


MC21605F6WE-SPTLY	2 x 16	5mm Character Height	LCD Module
<b>Specification</b>			
Version: 1		Date: 20/10/2016	
<b>Revision</b>			
23/09/2011		First Issue	
06/09/2012		Modify VOP	
30/09/2014		Remove IC Information	

Display Features			
Character Count	2 x 16		
Appearance	Black on Yellow/Green		
Logic Voltage	5V		
Interface	Parallel		
Font Set	English / Japanese		
Display Mode	Transflective		
Character Height	4.67mm		
LC Type	STN		
Module Size	59.00 x 29.30 x 5.50 mm		
Operating Temperature	-20°C ~ +70°C		
Construction	COB		
LED Backlight	Yellow/Green	Box Quantity	Weight / Display
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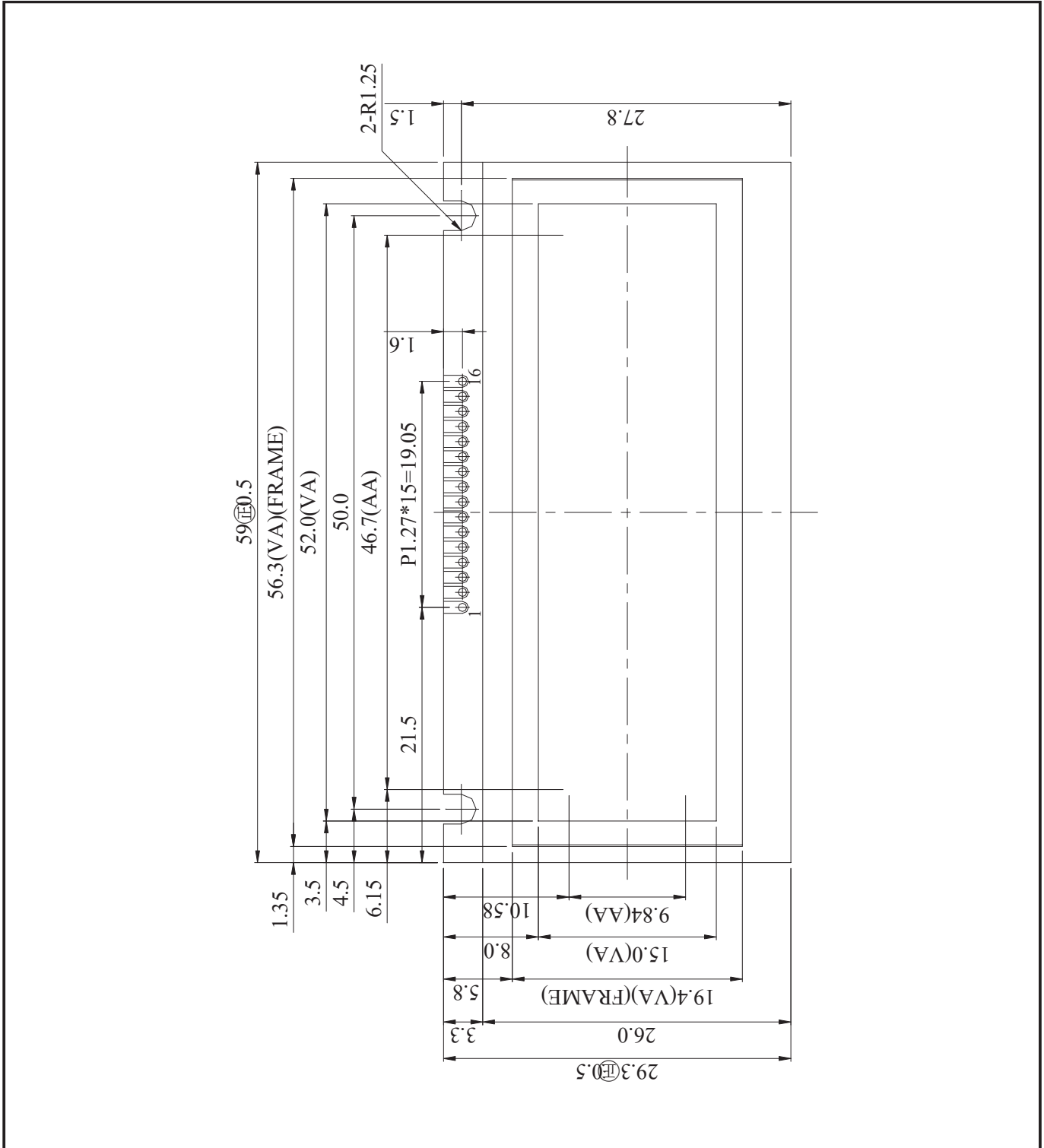
\* - For full design functionality, please use this specification in conjunction with the ST7066U specification. (Provided Separately)

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.
MCCBL1A16SILP-16DILS-150	16 Way, Single in-line to Dual In-line connector Cable.
MCCBL1A16SILP-16SILS-150	16 Way, Single in-line to Single In-line connector Cable.

