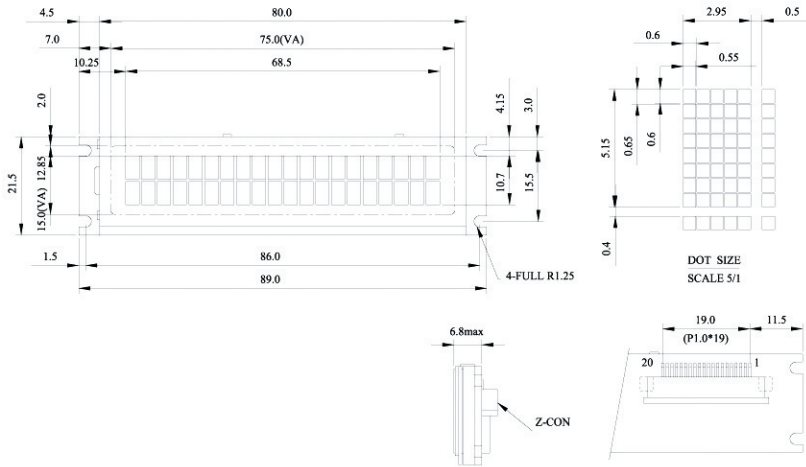


Character 20x2 **WH2002D**

**Dimension drawing**



Character type

**Feature**

- 1. 1.5x8 dots include cursor
- 2. Built-in controller KS0066 or Equivalent
- 3. +5V power supply (Also available for +3V)
- 4. 1/16 duty cycle
- 5. LED can be driven by Pin17, Pin18
- 6. N.V option for +3V power supply

**Mechanical Data**

Item	Standard Value	Unit
Module Dimension	89.0x21.5	mm
Viewing Area	75.0x15.0	mm
Mounting hole	86.0x15.5	mm
Dot Pitch	2.95x5.15	mm

Pin No.	Symbol	Function
1	NC	No Connection
2	NC	No connection
3	Vss	GND
4	Vdd	+3 or +5V
5	Vo	contrast Adjustment
6	RS	H/L Register select signal
7	R/W	Data Read/write
8	E	H→L Enable signal
9	DB0	Data bit 0
10	DB1	Data bit 1
11	DB2	Data bit 2
12	DB3	Data bit 3
13	DB4	Data bit 4
14	DB5	Data bit 5
15	DB6	Data bit 6
16	DB7	Data bit 7
17	VLED+	Power supply for LED+
18	VLED-	Power supply for LED-
19	Vee	Negative voltage output
20	NC	No connection

**Absolute Maximum Rating**

Item	Symbol	Standard Value			Unit
		min.	typ.	max.	
Power Supply	VDD-VSS	-0.3	---	6.7	V
Input Voltage	VI	-0.3	---	VDD	V

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

**Electronical Characteristics**

Item	Symbo	Condition	Standard Value			Unit
			min.	typ.	max.	
Input Voltage	VDD	VDD+±5V	4.75	---	5.25	V
Supply Current	IDD	VDD=+5V	---	1.2	---	mA
		-20°C	---	---	5.2	
Recommended LC Driving Voltage for Normal Temp.	VDD-V0	0°C	---	---	4.5	
		25°C	---	4.2	---	V
		50°C	---	3.8	---	
Version module		70°C	3.5	---	---	

**Display Character Address Code :**

Display position	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
DD RAM Address	00	01															0F			13
DD RAM Address	40	41															4F			53