

## PC4002A-L (40x2) Character LCD Display

<b>Features</b> *40 Character, 2 Line *View Angle 12H or 6H *TN or STN Fluid * <b>Extended Temperature Range available</b> *Several Character Types available *LED or EL Backlight available	Absolute Maximum Ratings at T <sub>A</sub> = 25 °C				
	Item	Symbol	Min	Max	Unit
	Power Supply (Logic)	Vdd	-0.3	7.0	V
	Power Supply (LCD)	Vo	Vdd - 0.3	Vdd 12.0	V
	Input Voltage	Vi	- 0.3	Vdd	V
	Operating Temperature (Standard)	Topr	0	50	°C
	Storage Temperature (Standard)	Tstg	- 20	70	°C
	<b>Extended Operating Temperature</b>	Topr	- 20	70	°C
	<b>Extended Storage Temperature</b>	Tstg	- 30	80	°C

### Electrical Characteristics at T<sub>A</sub> = 25 °C, Vdd=5V±0.25V

Item	Symbol	Min	Typ	Max	Unit
Power Supply (Logic)	Vdd-Vss	4.7	5.0	5.3	V
Supply Current	Idd	—	3.2	6.0	mA
LCD Driving Voltage	Vdd - Vo	4.2	4.5	4.8	V
Input Voltage “H”	Vih	2.2	—	Vdd	V
Input Voltage “L”	Vil	—	—	0.6	V
Output Voltage “H”	Voh	2.4	—	—	V
Output Voltage “L”	Vol	—	—	0.4	V

### Interface Pin Connection

No	Symbol	Function	No	Symbol	Function
1	Vss	Power Supply (GND)	9	DB2	Data Bus Line 2
2	Vdd	Power Supply (+5V)	10	DB3	Data Bus Line 3
3	Vo	Contrast Adjust	11	DB4	Data Bus Line 4
4	RS	Instruction/Register Select	12	DB5	Data Bus Line 5
5	R/W	Read/Write	13	DB6	Data Bus Line 6
6	E	Enable Signal	14	DB7	Data Bus Line 7
7	DB0	Data Bus Line 0	15	A	Power Supply for LED Backlight (+)
8	DB1	Data Bus Line 1	16	K	Power Supply for LED Backlight (-)

### LED Backlight Specifications

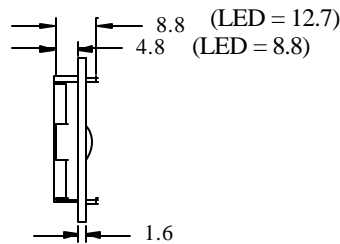
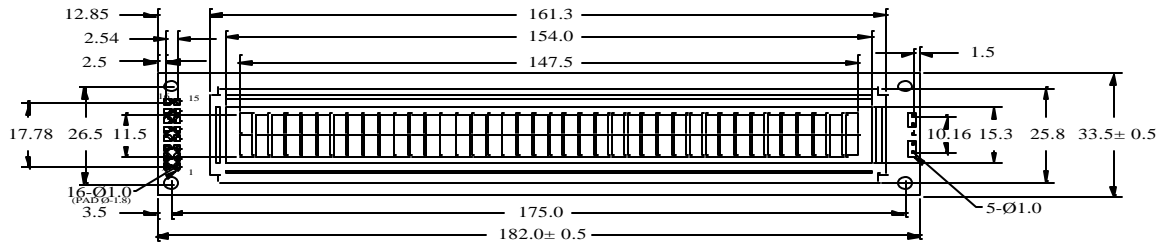
Forward Voltage	Forward Current	Power Dissipation	Peak Wavelength
4.2V (Typ)	465mA (Max)	2100mW (Max)	570nm (Typ)