Optional Variants		
Fonts	Appearances	Voltage

## Mechanical Specifications

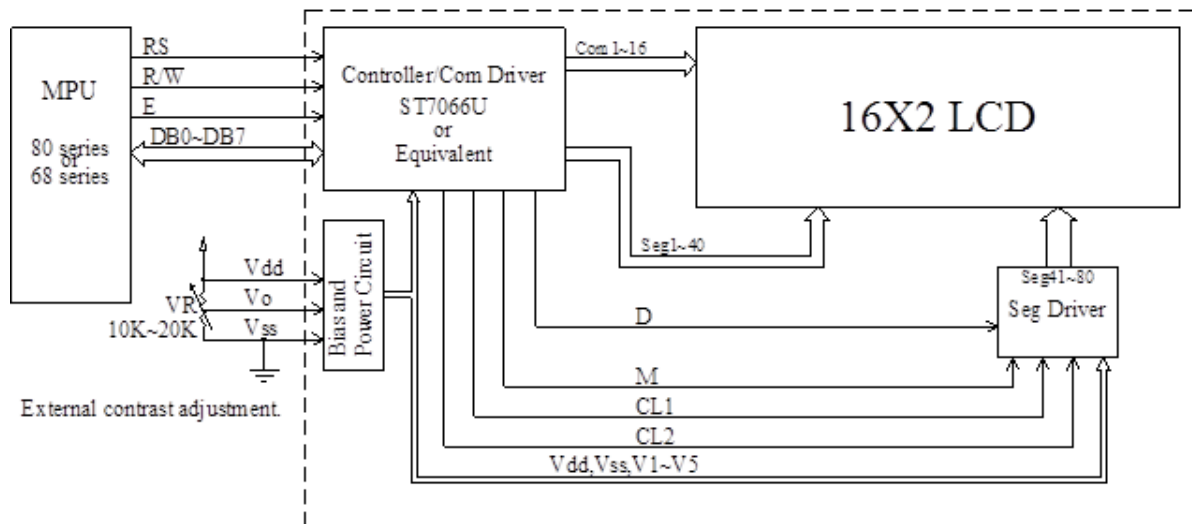
Module Size	59.00 x 29.30 x 5.50 ( With Backlight)			W x H x D mm	
Viewing Area	52.00 x 15.00	W x H mm	Hole-to-Hole	50.00	W
Character Size	2.45 x 4.67	W x H mm	Character Pitch	2.95 x 5.17	W x H mm
Dot Size	0.45 x 0.54	W x H mm	Dot Pitch	0.50 x 0.59	W x H mm



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# Pin Layout

PI	SYMBOL	DESCRIPTION	REMARKS
1	VLED-	Power Supply for BKL	
2	Vss	Ground	
3	Vdd	Supply Voltage for Logic	
4	V0	Operating Voltage	5.0V
5	RS	Instruction Code	
6	R/W	Read / Write	
7	E	Chip Enable Signal	
8	DB0	Data bus line	
9	DB1	Data bus line	
10	DB2	Data bus line	
11	DB3	Data bus line	
12	DB4	Data bus line	
13	DB5	Data bus line	
14	DB6	Data bus line	
15	DB7	Data bus line	
16	A	LED+	



Character located	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DDRAM address	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
DDRAM address	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F

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# 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)															

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Absolute Maximums Ratings					
Item	Symbol	Minimum	Typical	Maximum	Unit
Power Supply (Logic)	V <sub>DD</sub>	-0.3	---	7.0	V
Power Supply (LCD)	V <sub>0</sub>	V <sub>SS</sub> -0.3	---	13.0	V
Input Voltage	V <sub>in</sub>	V <sub>SS</sub>	---	V <sub>DD</sub>	V
Operating Temperature	T <sub>OP</sub>	-20°C	---	70°C	°C
Storage temperature	T <sub>ST</sub>	-30°C	---	80°C	°C

Electronic Characteristics						
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Input Voltage High	V <sub>IH</sub>	---	0.70	---	V <sub>DD</sub>	V
Input Voltage Low	V <sub>IL</sub>	---	V <sub>SS</sub>	---	0.60	V
Output Voltage High	V <sub>OH</sub>	---	3.90	---	---	V
Output Voltage Low	V <sub>OL</sub>	---	---	---	0.40	V
Supply Voltage Logic	V <sub>DD</sub> - V <sub>SS</sub>	---	4.50	5.00	5.50	V
Supply Voltage LCD	V <sub>DD</sub> - V <sub>0</sub>	T <sub>a</sub> =25°C	3.60	3.70	3.80	V
Supply Current	I <sub>DD</sub>	V <sub>DD</sub> =5.0V	1.00	1.20	1.50	mA

LCD Characteristics						
For STN/FSTN LCD Panel Types						
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Viewing Angle	Φ <sub>2</sub> - Φ <sub>1</sub>	CR ≥ 2	20	---	20	ψ=180°
	Θ	---	---	---	---	
Contrast Ratio	CR	---	---	3	---	---
Response Time (Rise)	TR	25°C	---	150	200	ms
Response Time (Fall)	TF	25°C	---	150	200	ms

LED Characteristics						
Item	Symbol	Condition	Minimum	Typical	Maximum	Unit
Supply Current	I <sub>LED</sub>	V=5.0V	32	40	60	mA
Supply Voltage	V	---	4.90	5.00	5.10	V
Reverse Voltage	V <sub>R</sub>	---	---	---	8	V
Luminance (Without LCD)	I <sub>V</sub>	I <sub>LED</sub> =40mA	37.28	46.60	---	Cd/m <sup>2</sup>
---	---	---	---	---	---	---
LED Life Time	---	I <sub>LED</sub> =40mA	---	50K	---	Hour

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

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