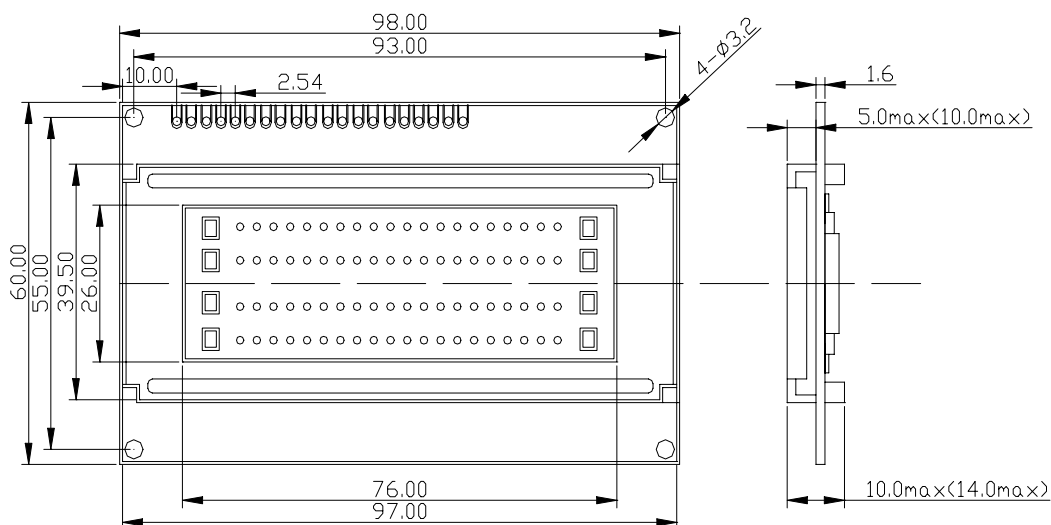


# LCM2004A

\*20 Characters 4 lines \* Controller LSI built-in \* +5v single power supply

## EXTERNAL DIMENSIONS AND DISPLAY PATTERN



## MECHANICAL DATA (Nominal dimensions)

module size-----98.0Wx60.0Hx10.0D mm  
Effective display area----- 76.0Wx26.0H mm  
Character size(5X8 dots) ----- 2.95Wx4.75H mm  
Character pitch ----- 3.55 mm  
Dot size----- 0.525Wx0.324H mm  
Weight ----- about 70 g

## ABSOLUTE MAXIMUM RATINGS min max

Power supply for logic(Vdd-Vss) ----- 0 7.0V  
power supply for LCD drive(Vdd-V0) --- 0 5.0V  
Input voltage(Vi) ----- Vss VddV  
Operating temperature(Ta)-----(-0°C- +50°C)  
Storage temperature(Tstg)-----(-10°C- +60°C)

## ELECTRICAL CHARACTERISTICS

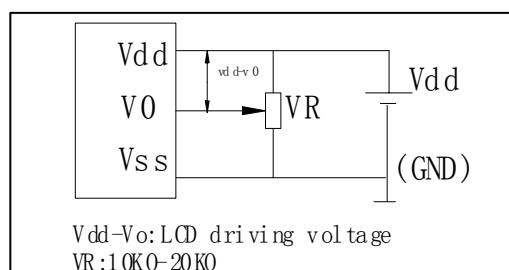
Ta=25°C, Vdd=5.0V±0.25V  
Input 'high' voltage(ViH) ----- 3.5Vmin.  
Input 'low' voltage(ViL) ----- 0.55Vmax.  
Output 'high' voltage(VoH)(-IoH+0.1mA) -- 3.75Vmin.  
Output 'low' voltage(VoL)(IoL=0.1mA) ----- 1.0Vmax.  
Power supply current(Idd)(Vdd=5.0V) --- 2.0mAmax.  
Drive method ----- 1/16Duty, 1/5bias.

## PIN CONNECTION

Pin No	Symbol	Level	Function
1	Vss	—	0V
2	Vdd	—	+5V
3	Vo	—	—
4	RS	H/L	L:Instruction code input H:Data input
5	R/W	H/L	H:Data read L:Data write
6	E	H,H→L	Enable signal
7	D0	H/L	Data bus line *
8	D1	H/L	
9	D2	H/L	
10	D3	H/L	
11	D4	H/L	
12	D5	H/L	
13	D6	H/L	
14	D7	H/L	
15	LED+	DC5V	
16	LED-	DC0V	

\*In case of 4 bits instruction,data is transferred by twice using only 4 buses of D4-D7,and D0-D3 are not used, first operation is higher order 4 bits and second is lower 4 bits of 8 bits ,but in case of 8 bits instruction, data is transferred by data bus of D0-D7.

## POWER SUPPLY



Vdd-V0: LCD driving voltage  
VR:10KΩ-20KΩ

## BLOCK DIAGRAM

