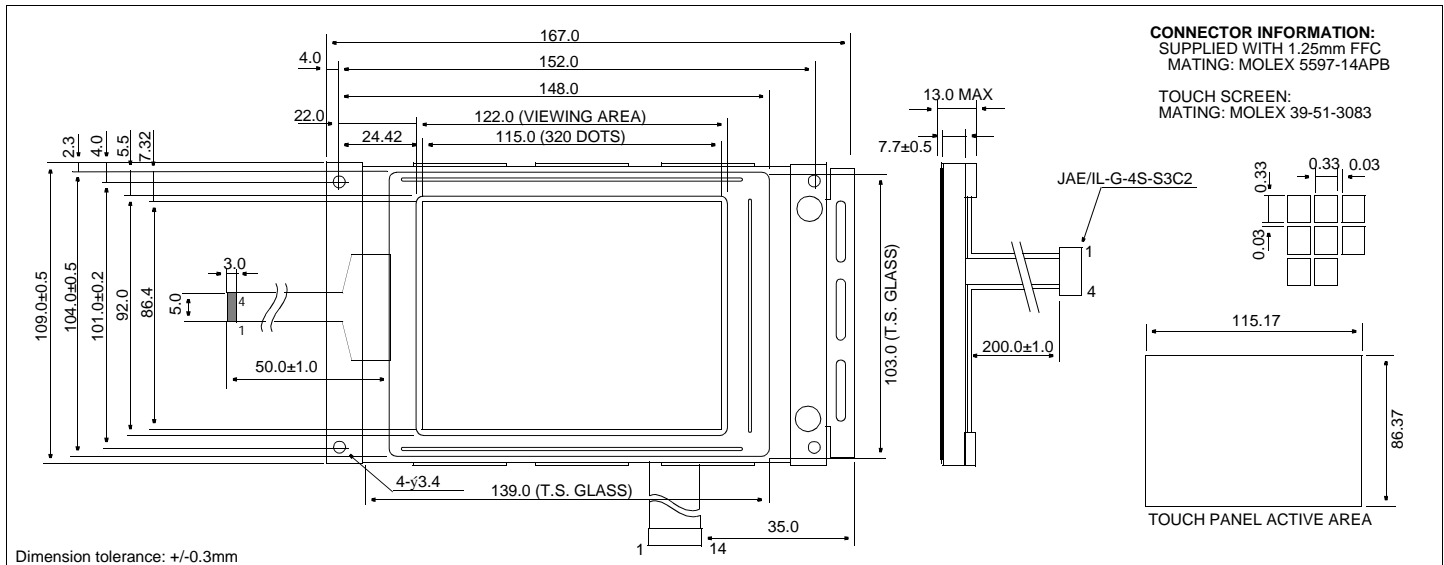


HDM 3224ATS-1

Dimensional Drawing

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



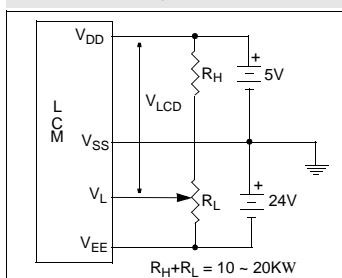
Features

- 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 _{IH} | - | 0.8 V _{DD} | - | - | V |
| INPUT LOW VOLTAGE | V _{IL} | - | - | - | 0.2 V _{DD} | V |
| OUTPUT HIGH VOLTAGE | V _{OH} | I _{OH} =0.4mA | V _{DD} -0.4 | - | - | V |
| OUTPUT LOW VOLTAGE | V _{OL} | I _{OL} =0.4mA | - | - | 0.4 | V |
| SUPPLY VOLTAGE | V _{DD} | - | 4.5 | 5.0 | 5.5 | V |
| | V _{LCD} | - | 22.1 | 22.5 | 22.9 | V |
| DRIVE METHOD | 1/240 DUTY | | | | | |

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} | 0 | 50 | °C |
| STORAGE TEMPERATURE | T _{STG} | -20 | 70 | °C |

Pin Connections

| PIN NO. | SYMBOL | LEVEL | FUNCTION |
|-----------------------|------------------|-------|--------------------------|
| DATA CONNECTOR | | | |
| 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 _{DD} | 5V | Power supply for logic |
| 11 | V _{SS} | 0V | Ground |
| 12 | V _{EE} | -22V | Power supply for LCD |
| 13 | V _L | - | Operating voltage for LC |
| 14 | FGND | - | Front panel ground |
| CCFL CONNECTOR | | | |
| 1 | V _{CFL} | - | Power supply for CCFL |
| 2 | NC | - | No Connection |
| 3 | NC | - | No Connection |
| 4 | V _{CFL} | - | CCFL Ground |

Touch Panel Connector

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