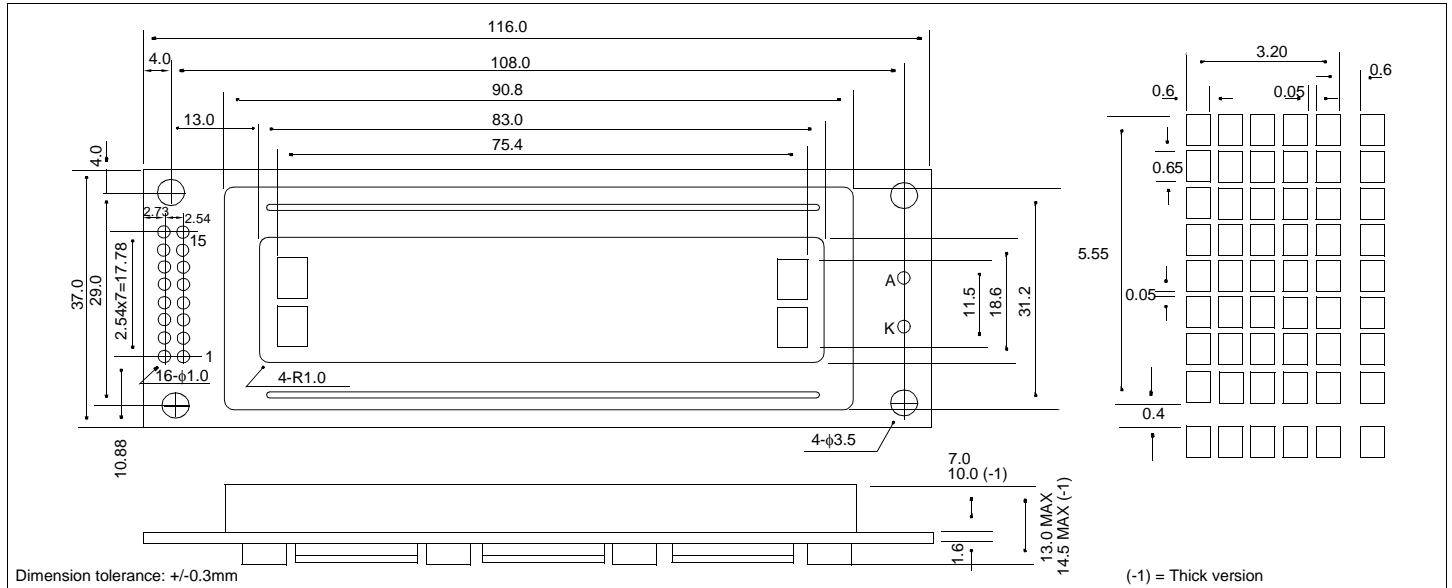


# HDM20216L, HDM20216L-1

## Dimensional Drawing

20 Character x 2 Lines, LED Backlight



### Features

Character Format ..... 5x7 Dots with Cursor  
 Backlight.....White or Yellow LED  
 Options.....Gray STN/Yellow STN, FSTN  
 12 o'Clock/6 o'Clock View  
 Normal/Extended Temperature  
 Normal/Negative Displays

### Physical Data

Module Size .....116.0W x 37.0H x 13.0T mm  
 Thick Version.....116.0W x 37.0H x 14.5T mm  
 Viewing Area Size.....83.0W x 18.6H mm  
 Weight.....45g

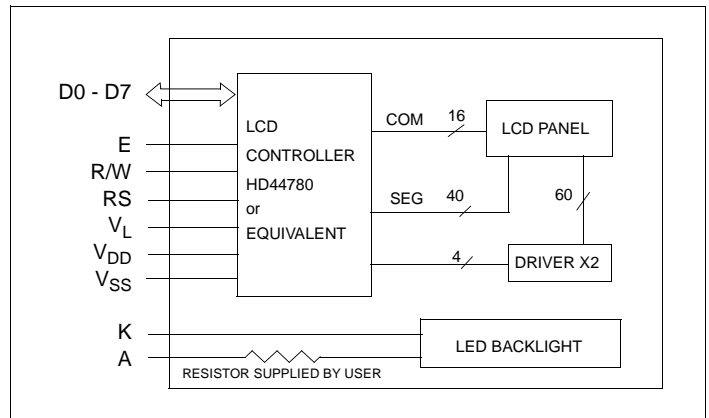
### Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	0	7.0	V
SUPPLY VOLTAGE FOR LCD	$V_{DD}-V_L$	0	13.5	V
OPERATING TEMPERATURE	$T_{OP}$	0	50	°C
STORAGE TEMPERATURE	$T_{OP}$	-20	70	°C
LED FORWARD CURRENT (White)	$I_F$	-	25	mA
(Yellow)		-	300	
LED REVERSE VOLTAGE (White)	$V_R$	-	5	V
(Yellow)		-	8	
LED POWER CONSUMPTION (White)	$P_D$	-	100	mW
(Yellow)		-	1350	

### Electrical Characteristics (VDD=5.0±0.25V 25°C)

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
POWER SUPPLY CURRENT	$I_{DD}$	$V_{DD}=5.0V$	-	1.2	2.4	mA
POWER SUPPLY FOR LCD	$V_{DD}-V_L$	$T_A=25°C$	4.3	-	4.7	V
LED FORWARD VTG (White)	$V_F$	$I_F=20mA$		3.6		V
(Yellow)		$I_F=120mA$	3.9	4.1	4.5	V
BRIGHTNESS (White LED)	L	$I_F=20mA$	46	57	-	cd/m2
(Yellow LED)		$I_F=120mA$	15	45	-	
DRIVE METHOD	1/16 Duty					

### Block Diagram



### Pin Connections

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	$V_{SS}$	-	Power supply
2	$V_{DD}$	-	
3	$V_L$	-	
4	RS	H/L	H: Data input L: Instruction data input
5	R/W	H/L	H: Data read L: Data write
6	E	H,H→L	Enable signal
7	D0	H/L	Data bus
8	D1	H/L	
9	D2	H/L	
10	D3	H/L	
11	D4	H/L	
12	D5	H/L	
13	D6	H/L	
14	D7	H/L	
15	A	-	Anode for LED backlight
16	K	-	Cathode for LED backlight