### Mechanical Specifications

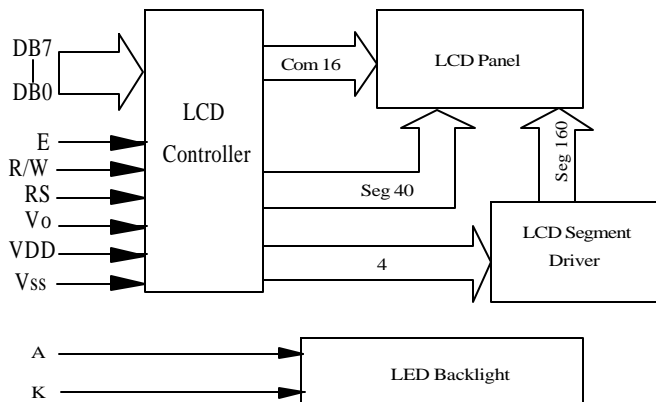
Item	Overall Size	Viewing Area	Character Size	Character Pitch	Dot Size
Specifications	182.0W x 33.5H x 8.8T (BL12.7T)	154.0W x 15.3H	3.20W x 5.55H	3.70W x 5.95H	0.60W x 0.65H

All dimensions are in mm. Tolerance is ± 0.3 Unless otherwise specified

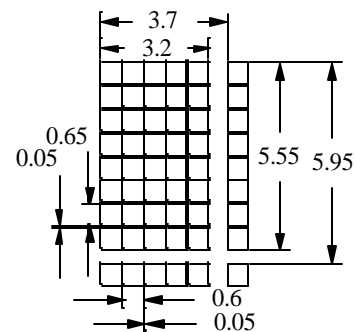
## PC4002A-L (40x2) Character LCD Display



### LCD Block Diagram



### Dot Layout



All dimensions are in mm. Tolerance is  $\pm 0.3$  Unless otherwise specified

## PC4002B-O (40x2) Character LCD Display

<b>Features</b>  *40 Character, 2 Line *View Angle 12H or 6H *TN or STN Fluid *Extended Temperature Range available *Several Character Types available	Absolute Maximum Ratings at T <sub>A</sub> = 25 °C				
	Item	Symbol	Min	Max	Unit
	Power Supply (Logic)	Vdd	-0.3	7.0	V
	Power Supply (LCD)	Vo	Vdd - 15.0	Vdd + 0.3	V
	Input Voltage	Vi	- 0.3	Vdd	V
	Operating Temperature (Standard)	Topr	0	50	°C
	Storage Temperature (Standard)	Tstg	- 20	70	°C
	<b>Extended Operating Temperature</b>	Topr	- 20	70	°C
	<b>Extended Storage Temperature</b>	Tstg	- 30	80	°C

### Electrical Characteristics at T<sub>A</sub> = 25 °C, Vdd=5V±0.25V

Item	Symbol	Min	Typ	Max	Unit
Power Supply (Logic)	Vdd	4.5	5.0	5.5	V
Supply Current	Idd	2.0	—	—	mA
LCD Driving Voltage	Vdd - Vo	—	—	13.0	V
Input Voltage “H”	Vih	2.2	—	Vdd	V
Input Voltage “L”	Vil	—	—	0.6	V
Output Voltage “H”	Voh	2.4	—	—	V
Output Voltage “L”	Vol	—	—	0.4	V

### Interface Pin Connection

No	Symbol	Function	No	Symbol	Function
1	Vss	Power Supply (GND)	9	DB2	Data Bus Line 2
2	Vdd	Power Supply (+5V)	10	DB3	Data Bus Line 3
3	Vo	Contrast Adjust	11	DB4	Data Bus Line 4
4	RS	Instruction/Register Select	12	DB5	Data Bus Line 5
5	R/W	Read/Write	13	DB6	Data Bus Line 6
6	E	Enable Signal	14	DB7	Data Bus Line 7
7	DB0	Data Bus Line 0	15	A	Power Supply for LED Backlight (+)
8	DB1	Data Bus Line 1	16	K	Power Supply for LED Backlight (-)

