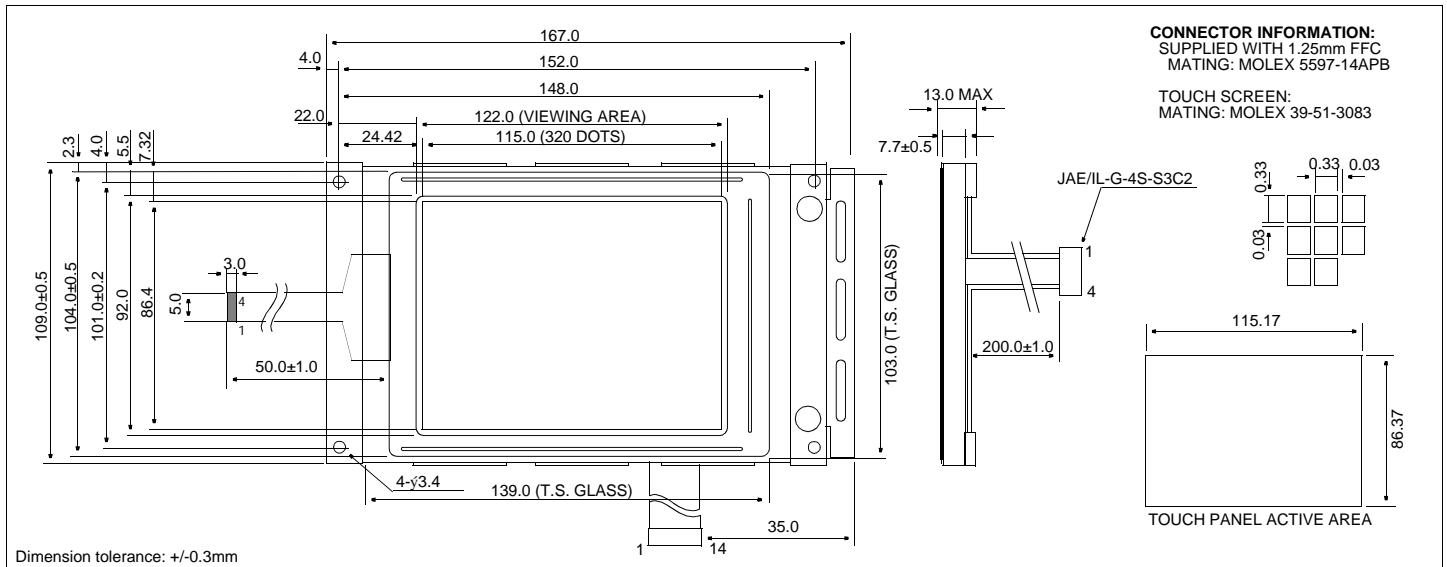


# HDM 3224ATS-1

## Dimensional Drawing

320 X 240 Dots Graphic CCFL Backlight w/ Analog Touch Screen



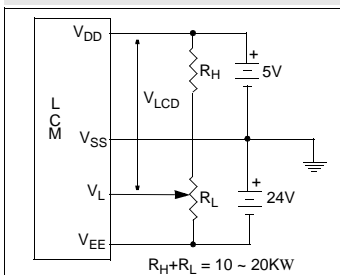
### Features

- Backlight.....CCFL
- Options.....STN/Black and White FSTN  
 Normal/Extended Temperature  
 Bottom / Top Viewing
- Built-in Controller.....None

### Physical Data

- Module Size.....167.0W x 109.0H x 13.0T mm
- Viewing Area Size.....122.0W x 92.0H mm
- Dot Pitch.....0.36W x 0.36H mm
- Dot Size.....0.33W x 0.33H mm
- Weight.....205g

### Power Supply



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

PARAMETER	SYM	CONDITION	MIN	TYP	MAX	UNIT
INPUT HIGH VOLTAGE	V <sub>IH</sub>	-	0.8 V <sub>DD</sub>	-	-	V
INPUT LOW VOLTAGE	V <sub>IL</sub>	-	-	-	0.2 V <sub>DD</sub>	V
OUTPUT HIGH VOLTAGE	V <sub>OH</sub>	I <sub>OH</sub> =0.4mA	V <sub>DD</sub> -0.4	-	-	V
OUTPUT LOW VOLTAGE	V <sub>OL</sub>	I <sub>OL</sub> =0.4mA	-	-	0.4	V
SUPPLY VOLTAGE	V <sub>DD</sub>	-	4.5	5.0	5.5	V
	V <sub>LCD</sub>	-	22.1	22.5	22.9	V
DRIVE METHOD	1/240 DUTY					

### Absolute Maximum Ratings

PARAMETER	SYMBOL	MIN	MAX	UNIT
SUPPLY VOLTAGE	V <sub>DD</sub> -V <sub>SS</sub>	0	7.0	V
SUPPLY VOLTAGE FOR LCD	V <sub>DD</sub> -V <sub>EE</sub>	0	30.0	V
INPUT VOLTAGE	V <sub>IN</sub>	-	7.0	V
OPERATING TEMPERATURE	T <sub>OP</sub>	0	50	°C
STORAGE TEMPERATURE	T <sub>STG</sub>	-20	70	°C

### Pin Connections

PIN NO.	SYMBOL	LEVEL	FUNCTION
<b>DATA CONNECTOR</b>			
1	D0	H/L	Display Data
2	D1		
3	D2		
4	D3		
5	DISPOFF	H/L	H=On, L=Off
6	FRAME	H	First Line Marker
7	NC	-	No Connection
8	LOAD	H/L	Data Latch
9	CP	H/L	Data shift
10	V <sub>DD</sub>	5V	Power supply for logic
11	V <sub>SS</sub>	0V	Ground
12	V <sub>EE</sub>	-22V	Power supply for LCD
13	V <sub>L</sub>	-	Operating voltage for LC
14	FGND	-	Front panel ground
<b>CCFL CONNECTOR</b>			
1	V <sub>CFL</sub>	-	Power supply for CCFL
2	NC	-	No Connection
3	NC	-	No Connection
4	V <sub>CFL</sub>	-	CCFL Ground

### Touch Panel Connector

PIN	SYMBOL	FUNCTION
1	YU	Up
2	XR	Right
3	YD	Down
4	XL	Left