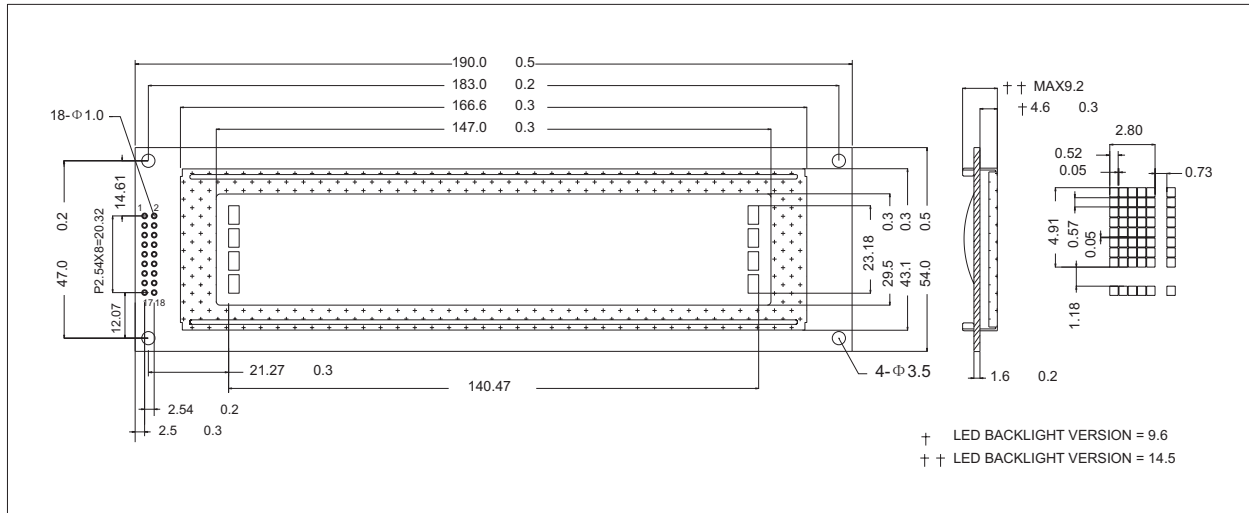


STANDARD CHARACTER MODULES

YMS404-01

40CHAR x 4LINE
1/16DUTY, 1/5BIAS

1 EXTERNAL DIMENSION AND DISPLAY PATTERN



2 MECHANICAL DATA

ITEM	SPECIFICATION	UNIT
Module Size(WXHXT)	190.0 x 54.0 x 9.2 (LED:14.5)	mm
Viewing Area(WXH)	147.0 x 29.5	mm
Character Font(WXH)	5 x 7 with Cursor	dots
Character Size(WXH)	2.8 x 4.91	mm
Character Pitch(WXH)	3.53 x 6.09	mm
Dot Size(WXH)	0.52 x 0.57	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	$V_{DD}-V_{EE}$	-0.3	13.5	V
Input Voltage	V_{IN}	-0.3	$V_{DD}+0.3$	V
Operating Temp.		See page 9		
Storage Temp.				

3 PIN CONFIGURATION

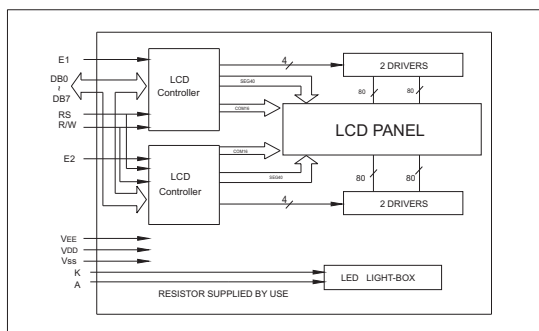
PIN	SYMBOL	SIGNAL DESCRIPTION
1 to 8	DB ₊ to DB ₀	Data Bus-Software Selectable 4 or 8bit Mode
9	E1	Eable R/W=LOW:Data are talking over at falling edge R/W=HIGH:Data can be read at E=1
10	R/W	Read/Write LOW=MPU to LCM,HIGH=LCM to MPU
11	RS	Register Select-LOW=Instruction,HIGH=Data
12	V_{EE}	Supply Voltage LCD Driver
13	V_{SS}	GND(0V)
14	V_{DD}	Power Supply(5V)
15	E2	Eable R/W=LOW:Data are talkingover at falling edge R/W=HIGH:Data can be read at E=1
16	N/C	N/C
17	A	Anode of LED Unit
18	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	$V_{DD}-V_{EE}$	$V_{DD}=5V$	4.5	4.7	5.0	V
Supply Voltage LCD Drive	I_{EE}	Ta=25 °C	-	1.0	1.7	mA

Note(1): () Value is high Reliability type
Note(2): Electro-Optical Characteristics:See page 6.

4 BLOCK DIAGRAM



7 BACKLIGHTING CHARACTERISTICS(Ta=25 °C)

ITEM	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V_{LED}		-	4.1	-	V
Power Consumption	P_{LED}	$I_F=500 mA$	-	1000	-	mW
Luminous	I_V	$I_F=500 mA$	60	80	-	cd/m ²