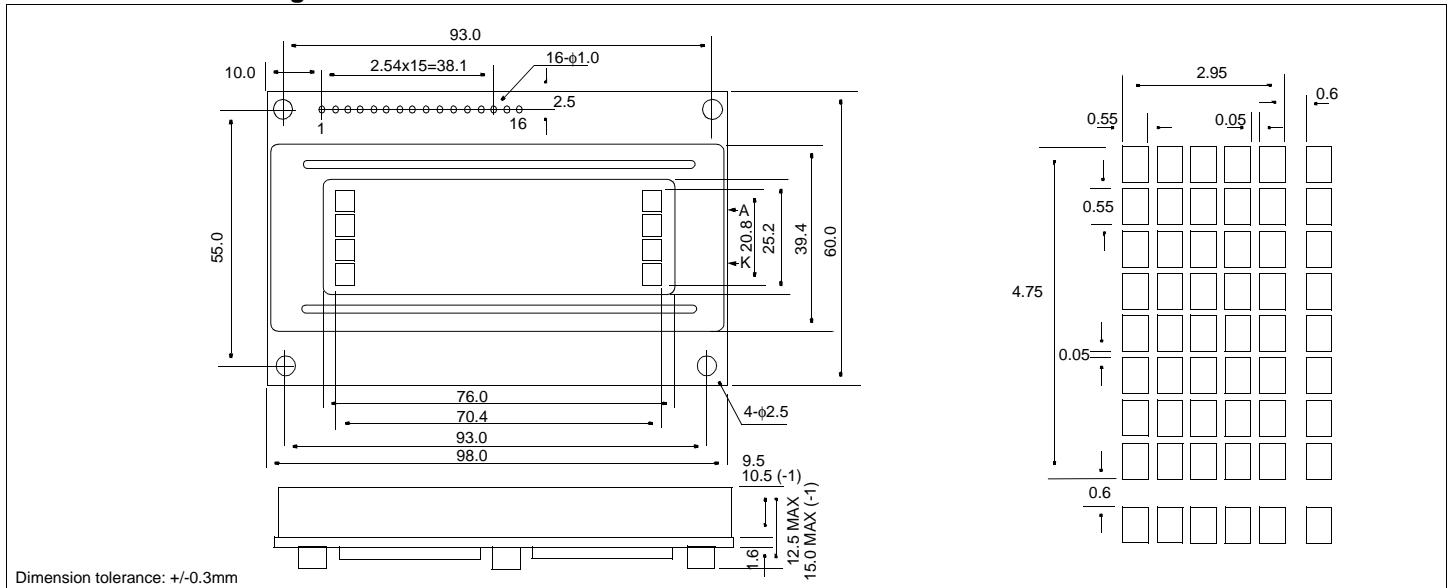


HDM20416L, HDM20416L-1

Dimensional Drawing

20 Character x 4 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 Size98.0W x 60.0H x 12.5T mm
 Thick Version.....98.0W x 60.0H x 15.0T mm
 Viewing Area Size.....76.0W x 25.2H mm
 Weight.....60g

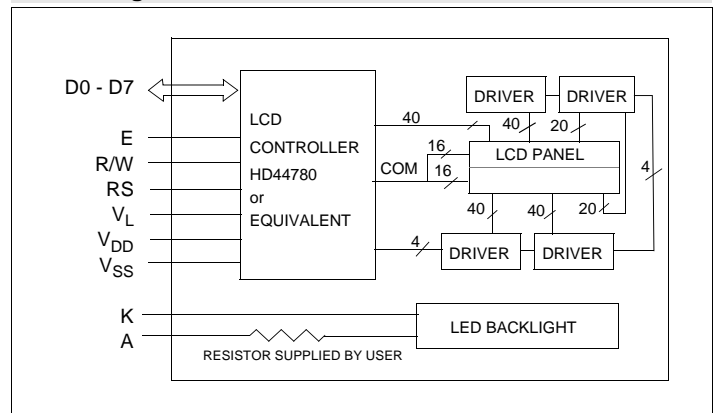
Absolute Maximum Ratings

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_{STG}	-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	-	50	mW
(Yellow)		-	1350	

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

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
POWER SUPPLY CURRENT	I_{DD}	$V_{DD}=5.0V$	-	1.5	2.5	mA
POWER SUPPLY FOR LCD	$V_{DD}-V_L$	$T_A=25°C$	4.2	4.7	5.2	V
LED FORWARD V_tg (White)	V_F	$I_F=20mA$	3.2	3.4	3.6	V
(Yellow)		$I_F=110mA$	3.9	4.1	4.5	
BRIGHTNESS (White LED)	L	$I_F=20mA$	58	83	-	cd/m ²
(Yellow LED)		$I_F=110mA$	30	45	-	
DRIVE METHOD	1/16 Duty					

Block Diagram



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	A	-	Anode for LED backlight
16	K	-	Cathode for LED backlight