

PC4004A-L (40x4) Character LCD Display

Features *40 Character, 4 Line *View Angle 12H or 6H *TN or STN Fluid *Extended Temperature Range available *Several Character Types available *LED or EL Backlight available	Absolute Maximum Ratings at T _A = 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
	Extended Operating Temperature	Topr	- 20	70	°C
	Extended Storage Temperature	Tstg	- 30	80	°C

Electrical Characteristics at T_A = 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	—	5.2	10.8	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	DB7	Data Bus Line 7	9	E1	Enable IC1
2	DB6	Data Bus Line 6	10	R/W	Read/Write
3	DB5	Data Bus Line 5	11	RS	Register Select
4	DB4	Data Bus Line 4	12	Vo	Contrast Adjustment
5	DB3	Data Bus Line 3	13	Vss	Power Supply (GND)
6	DB2	Data Bus Line 2	14	Vdd	Power Supply (+5V)
7	DB1	Data Bus Line 1	15	E2	Enable IC2
8	DB0	Data Bus Line 0	16	NC	No Control

LED Backlight Specifications

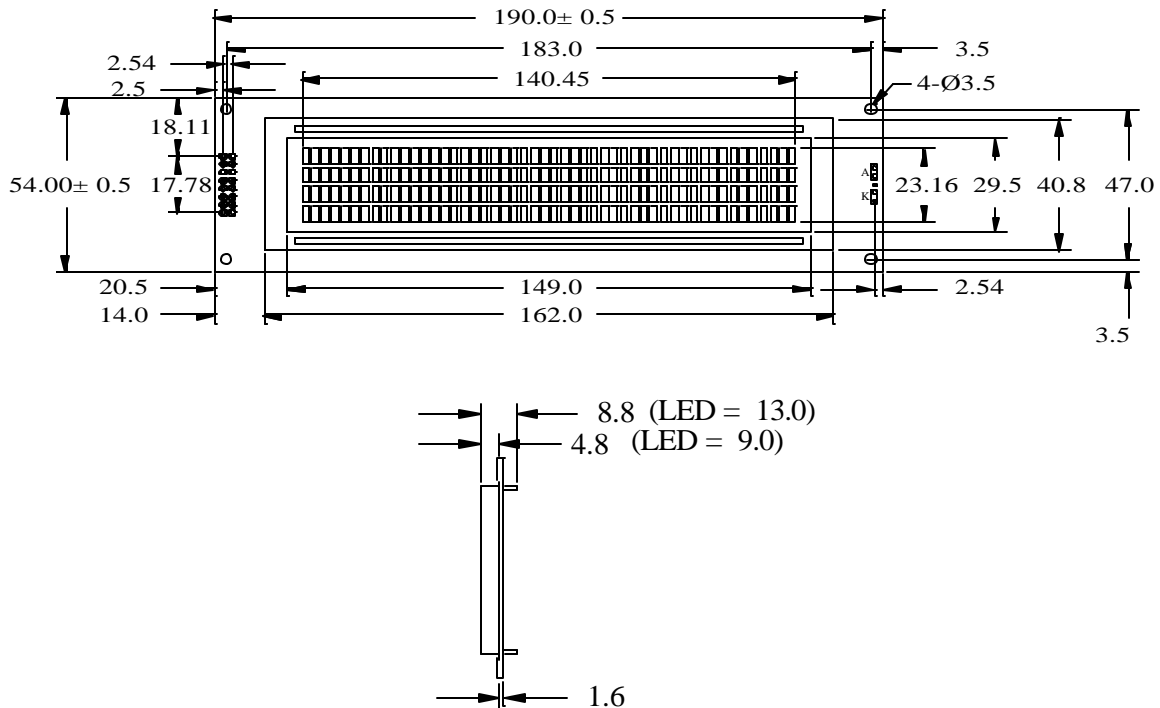
Forward Voltage	Forward Current	Power Dissipation	Peak Wavelength
4.2V (Typ)	900mA (Max)	4100mW (Max)	570nm (Typ)

Mechanical Specifications

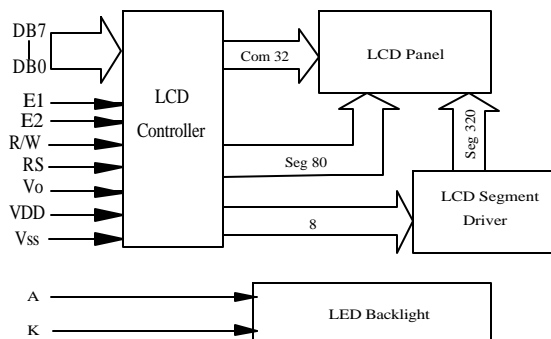
Item	Overall Size	Viewing Area	Character Size	Character Pitch	Dot Size
Specifications	190.0W x 54.0H x 8.8T (BL13.0T)	154.0W x 15.3H	3.20W x 5.55H	3.70W x 5.95H	0.60W x 0.65H

