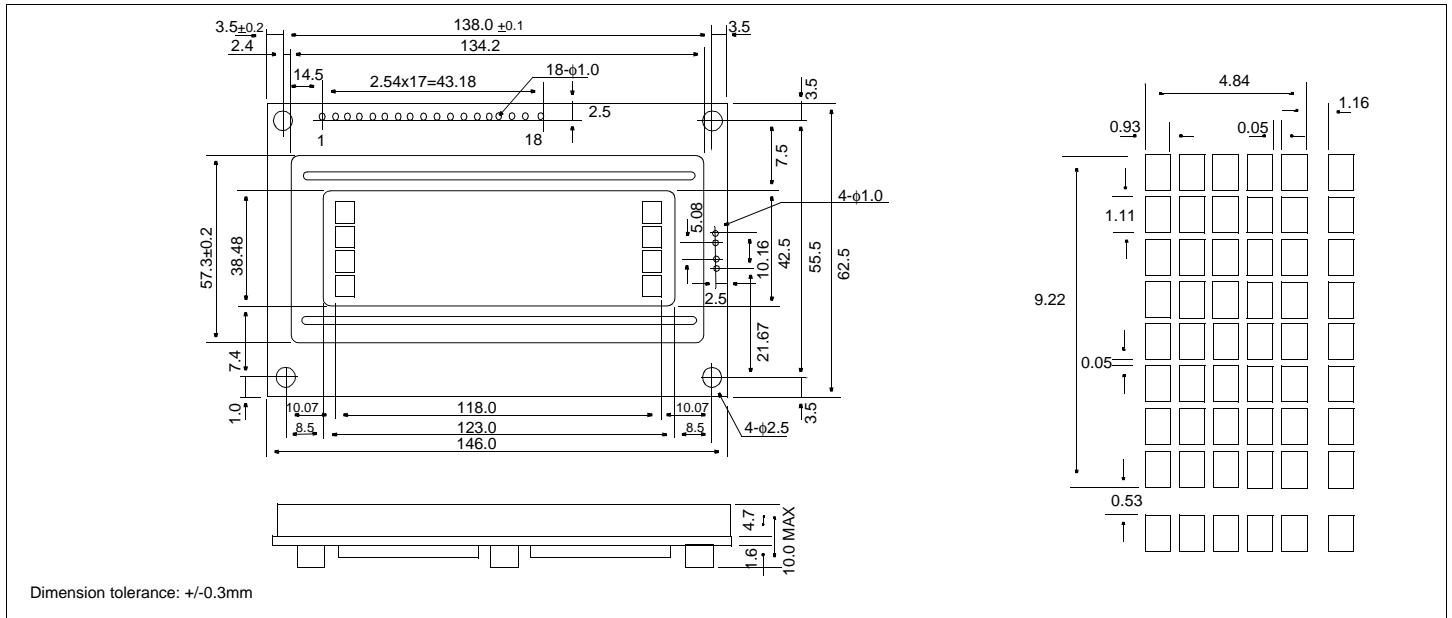


# HDM20416H-M

## Dimensional Drawing

20 Character x 4 Lines, Large Character



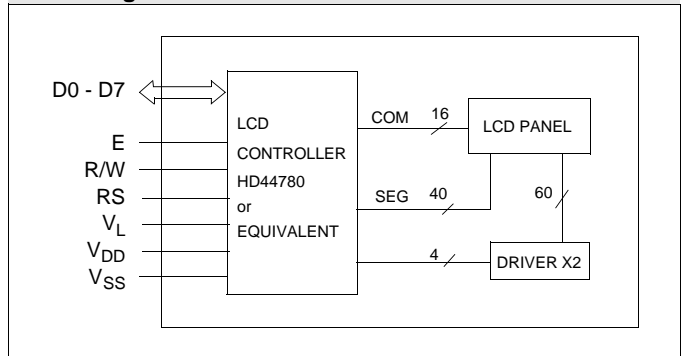
### Features

Character Format .....5x7 Dots with Cursor  
 Backlight.....EL Optional  
 Options.....TN/Gray STN/Yellow STN, 12 o'Clock/6 o'Clock View  
 Normal/Extended Temperature  
 Normal/Negative Displays  
 Built-in Negative Voltage Inverter

### Physical Data

Module Size.....146.0W x 62.5H x 10.0T mm  
 Viewing Area Size.....123.0W x 42.5H mm  
 Weight.....70g

### Block Diagram



### 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
INPUT VOLTAGE	$V_{IN}$	$V_{SS}$	$V_{DD}$	V
OPERATING TEMPERATURE	$T_{OP}$	0	50	°C
STORAGE TEMPERATURE	$T_{STG}$	-20	70	°C

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

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
INPUT HIGH VOLTAGE	$V_{IH}$	-	2.2	-	-	V
INPUT LOW VOLTAGE	$V_{IL}$	-	-	-	.6	V
OUTPUT HIGH VOLTAGE	$V_{OH}$	$I_{OH}=0.2mA$	2.4	-	-	V
OUTPUT LOW VOLTAGE	$V_{OL}$	$I_{OL}=1.2mA$	-	-	0.4	V
POWER SUPPLY CURRENT	$I_{DD}$	$V_{DD}=5.0V$	-	1.0	2.2	mA
POWER SUPPLY FOR LCD	$V_{DD}-V_L$	$T_A=25^{\circ}C$	4.3	-	4.7	V
DRIVE METHOD	1/16 Duty					

### Pin Connections

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	$V_{SS}$	-	0V
2	$V_{DD}$	-	5V
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	N/C	-	No Connection
16	N/C	-	No Connection
17	N/C or $V_{EE}$	-	No Connection or Negative Voltage
18	N/C	-	No Connection