### LED Backlight Specifications

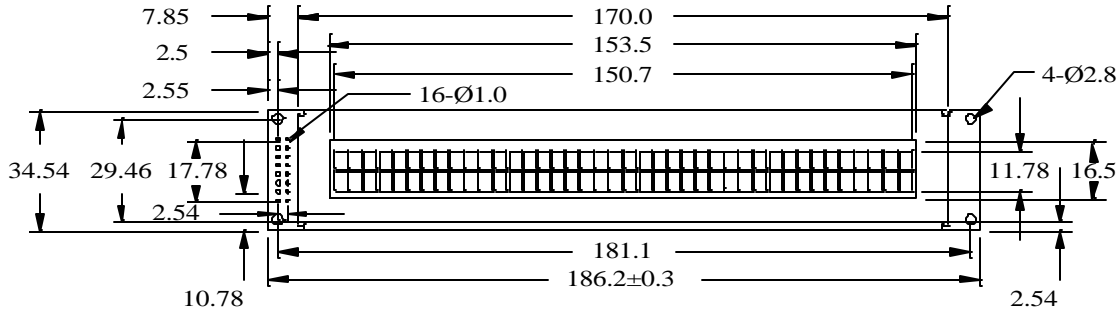
Forward Voltage	Forward Current	Power Dissipation	Peak Wavelength
4.2V (Typ)	560mA (Typ)	2400mW (Typ)	570nm (Typ)

### Mechanical Specifications

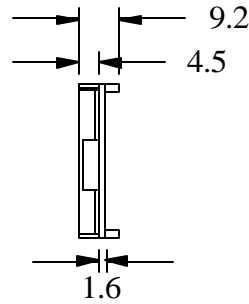
Item	Overall Size	Viewing Area	Character Size	Character Pitch	Dot Size
Specifications	186.2W x 34.54H x 9.2T	153.5W x 16.5H	3.28W x 5.69H	3.78W x 6.09H	0.6W x 0.65H

All dimensions are in mm. Tolerance is ± 0.3 Unless otherwise specified

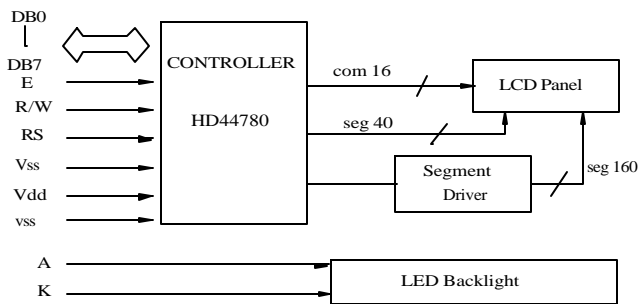
## PC4002B-O (40x2) Character LCD Display



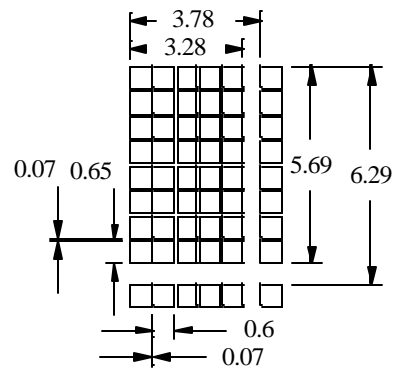
MAX 13.5 for LED Backlight



### LCD Block Diagram



### Dot Layout



All dimensions are in mm. Tolerance is ±0.3 Unless otherwise specified

## PC4002C-O (40x2) Character LCD Display

Features  *40 Character, 2 Line *View Angle 12H or 6H *TN or STN Fluid *Extended Temperature Range available *Several Character Types available	Absolute Maximum Ratings at T <sub>A</sub> = 25 °C				
	Item	Symbol	Min	Max	Unit
	Power Supply (Logic)	Vdd	-0.3	7.0	V
	Power Supply (LCD)	Vo	Vdd - 15.0	Vdd + 0.3	V
	Input Voltage	Vi	- 0.3	Vdd	V
	Operating Temperature (Standard)	Topr	0	50	°C
	Storage Temperature (Standard)	Tstg	- 20	70	°C
	<b>Extended Operating Temperature</b>	Topr	- 20	70	°C
	<b>Extended Storage Temperature</b>	Tstg	- 30	80	°C

### Electrical Characteristics at T<sub>A</sub> = 25 °C, Vdd=5V+0.25V

Item	Symbol	Min	Typ	Max	Unit
Power Supply (Logic)	Vdd	4.5	5.0	5.5	V
Supply Current	Idd	2.0	—	—	mA
LCD Driving Voltage	Vdd - Vo	—	—	13.0	V
Input Voltage "H"	Vih	2.2	—	Vdd	V
Input Voltage "L"	Vil	—	—	0.6	V
Output Voltage "H"	Voh	2.4	—	—	V
Output Voltage "L"	Vol	—	—	0.4	V

