

MC21605G6W-SPTLY-V2	2 x 16	5mm Character Height	LCD Module
Specification			
Version: 1		Date: 20/02/2016	
Revision			
1	18/02/2016	First issue	

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	5.23mm		
LC Type	STN		
Module Size	80.00 x 36.00 x 13.50mm		
Operating Temperature	-20°C ~ +70°C		
Construction	COB	Box Quantity	Weight / Display
LED Backlight	Yellow/Green	~	~

* - 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.
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	White on Blue Black on White Black on RGB	3V 3.3V

FEATURES

AVAILABLE OPTIONS	CHARACTERISTICS		No.
DISPLAY FORMAT	16 Characters by 2 Lines		1~6
POLARIZER OPTIONS	Positive Transflective		7
BACKLIGHT TYPE OPTIONS	Edge Type LED Backlight (Long life span version)		8
BACKLIGHT COLOR OPTIONS	Yellow-Green color		9
LCD PANEL OPTIONS	Yellow-Green STN		10
VIEWING ANGLE OPTIONS	6:00 (Bottom)		11
TEMPERATURE RANGE OPTIONS	-20°C ~ 70°C, Single Supply Voltage		12
SUGGESTED DRIVING VOLTAGE	V _{lcm} = 5.0V V _{led} = 5.0V		13
SUGGESTED LED DRIVING MODE	PIN15: LED+, PIN16: LED-		14
CONTROLLER	SPLC780D+SPLC100A		15
FONT MAP CODE	E Version		16
DRIVING DUTY	1/16		—
DRIVING BIAS	1/5		—

Please ask for datasheet of the mentioned controller from Midas or Midas's 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.

You can ask for the example of software program (C language) from Midas or Midas's authorized distributors.

MECHANICAL SPECIFICATIONS

OVERALL SIZE	80.0W x 36.0H	mm	THICKNESS	max 13.5	mm
VIEWING AREA	64.5W x 16.4H	mm	HOLE-HOLE	75.0W x 31.0H	mm
CHARACTER SIZE	3.00W x 5.23H	mm	CHARACTER PITCH	0.51W x 0.52H	mm
DOT SIZE	0.56W x 0.61H	mm	DOT PITCH	0.05W x 0.05H	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

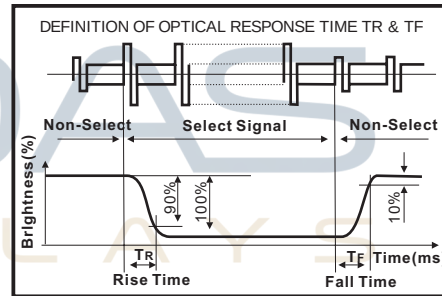
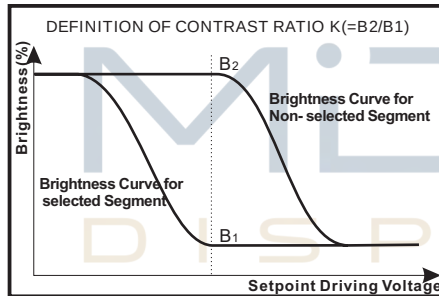
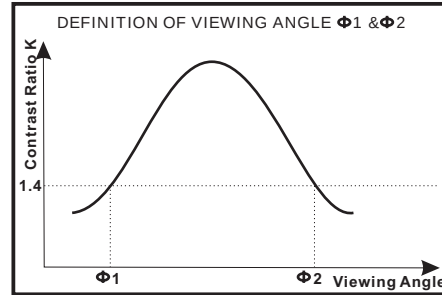
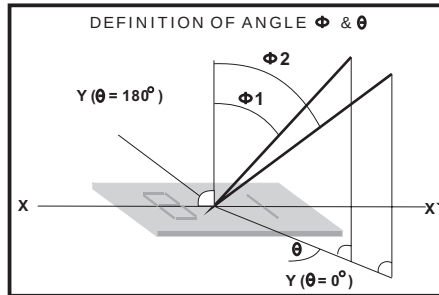
ELECTRONIC CHARACTERISTICS*

ICONS	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
	INPUT VOLTAGE	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	3.85	—	4.45	V
			0°C	3.80	—	4.35	
			25°C	3.75	4.00	4.30	
			50°C	3.65	—	4.30	
			70°C	3.50	—	4.05	

