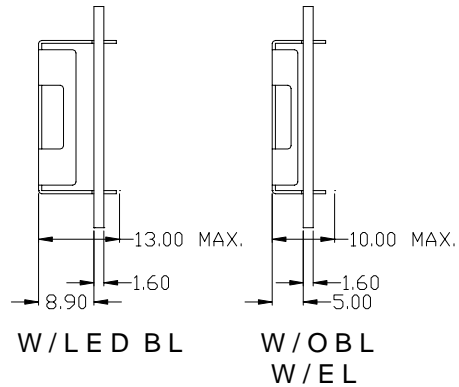
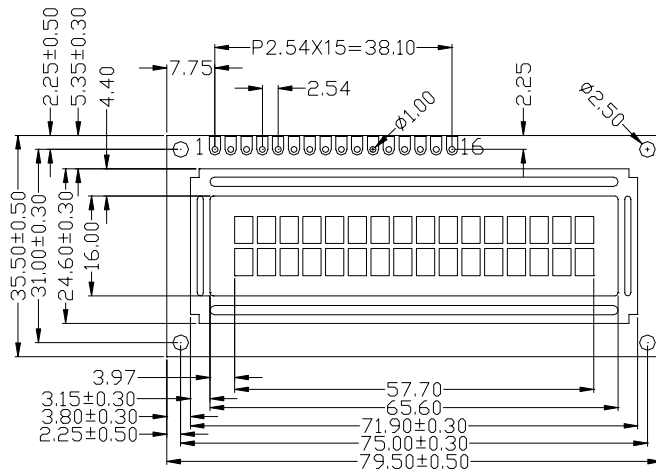
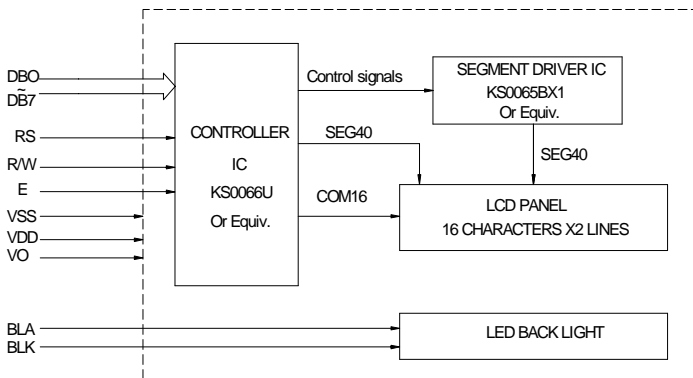
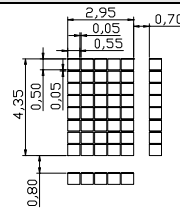


**Standard LCD module**
**MC1602-13**
**OUTLINE DIMENSION**


Tolerance: ± 0.20mm, unless otherwise specified.

**BLOCK DIAGRAM**

**DISPLAY PATTERN**

**MECHANICAL SPECIFICATION**

Item	Dimensions(W)X(H)	Unit
Overall Size	79.5x35.5	MM
View Area	65.6x16.0	MM
Character	2.95x4.35	MM
Dot Size	0.55x0.50	MM
Dot Pitch	0.60x0.55	MM

**PIN ASSIGNMENT**

Pin no	Symbol	Function
1	V <sub>SS</sub>	Power Supply(GND)
2	V <sub>DD</sub>	Power Supply(+)
3	VO	Contrast Adjust
4	RS	Command data input
5	R/W	Data read / write
6	E	Enable signal
7-14	DB0~DB7	Data bus line
15	BLA	Back light anode
16	BLK	Back light cathode

**ABSOLUTE MAXIMUM RATING**

Item	Symbol	Condition	Min	Max	Unit
Supply for logic voltage	V <sub>DD</sub>	25	-0.3	7.0	V
LCD driving supply voltage	V <sub>DD</sub> -VO	25	-0.3	V <sub>DD</sub> +0.3	V
Input voltage	V <sub>I</sub>	25	-0.3	V <sub>DD</sub> +0.3	V

**ELECTRICAL CHARACTERISTICS**

Item	Symbol	Condition	Min	Typical	Max	Unit
Supply voltage for logic	V <sub>DD</sub>	---	4.5	5.0	5.5	V
Supply current for logic	I <sub>DD</sub>	0	---	1.38	3	mA
		25	---	4.7	5.0	5.3
Operation voltage for LCD	V <sub>DD</sub> -V <sub>o</sub>	25	4.5	4.8	5.1	V
		50	4.4	4.7	5.0	V
Input voltage "H" level	V <sub>IH</sub>	---	2.2	---	V <sub>DD</sub>	V
Input voltage "L" level	V <sub>IL</sub>	---	-0.3	---	0.6	V
Supply voltage for back light	V <sub>F</sub>	---	---	4.2	4.6	V
Supply current for back light	I <sub>F</sub>	V <sub>F</sub> =4.2V	---	110	220	mA

**REMARKS:**

- LCD options: STN, TN, FSTN.
- Back light Options: LED\EL Back light feature.