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

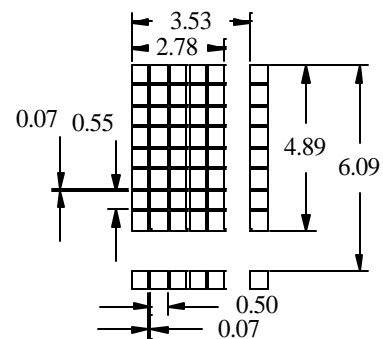
PC4004A-L (40x4) Character LCD Display



LCD Block Diagram



Dot Layout



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

PC4004B-O (40x4) Character LCD Display

Features *40 Character, 4 Line *View Angle 12H or 6H *TN or STN Fluid *Extended Temperature Range available *Several Character Types available	Absolute Maximum Ratings at T _A = 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
	Extended Operating Temperature	Topr	- 20	70	°C
	Extended Storage Temperature	Tstg	- 30	80	°C

Electrical Characteristics at T_A = 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	DB0	Data Bus Line 0	10	RS	Instruction/Register Select
2	DB1	Data Bus Line 1	11	R/W	Read/Write
3	DB2	Data Bus Line 2	12	Vo	Contrast Adjust
4	DB3	Data Bus Line 3	13	Vss	Power Supply (GND)
5	DB4	Data Bus Line 4	14	Vdd	Power Supply (+5V)
6	DB5	Data Bus Line 5	15	E2	Enable Signal for KS0066 (2)
7	DB6	Data Bus Line 6	16	NC	NC
8	DB7	Data Bus Line 7	17	A	Power Supply for LED Backlight (+)
9	E1	Enable Signal for KS0066 (1)	18	K	Power Supply for LED Backlight (-)

LED Backlight Specifications

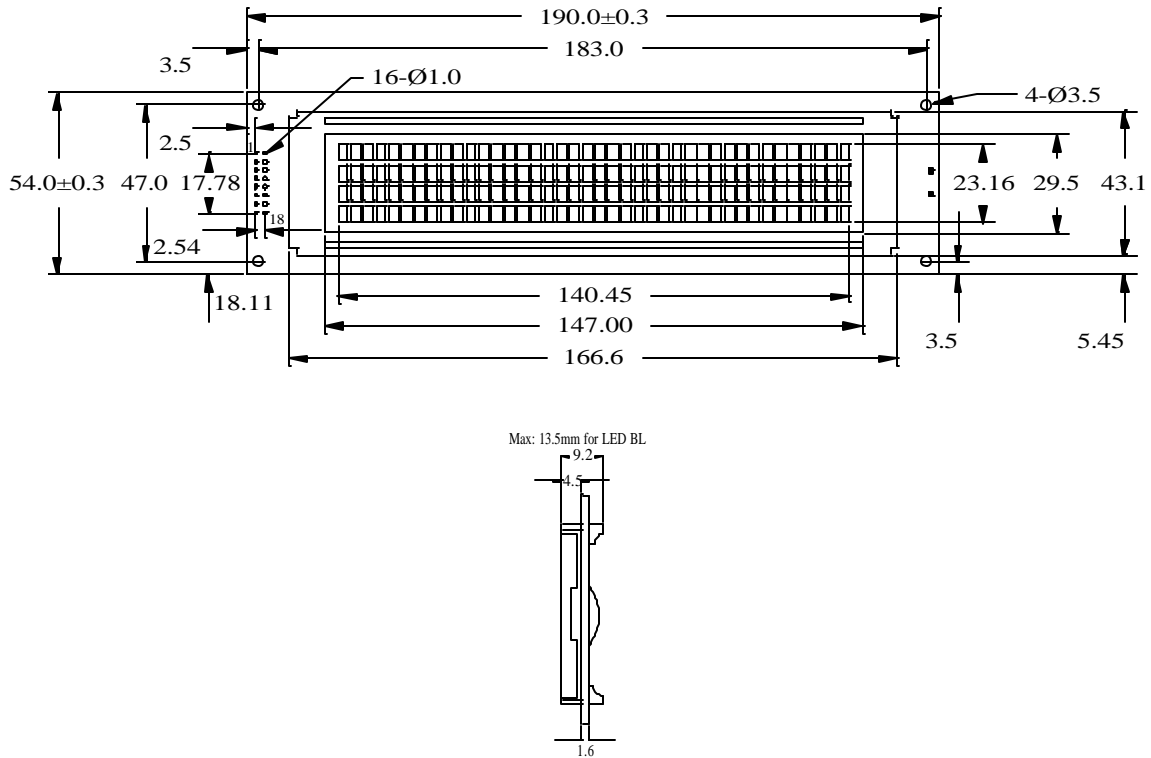
Forward Voltage	Forward Current	Power Dissipation	Peak Wavelength
4.2V (Typ)	690mA (Typ)	2900mW (Typ)	570nm (Typ)