* All data are recorded from TEST REPORT #FSYP000700037

LCD CHARACTERISTICS

FOR STN/FSTN TYPE LCD Panel (TA=25 °C, Vlcd=5.0V ± 0.5V)							
ICONS	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
 	VIEWING ANGLE	$\Phi 2 - \Phi 1$	K=4	40	—	—	deg
		θ		60			
	CONTRAST RATIO	K	—	—	10	—	—
	RESPONSE TIME(RISE)	TR	—	—	150	250	ms
	RESPONSE TIME(FALL)	TF	—	—	150	250	ms



LED CHARACTERISTICS

ICONS	ITEM	SYMBOL	CONDITION	MIN	TYP	MAX	UNIT
 	LED FORWARD VOLTAGE	Vf	25°C If = 5mA	—	3.0	—	V
	LED FORWARD CURRENT ▲2	If	25°C	—	5	—	mA
	LED REVERSE CURRENT	Ir	25°C Vr= 5V	—	—	10	μA
	LED PEAK WAVE LENGTH	λ_p	25°C If = 5mA	569	—	575	nm
	LED BRIGHTNESS (WITHOUT LCD)	Lv	25°C If = 5mA	—	125	—	cd/m ²
	LED BRIGHTNESS UNIFORMITY	Lvmin/Lvmax	25°C If = 5mA	70	—	—	Ratio
	LED LIFE TIME	—	25°C If = 5mA	20K	—	—	Hours

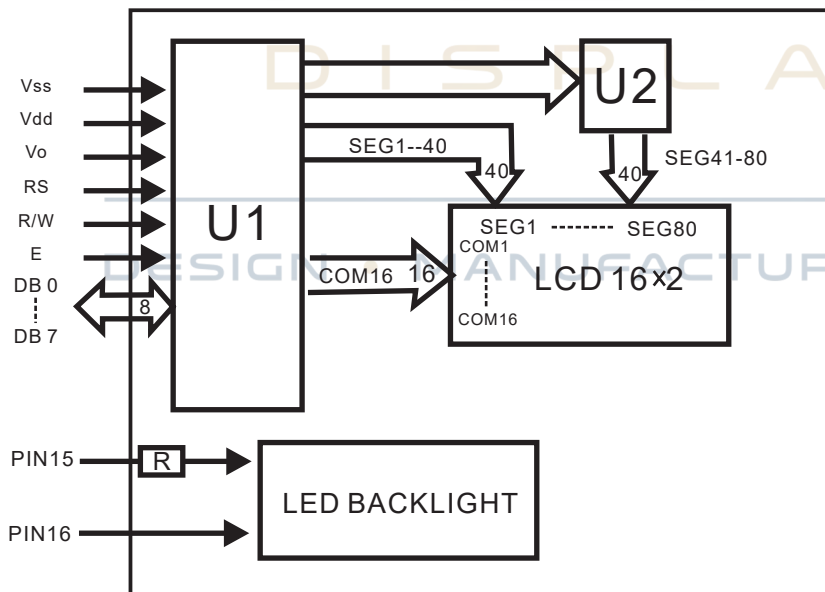
▲2 YOUR ATTENTION: It is constant current (not constant voltage) that should be applied when driving LED backlight. Therefore, this data is very important!

For operation above 25°C, The Ifm Ifp & Pd must be derated, the Current derating is -0.36*1 mA/°C for DC drive and -0.86*1 mA/°C for Pulse drive, the power dissipation is -75*1 mW/°C The product working current must not be more than 60% of the Ifm or Ifp according to the working temperature.

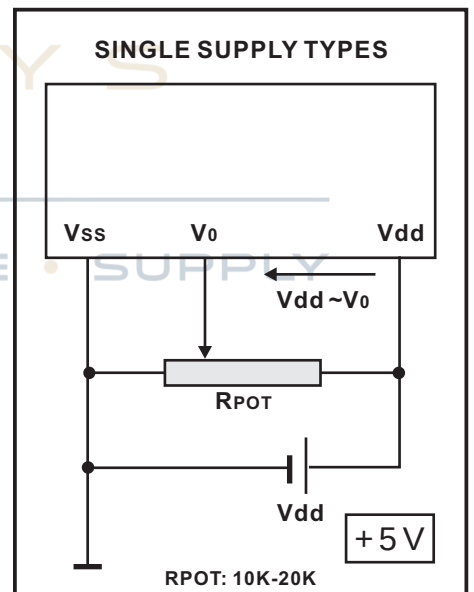
PIN ASSIGNMENT

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	LED+	Power supply for BKL	5.0V
16	LED-	Power supply for BKL	

