interface	SPI
Font Set	English / Japanese
Display Mode	Transmissive
Character Height	4.75mm
LC Type	BSTN
Module Size	98.00 x 60.00 x 13.60 mm
Operating Temperature	-20°C ~ +70°C
Construction	COB
LED Backlight	White

Box Quantity	Weight / Display
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RoHS compliant

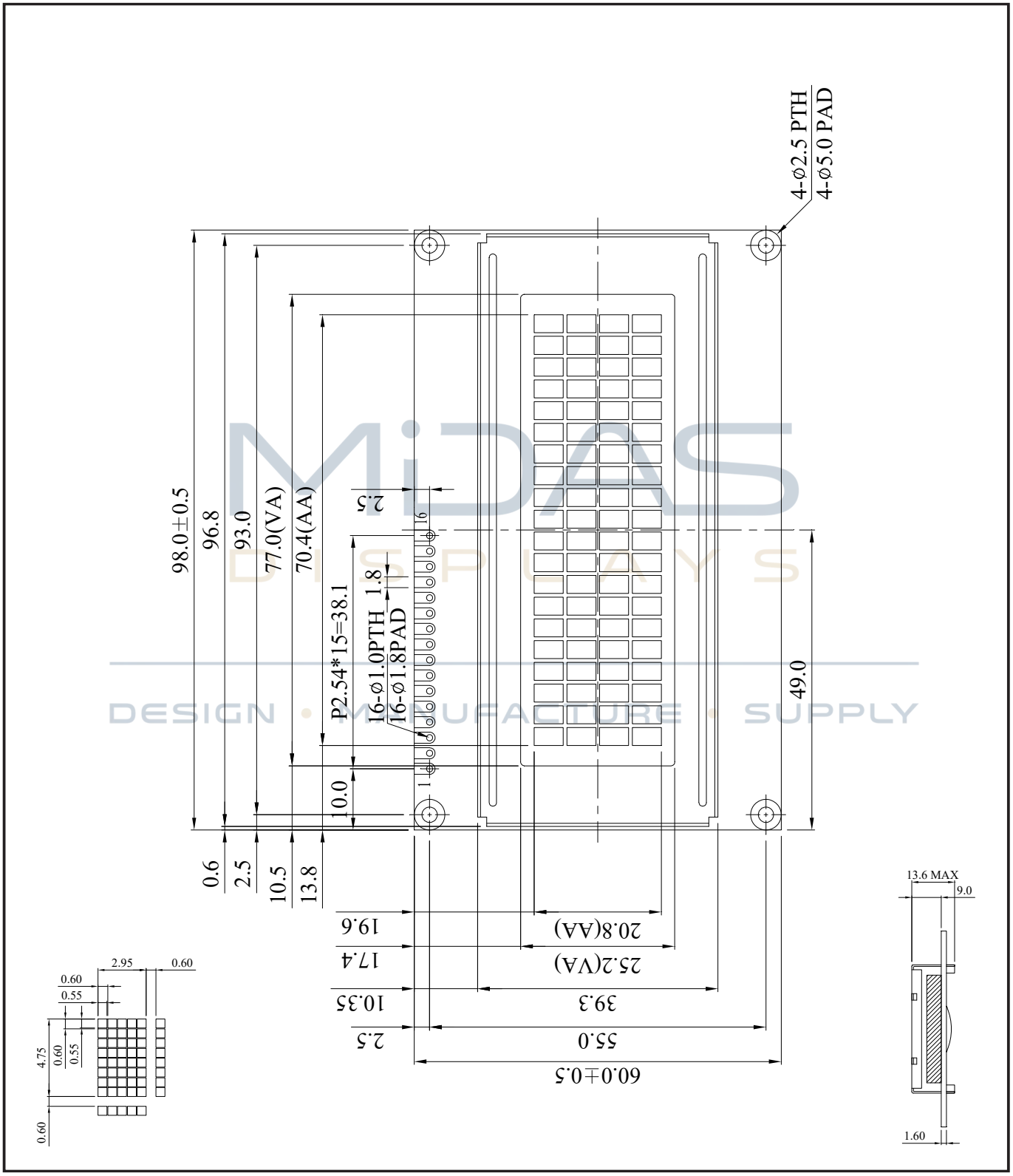
DESIGN • MANUFACTURE • SUPPLY

* - 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**
	Black on White Black on Yellow/Green	3V

