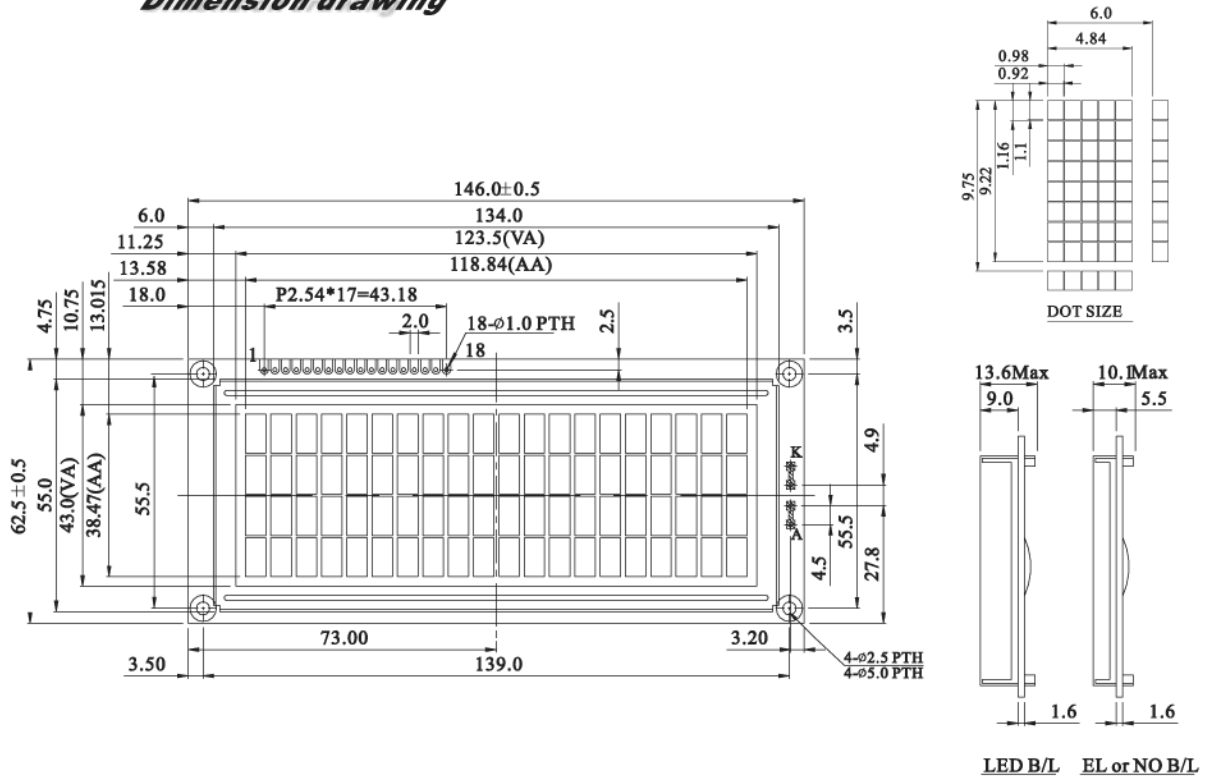


**WH2004L** Character 20x4

**Dimension drawing**



Character type

**Feature**

1. 5x8 dots includes cursor
2. Built-in controller (KS 0066 or Equivalent)
3. +5V power supply (Also available for +3V)
4. 1/16 duty cycle
5. LED can be driven by pin1, pin2, pin15, pin16 or A and K
6. N.V. optional for +3V power supply

**Mechanical Data**

Item	Standard Value	Unit
Module Dimension	146x62.5	mm
Viewing Area	123.5x43.0	mm
Mounting hole	139.0 x 55.5	mm
Character Size	4.84 x 9.22	mm

Pin NO.	Symbol	Function
1	Vss	GND
2	Vdd	+3V or +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	Power supply for LED 4.2 V
16	K	Power supply for B/L (0V)
17	NC/Vee	NC or Negative Voltage output
18	NC	No connection

**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.

**Electronical Characteristics**

Item	Symbol	Condition	Standard Value			Unit
			min.	typ.	max.	
Input Voltage	VDD	VDD=+5V	4.7	5.0	5.3	V
		VDD=+3V	2.7	3.0	5.3	V
Supply Current	IDD	VDD=5V	---	8.0	10.0	mA
Recommended LC Driving Voltage for Normal Temp. Version module	VDD-V0	-20°C	5.0	5.1	5.7	V
		0°C	4.6	4.8	5.2	
		25°C	4.1	4.5	4.7	
		50°C	3.9	4.2	4.5	
		70°C	3.7	3.9	4.3	
LED Forward Voltage	VF	25°C	---	4.2	4.6	V
LED Forward Current	IF	25°C	---	540	1080	mA
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	---	20
DD RAM Address	00	01													13
DD RAM Address	40	41													53
DD RAM Address	14	15													27
DD RAM Address	54	55													67