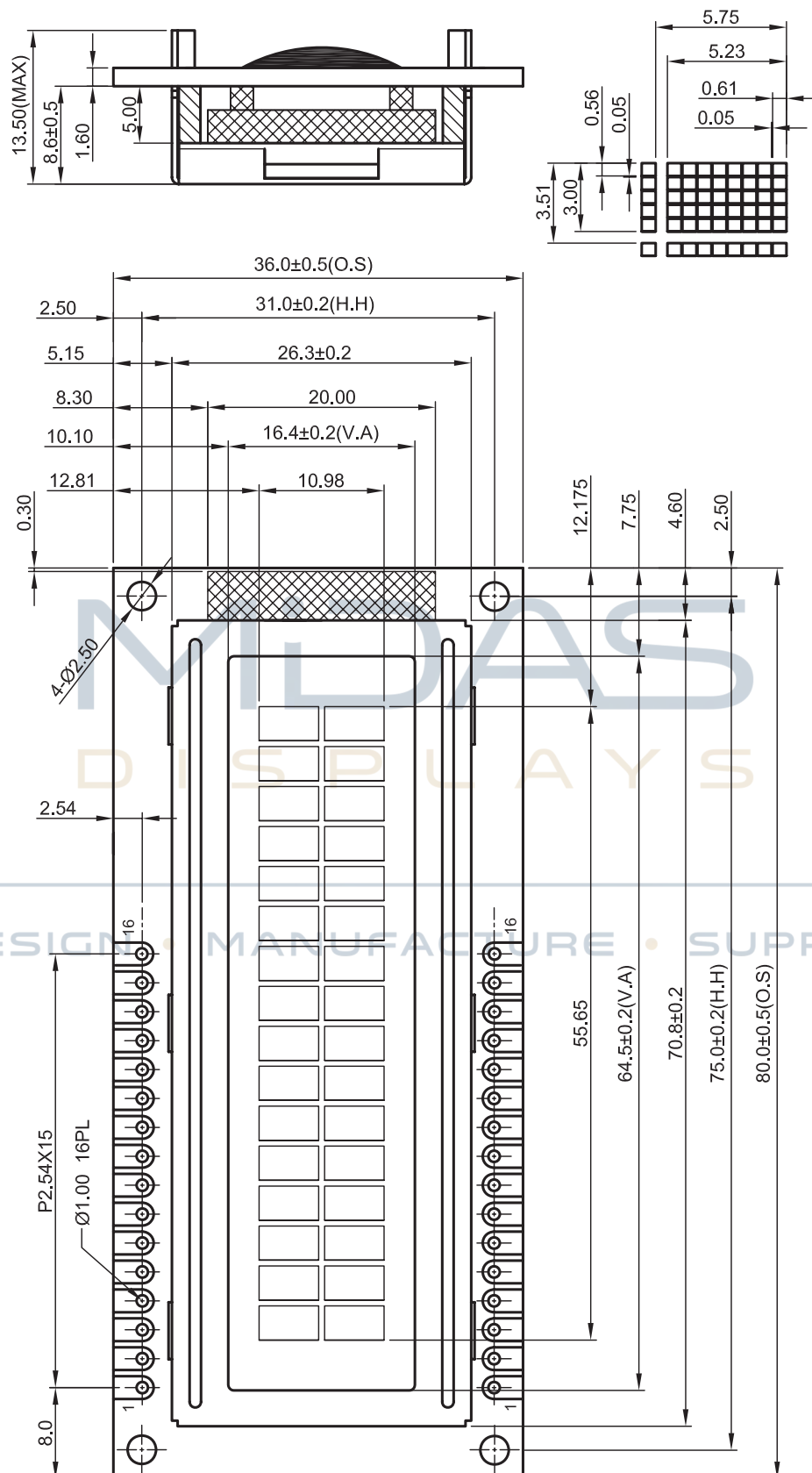
BLOCK DIAGRAM



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)															



PACKING DETAILS

FULL-SIZED PACKAGE
45 PCS/BOX
10 BOXES/CARTON
450 PCS/CARTON
13.00 KGS/CTN(G.W.)
0.054 M ³ /CARTON

HALF-SIZED PACKAGE
45 PCS/BOX
5 BOXES/CARTON
225 PCS/CARTON
6.00 KGS/CTN(G.W.)
0.027 M ³ /CARTON

PACKING DECLARATION
1. This packaging information is for reference only. The actual information is subject to the actual packaging. Especially for packaging of LCL, tolerances may exist.
2. Midas will not be responsible for quality problems caused by unnormal transportation conditions (including but not limited to climate factors or human factors, such as improper handling).