Mechanical Specifications					
Module Size	98.00 x 60.00 x 13.60 (With Backlight)				W x H x D mm
Viewing Area	77.00 x 25.20	W x H mm	Hole-to-Hole	93.00 x 55.00	W x H mm
Character Size	2.95 x 4.75	W x H mm	Character Pitch	3.55 x 5.35	W x H mm
Dot Size	0.55 x 0.55	W x H mm	Dot Pitch	0.60 x 0.60	W x H mm

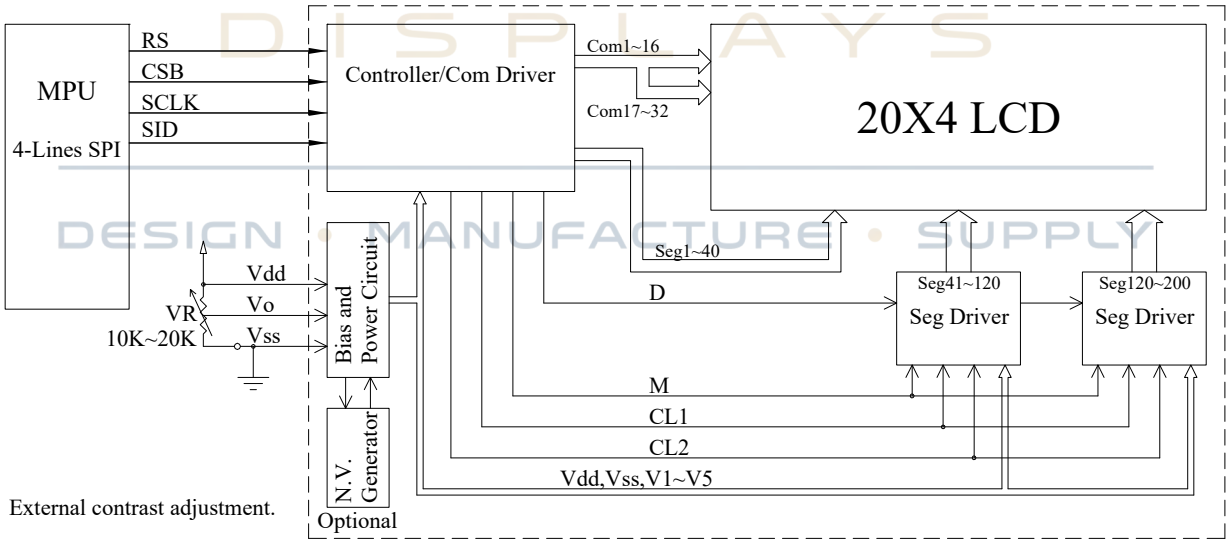


MC42005A6W-BNMLWS-V2	4 x 20	5mm Character Height	LCD Module
Specification			
Version: 1		Date: 20/10/2016	
Revision			

