

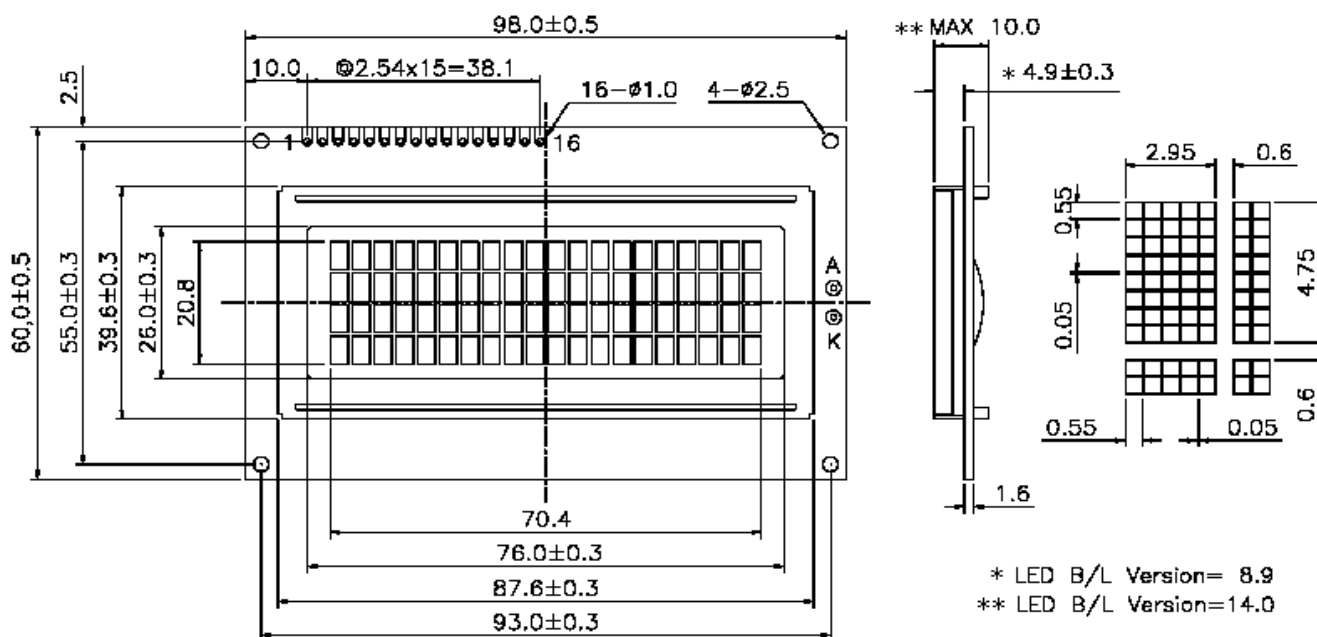


TC2004A

20CharsX4 Lines
1/16 Duty, 1/5Bias

External Dimension

<http://www.oppod.com>



Mechanical Data

Item	Standard Value	Unit
Module size (W*H*T)	98.0*60.0*10.0/14.0	mm
View area (W*H)	78.0*26.0	mm
Active area (W*H)	70.4*20.8	mm
Dot size (W*H)	0.55*0.55	mm

Maximum Absolute Ratings

Item	Symbol	Value	Unit
Supply logic Volt.	$V_{DD} - V_{SS}$	$-0.3 \sim +7.0$	V
LCD driving Volt.	$V_{DD} - V_0$	$-0.3 - 13.0$	V
Input Volt.	V_{in}	$-0.3 \sim V_{DD} + 0.3$	V
Operating temp.	T_{OPR}	$-20 \sim +70$	°C
Storage temp.	T_{STG}	$-30 \sim +80$	°C

Electrical Characteristics ($V_{DD} = 4.5V \sim 5.5V$)

Item	Symbol	Condition	Value	Unit
Supply logic Volt.	V_{DD}	---	5.0 ± 0.5	V
Operating current	I_{DD}	$V_{DD} = 5.0V$	$2.0 \sim 3.0$	mA
Input high volt.	V_{IH}	---	$2.2 \sim V_{DD}$	V
Input low volt.	V_{IL}	---	$-0.3 \sim 0.6$	V
Output high volt.	V_{OH}	$I_{OH} = -0.2mA$	$2.4 \sim V_{DD}$	V
Output low volt.	V_{OL}	$I_{OL} = 1.2mA$	$0 \sim 0.4$	V
LCD driving volt.	V_{LCD}	$T_A = 25^\circ C$	4.6(Typ)	V

LED Backlight Characteristics ($T_A = 25^\circ C$)

Item	Symbol	Condition	Min	Typ	Max	Unit
Supply Volt.	V_f	---	---	4.0	4.2	V
Led Current	I_f	$T_A = 25^\circ C$	---	180	---	mA
Power Dissipation	P_d	---	---	750	---	mW

Interface Description

PIN	Symbol	Level	Description
1	V_{SS}	0V	Ground
2	V_{DD}	5.0V	Power supply for Logic
3	V_O	Variable	Driving voltage for LCD
4	RS	H/L	H:Data L:Instruction
5	RW	H/L	H:Read L:Write
6	E	H/L	Enable
7	DB0	H/L	In 8-bit mode, used as low order data bus. In 4-bit bus mode open these pins.
8	DB1	H/L	
9	DB2	H/L	
10	DB3	H/L	
11	DB4	H/L	In 8-bit mode, used as high data bus. In 4-bit mode, used as both high and low order. DB7 is used for Busy Flag .
12	DB5	H/L	
13	DB6	H/L	
14	DB7	H/L	
15	A	+5V	Anode of LED Backlight
16	K	0V	Cathode of LED Backlight

Block Diagram