Mechanical Specifications

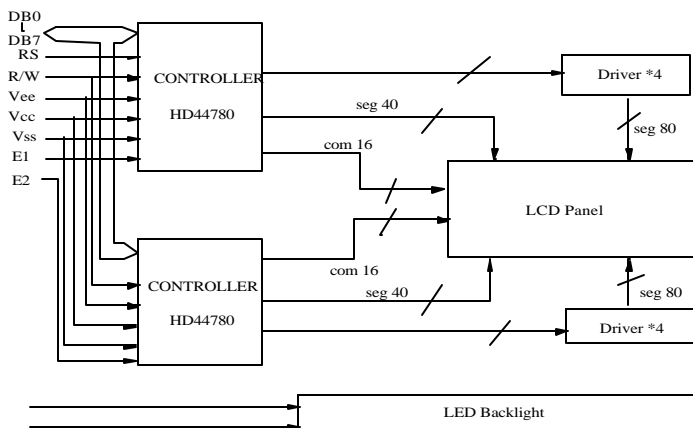
Item	Overall Size	Viewing Area	Character Size	Character Pitch	Dot Size
Specifications	190.0W x 54.0H x 9.2T (BL13.5T)	147.0W x 29.5H	2.78W x 4.89H	3.53W x 6.09H	0.5W x 0.55H

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

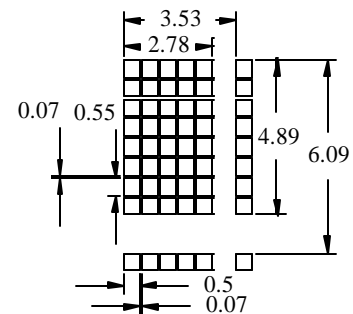
PC4004B-O (40x4) Character LCD Display



LCD Block Diagram



Dot Layout



PC4004C-O (40x4) Character LCD Display

Features *40 Character, 4 Line *View Angle 12H or 6H *TN or STN Fluid *Extended Temperature Range available *Several Character Types available	Absolute Maximum Ratings at T _A = 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
	Extended Operating Temperature	Topr	- 20	70	°C
	Extended Storage Temperature	Tstg	- 30	80	°C

Electrical Characteristics at T_A = 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)	10	DB2	Data Bus Line 2
2	Vdd	Power Supply (+5V)	11	DB3	Data Bus Line 3
3	Vo	Contrast Adjust	12	DB4	Data Bus Line 4
4	RS	Instruction/Register Select	13	DB5	Data Bus Line 5
5	R/W	Read/Write	14	DB6	Data Bus Line 6
6	E1	Enable Signal for KS0066 (1)	15	DB7	Data Bus Line 7
7	E2	Enable Signal for KS0066 (2)	16	NC	NC
8	DB0	Data Bus Line 0	17	A	Power Supply for LED Backlight (+)
9	DB1	Data Bus Line 1	18	K	Power Supply for LED Backlight (-)

