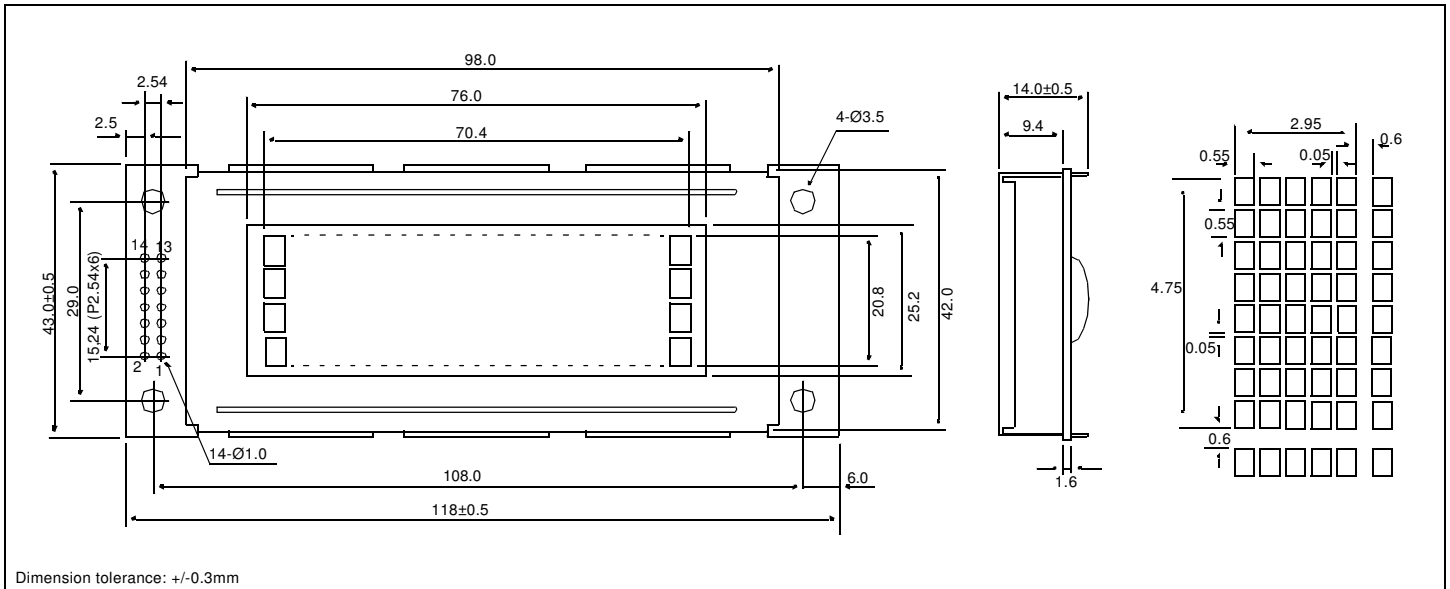


# HDM20416L-B

## Dimensional Drawing

20 Character x 4 Lines, LED Backlight



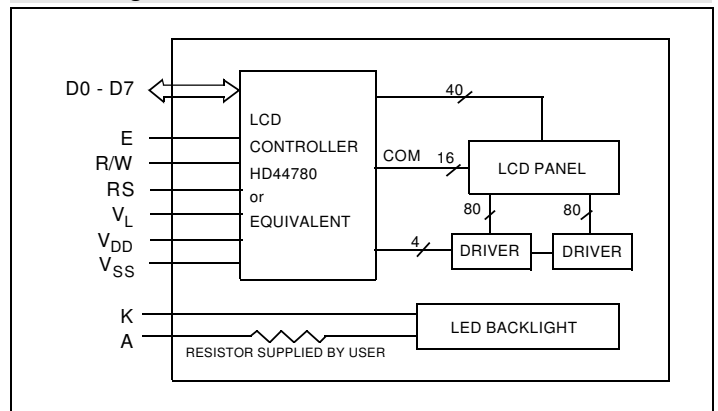
### Features

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

### Physical Data

Module Size.....118.0W x 43.0H x 14.0T mm  
 Viewing Area Size.....76.0W x 25.2H mm  
 Weight.....60g

### Block Diagram



### Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	-0.3	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	60	°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	$V_{IL}$	-	-	-	0.6	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	$I_{DD}$	$V_{DD}=5.0V$	-	0.35	0.6	mA
POWER SUPPLY FOR LCD	$V_{DD}-V_L$	$T_A=25°C$	3.0	-	11.0	V
LED FORWARD VOLTAGE	$V_f$	$I_f=210mA$	3.9	4.1	4.5	V
BRIGHTNESS	L	$I_f=210mA$	-	250	-	cd/m <sup>2</sup>
DRIVE METHOD	1/16 Duty					

### Pin Connections

PIN NO.	SYMBOL	LEVEL	FUNCTION
1	$V_{SS}$	-	0V
2	$V_{DD}$	-	5V
3	$V_L$	-	-
			Power supply
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	K	-	Anode for LED backlight
16	A	-	Cathode for LED backlight