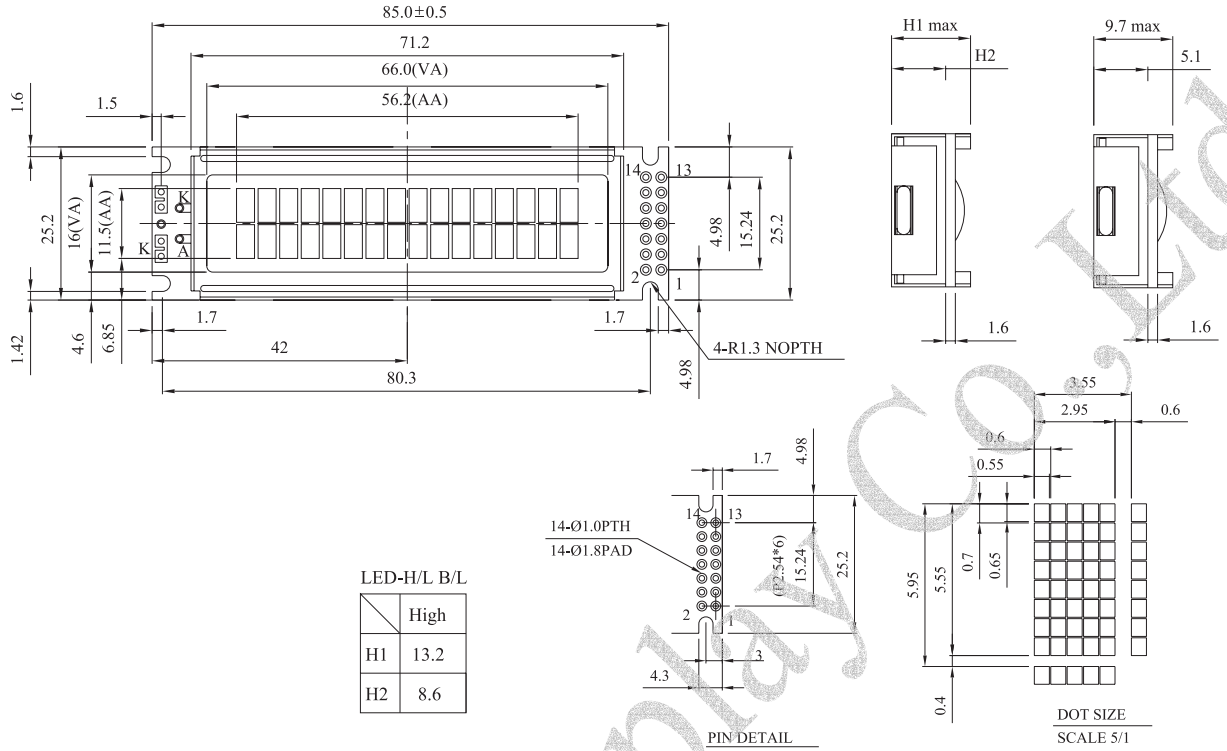


**WH16020** Character 16x2

**Dimension drawing**



Character type

**Feature**

- 1. 5x8 dots includes cursor
- 2. Built-in controller (KS0066 or Equivalent)
- 3. +5V power supply
- 4. 1/16 duty cycle
- 5. Optional: smaller character size (2.95x4.35mm)

**Mechanical Data**

Item	Standard Value	Unit
Module Dimension	85.0x25.2	mm
Viewing Area	66.0x16.0	mm
Mounting hole	80.3x22.0	mm
Character Size	2.95x5.55	mm

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

**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	