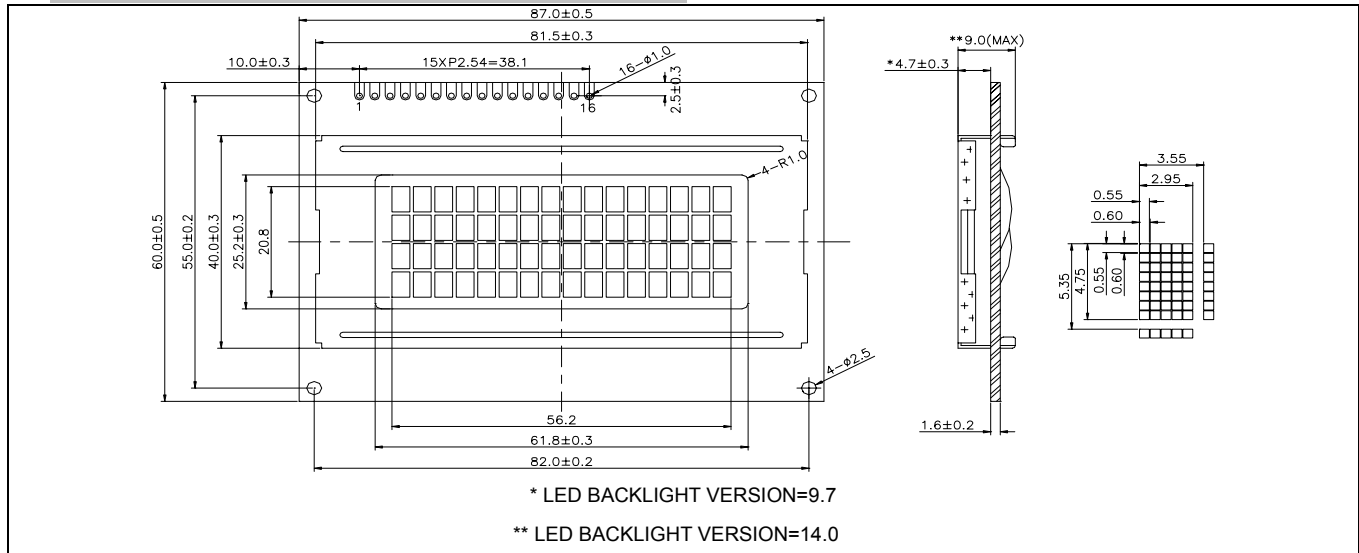


# HY164XX01

16 CHAR X 4 LINE

## 1. EXTERNAL DIMENSION AND DISPLAY PATTERN



## 2. MECHANICAL DATA

ITEM	SPECIFICATION	UNIT
Module Size (W×H×T)	87.0×60.0×9.0 (LED:14.0)	mm
Viewing Area (W×H)	61.8×25.2	mm
Character Font (W×H)	5×7 with Cursor	dots
Character Size (W×H)	2.95×4.75	mm
Character Pitch (W×H)	3.55×5.35	mm
Dot Size (W×H)	0.55×0.55	mm

## 5. ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	MIN.	MAX.	UNIT
Supply Voltage (Logic)	$V_{DD} - V_{SS}$	-0.3	7.0	V
Supply Voltage (Driver)	$V_O$	$V_{DD} - 12$	$V_{DD} + 0.3$	V
Input Voltage	$V_{IN}$	-0.3	$V_{DD} + 0.3$	V

## 3. PIN CONFIGURATION

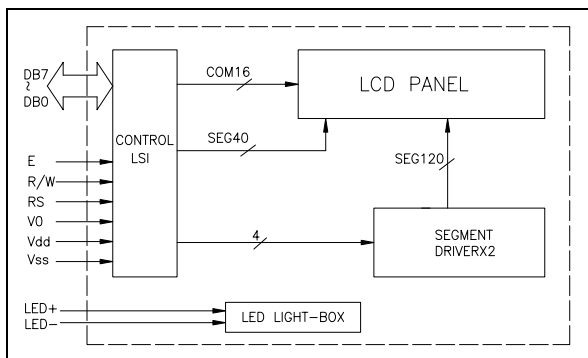
PIN	SYMBOL	SIGNAL DESCRIPTION
1	$V_{SS}$	GND (0V)
2	$V_{DD}$	Power Supply
3	$V_O$	Supply Voltage LCD Driving
4	RS	Register Select Low = Instruction, High = Data
5	R/W	Read/Write Low = MPU to LCM, High = LCM to MPU
6	E	Enable R/W= Low : Data are talking over at falling edge R/W=High : Data can be read at E=1
7 ~ 14	DB <sub>0</sub> to DB <sub>7</sub>	Data Bus-Software Selectable 4 or 8bit Mode
15	A	Anode of LED Unit
16	K	Cathode of LED Unit

## 6. ELECTRICAL CHARACTERISTICS (Ta=25°C)

ITEM	SYMBOL	CONDITION	SPEC. VALUE			UNIT
			MIN.	TYP.	MAX.	
Supply Voltage (Logic)	$V_{DD} - V_{SS}$		4.5	5.0	5.5	V
Supply Current (Logic)	$I_{DD}$	$V_{DD}=5V$	-	0.8	2.0	mA
Input Voltage	"HIGH"	$V_{IH}$	-	2.2	-	$V_{DD}$
	"LOW"	$V_{IL}$	-	-0.3	-	0.6
Output Voltage	"HIGH"	$V_{OH}$	$-I_{OH}=0.2mA$	2.4	-	-
	"LOW"	$V_{OL}$	$I_{OL}=1.2mA$	-	-	0.4
LCD Operating Voltage	$V_{DD} - V_O$	$V_{DD}=5V, Ta=25°C$	4.2	4.4 (7.8)	4.6	V
Supply Voltage LCD Drive	$I_O$		-	1.0	1.5	mA

Note : ( ) Value is high Reliability type

## 4. BLOCK DIAGRAM



## 7. BACKLIGHTING CHARACTERISTICS (Ta=25°C) LED

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	$V_{LED}$	-	-	4.2	4.6	V
Power Consumption	$P_{LED}$	$I_F=200mA$	-	840	-	mW
Luminous	$I_V$	$I_F=200mA$	-	80	-	cd/m <sup>2</sup>