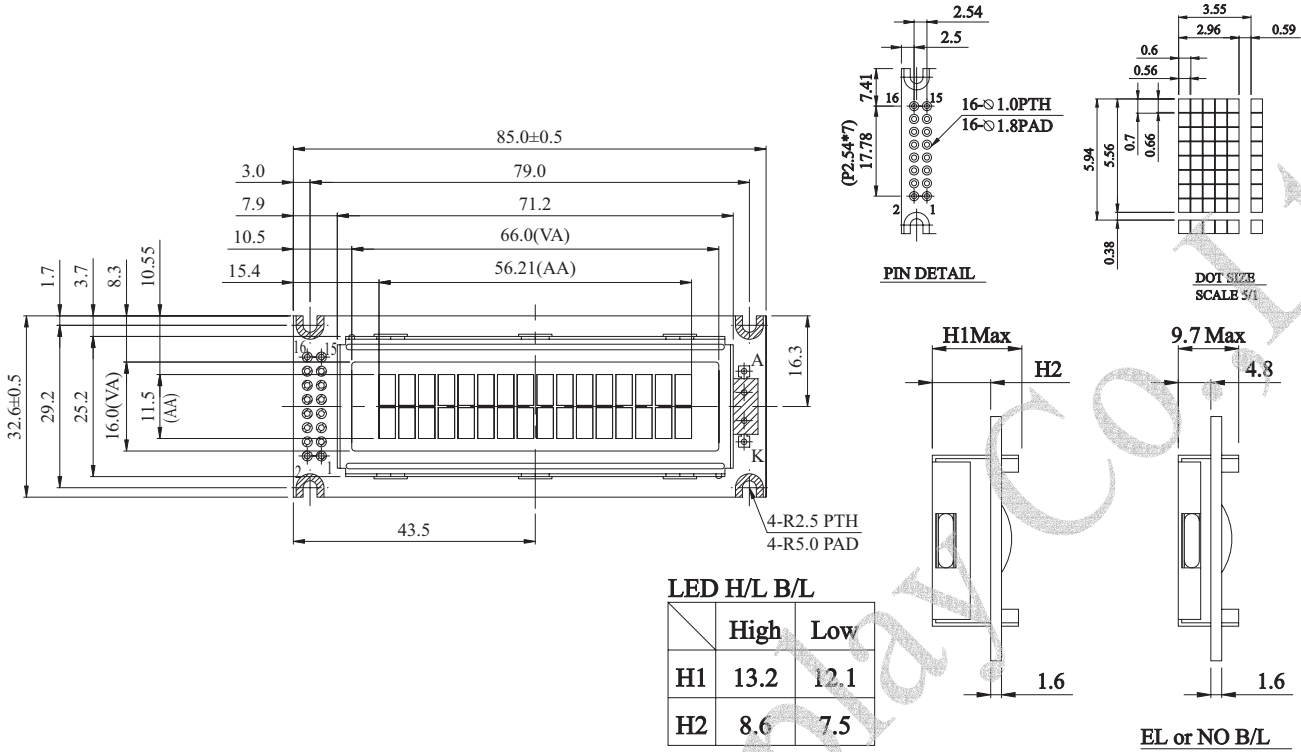




# WH1602M Character 16x2

## Dimension drawing



### Feature

1. 5x8 dots includes cursor
2. Built-in controller (KS 0066 or Equivalent)
3. +5V power supply
4. 1/16 duty cycle
5. LED can be driven by pin1, pin2, or A and K
6. N.V. optional for +3V power supply
7. Optional: smaller character size (2.95x4.35mm)

### Mechanical Data

Item	Standard Value	Unit
Module Dimension	85.0x32.6	mm
Viewing Area	66.0x16.0	mm
Mounting hole	79.0x25.2	mm
Character Size	2.96x5.56	mm