### Interface Pin Connection

No	Symbol	Function	No	Symbol	Function
1	Vss	Power Supply (GND)	9	DB2	Data Bus Line 2
2	Vdd	Power Supply (+5V)	10	DB3	Data Bus Line 3
3	Vo	Contrast Adjust	11	DB4	Data Bus Line 4
4	RS	Instruction/Register Select	12	DB5	Data Bus Line 5
5	R/W	Read/Write	13	DB6	Data Bus Line 6
6	E	Enable Signal	14	DB7	Data Bus Line 7
7	DB0	Data Bus Line 0	15	A	Power Supply for LED Backlight (+)
8	DB1	Data Bus Line 1	16	K	Power Supply for LED Backlight (-)

### LED Backlight Specifications

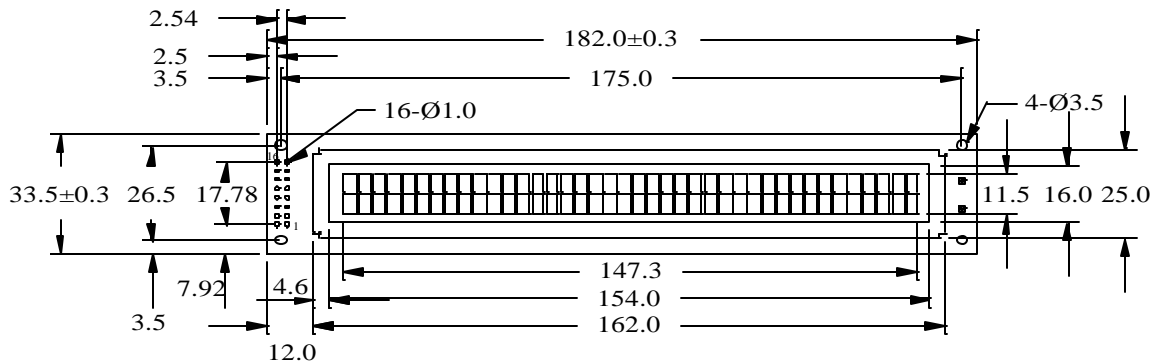
Forward Voltage	Forward Current	Power Dissipation	Peak Wavelength
4.2V (Typ)	380mA (Typ)	1600mW (Typ)	570nm (Typ)

### Mechanical Specifications

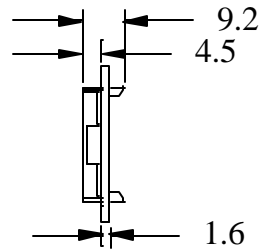
Item	Overall Size	Viewing Area	Character Size	Character Pitch	Dot Size
Specifications	182.0W x 33.5H x 9.2T (BL13.5T)	154.0W x 16.0H	3.20W x 5.55H	3.70W x 5.95H	0.6W x 0.65H

All dimensions are in mm. Tolerance is ± 0.3 Unless otherwise specified

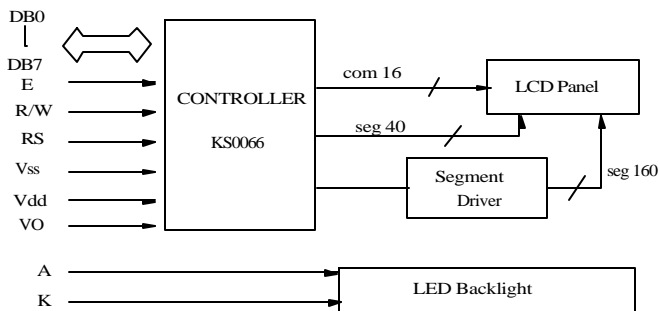
## PC4002C-O (40x2) Character LCD Display



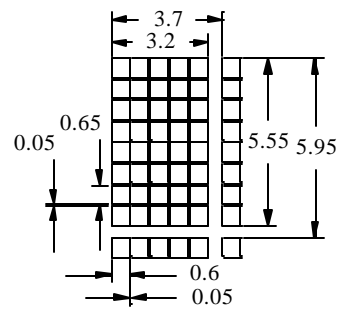
MAX 13.5 for LED Backlight



### LCD Block Diagram



### Dot Layout



All dimensions are in mm. Tolerance is  $\pm 0.3$  Unless otherwise specified