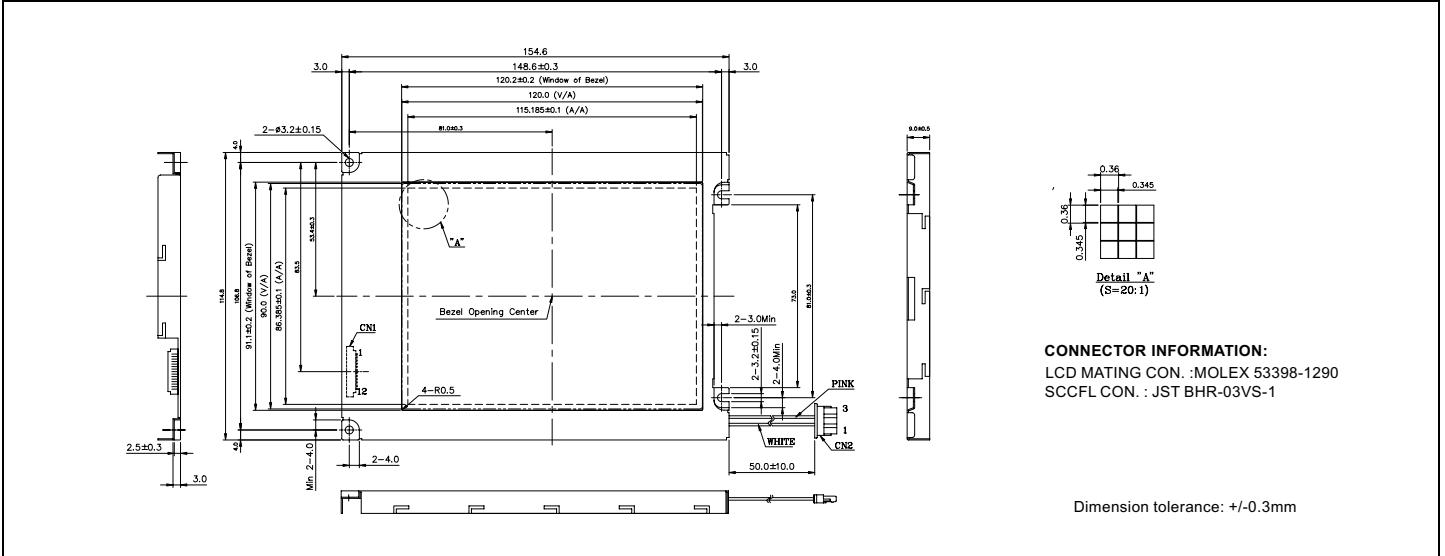


# HDM3224-M

## Dimensional Drawing

320 X 240 Dots Graphic CCFL Backlight



### Features

- Backlight.....CCFL
- Options.....Normally Black, FSTN  
Extended Temperature  
12 o'clock
- Built-in Controller.....None

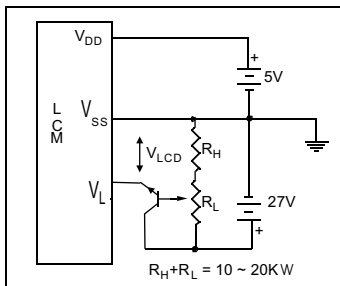
### Physical Data

- Module Size.....154.6W x 114.8H x 9.0T mm
- Viewing Area Size.....122.0W x 92.0H mm
- Dot Pitch.....0.36W x 0.36H mm
- Dot Size.....0.345W x 0.345H mm
- Weight.....190g

### Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	$V_{DD}-V_{SS}$	0	7.0	V
SUPPLY VOLTAGE FOR LCD	$V_{DD}-V_{EE}$	0	30.0	V
INPUT VOLTAGE	$V_{IN}$	-	7.0	V
OPERATING TEMPERATURE	$T_{OP}$	-20	70	°C
STORAGE TEMPERATURE	$T_{STG}$	-40	80	°C

### Power Supply



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

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
INPUT HIGH VOLTAGE	$V_{IH}$	-	0.8 $V_{DD}$	-	-	V
INPUT LOW VOLTAGE	$V_{IL}$	-	-	-	0.2 $V_{DD}$	V
SUPPLY VOLTAGE	$V_{DD}$	-	4.5	5.0	5.5	V
	$-V_L$	-	22.3	22.7	23.1	V
DRIVE METHOD	1/240 DUTY					

### Pin Connections

PIN NO.	SYMBOL	LEVEL	FUNCTION
<b>DATA CONNECTOR</b>			
1	FRAME	H	First Line Marker
2	LOAD	H/L	Data Latch
3	CP	H/L	Data shift
4	DISPOFF	H/L	H=On, L=Off
5	vDD	5V	Power supply for logic
6	$V_{SS}$	0V	Ground
7	$V_{LCD}$	-	Operating voltage for LC
8	D0	H/L	Display Data
9	D1		
10	D2		
11	D3		
12	V	0V	Ground
<b>CCFL CONNECTOR</b>			
1	$V_{CFL}$	-	CCFL Ground
2	NC	-	No Connection
3	$V_{CFL}$	-	Power supply for CCFL