Character type

Pin NO.	Symbol	Function
1	Vss	GND
2	Vdd	Power supply (+5V)
3	Vo	Contrast Adjustment
4	RS	H/L Register select signal
5	R/W	H/L Read / write signal
6	E	H → L Enable signal
7	DB0	H/L Data bus line
8	DB1	H/L Data bus line
9	DB2	H/L Data bus line
10	DB3	H/L Data bus line
11	DB4	H/L Data bus line
12	DB5	H/L Data bus line
13	DB6	H/L Data bus line
14	DB7	H/L Data bus line
15	A/Vee	Power supply for B/L
16	K	Power supply for B/L

### Absolute Maximum Rating

Item	Symbol	Standard Value			Unit
		min.	typ.	max.	
Power Supply	VDD-VSS	-0.3	---	7.0	V
Input Voltage	VI	-0.3	---	VDD	V

Note : VSS=0 Volt, VDD=5.0 Volt.

### Electrical Characteristics

Item	Symbol	Condition	Standard Value			Unit	
			min.	typ.	max.		
Input Voltage	VDD	VDD=+5V	4.7	5.0	5.3	V	
Supply Current	IDD	VDD=5V	---	1.2	1.5	mA	
Recommended LC Driving Voltage for Normal Temp. Version module	VDD-V0	-20°C	---	---	5.2	V	
		0°C	---	---	4.2		
		25°C	---	3.8	---		
		50°C	3.5	---	---		
		70°C	3.2	---	---		
LED Forward Voltage	VF	25°C	---	4.2	4.6	V	
LED Forward Current	IF	25°C	Array	---	100	---	mA
			Edge	---	20	40	
EL Power Supply Current	IEL	Vel=110VAC;400Hz	---	---	5.0	mA	

### Display Character Address Code :

Display position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
DD RAM Address	00	01														0F
DD RAM Address	40	41														4F

	<b>2</b>	<b>4</b>	<b>6</b>	<b>8</b>	<b>10</b>						
<b>W</b>	<b>H</b>	<b>16</b>	<b>02</b>	<b>B</b>	<b>—</b>	<b>Y</b>	<b>G</b>	<b>B</b>	<b>—</b>	<b>JP</b>	<b>**</b>
<b>1</b>		<b>3</b>		<b>5</b>		<b>7</b>				<b>9</b>	

NO	Code value	Description	Remark							
1	W	WINSTAR products	Winstar Display							
2	H,G,X,O	H:Character ; G: Graphic ; X:TAB;O:COG	LCM type							
3	08,16,20,24. ...	Words per line	Character							
	122,128,240...	Row dots	Graphic							
4	01,02,04,...	Lines	Character							
	32,64,128...	Column dots	Graphic							
5	A~Z	Serials number	Model name							
6	N	Without backlight	Backlight type							
	B	EL backlight , Blue								
	D	EL backlight , Green								
	W	EL backlight , White								
	Y	LED backlight , Yellow-Green								
	A	LED backlight , Amber								
	R	LED backlight , Red								
	G	LED backlight , Green								
	T	LED backlight , White								
	P	LED backlight , Blue								
	F	CCFL backlight , White								
7	B	STN positive , Gray	LCD type							
	N	TN negative , Black								
	G	STN positive , Gray								
	Y	STN positive Yellow-Green								
	M	STN negative , Blue								
	F	FSTN positive White								
	T	FSTN negative , Black								
	E	ISTN negative								
8	Temperature	Normal temp,				Wide temp,				Polarizer type/ Temperature range/ View direction
	View angle	6:00	12:00	3:00	9:00	6:00	12:00	3:00	9:00	
	Reflective	A	D	M	P	G	J	S	V	
	Transflective	B	E	N	Q	H	K	T	W	
	Transmissive	C	F	O	R	I	L	U	X	
9	Character						Graphic			
	English/ Japanese European	English/ Japanese	English/ Europe	English/ Europe	English/ Cyrillic	English/ Hebrew	Negative Voltage	Without Negative Voltage	Temperature Compensation	
	JW	JP, JT	EP,ET	EC,ES	CP,CT	H2	V	N	T	
10	**	Special Code							Touch panel, Backlight	