LED Backlight Specifications

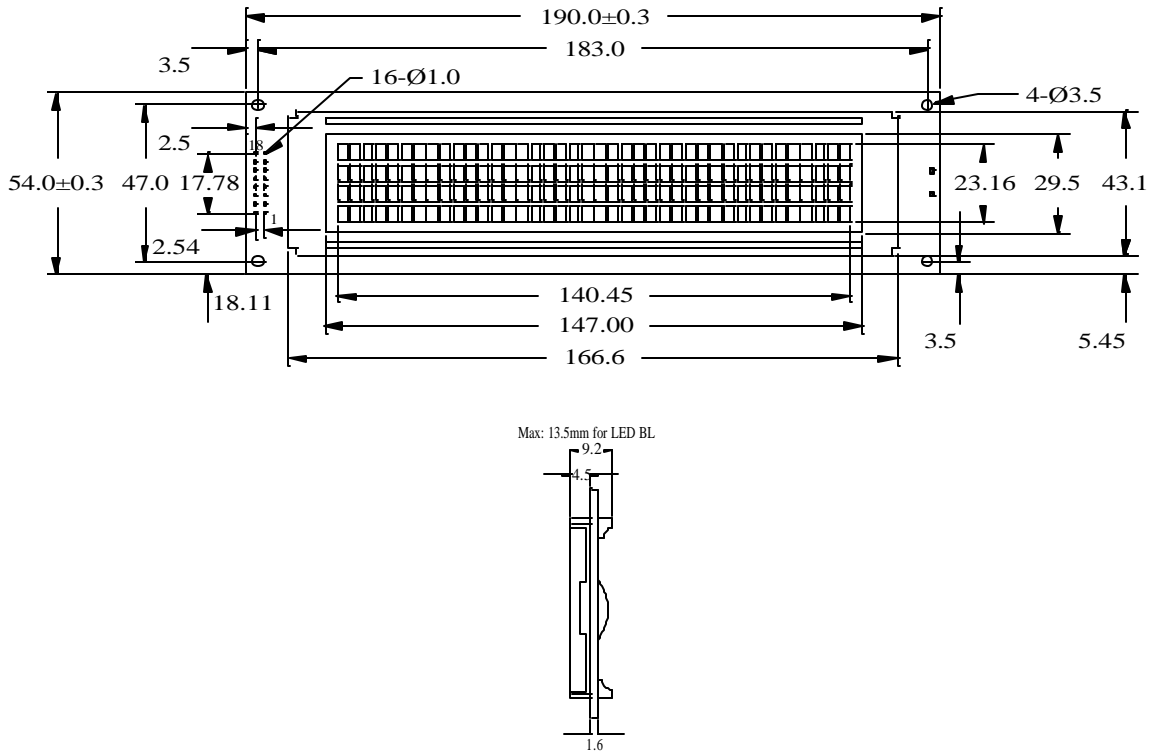
Forward Voltage	Forward Current	Power Dissipation	Peak Wavelength
4.2V (Typ)	690mA (Typ)	2900mW (Typ)	570nm (Typ)

Mechanical Specifications

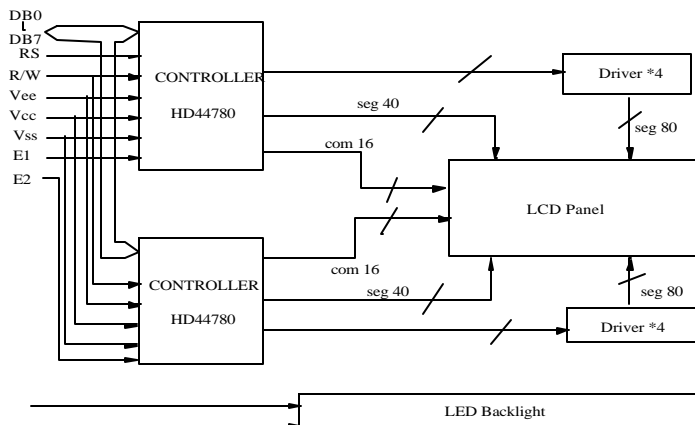
Item	Overall Size	Viewing Area	Character Size	Character Pitch	Dot Size
Specifications	190.0W x 54.0H x 9.2T (BL13.5T)	147.0W x 29.5H	2.78W x 4.89H	3.53W x 6.09H	0.5W x 0.55H

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

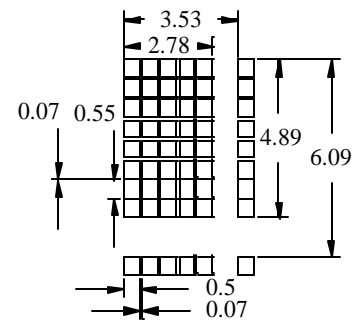
PC4004C-O (40x4) Character LCD Display



LCD Block Diagram



Dot Layout



PC4004D-L (40x4) Character LCD Display

Features *40 Character, 4 Line *View Angle 12H or 6H *TN or STN Fluid *Extended Temperature Range available *Several Character Types available	Absolute Maximum Ratings at T _A = 25 °C				
	Item	Symbol	Min	Max	Unit
	Power Supply (Logic)	Vdd	0	7.0	V
	Power Supply (LCD)	Vo	Vdd 0	Vdd 10	V
	Input Voltage	Vi	0	Vdd	V
	Operating Temperature (Standard)	Topr	0	50	°C
	Storage Temperature (Standard)	Tstg	- 20	70	°C
	Extended Operating Temperature	Topr	- 20	70	°C
	Extended Storage Temperature	Tstg	- 30	80	°C

