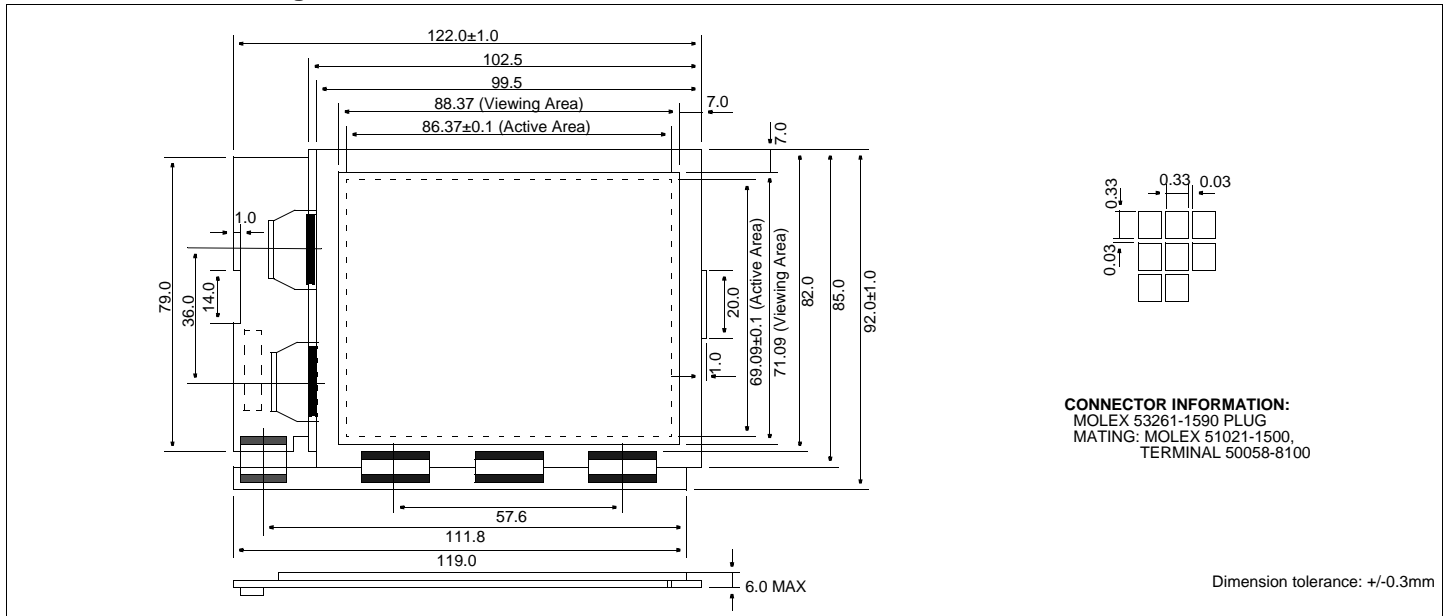


# HDM 240192

## Dimensional Drawing

240 X 192 Dots Graphic, Very Thin



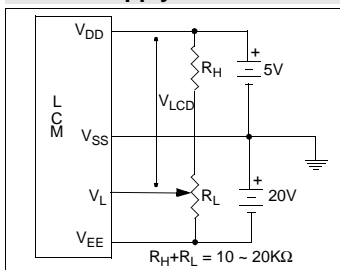
### Features

Backlight.....None  
Options.....Gray STN / Yellow STN / FSTN  
Normal/Extended Temperature  
Bottom / Top Viewing  
Built-in Controller.....None

### Physical Data

Module Size.....122.0W x 92.0H x 6.0T mm  
Viewing Area Size.....88.37W x 71.09H mm  
Dot Pitch.....0.36W x 0.36H mm  
Dot Size.....0.33W x 0.33H mm  
Weight.....42g

### Power Supply



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

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
OPERATING VOLTAGE	V <sub>DD</sub>	-	4.75	5.0	5.25	V
LCD VOLTAGE	V <sub>EE</sub>	-	-	-15	-	V
POWER SUPPLY FOR LCD	V <sub>DD</sub> -V <sub>L</sub>	-	19.2	20.2	20.7	V
INPUT HIGH VOLTAGE	V <sub>IH</sub>	-	V <sub>DD</sub> -2.2	-	V <sub>DD</sub>	V
INPUT LOW VOLTAGE	V <sub>IL</sub>	-	0	-	0.8	V
OUTPUT HIGH VOLTAGE	V <sub>OH</sub>	I <sub>OH</sub> =0.2mA	V <sub>DD</sub> -0.4	-	V <sub>DD</sub>	V
OUTPUT LOW VOLTAGE	V <sub>OL</sub>	I <sub>OL</sub> =1.2mA	0	-	0.4	V
POWER SUPPLY CURRENT	I <sub>DD</sub>	V <sub>DD</sub> =5.0V	-	3.5	-	mA
LCD CURRENT	I <sub>LCD</sub>	V <sub>L</sub> =-12.7V	-	2.0	-	mA
DRIVE METHOD	1/192 Duty					

### Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	V <sub>DD</sub> -V <sub>SS</sub>	-0.3	6.0	V
INPUT VOLTAGE	V <sub>DD</sub> -V <sub>6</sub>	0	30.0	V
OPERATING TEMPERATURE	T <sub>OP</sub>	0	50	°C
STORAGE TEMPERATURE	T <sub>STG</sub>	-20	70	°C

### Pin Connections

PIN NO.	SYMBOL	FUNCTION	
1	FLM	H	First line marker
2	CL1	H,H→L	Display data latch clock
3	CL2	H,H→L	Display data shift clock
4	DOFF	L	Display off
5	V <sub>DD</sub>	5V	Power supply for logic
6	V <sub>SS</sub>	0V	Ground
7	V <sub>L</sub>	-12.7v	LCD Voltage
8	DB0	H/L	Data bus
9	DB1	H/L	
10	DB2	H/L	
11	DB3	H/L	
12	V <sub>EE</sub>	-20V	Power Supply for LCD
13	M	H/L	AC driving control signal
14	N/C	No Connection	
15	N/C	No Connection	