Pin Layout

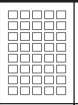
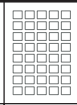
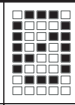
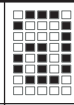
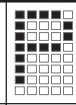
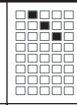
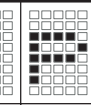
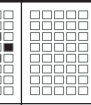
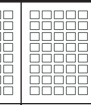
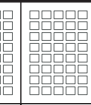
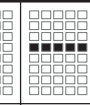
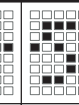
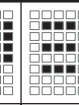
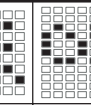
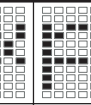
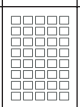
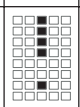
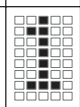
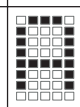
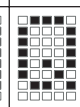
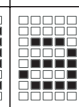
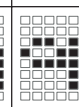
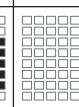
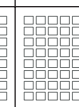
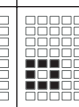
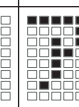
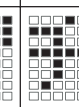
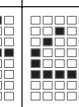
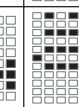
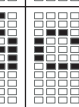
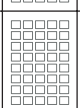
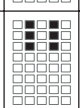
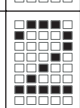
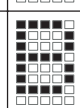
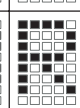
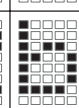
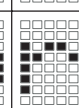
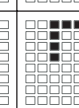
PI	SYMBOL	DESCRIPTION	REMARKS
1	Vss	GND	
2	Vdd	Power supply for LCM	5.0V
3	V0	Operating Voltage for LCD	
4	RS	Register Selection Input	
5	NC	No Connection	
6	NC	No Connection	
7	NC	No Connection	
8	NC	No Connection	
9	NC	No Connection	
10	NC	No Connection	
11	NC	No Connection	
12	CSB	Chip Select. Low=True High=False	
13	SCLK	Serial Clock Input	
14	SID	Serial Data Input	
15	A	Power Supply for BKL	
16	K	Power Supply for BKL	

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Character located	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DDRAM address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13
DDRAM address	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F	50	51	52	53
DDRAM address	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F	20	21	22	23	24	25	26	27
DDRAM address	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F	60	61	62	63	64	65	66	67

Font Map

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)															

MITSUBISHI ELECTRIC
Design Manual Electronic Devices

Absolute Maximum Ratings

Item	Symbol	Condition	Min	Typ	Max	Unit
Power Supply (LOGIC)	Vdd	25°C	-0.3	---	5.5	V
Power Supply (LCD)	V0	25°C	Vss -0.3	---	Vss +7.0	V
Input Voltage	Vin	25°C	-0.3	---	Vdd +0.3	V
Operating Temperature	Vopr	---	-20	---	70	C
Storage Temperature	Vstg	---	-30	---	80	C

Electronic Characteristics

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Input Voltage High	V_{IH}	---	2.50	---	V_{DD}	V
Input Voltage Low	V_{IL}	---	-0.30	---	0.55	V
Output Voltage High	V_{OH}	---	3.90	---	---	V
Output Voltage Low	V_{OL}	---	---	---	0.40	V
Supply Voltage Logic	V_{DD} ~ V_{SS}	---	4.50	5.00	5.50	V
Supply Voltage LCD	V_{DD} ~ V_0	Ta=25°C	4.40	4.50	4.60	V
Supply Current	I_{DD}	V_{DD}=5.0V	1.00	1.20	1.50	mA

LCD Characteristics

For STN/FSTN LCD Panel Types

Item	Symbol	Condition	Min	Typ	Max	Unit
Viewing Angle	Φ2 – Φ1	CR ≧ 2	40°	---	20	ψ=180°
	Θ		60°			
Contrast Ratio	K	---	---	3	---	---
Response Time (Rise)	TR	---	---	150	200	ms
Response Time (Fall)	TF	---	---	150	200	ms

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LED Characteristics

Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Supply Current	ILED	V=3.5V	---	48	60	mA
Supply Voltage	V	---	3.40	3.50	3.60	V
Reverse Voltage	VR	---	---	---	5	V
Luminance (Without LCD)	IV	ILED=48mA	448	560	---	Cd/m^2
---	---	---	---	---	---	---
LED Life Time	---	ILED=48mA	---	50K	---	Hour

Attention: It is constant current, not constant voltage, which should be applied when driving the LED backlight, please ensure you adhere to this rule.