Electrical Characteristics at T_A = 25 °C, Vdd=5V+0.25V

Item	Symbol	Min	Typ	Max	Unit
Power Supply (Logic)	Vdd-Vss	4.8	4.9	5.3	V
Supply Current	Idd	2.0	—	—	mA
LCD Driving Voltage	Vdd -Vo	4.8	4.9	5.3	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)	10	DB3	Data Bus Line 3
2	Vdd	Power Supply (+5V)	11	DB4	Data Bus Line 4
3	Vo	Contrast Adjust	12	DB5	Data Bus Line 5
4	RS	Instruction/Register Select	13	DB6	Data Bus Line 6
5	R/W	Read/Write	14	DB7	Data Bus Line 7
6	E1	Enable Signal	15	E2	Enable Signal
7	DB0	Data Bus Line 0	16	NC (Vee)	NC
8	DB1	Data Bus Line 1	17	A	Power Supply for LED Backlight (+)
9	DB2	Data Bus Line 2	18	K	Power Supply for LED Backlight (-)

LED Backlight Specifications

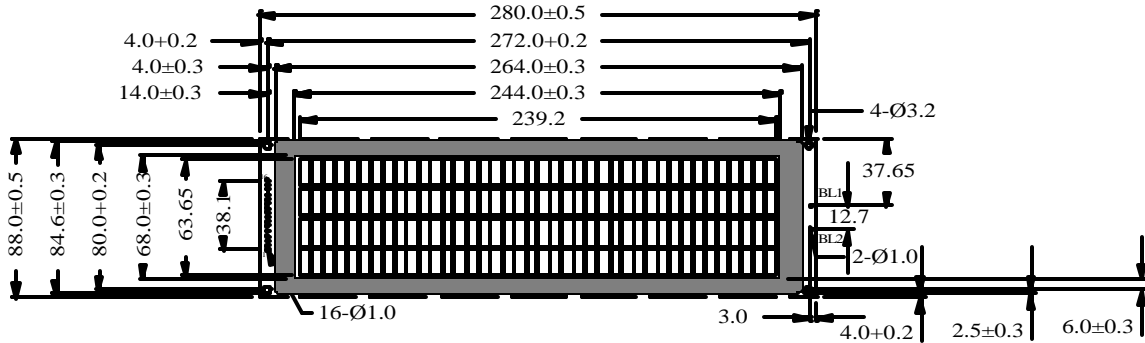
Forward Voltage	Forward Current	Power Dissipation	Peak Wavelength
5.0V (Typ)	2200mA (Typ)	11000mW (Typ)	570nm (Typ)

Mechanical Specifications

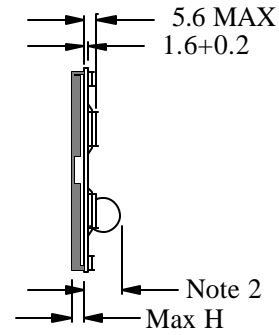
Item	Overall Size	Viewing Area	Character Size	Character Pitch	Dot Size
Specifications	280.0W x 88.0H x 9.2T (BL13.5T)	244.0W x 68.0H	5.20W x 14.51H	6.0W x 16.38H	1.0W x 1.77H

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

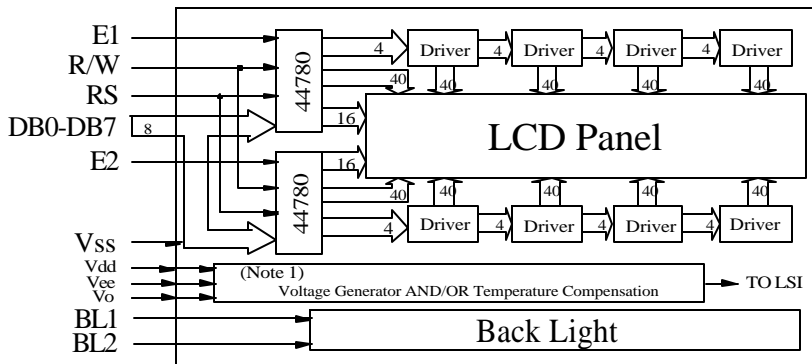
PC4004D-L (40x4) Character LCD Display



Note 1	Note 1	Module	H
NV (Negative Voltage Only)	t=7.6	EL	5.3
TC (Temperature Compensation Only)	--	LED	10.7
NT (NV + TC)	--	SMT	



LCD Block Diagram



Dot Layout

